Royal Commission on Workers’ Compensation in BC

Occupational Health and Safety Program Delivery (Part 1)

Final Report

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by

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1.0 INTRODUCTION

1.1 Purpose

The Terms of Reference for the Royal Commission on Workers’ Compensation in BC direct it to examine the statutory framework, mandate, structure, organization, governance and administration of the British Columbia workers’ compensation system in order to meet the needs of the people of British Columbia for a high quality public system that is equitable, effective and efficient in the context of changing workplaces, and consistent with the underlying principles of workers’ compensation in British Columbia, namely:

(a) accident prevention
(b) no fault compensation
(c) collective employer liability
(d) industry funding
(e) universal coverage, and
(f) administrative adjudication

This paper examines the administration of the Prevention Division of the Workers’ Compensation Board of BC. It is the first part in a two-part series of reports on occupational health and safety and the Prevention Division.
1.2 Overview

The field of occupational health and safety has not always received the kind of attention that it warrants in Canada and elsewhere, and has suffered from limited resources, poor data, and limited research on program effectiveness.

A recent review of the costs of occupational injury and illness in the United States concluded that¹:

> The costs of occupational injuries and illnesses are high, in sharp contrast to the limited public attention and societal resources devoted to their prevention and amelioration. Occupational injuries and illnesses are an insufficiently appreciated contributor to the total burden of health care costs in the United States (p.1557).

The province of British Columbia has one of the highest rates of occupational injury in the country. There may be several reasons for this high rate, including the concentration of high hazard industries within BC, and some of the BC Board’s policies with respect to the acceptance of claims². Nevertheless, it is clear that effective prevention efforts are of critical importance within this province.

This report addresses several concerns raised in submissions to the Royal Commission. It also draws upon two recent external reviews of the Prevention Division, the 1992 *Occupational Safety and Health in British Columbia: An Administrative Inventory*³ (referred to herein as the 1992 Administrative Inventory), and the 1997 *Occupational Health and Safety in British Columbia: An Administrative Inventory of the Prevention Activities of the Workers’ Compensation Board*⁴ (referred to herein as the 1997 Administrative Inventory). The report’s conclusions are based on analyses of numerous Prevention Division documents including policy and procedure manuals, planning documents, audits, internal and external research studies, and analyses of data on activities and outcomes provided by the Prevention Division at the request of the Royal Commission. Interviews with selected Prevention Division management, and with a small number of Prevention Division staff, were conducted to clarify discrepancies with respect to the data and to confirm information provided within the documents. Finally,
information on prevention programs from other jurisdictions was considered where relevant.

At the time of the Royal Commission, the Board was undergoing tremendous change. In 1995, the Board put in place its Strategic Plan, and each division was responsible for preparing an annual Business Plan each year thereafter. All Divisions had introduced a series of new initiatives in conjunction with the Strategic Plan. For the Prevention Division, new strategic initiatives and directions were compiled under the WorkSafe plan, which included more targeted consultation and enforcement efforts, new automated services such as the employer’s Accident and Injury Reporting System (AIRS), and a new employer-partnership initiative entitled the “Diamond Program”. A small Research and Evaluation unit was established within the division just prior to the start of the Royal Commission. The delivery of occupational health and safety courses for employers and workers, traditionally carried out by the Prevention Division, was being transferred to the community colleges. The new Occupational Health and Safety Regulations were finalized and a province-wide initiative was put in place to educate field officers, employers and workers with respect to the new regulations. In addition, a reorganization of the Prevention Division took place in 1997, with two new directors and a whole department devoted to industry-specific programs and special projects.

The Royal Commission had initially hoped that by reviewing the Board’s documents it would be possible to comment on the extent to which:

- the Prevention Division is effective in its delivery of programs and services;
- the development of new strategic directions is consistent with evidence on effectiveness; and,
- various programs and services are being resourced sufficiently.

Unfortunately, the Prevention Division has “not historically conducted separate research into the efficiency and effectiveness of prevention programs,” and its current measures of performance are unable to provide conclusive evidence of the effectiveness of its programs and services. Furthermore, in the midst of the kind of changes discussed above, some strategies were too new, or had not yet been rolled out sufficiently, for any
analysis of effectiveness. Also, over the course of the Royal Commission, the Board continued to test and modify its strategies.

This research does not constitute a comprehensive evaluation of the Prevention Division’s activities. Rather, it represents an investigation of specific issues and concerns to the Royal Commission, within the commission’s time and resource constraints. The report’s conclusions are intended to highlight some of the recent advances made by the Board, as well as some of the important areas where further development might be pursued by the Board. To the extent possible, it examines the Board’s prevention effort both prior to, and following the change in Board leadership and strategic direction of the mid-1990s.

The information provided by the Prevention Division to the Royal Commission was not always complete. On some issues, the division was unable to provide data or documentation in answer to specific questions from the commission. On other issues personal interviews provided somewhat different – sometimes significantly different – information than that contained in the documents the division provided. Finally, the Prevention Division told the Royal Commission that some of the data provided by the division in response to requests by the Royal Commission was unreliable. Comparisons of some of this data with that provided in other Board reports (e.g., Annual Reports) revealed a number of inconsistencies.

1.3 Structure of the Report

This report was originally drafted in 1997 to assist with the Royal Commission’s reporting on occupational health and safety legislation. It was updated in December 1998 to include some of the changes within the Prevention Division since the Royal Commission’s first report.

The report examines at a very broad level the management practices in place with respect to program design and delivery, including processes for:

- planning and designing programs and services
- monitoring program delivery
• evaluating program effectiveness
• ensuring accountability

Two program delivery issues are examined in some depth, namely enforcement and internal responsibility. Enforcement was selected because it is, and has been, the main program area within the Prevention Division, having received primary emphasis both within the legislation and within the WCB Prevention Division, in terms of staffing and resources. Internal responsibility was selected because it underlies the new directions that the WCB has been taking in recent years, and because it has significant implications with respect to legislative rights and responsibilities. Also considered, but in less depth, are two other major program areas -- education and experience rating, the latter of which is an Assessment Department program with safety objectives. Many of the submissions to the Royal Commission that dealt with occupational health and safety addressed the health and safety programs and services provided by the WCB, and many of the submissions were concerned with enforcement and aspects of internal responsibility, including worker rights and responsibilities.

1.4 Summary of Findings

The WCB of BC’s Prevention Division has resources available to it that could place it ahead of many other jurisdictions in terms of the services it could offer. In addition to a dedicated staff, the division has access to compensation and assessment information and resources with the potential for collaborative team efforts, a high per capita inspectorate and a high proportion of occupational hygiene officers, and its own lab for monitoring health risks.

Over the course of this review, several positive new developments within the Prevention Division were observed. The Prevention Division has developed a set of strategies to address occupational health and safety, which are clearly presented in its WorkSafe Plan and in its annual Business Plans. The division has been operating in line with this strategic plan for the past three years, and senior management within the division appear to have a common vision and commitment to the plan. The division reports that it is striving to develop more cooperative and collaborative relationships with employers and workers at the worksite, and to use a “mix” of approaches rather than the traditional
enforcement approach in all cases. In particular, the division aims to work with employers and workers to develop the most effective strategies to ensuring health and safety at individual worksites. The division also reports that it is concerned more with “quality” inspections now rather than “numbers”, which had been the focus in the early 1990’s and years prior.

In recent years, there has been an increase in collaborative activities between the Prevention Division, Compensation Services, and Finance/Information Services, which support the mandate of the Prevention Division. At the senior executive level, this was reflected in efforts to work with employers with consistently high claim costs. At the front-line, in some regional offices, field officers and claims adjudicators work on common teams and conduct worksite visits together.

There have been a number of positive new developments in the “Programs” area, offering the potential to create and build upon partnerships with industry, and to improve health and safety through collaborative efforts with employers, industry associations, and labour groups.

Computerized accident reporting systems that have been developed, such as AIRS, contain extensive information on circumstances surrounding accidents, and have the potential to provide much more useful data than standard accident reporting forms.

The extensive regulation review process has been completed. A great deal of stakeholder consultation and input went into the development of these regulations. The up-to-date regulations are now being distributed to BC worksites, supported by an extensive public education campaign. The Prevention Division also appears to be taking a much more proactive role than it had in previous years in trying to promote concern with safety amongst the public, and in trying to disseminate information through newspaper articles and other media efforts regarding specific hazards and strategies to reduce risks.

Educational courses at community colleges have the potential to offer more to employers and workers than could be offered through the one central location in Richmond. The Prevention Division is also engaged in a number of strategies to reduce
the injury rate amongst young workers, including investment in schools to raise the level of awareness of young people about workplace hazards.

The new research unit within the Prevention Division has the potential to contribute to the Prevention Division’s understanding of injury and disease causality, and to its understanding of program and service impacts. Increased resources within the evaluation unit should also help to achieve this objective.

In a recent employee survey, staff within the Prevention Division were found to have higher ratings than other Board employees on all dimensions, including job satisfaction.

At the same time, a number of concerns were identified. The most significant concern has to do with the limited information gathered and analyzed by the Prevention Division to monitor its processes, determine its program impacts, and make decisions regarding allocation of resources.

Additionally, the Prevention Division informed the Royal Commission that some of the data that were available on program activities and that had been requested by the Royal Commission for analysis were unreliable. The Royal Commission observed that data provided by one source (i.e., directly requested from the Prevention Division) were often very different from data provided by another source (i.e., the Board’s Annual Reports).

This lack of information, and lack of reliable information, places the Prevention Division at risk in terms of accountability, and serves as a constraint to efficient and effective program delivery. Several concerns regarding quality control were raised over the course of the Royal Commission.

Information was either unavailable, unreliable or inconsistent across sources on such critical issues as inspection follow-up activities, compliance levels following sanctions, sanction activities (e.g., total number and dollar value of penalties), regulation violations associated with injuries, and the demand side of the division’s work (i.e., number of employers, number of worksites, and number of workers in each worksite).
The Prevention Division monitors its performance on a general level in terms of changes in injury rates (i.e., the number of accepted WCB short-term disability claims per 100 worker years, with the latter derived from payroll rather than actual number of workers), but injury rates can be affected by many factors outside of the control of the Prevention Division. There have been limited efforts to assess the impacts of specific Prevention Division programs.

While the workplace injury rate in BC has declined steadily since 1990, it remains among the highest in Canada. Furthermore, the workplace injury rate in Canada has also declined steadily since 1990. Relative to BC, the injury rate for the country as a whole showed a comparable decline in terms of absolute numbers of injuries, and a greater decline in terms of the proportion of injuries in 1996 relative to 1990.

Resources allocated by the Prevention Division to traditional enforcement activities (i.e., inspections) appear to have declined somewhat in recent years, and traditional enforcement approaches (orders and warning letters) have been used somewhat less frequently. The most recent decline in inspection activity may be partly a result of other demands on field officer’s time (e.g., Regulation Review). There was some lack of clarity at the operational level, amongst Prevention Division staff, regarding the Prevention Division’s current direction and priorities.

There has been no management strategy in place to mobilize resources for the most effective approach to the prevention of occupational disease, although one may be in place in the near future.
2.0 PROGRAM MANAGEMENT

2.1 Overview

The following chapter concludes that:

- In general, the WCB provides a range of services similar to occupational health and safety programs and services provided in other jurisdictions. These services include the promulgation and enforcement (inspections and sanctions) of regulations, consultative and educational activities, and financial incentives. In other jurisdictions, some of these programs and services are provided by separate agencies. The promulgation of regulations, and enforcement activities, for example, are provided by agencies independent of workers’ compensation in some jurisdictions.

- The information that the WCB uses to evaluate the effectiveness of its programs and services, and to make decisions about changes to programs and services, is limited. This means that at the present time the Board is unable to provide convincing evidence of what is and is not working in terms of its occupational health and safety programs.

- The WCB may have insufficient resources to provide an enforcement program that could serve as a reasonable deterrent to employers. Assessments of resource requirements are severely constrained by an absence of information on the demand side of the Prevention Division’s work (i.e., number of worksites) and on the impacts of enforcement efforts.

- It is currently impossible to determine whether or not resources are appropriately allocated to different types of prevention programs.

- While the workplace injury rate in BC has declined steadily since 1990, it remains among the highest in Canada. Additionally, the workplace injury rate in Canada has also declined steadily since 1990. Relative to BC, the injury rate for the country as a whole showed a comparable decline in terms of absolute numbers of injuries, and a greater decline in terms of the proportion of injuries in 1996 relative to 1990.
• The Prevention Division could provide more information on its ongoing activities to its stakeholders than is currently being provided.

2.2 Health and Safety Within BC

The Prevention Division could gather more information than it currently gathers with respect to the health and safety of BC workplaces. There is little information available on indicators such as employer and worker knowledge and understanding of occupational health and safety (e.g., knowledge of the most serious hazards within their work environments, understanding of the regulations, understanding of strategies to monitor and improve health and safety), the extent to which occupational health and safety activities are being implemented within BC workplaces (e.g., existence and effectiveness of occupational health and safety committees and programs), or other indicators of the extent to which BC workplaces are actually safe, healthy, and free from injury and disease.

The Prevention Division uses “injury rates” as the primary indicator of workplace health and safety and of the impacts of its programs. Injury rate has several limitations as an indicator of workplace health and safety when it is used in isolation. It is based on claims reported to and accepted by the Workers’ Compensation Board, and does not include near misses, exposures, or injuries that go unreported. Additionally, injury rates can be affected by many different factors. Increases or decreases in injury rates over time might just as readily be attributed to changes in the economy, the industrial mix, or in claims acceptance policies, for example, as they might to the interventions of a health and safety agency.

The notion that injury rates are unreliable indicators of program effectiveness is not new. For example, the 1981 Economic Council of Canada report entitled Occupational Health and Safety: Issues and Alternatives states:

...injury statistics are influenced by many factors and users are cautioned accordingly. New injuries and wage loss injuries will be responsive to shifts in the composition of the work force, shifts in the structure of industry, worker attitudes toward reporting injuries, compensation board policies on what
constitutes a compensable injury, appeal times, and the business cycle. Consequently, it is desirable to be cautious in drawing general conclusions about program effectiveness from the statistics and in undertaking inter-provincial comparisons. …it is difficult to determine the extent to which (reductions in fatalities over the past decade in BC) are attributable to shifts in the composition of the work force, activities of organized labour, and actions of the board.

Injury rates are reported for each jurisdiction across Canada. Any comparisons across jurisdictions necessarily must be made with the above cautions in mind. Comparing jurisdictions on this indicator reveals that BC is consistently higher than many or most of the other Canadian jurisdictions. While BC’s rate has been declining in recent years, the average for Canada has also been declining.

BC experienced a decline of 1.4 points in its injury rate between 1976 and 1996, representing a decline of 22% from the 1976 rate. Over the same time period, Canada experienced a decline of 1.5 or 33% from its 1976 rate. Since 1990, BC has seen a decline of 1.7 or 25% from the 1990 rate, whereas Canada has seen a decline of 1.9 or 38%. This difference between BC and Canada overall may be slightly smaller if HRDC’s rates of injury in BC are used for comparison purposes rather than the WCB of BC’s injury rates provided to the Royal Commission, although the rate of decline would not be expected to differ significantly.

Table 1: Comparison of Injury Rates in BC and Canada

<table>
<thead>
<tr>
<th></th>
<th>Injury Rate ‘76</th>
<th>Injury Rate ‘90</th>
<th>Injury Rate ‘96</th>
<th># Decline (‘76-’96)</th>
<th>% Decline (‘76-’96)</th>
<th># Decline (‘90-’96)</th>
<th>% Decline (‘90-’96)</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Columbia</td>
<td>6.4</td>
<td>6.7</td>
<td>5.0</td>
<td>1.4</td>
<td>21.9%</td>
<td>1.7</td>
<td>25.4%</td>
</tr>
<tr>
<td>Canada</td>
<td>4.6</td>
<td>5.0</td>
<td>3.1(^\text{10})</td>
<td>1.5</td>
<td>32.6%</td>
<td>1.9</td>
<td>38.0%</td>
</tr>
<tr>
<td>Difference (BC - Canada)</td>
<td>1.8</td>
<td>1.7</td>
<td>1.9</td>
<td>-0.1</td>
<td>-10.7%</td>
<td>-0.2</td>
<td>-12.6%</td>
</tr>
</tbody>
</table>

During each of the three time periods, BC’s rate was nearly 2 points higher (i.e., nearly 2 more workers with time-loss injuries for every 100 person years) than the average for
Canada, and there was little variability between the three time periods with respect to this difference. Over the past twenty years, BC reached its highest rate in 1980, where the injury rate was 8.6. At that time, Canada’s rate was 4.9. For Canada as a whole over the same time period, the highest rate was observed in 1981, at 5.9. In 1981, BC’s rate was 8.1.

Between 1991 and 1996, BC has had one of the highest workplace fatality rates in Canada. In 1995, BC placed among the top three provinces in Canada with the highest workplace fatality rates (BC at 8.56; Newfoundland at 9.04; and Prince Edward Island at 18.0\textsuperscript{11}) and the highest rates of time-loss injuries (BC at 5.01; Quebec at 4.52; Prince Edward Island at 7.71)\textsuperscript{12}. In 1996, preliminary data suggests that BC’s fatality rate was the highest of all the provinces at 9.59\textsuperscript{13}.

As will be discussed below, the WCB’s Prevention Division has attributed the decline in the province’s workplace injury rate in recent years, in part, to the activities of the Prevention Division and to the effectiveness of WorkSafe strategies. While this conclusion may ultimately prove to be justified, the division is unable at the present time to identify the extent to which its activities have affected the injury rate, apart from other possible contributing factors. Furthermore, in comparison with the patterns observed elsewhere across Canada, BC’s performance has been about average, and the province’s overall rate in past and present years remains unusually high.

Higher injury rates in BC may be attributable to a variety of factors. It would be useful to try to develop a better understanding of what BC’s high rates relative to the rest of Canada actually do reflect (i.e., safety practices, WCB policies, mix of industries in BC, etc.). For example, some of BC’s strongest industries, such as logging and forestry, are among the highest-hazard industries. While it can not be concluded from these simple statistics that BC workplaces are necessarily more “unsafe” than other workplaces across Canada, the figures do suggest that workplace health and safety needs serious attention in this province. It is within this context that the discussion below regarding program management should be considered.
2.3 Clear Management Direction

A clear statement of objectives forms the basis for organizational programs and services; it directs the design and delivery of programs and services and provides the position from which to evaluate their effectiveness. Models of strategic planning frequently place objectives as the first critical step on which subsequent planning and evaluation activities are to be based.

The Office of the Auditor General of British Columbia has produced an Accountability Framework which it hopes will guide government agencies in planning, managing and reporting on their results. The report provides a model for performance management that illustrates the links between objectives, strategies to meet objectives, management systems, and performance measurement and reporting. The report states (p.25):

If improving accountability for performance is the goal, performance management is the process by which it will happen. To facilitate performance management, the performance objectives of an organization must be clearly stated and effective strategies for achieving those objectives identified. Progress against these objectives must be regularly measured and reported, and variances acted on.

The Prevention Division's Mission and Vision are presented in its 1998 Business Plan, as follows (p.5)

Our Mission:

To reduce the incidence of workplace disease and injury and to strengthen the occupational health and safety performance in workplaces in B.C.

Our Vision:

Workers and workplaces safe and secure from injury and disease.
The Prevention Division’s Mandate and Authority, as presented in the April, 1998 Draft Prevention Policies, is described, in part, as follows (Part A1, p.1):

The Board provides occupational health and safety services to assist persons to fulfill their responsibilities to ensure healthy and safe places of employment. These services include:

- defining a healthy and safe workplace by enacting regulations,
- providing information, education, advice and guidance,
- evaluating the conditions in places of employment to determine compliance with the regulations, and
- encouraging or requiring employers, workers and other contributing persons to initiate remedial measures to address and resolve workplace conditions or situations which are unhealthy or unsafe.

These services are primarily provided by the Division.

The Board’s general approach in providing these services is as follows:

- Optimum health and safety conditions can best be promoted through labour-management cooperation, developed through the working of an efficient occupational health and safety committee at the workplace, and assisted by help and encouragement from the Board.

- The preference to promote healthy and safe working conditions by cooperation must not be allowed to detract from the Board’s obligation to establish and enforce regulations. The enforcement of the regulations must not depend entirely on persuasion and discussion. This would require an enormous increase in the inspection staff and create a disincentive to comply with the regulations in the first place.

Additionally, the Draft Prevention Policies document addresses the responsibilities of employers and of workers. With respect to the role of Division with respect to employers, it states in part (Part A1, p.2):
The Division’s mandate is to encourage employers, through education and guidance, to institute and maintain adequate health and safety programs. These must not only identify and recognize hazards in the workplace but also comply with the regulations. An integral part of the mandate is routine and special inspections of, or visits to, places of employment together with the ensuing discussions, advice, guidance and corrective orders. This is to ensure compliance with the regulations. The regulations are the minimum requirements, and serve as the base for building an even more effective health and safety program.

Where this approach is successful, the Division continues to operate in this manner. Where it is unsuccessful, the inspecting officers use other persuasive means including warning letters, recommendations for additional assessment, closure orders and prosecutions.

In the Mandate and Authority section’s subsection on “workers”, the discussion primarily concerns responsibilities of workers, and of employers with respect to workers.

Finally, the Mandate and Authority section of the Draft Policies document contains a subsection on occupational health and safety committees, which states that “the Board encourages, and in many situations requires, the establishment of safety committees.” (Part A1, p.4).

The Prevention Division has recently developed a five-year “WorkSafe” plan, which contains six strategies with specific goals and objectives. These goals are expressed as outcomes, and the objectives are expressed as a mix of processes and outcomes. The goals and objectives of each strategy, as presented in the WorkSafe Five Year Plan\(^6\), and the 1996,1997 and 1998 Prevention Division Business Plans\(^7\), change only slightly from year to year. In the WorkSafe Five Year Plan, the goals of the WorkSafe Strategies are as follows:
WorkSafe Strategies:

1. Focus on High Risk Industries/Firms: the goal is to reduce the absolute number of workplace accidents and injuries (fatalities, long-term disabilities or LTDs and short-term disabilities or STDs).

2. Focus on Large Firms: the goal is to decrease fatalities, LTD and STD claims within the largest firms.

3. Outreach: the goals are to significantly reduce injury and death of young workers; and, to increase public awareness of occupational hazards and risks.

4. Increasing Compliance: the goals are to emphasize a balanced approach which includes education, consultation, inspections and, where necessary, the sanction process; and, to improve compliance with IH&S regulations.

5. Addressing Causality: the goals are to improve the ability to identify prevention issues more accurately; and, to evaluate the linkage between prevention worksite activities and changes in outcome.

6. Finding New Opportunities to Reduce Costs: the goal is to identify areas to reduce costs related to accidents, injury and diseases occurring in workplaces and to facilitate improved practices to minimize costs when injuries do occur.

In the Prevention Division’s 1998 Business Plan (p.39-52), the wording for some of the strategies and their goals has changed slightly. For example, Strategy #2 is now referred to as a “Focus on Large Firms and Regional Targets”. Strategy #3, Improving Outreach, aims to increase access to and quality of WCB prevention resources (personnel, training, and information). Strategy #5, Addressing Causality, aims to “improve the quantity and quality of accident reporting and data gathering so as to identify root causes of accidents and then focus prevention efforts on these causes”. Strategy #6 is now called “Finding New Opportunities to Improve Service and Reduce Costs”, and aims to “promote professional development and training of all Prevention staff in order to ensure the delivery of consistent, quality client service.” Activities for this strategy are now to include investigating customer service levels and addressing the issues raised.

The 1998 Corporate Business Plan includes a seventh “Prevention Strategy”, although it is not found in the division’s own 1998 Business Plan. This strategy is as follows (p.41):
Strategy #7: Research and Development: the goal is to develop a model and process for research and development at the WCB to include grants and awards and strategic projects.

Activities under this strategy include consolidating research at the Board to ensure focus, establishing self-funding for the future, and establishing a program for research and development that includes causality research, evaluation of interventions, and education and training, to support the Board’s strategic plan and priorities.

It was explained in interviews with Prevention Division management that research and development has been part of the Prevention Division’s Strategy #5, Addressing Causality, and that Strategy #7 will be handled by a new department in the Prevention Division which will be responsible for coordinating research.

These strategies describe a mix of targeted interventions involving education, research, public awareness campaigns, partnerships, and enhanced enforcement efforts that, together, are aimed at assisting employers and workers to create safer workplaces. The Prevention Division’s current structure and resources, along with the alliances and partnerships that have been created, enable this mix of strategies to be offered.

Until recently, the Prevention Division was divided into two major divisions: Field Operations, and Central Operations. Field Operations, headed by the Director of Field Operations, was divided into 10 regions, each with its own manager. Occupational Safety and Hygiene Officers were assigned to each of the regions. Field Operations also contained a First Aid section, an Engineering, Ergonomics and Occupational Health section, and a Workplace Hazardous Material Information System (WHMIS) coordinator.

Central Operations, headed by the Director of Central Operations, contained all other services provided by the division, including Prevention Administration, Accident and Injury Reporting System (AIRS) Implementation, Outreach and Education, Public Affairs, Hearing Conservation Section and Audiology Unit, Laboratory, Variance and Sanction Review, Prevention Policy, and Research and Evaluation.
The Division underwent a reorganization in 1997 “to more effectively deal with large-scale program initiatives”\textsuperscript{20}. The Division was split into four departments, each headed by a Director, which included Regional Services, Programs, Central Resources, and Diamond\textsuperscript{21}. Very recently, Diamond was subsumed under the Programs department, and a new department for research and development, called Strategic Projects was established.

Regional Services appears to cover most of what were formerly Field Operations’ responsibilities, and Central Resources continues to be responsible for most of Central Operation’s former areas.

According to the May 29, 1998 Prevention Division organizational chart, the new Programs/Diamond department is divided into 10 sections. This department “manages large scale health and safety issues or industry specific initiatives” (p.7). Seven of the sections are industry-specific, including Health Care/Government; Heavy Manufacturing/Film and Live Arts/Wood Products; Construction/Road Building/Trades; Forest Sector/Hydrocarbon/Trucking; Agriculture/Fishing/Marine; Chemical; and Hospitality. The other three sections within the Programs department are: Hearing, Conservation and Audiology; First Aid, Diving and Blasting, and Retail Food; and Regulation Implementation.

Looking back over the past twenty years, the Prevention Division’s position on enforcement appears to have fluctuated, as evidenced through reviews of \textit{Annual Reports} over this time period, analyses of enforcement data, and reflections of internal and external stakeholders.

The 1992 \textit{Administrative Inventory} discusses some of the critical periods in the past twenty years where changes in enforcement policy occurred. For example, during Adam Little’s tenure as Chair from 1977 to 1981, enforcement activities reflected in orders and penalties declined, and it was made clear to field officers that “the imposition of sanctions against a firm was to be used as a last resort.” Walter Flesher was appointed Chair in 1983, and his general manager, William Greer, was reportedly “known for his vigorous approach to inspection and enforcement.” (p.30). As pointed out in the \textit{Administrative Inventory} and as can be seen in Figure 1, there was a dramatic increase
in the number of penalty assessments between 1983 and 1991, and a pronounced jump in 1990, during Greer’s tenure as Acting Chair. Greer was also responsible for establishing the list of the Prevention Division’s “11 Deadly Sins”, which provided greater clarity with respect to when violations should be considered serious and deserving of a penalty consideration.

Labour representatives argued in their submission to the Royal Commission that it is the lack of clear public policy direction that has allowed this kind of variability to endure:

A primary problem is instability and uncertainty in public policy. The effect of frequent changes in leadership within the governing body of the Board, and within its executive administration since 1972 have been exacerbated by the lack of clear public policy direction. Board policy direction has swung to and fro like a pendulum, based on the personal belief system of a small cohort of appointed or hired individuals.

After the new Board of Governors was appointed in 1991, there appears to have again been a gradual decline in enforcement. According to the 1992 Administrative Inventory, staff of the Prevention Division reported that since the Governors were appointed (p.31):

…they have received “mixed messages” from the Board of Governors and the upper management of the WCB. The most frequently voiced perception was that the management team wanted field officers to take a “warm and fuzzy” approach to enforcement. This was interpreted to mean that officers should write fewer orders, recommend fewer penalties, and become more of a consultant, educator, and friend to the employers of the province.

In the 1997 Administrative Inventory, it is reported that representatives of the labour community believe that “the WCB’s commitment (and duty) to enforcing regulations has deteriorated. There is a perception that field officers have been told to employ a soft approach, write fewer orders, and recommend fewer sanctions.” Employers have also noted a change in the Prevention Division’s approach, with a “new emphasis on education, consultation, collaboration, and facilitation.”
The distributions of penalties, and of total penalty dollars, for each year from 1976 through 1996, are presented in Figures 1 and 2 (Note: As explained in the footnote to these figures, two different sources of data were used for two different time periods in these figures, due to discrepancies in data provided by the Prevention Division).

The Prevention Division has also undergone frequent internal restructuring, including as recently as in the past year. Still, according to the division, the main programs that existed in 1976 and in 1989 continue to exist today, although within areas of activity there may have been changes.

Programs added between 1976 and 1989, as reported by the division, included: programs on audiometric testing and the construction industry’s hearing test program; application of regulations to diving operations in the sea food harvesting industry and the requirement that divers in this industry be examined and certified by the Board; administration of Occupational Environment Regulations in relation to factories, offices and shops; and WHMIS (Workplace Hazardous Material Information System. Since 1989, new programs or initiatives have included the WorkSafe strategy for targeting prevention activities, the Diamond program, the Accident and Injury Reporting System (AIRS), and new education initiatives such as the “Education Partners” program.

Some of the WorkSafe strategies appear to have been in place for a number of years. For example, the 1976 Annual Report states that research began in that year into “the possibility of using the computer to schedule inspections according to firms’ injury records. This would allow the department to focus more inspection and education efforts on problem areas.” WorkSafe’s strategy of targeting high claim industries appears to be a similar initiative. Similarly, the 1989 Annual Report refers to a safety education program aimed at high school students. This appears similar to the education initiatives for young workers discussed in WorkSafe. The 1990 Annual Report refers to an increase in inspections in the logging sector, which is a strategy that is in place today.

The Prevention Division, like other areas of the Board, has made considerable advances in recent years in clarifying its goals and directions through its ongoing annual business plans and performance reports. The planning effort that the division has undergone in
Figure 1: Number of Penalties 1976-1996

Figure 2: Total Penalty Dollars 1976-1996
recent years would be expected, in time, to pay off in terms of greater clarity for staff and external stakeholders with respect to the goals and objectives of the division. At the present time, however, there appears to be some need for greater clarity with respect to the role and direction of the Board’s Prevention Division from the perspective of Prevention Division personnel. Furthermore, there have been concerns expressed about the division’s tendency to change directions in response to political pressure.

In their submission to the Royal Commission, the Compensation Employees’ Union argued that there is a lack of clarity in Prevention Division goals and objectives:

We need to clarify what we think complying with the regulations means. Is minimum compliance with the regulations sufficient? Or is – or should – our goal be to ensure that an employer has an effective safety and health program supported by a safety culture, characterized by commitment by management in partnership with workers – rather than just simply a program supported by the required written documents? Is compliance without understanding really compliance?

According to the 1997 Administrative Inventory, field officers feel that Prevention Division leadership is “essentially political, bowing too easily to external (and internal) pressure” and that the division is “constantly changing direction.” Furthermore, staff expressed concerns about the number of new strategies undertaken by the division and uncertainty about how they all fit together. Similarly, in interviews conducted for the Royal Commission, it was suggested that there had been more political influence upon the division in recent years from various external stakeholders than there had been in the past, and that the division seemed to be “jumping to their tune”.

Managers and staff interviewed for the Royal Commission had differing perspectives with respect to the direction in which the division was heading, with some staff feeling that it was “business as usual” in terms of the balance between enforcement and consultation, and others feeling that there now was a greater emphasis upon consultation.
Current Board policy documents and public statements suggest that in most cases enforcement is to be used as a last resort. As noted by the Prevention Division in 1997[^30], “Education and consultation are usually the first routes chosen for reasons of practicality and immediacy. Regulations are needed to provide a minimum legal standard over the long term but are more of a final resource if education and consultation fail.”

Prevention Division managers and senior executive described the current focus as follows: The role of field officers is to identify the best mix of approaches for individual employers. In some cases this may mean consultation, in others education, and in still others, traditional enforcement. What it does mean is that traditional compliance efforts are not the automatic solution in every case, but that this option is there and should be used when the situation calls for it.

Field officers interviewed for the Royal Commission spoke favourably about the variety of tools available to them – including education, consultation, inspection and application of sanctions such as penalties – to use with employers. These options allowed them to modify their approach as needed depending upon the efforts and interests of employers (unlike other jurisdictions, for example, which separate enforcement from consultation functions, or which must rely on prosecutions rather than administrative penalties). They were concerned, however, that at times it was difficult to sort out and address the priorities of the division while still achieving their other enforcement responsibilities.

Some of the staff concerns related to the division’s focus on injury rates. It was argued that a reduction in injury rates means something different than ensuring compliance with regulations. If resources are directed toward consultation to lower the rate of high-cost injuries (e.g., soft-tissue injuries), there may be less opportunity to ensure compliance with the regulations in high-risk situations. Field officers are accountable for achieving both, however. Thus, some felt the field officer was faced with an “ethical dilemma” (“if we don’t enforce, someone may die”) and had to decide “am I going to get in more trouble for doing one thing or the other”. Field officers are given targets and are accountable for reducing the injury rate, but it was noted that if a disaster like Westray was to occur because they haven’t been paying as much attention to hard-nosed compliance, they would also be held accountable.

[^30]: Reference or citation
It was also argued there were a lot of “great new ideas” but that they kept getting added on, so that now there are too many “number one priorities” and not enough clarity from senior management with respect to what the real priorities are: “you can’t accomplish seventeen number one priorities”.

In its *1997 Business Plan*, the Prevention Division stated that (p.39):

> The Division has undergone substantive change in the past twelve months and now needs a stable year to implement the new results oriented focus and initiatives. More change may not be able to be tolerated. The staff are committed to achieving their stated goals and have low tolerance for ‘wonderful ideas’ which may not be well developed.

The 1997 *Administrative Inventory*’s discussion of staff perceptions of management directions echo these statements (p.242):

> ...we express some concern about the number and extent of new initiatives and activities presently being undertaken by the Prevention Division. Staff have expressed difficulty in keeping up with the many new programs, and many do not understand if and how they all fit together.

Some interviewees complained that the department now appeared to look like the “tail wagging the dog”, in that resources were being increasing allocated to new initiatives (including managers without staff), with insufficient recognition of the main function of the department (Field Services).

The executive summary of the Prevention Division’s 1998 *Business Plan* also notes that the continued change process will provide “tremendous” challenges” in 1998 (p.3):

> The Prevention Division faces tremendous challenges in 1998. Some of the challenges are known, others will only become clear as we see the report of the
Royal Commission and recommendations from the Auditor General’s report on performance measures.

...The 1998 Divisional Plan addresses the challenges and aggressively focuses on new opportunities to improve the acquisition of data, provide better analysis of causality to focus scarce resources, improve customer service, introduce new technology and systems and address the need for staff training and succession planning for an aging officer complement.

Some of the changes within the Prevention Division in the past year have been attributed by the division to its most recent Administrative Inventory and to the ongoing work of the Royal Commission. For example, with respect to WorkSafe Strategy #6, the division’s 1998 Business Plan states that “Formal reports such as Ashford and Rest and the Royal Commission hearings have identified a need to gather feedback from clients about the services and products delivered by the Prevention Division” (p.51). Elsewhere in the 1998 Business Plan it is stated that (p.20-21):

The Administrative Inventory identified the ability to acquire and analyze relevant health and safety data as a key issue for the Division. It is anticipated that the Royal Commission will also comment on the need for data. In recognition of this need, the 1998 plan includes the addition of a new Divisional focus on data acquisition and the addition of a researcher to the Research and Evaluation unit.

Frequent reviews can be frustrating if, as a result, the organization is required to undergo continual change in response to the recommendations from these reviews. In some circles, there is concern that the Royal Commission will result in yet another wave of change for an organization that has just now begun to establish a clear and consistent path for itself, based on the Strategic Plan. In Royal Commission interviews, however, some staff expressed the view that the same issues keep coming up through the various reviews of the system, and nothing changes. Both of the Prevention Division Administrative Inventories called for a greater focus on occupational diseases, and both of these, and Administrative Inventories looking at other sections of the Board, called for increased staff support and development. In a proposal developed for the Board’s recently approved Research Foundation, it is pointed out that (p.1-2):
In recent years, external and internal demand for research to improve the WCB’s operations has increased. This demand partially has been met by increased research activities. However, critical gaps remain in the acquisition, coordination and application of new knowledge.

...All seven administrative inventories, from 1991 to 1997 have emphasized the importance of strengthening research and its application at the WCB. The same point was also made in the 1997 review of Vocational Rehabilitation.

In the 1998 First Quarter Report, the Prevention Division indicated that the introduction of the new OHS regulations will have an effect on the number of compliance-type inspections (p.19):

During the (new OHS) Regulation Implementation phase, the amount of time spent on site performing compliance type inspections may be reduced (in favour of larger educational opportunities). Therefore the number of inspections conducted and the number of orders, which would ordinarily be issued, will be reduced (over the second and third quarters of 1998). Activity should stabilize, however, in the fourth quarter.

While the focus on educational opportunities is likely an appropriate short-term tactic given the introduction of new OHS regulations, the Prevention Division must be diligent in ensuring that inspection activity returns to an appropriate level as quickly as possible. If the focus on larger educational opportunities is to become systemic, appropriate measures must be taken to ensure that inspection levels are not negatively affected in the long-term. As will be discussed below, the regulation review process itself has reportedly resulted in less time for field officers to conduct inspections, and this is an area where resources are already constrained.

2.4 Assessing Causality

An understanding of causality facilitates effective program design and appropriate allocation of resources to programs. The importance of basing prevention program
development on an understanding of workplace injury and disease causality is well recognized in the field. It is also recognized that existing knowledge in this area is limited. The following comments from recent reviews of approaches to understanding the epidemiology of occupational injury illustrate these points:

Injury prevention efforts are most likely to be successful when injury etiology is understood, so that prevention efforts can be directly focused on causal (etiologic) factors. Inaccurate estimation of causal parameters can lead to incorrect inferences and incorrect public health decisions.

Epidemiologic research on the etiology of injuries at work is rather scant [Veazie et al., 1994], even though improved understanding of etiology is considered a necessity for the selection and implementation of interventions [Baker et al., 1992]. Therefore, it comes as no surprise that it is very difficult to discern whether the progress in reducing work-related injuries has been limited by the selection of inappropriate interventions or by inadequate implementation of interventions [Sorock and Courtney, 1997]. It is also clear that improvements in epidemiologic methods can enhance the ability to better define these problems and identify the ultimate causes of occupational injury.

Based on a review of objectives and program descriptions, it appears that the Board offers a range of programs similar to those in other jurisdictions. As noted above and elsewhere in this report, the Prevention Division also appears to have in place a number of potentially useful new initiatives. It does not appear that the Prevention Division is in a position, at the present time, to base program design on knowledge of accident and disease causality.

A number of factors may be responsible for occupational injuries and disease. These include the nature of the industry, the type of equipment and nature of work processes, organizational characteristics (e.g., size; support for occupational health and safety; adherence to regulations), and individual characteristics (e.g., inexperience; fatigue).
Understanding causality might be enhanced by, for example, more frequent accident investigations, and investigations that not only assess immediate factors such as equipment failures, regulation violations, or appropriate training and supervision, but that assess other factors thought to be associated with workplace safety, such as organizational commitment to safety and the existence and functioning of the occupational health and safety committee. The standardization of a more thorough reporting structure might assist in the development of a more useable database of information. At present, according to the 1997 *Administrative Inventory*, the Prevention Division only conducts a small number of accident investigations (fewer than 400 annually\(^3\)), usually for fatalities and serious accidents, although there are approximately 190,000 injuries reported\(^3\) and 145,000 claims first paid\(^3\) each year.

Additionally, there may be individual factors, such as knowledge and understanding of the regulations, that are associated with accidents and injuries. If it is the case that the regulations are up-to-date, and these regulations are known to reduce accidents if followed, then it would be helpful if the Prevention Division had a way of assessing and monitoring the extent to which employers and employees know and understand these regulations. The Division could keep up-to-date the list of regulations that are most critical to safety within particular types of workplaces, and ensure that it is these regulations especially that are known, understood and followed.

The Division could use information on which regulation violations, if any, are associated with injuries, to design educational programs and public awareness campaigns, as well as to monitor the relevance of the regulations and to identify gaps where new regulations might be needed. This would require enhanced allocation of resources to accident investigations and to research aimed at assessing factors associated with injuries and disease.

The Prevention Division has been encouraged in the past to devote more attention to the assessment and understanding of accident and disease causality. As pointed out in the 1997 *Administrative Inventory*\(^3\):

...the WCB continues to “lack adequate analysis about cause and consequences”. The Prevention Division has made significant strides to address
this concern, but more remains to be done. Developing prevention policies, regulation, and strategies requires a clear understanding of why accidents and exposures occur in addition to how, in turn, they lead to injuries, diseases, and fatalities. Deploying the most effective mix of tools and resources requires analysis and evaluation of what works, what doesn’t, and with whom.

Similarly, the Auditor General of BC’s Accountability Reporting Review\textsuperscript{37} states that (p.19):

To reduce the injury rate, it is important that the WCB understands the root causes of injuries and trends in those causes. A comprehensive analysis of causes would include dimensions beyond simply the immediate reason for the accident. It would also include the effect of WCB legislation, regulations, and policies on worker and employer attitudes and beliefs and, ultimately, the rate of injuries in the workplace.

The Board produces annual statistics on occupational injuries and diseases in terms of: type of claim (i.e., health-care only, short-term disability, long-term disability and fatals). It typically reports its statistics on causality in terms of \textquote{Type of Accident}\textsuperscript{38}, which contains the following categories:

- struck against
- struck by
- falls from elevations
- falls on same level
- caught in
- rubbed or abraded
- strains
- harmful substances
- transportation

Additionally, analyses are presented:

- by injury (e.g., abrasion, contusion, cut, back strain, other strain, occupational disease)
• by disease category (e.g., hearing loss; inflammation, irritation of joints, tendons, etc.; stress)
• by back strain claims (i.e., number, % of total claims, days lost, etc.)

The WCB provides other statistics, such as age and gender breaks, by number of claims. The injury rate is usually presented by year and by industry.

As noted in the 1997 *Administrative Inventory* (p.93):

The data from accident investigation reports ...say little, if anything, about the root causes of an accident; rather they focus on the cause of injury. For example, the cause of a worker’s broken leg may be described in terms of “fall from” or “struck by”. The report says nothing about why there was a “fall from” or “struck by”. Once the electronic (the Accident Investigation Reporting System) reporting system undergoes planned revisions and becomes more widely used, the collection and retrieval of information more useful for prevention will be possible. This includes better information on the root causes of an accident, contributing factors, and regulations cited in the accident investigation report. Some of these elements are already on the electronic reporting format for AIRS.

The WCB of BC is not unlike other Boards across Canada with respect to the way accident causality has traditionally been reported. Occupational injury and disease statistics in Canada have been compiled by Statistics Canada, Human Resources Development Canada, and the Association of Workers’ Compensation Boards of Canada. The common data coding for “causality” within workers compensation agencies focuses strictly on nature of injury (e.g., body part) and “type of accident” (such as struck by, fall from elevation). National data is not compiled on environmental, personal and situational factors that might explain why the accident occurred, nor the processes in place that may have led up to the accident occurring. For example, there appears to be no standardized reporting on the proportion of accidents involving violations of particular regulations, equipment hazards, lack of worker training, or other organizational characteristics (e.g., the extent to which there was an organizational
commitment to safety, and a functioning occupational health and safety committee at the worksite).

Claim statistics can be presented in terms of “number of claims” or in terms of the “injury rate”. “Number of claims” is simply the total number of claims that are accepted by the Workers’ Compensation Board. The number is difficult to interpret at times because it may reflect the number of persons within a category more than the seriousness of the problem. For example, a high number of claims in the retail industry, or a high number of claims among 30 to 34 year olds, may mean that retail is more hazardous than other industries and that 30 to 34 year olds are more at risk; however, it may also simply mean that more people are working in these groups than in other groups. Analysis of injury data, in conjunction with data collected on employment rates from Statistics Canada, provides somewhat more useful information, but it too can be problematic.

If claims are to be used to determine the level of hazard or risk, they need to be expressed as number of claims per worker within the category. This statistic is known as the “injury rate”. Injury rates are typically expressed in terms of number of short-term disability (STD) claims per 100 person-years of WCB-covered employment. In BC, statistics are not kept by the WCB on number of workers, but rather dollars of payroll, and it is from dollars of payroll that a rough estimate of number of workers is obtained. The fatality rate is also determined as the number of claims per person years of employment – in this case, the number of fatal claims per 100,000 person-years of employment.

While the Prevention Division can identify specific regulation violations that result in orders being written, the division is unable to identify whether or not regulation violations occurred, and which regulations were violated, in actual cases of workplace injury or disease (other than in those few cases where accident investigations have been conducted).

When the Board was asked to confirm that it does not currently have a process in place to systematically collect and analyze data on the specific regulations violated in the case of an accident or injury, the Prevention Division’s response was as follows:42
The Prevention Division receives information on accidents from 3 main sources:

- From the worker, employer and other sources describing the nature of an injury through the claims process,
- Accident reports by employers filed with the Board under regulation 6.06 of the *Industrial Health and Safety Regulations*, and
- Accident investigations by Board officers.

The principal focus in reviewing this data is to prevent injury recurrence using the tools at the Board’s disposal. Education and consultation are usually the first routes chosen for reasons of practicality and immediacy. Regulations are needed to provide a minimum legal standard over the long term but are more of a final resource if education and consultation fail. It would nevertheless be desirable to have good data linking claims to violations but for several reasons this may only be possible to a limited extent.

In investigating a claim, there is no immediate need for the Board to determine which regulations were violated. The injury reporting and claims systems are not set up to link violations to claims. It might in any event be difficult for claims adjudicators or employers to make accurate assessments of which specific regulations were violated. They could likely conclude what unsafe acts lead to an accident but it might not always be straightforward to assign those acts to particular regulations. Employers might also hesitate to admit they had violated specific regulations. For these reasons, the new AIRS program does not ask employers to identify violated regulations.

The only one of the 3 sources where reliable information may be found on the causative effect of violations is the last. However, even officers may sometimes have difficulty in naming a particular violation as causing an accident. It may be clear if, for example, there was a failure to lockout machinery but less clear if there was a failure to train.

Investigations of fatal accidents by Board officers are currently entered into a database. However, this database does not allow effective matching of injury or
accident types to regulation violations without an individual review of written reports. The Board has recently used such a process to prepare reports on fatalities in different industries.

In order to relate accidents or injuries to violations, a system would need, firstly, a way of categorizing accidents or injuries and, secondly, a process for assigning specific regulation violations to accident/injury causes. The Board’s Statistical Department has the first but not the second. Prevention Division officers who investigate accidents can do the second but do not now have access to the first. Nor is there an effective way of electronically recording their findings. The Board is considering an electronic accident investigation system for officers but this would not solve all the problems. There could be a significant cost in increasing the amount of accident investigations in order to obtain data regarding regulation violations for a larger number of accidents.

The Prevention Division suggests above that the only reliable information on whether or not there has been a regulation violation that has led to an injury can be obtained from field officers when they investigate the accident. Since field officers only conduct about 315 (317 in 1994, 307 in 1995, and 322 in 199643) accident investigations per year, and usually only in cases of fatalities and serious accidents, this leaves about 145,00044 claims where data on causality will be incomplete or unreliable (compensation services provides some data on claims that are not reported through AIRS).

AIRS is a major part of the division’s strategy to assess causality. There are some concerns, however, with using AIRS as a causality tool, some of which are acknowledged by the Prevention Division itself in the response above. As pointed out by the division, employers may be reluctant to identify where their own actions (e.g., failure to comply with a regulation) have resulted in an injury. Also, employers may not always have the relevant knowledge and experience to be able to dissect the circumstances surrounding an injury. Employers have often failed to complete accident investigation reports in the past, although there is an assumption that they will be more willing to submit information through AIRS. Small, and possibly many mid-size employers, may not be motivated to use AIRS if the frequency of accidents that they experience is one or fewer per year. AIRS is a tool for employer reporting, and is not designed for input from
others who may have relevant information on cause, such as injured workers themselves, or representatives of the organization’s occupational health and safety committee who have been involved in monitoring health and safety over time. According to interviews, however, integration of information from various sources with respect to specific claims can be carried out subsequently by the Board.

There are other issues with respect to AIRS that should also be mentioned. Some interviewees expressed concerns about the way AIRS was implemented, and noted that the process had not always been particularly responsive to the needs of employers. Among the potential issues raised in a scoping document prepared by the Board’s Internal Audit Department were that some employers appeared to be reluctant to have AIRS installed, and that the employer reports through AIRS may not contain reliable and useful information on such issues as contributing factors and preventive actions taken. The scoping document also states that (p.7) “Prevention and Compensation Services may have conflicting objectives in the areas of claims registration. In order to expedite claims processing, the Call Centre may not be requesting detailed accident reporting (e.g., cause, contributing factor) when claims are registered. However, this information is required by Prevention for AIRS Inquiry.” The Prevention Division is considering some alternatives to AIRS such as a dial-up internet system, which could be modified within the Board (i.e., rather than requiring employers to upgrade their software, as has already occurred with the current version of AIRS), and that could offer immediate feedback to employers on strategies to reduce commonly occurring injuries within their worksites.

The Prevention Division has tended to report the type of accident as a cause. For example, the 1997 Business Plan states that:

In 1995, the logging industry exhibited three principal causes of injury: struck by, falls from elevations, and strains (p.26).

The principal causes of injury in the approximately 14,400 firms involved in the construction industry include: falls from elevation, strains and struck-bys (p.27).
The Board is not unlike other jurisdictions in Canada in terms of how it reports accident statistics, and has acknowledged its limitations in terms of understanding accident causality. This limited understanding of accident causality has important implications for occupational health and safety in the province. By the time the new regulations are in operation, the Prevention Division will have spent years of staff time and millions of dollars on the development of regulations and on the education of the public with respect to their use, and yet, the division does not have a process in place to identify the extent to which the regulations are playing a role in workplace injuries and disease. The division also speaks of the importance of responsibility amongst workers and employers at the workplace, yet its data collection and analysis plans do not include, for example, assessment of the extent to which occupational health and safety committees are in place, nor how these committees are functioning.

The Prevention Division has become increasingly aware that more needs to be done to assess injury and disease causality. The most recent goal of the Prevention Division’s WorkSafe’s Strategy #5, Addressing Causality, as identified in the 1998 First Quarter report, aims to “improve the quantity and quality of accident reporting and data gathering to identify root causes of accidents and then focus prevention efforts on these causes”. The Division has a number of initiatives in place in order to improve the assessment of causality, including an improved employer accident and injury reporting system (AIRS), several industry-specific reports which examine a sample of claims and the circumstances surrounding them in depth, a “programs” focus which brings industry association representatives and specialists together with Prevention Division managers assigned exclusively to those industries, and increased resources allocated to research, including research aimed at understanding causality.

The division needs to continue to increase its emphasis on understanding causality and using this information to guide decisions about services, resource allocation, and measurement of impacts.

While strategies to address causality in the Prevention Division’s 1996 and 1997 Business Plans were somewhat limited, causality seemed to have been given more attention in the 1998 Business Plan. In 1996, the Plan referred simply to deploying AIRS and electronic reporting of field services activity, and included some very general
statements about analyzing the effectiveness and impacts of worksite activities on injury/disease reduction, and producing cost awareness statements for programs. In 1997, added to the 1996 list were: developing a position paper and strategy on biological/atmospheric monitoring, conducting and communicating results of noise surveys, and continuing the production of monthly, quarterly and annual statistics.

In the Prevention Division’s 1998 Business Plan the following additional activities are listed as “examples of focused inputs/activities for addressing causality” in the upcoming year:

- Develop data acquisition strategies which will use non-claim data such as demographics, economic indicators, workplace socio/economic indicators to determine targets and measure performances. For example, the “Diamond” program will take into account the overall effectiveness of employers’ health and safety programs, including their compliance with the regulations and the culture and beliefs of the organization.
- Use accident and injury reports to capture and target hygiene issues and “near misses”
- Provide a statistical analysis of the causes of Young Worker workplace injury and disease and the industry sector where young workers are injured
- Increase the research resources and capacity of the division
- Commission and support researchers in the community on emerging or prevalent OHS issues
- Develop a model which addresses the changing industry and firm focuses, changing demographics, or other targeting tools

In the 1998 Business Plan, the Prevention Division has requested additional staff members in the Engineering and Research and Evaluation sections in order to support an increased level of investigation into accident causes. Funds were also requested to support internet or software development initiatives which will collect additional relevant accident data (p.65).

The Board identifies its recently completed Focus Reports as contributing “…to hazard awareness…(and providing) the data framework for accident prevention focus at the
jobsite level.” These reports provide specific industries with statistical information about the type of injuries and kinds of accidents occurring in their sector, information on how to prevent accidents, and case reviews. According to the 1997 Operating and Financial Report, the research and evaluation section has produced a number of these Focus Reports, including reports on the Provincial Government, Agriculture and the Vancouver Health Board, and focus reports on Young Workers, Logging Fact Sheets, Sawmills and the Health Care Industry. Three further reports are being prepared for Construction, Fishing and Heavy Manufacturing.

The Focus Reports represent a positive step forward in identifying the nature of accidents that are most likely to occur in particular industries. The reports vary in terms of the depth of analysis of injury causality that is conducted, and in many cases conclusions are based on very small sample sizes, primarily because the data is analyzed by hand. Along with statistics reported, disclaimers about the completeness of data are included: Making a Difference reports that “80% of the records on fatalities are incomplete” and that “one must construct individual tables and draw inferences manually” (p.21). The Operating and Financial Report does not indicate how the reports have influenced the division’s planning.

Finding Solutions is the Board’s Grants and Awards program. The objectives of this program are to:

- Promote early identification and prevention of workplace risks
- Research methods for reducing workplace risks and/or improving worker health and safety
- Evaluate rehabilitation strategies in reducing impact of workplace injury and disease
- Promote education and training on specific health and safety risks

Much of the focus for 1998 in Finding Solutions appears to be on issues of causality and effectiveness of interventions.
2.5 Monitoring Change

Responsiveness to change is particularly important in a field such as occupational health and safety. Without the capacity to anticipate trends in injury and disease, a program can only respond to present-day patterns with the hope of reducing the likelihood of these escalating. New and unanticipated injuries and diseases that emerge slowly as a result of changes in technology, work processes, and other factors may be missed.

Processes need to be in place in order for the organization to be responsive to emerging trends. There must be sufficient resources applied to obtaining and analyzing relevant information, through research and through exposure monitoring. As new risks emerge, the organization must be ready to apply the necessary resources and interventions that will reduce the chances of problems escalating.

Responsiveness can also be considered in terms of the extent to which stakeholder concerns are listened to and addressed, through formal needs assessments that feed into planning and through consultative processes.

In its planning documents, the Prevention Division presents an “analysis of the business environment” which includes a number of issues to which it states the division has reportedly been attentive to in its planning. These issues include accountability, accessibility, public expectations, public participation and consultation, changes in industries served, technological changes and demographic changes. Part of the Prevention Division’s strategy, which is reflected most clearly in the Diamond project, is to increase employer and worker skill and responsibility in recognizing and reducing hazards, so that there will be less need for external monitoring and intervention.

To address the problem of occupational diseases, the Prevention Division has a staff of fifty-five occupational hygienists, which represents according to the division, the greatest concentration of hygienists in North America. The Division also employs two occupational medicine physicians, and has its own Laboratory Services section which analyzes air samples, commercial products and biological samples submitted by occupational hygienists, physicians, employers, and other interested parties.
In the past few years, the division has moved ahead into a number of non-traditional areas such as protection against workplace violence and ergonomics. Also, as discussed above, the new Programs department, which is organized by industry, should be useful in identifying emerging industry-specific trends.

There are indications, however, that the Prevention Division has tended to be more reactive than proactive in its approach in the past, and that it does not always have the capacity to adapt quickly to changes in the nature of work and occupational hazards.

The 1992 *Administrative Inventory* recommended that:\(^{53}\):

> To fulfill its mission of prevention, the OSH Division should enhance its ability to anticipate needs and problems. This means that, operationally, its focus should be a moving target that reflects future changes in the technology and economic/industrial profile of B.C. commerce. Working together, the Engineering Section and the Field Services Department can help the OSH Division emphasize a proactive approach toward the prevention of accidents, injury, and disease in the workplace.

The completion of the new Occupational Health and Safety Regulations is an extremely positive step in addressing current risks in the workplace. The Royal Commission has heard a number of favourable comments about these regulations, and about some of the processes involved in their completion. It has also heard about some of the roadblocks, frustrations and deadlocks that occurred, and about the significant proportion of Prevention Division resources consumed.

The development of these regulations has been a long time coming. The previous regulations will have been in place for 20 years by the time the new regulations become effective. No doubt some of these regulations are timeless. However, as noted in the 1992 *Administrative Inventory*, many of the regulations were “outdated and clearly inadequate.” (p.199). When regulations are out of date, and new regulations are not in place to cover the kinds of hazards existing in today’s workplaces, one runs the risk of new kinds of injury and disease occurring. In their submission to the Royal Commission, the Compensation Employee’s Union argued that “A process for continuously improving
and updating regulations needs to be developed to ensure that the Board’s regulations reflect advances in technological and scientific knowledge, and the changing circumstances in British Columbia’s industries and workplaces.”

The 1997 Administrative Inventory states that the Prevention Division’s occupational health group is “hampered by a lack of data on occupational exposure, disease and risk factors in provincial workplaces.” The Administrative Inventory points out that the Prevention Division’s occupational health officers do some sampling as part of their inspection activity, but that the division tries to encourage employers to conduct their own sampling. The Administrative Inventory also notes that there has been a significant decline in the number of air samples and commercial products received by the Prevention Division’s Laboratory Services since the mid 1980’s, which has serious implications for prevention activities, including exposure assessment and risk identification, hazard and disease surveillance, trend analysis, and early detection of illness. Concerns about the reduction in samples, and about the absence of a coordinated effort to collect and analyze occupational health data, were also raised in interviews conducted for the Royal Commission. Interviewees noted that there has been no management strategy in place to mobilize resources for the most effective approach to the prevention of occupational disease, although one may be in place in the near future.

The Prevention Division has a Grants and Awards function that is intended to provide funds for external research into occupational health and safety. A 1996 Audit found that the program did not maintain an appropriate system of budgeting and accounting for funds, and that the budget for 1995 was used almost exclusively to fund projects committed to prior years. There was no process in place to track and deal with the reports received as a result of the research. Research findings were not always brought back and used by the Prevention Division in its ongoing planning and program development activities. A number of changes have since been made to the function which will improve its capacity to contribute to the Prevention Division, and early identification and prevention of workplace risks is now one of the four program objectives that funded projects are expected to address.
2.6 Assessing Effectiveness

Program design is an iterative process driven by an understanding of, among other things, which of the programs elements are effective in achieving the desired outcome and which need changing. Gaining that understanding necessitates assessing the effectiveness of the program through research that ties program elements to measurable and meaningful outcomes.

In 1991, the Annual Report asked, is the “Occupational Safety and Health Division programs effective?” then cited what seemed “…to be a measurable relationship between worker knowledge and awareness and a lower number of workplace accidents.” The report then went on to state that “Statistical monitoring and review will continue so that judgment of the effectiveness of Occupational Safety and Health can be made.”

It appears from the 1993 Annual Report that either this was not done, or was not long lived. “The priority in 1993 was not on results measurement. The challenge in 1994 will be to effectively measure the outcomes of 1993’s initiatives.” While this statement appears to recognize the importance of measuring effectiveness, the report goes on to call this into question by stating that “…In the first quarter of 1994, a reorganized operational structure will be phased in. The intent is to deliver better, more cost-effective service in line with the division’s primary mission of preventing workplace injury and disease.”

In order to better understand the Prevention Division’s current and historical approach to assessing effectiveness, the Royal Commission asked the Board to describe in detail any research that has been done on effectiveness and efficiency of prevention programs since 1976. The Prevention Division’s response, in part, was that:

Generally speaking, the Board has not historically conducted separate research into the efficiency and effectiveness of prevention programs. Effectiveness has (been) determined through the Board’s normal management structure. The results of activities in the field are collated statistically and reviewed by the management of the Prevention Division.
or its predecessor, which then reports to the governing body of the day. 

Regard is also had to other information such as claims data, complaints, expressions of stakeholder concern, etc.

The various documents that the Prevention Division provided to the Royal Commission in order to illustrate the more current directions in assessing effectiveness provide some information on satisfaction with service, claim rate changes in targeted industries, and process issues (e.g., number of inspections, program reviews, accident reports, claim investigations, penalties issued, courses conducted). They include a number of reports on training, and on Prevention Division publications. These reports are discussed in greater detail under the corresponding program areas below.

The Prevention Division has had a research and evaluation unit in place since 1996, however staffing and resources allocated to this function have been limited. Additional resources were requested for this department in 1998.

In its Operating and Financial Report for Year End 1996, the Prevention Division states that advances were made in two major areas in Research and Evaluation (p.15):

- the production of focus reports
- client satisfaction surveys

The 1997 Year End Report indicates that a number of Evaluation Projects and Technical and Focus Reports were completed and that “Research and Evaluation began to focus more attention on internal and external program evaluations”.

With respect to Effectiveness, the Prevention Division’s 1997 Business Plan states (p.20):

Prevention in partnership with employers and workers has been effective in reducing the number of injuries. For example, last year, the use of a multi-pronged approach (radio campaigns, training for fallers, emphasis on seat belt use by skidder operators and increased inspection activity) reduced injuries and fatalities in the logging industry. In 1995-96, the
combined measures of the officers, outreach and public affairs section have reduced the number of injuries to young workers by 11.5%.

Both the 1997 (p.20) and 1998 (p.30) Business Plans refer to measurement and evaluation:

There are increasing pressures to measure effectiveness and to ensure the Division is able to demonstrate that its initiatives reduce accidents and injuries. ...The Division is committed to ensuring that programs are evaluated for effectiveness.

Despite these statements, the Prevention Division is currently unable to clearly identify the link between its programs and services, and effectiveness. This is acknowledged at a later point in the 1997 Business Plan (p.24):

Another related problem is the difficulty of measuring the link between cause and effect of divisional programs. At present divisional systems do not provide sufficient detail to allow correlations between prevention activities and outcomes. As well, there can be a delay between the time preventative action (is) taken and the time when a measured reduction in resultant claims occurs. This difficulty in measurement presents additional challenges to the division in terms of justifying investment in new or enhanced preventative activities. (p.24)

The Division’s 1998 Business Plan refers again to the problem of assessing program effectiveness. Included among the issues to be “resolved in upcoming years” is the division’s ability “to evaluate effectiveness of various components of interventions” (p.35).

In late 1997, the Board’s Internal Audit Department prepared a scoping report\(^\text{58}\) to outline potential issues and areas of risk for the Prevention Division. The potential issues outlined in the scoping document were to be examined in an audit, which remained to be completed as of the commission researchers’ latest contact with the
Board in preparation of this report. The scoping document identified the following issues with respect to the Prevention Division’s Management Reporting (p.6):

The Division may be unable to demonstrate that programs are effective and serving a public need. Changes in claims rates are the primary performance measure used by Prevention. There is significant difficulty in separating the effect of other WCB initiatives and external factors (including the economy, advances in medical science to cure/discover illnesses, and changes in technology) from the effect of Prevention programs in the resulting number of claims. These other factors could result in increases in claims rates, even when Prevention programs are functioning effectively (reported in 1997 Administrative Inventory).

The scoping report also pointed out other concerns with respect to reporting, such as inconsistent reporting formats, and inflexibility in the system with respect to accommodating ad-hoc requests to focus field officer activities and monitor firm performance.

In its responses to the Royal Commission’s requests for information on effectiveness of various strategies, the Prevention Division did not always seem to acknowledge the importance of evidence-based research. This issue is discussed further in the Enforcement chapter’s section on effectiveness.

2.7 Performance Measurement

In Enhancing Accountability for Performance59, BC’s Auditor General considers performance measurement “at the heart of both accountability for, and management of, performance” (p. 77). The process requires (p.78):

- Program objectives (or what the [agency] wants to achieve)
- Program activities (how the objectives are going to be achieved)
- Program performance measures (the measurements that will be made and reported to show the extent of achievement)
The accountability framework identifies the types of information that agencies should report about performance. The Auditor General acknowledges there is “a continuum of measures between outputs and outcomes, with outputs being closely related to program activities, and outcomes being significant impacts on society” (p. 79) and that a balance between measures is required. To achieve this balance and ensure the usefulness of this information to decision-makers, requires a number of criteria be satisfied (p. 72-73). A summary of these criteria follows:

- **Provide baseline data**: The information should include contextual material and facilitate comparisons to a baseline or benchmark.
- **Be comparable**: Information should be comparable between reporting periods.
- **Be explained**: The importance of each key performance measure should be explained and the methodology outlines (for example, how the information is obtained, from what data sources, etc.).
- **Be analyzed**: The information should show that any significant variances were analyzed. Performance measures in themselves show what happened, but they do not show why. The reasons for differences must be examined. Periodic program evaluations are therefore important not only to actually monitor outcomes, but also to assess the relationship between program outputs and intended outcomes. (Program evaluation will also focus on the design of the program.)
- **Reflect a range of measures**: The information should reflect the various attributes of performance. For example, to focus only on the cost of outputs is not sufficient to describe performance. If costs are decreasing, what about quality – is it also decreasing?

The Board identified a list of outcomes by the year 2000 in its 1996 Strategic Plan. The main outcome for which occupational health and safety programs would be responsible was a ten percent decrease in the serious injury rate. Strategies for prevention included continued enforcement along with the Diamond program, improving access to information, initiatives that are firm- and industry-specific, expansion of AIRS (Accident and Injury Reporting System), improved understanding of worker and employer responsibilities and enhanced worker safety training, and partnering with other health and safety agencies. In addition, the Panel of Administrators approved a set of key performance indicators for the Board in February 1997.
Most of the Prevention Division’s performance measures deal with injury rates and
claims, including overall injury rates and total claims; claims by type (STD, LTD and
fata ls), and claims by targeted industry (i.e., the 7 high-claim industries). Four have to
do with activity: percent of time spent by Field Services in key industries; number of
AIRS installations; and two measure “additional assessments” or penalties imposed.
(i.e., the number of penalties assessed and imposed, and the dollar value of penalties
assessed and imposed).

The Prevention Division does not currently report and analyze intermediate measures
such as indicators of occupational health and safety committees in place, knowledge
and understanding of the regulations, or industry changes with respect to occupational
diseases. There are a variety of indicators that might be used to assess effectiveness,
particularly those that reflect changes in workplace practices, however the Prevention
Division has not yet implemented a strategy to gather information on these other types of
indicators. The division also does not routinely assess and report on the satisfaction of
workers or employers with occupational health and safety programs and services, other
than through the use of standard course evaluation forms for its educational programs.
Recently, the division has conducted satisfaction surveys for Field Services and the
Information Line.

It is unclear how the Prevention Division is using its performance indicators to monitor
program performance, whether any of the indicators or measures used are grounded in
research on performance measurement, or whether they are based on “best practices”
from other jurisdictions. In the Board’s April presentation to the commission, specific
targets were said to be based on “gut feel” rather than scientifically derived estimates.

Several Board documents (e.g., Annual Reports and Briefing documents) cite reductions
in injury rates overall, and in claims within the targeted industries, and the Prevention
Division is often credited as a major force behind this change. As noted above, while the
Board also cites other causes for changes in claims rates, the division continues to use
decreased claim rates as the main indicators of its performance. The first two WorkSafe
strategies state objectives strictly in terms of these outcomes.
The Prevention Division is cognizant of the fact that decreases in claim rates can be due to any number of factors, only one of which may be division activity. Thus, while decreases in claim rates may represent one important outcome to monitor over the years they provide little useful information with respect to the division’s effectiveness. Still, the Board gives credit to the Prevention Division for improvement in safety in its public documents at the same time as it acknowledges its inability to draw definitive conclusions about the effectiveness of Prevention Division programs.

The Board’s *Briefing* paper acknowledged the difficulty in attributing declines in the injury rate to Prevention Division activities with the following statement:

> Some indication of the results of Prevention Division activity may be taken from the (table of STD claims for the 7 targeted industries). It compares the number of short-term disability claims at the end of September 1996, with the same period in 1995 in the 7 targeted industries. The numbers are reduced in all industries, but this may be partly due to economic or other factors.

As noted in the 1997 *Administrative Inventory*:

> Although Statistical Services has advised that short-term differences in STD claims are ...not dependable indicators of success, the Prevention Division may be taking credit prematurely for decreases in all seven targeted industries for the first half of 1996. (The Division is, however, careful to point out possible economic and labour market confounders). The corporate goal of a 10% reduction in the serious injury rate by 2000 also fails to heed warnings about this statistic as a reliable measure of prevention activity” (p.113).

In its Annual Reports, the Board reports that Prevention Division efforts are having an effect. In the 1996 *Annual Report* it is stated that:

> With the cooperation of the WCB’s partners in industry and education, WorkSafe is having an effect. In 1996, the WCB achieved its primary goal of helping lower serious workplace injury rates. The injury rate --
claims per 100 person-years of employment -- fell to 5.0, a decline of 5.7 percent, exceeding the WCB’s two percent reduction goal for the year. (p. 5).

The Prevention Division’s Operating and Financial Report for Year End 1996\(^{61}\) points out that STD claims decreased from 1995 to 1996 in the 7 key industries. The 1997 Year End Operating Report\(^{62}\) shows that 3 of the 7 key industries experienced an increase in STD’s. The report does caution, however, that this increase could be related to a 1.8% employment gain in B.C. during 1997 (i.e., these were claims not injury rates; injury rates are based on payroll and, the report states, would not be available until third quarter 1998). The 1996 report also shows that, in all but one of the 7 key industries, LTD claims increased, and the logging industry had an increase in traumatic fatalities in that year (1995: 17 fatalities; 1996: 22 fatalities); this figure increased again in 1997 to 29 fatalities. There does not appear to be an interpretation of the increase in fatalities provided within these reports. In its 1996 and 1997 Annual Reports, the Board refers only to the statistics on respective reductions or increases in STD claims. In 1997, there was no significant change in the injury rate.

Reductions in claim rates are suggestive of an improved focus on safety in the workplace, but they cannot be considered definitive evidence of such an impact. Injury rates go up and down as a result of many different factors, such as changes in the economy, introduction of new technology, changes in the industrial mix, workplace culture, and so on. Furthermore, claim rates reflect only those injuries that are reported; it is possible that, as some employers become more concerned about claim costs and the affect on their assessment rates, they will implement strategies to reduce costs rather than accidents (for example, by implementing rewards to work teams for having the lowest claim counts; by sending workers home on sick leave or other disability benefits rather than having them file a WCB claim). The Tysoe Commission of Inquiry, Workmen’s Compensation Act, reported concerns about claims suppression in 1965:

There were complaints from labour that efforts are sometimes made by employers to induce workmen not to report accidents on the promise of being kept on the payroll, and that this is done so that there is no reportable time loss and employers’ accident records are shown to be
more favourable than they actually are, and accordingly their assessments are not unfavourably affected. There is some evidence that this does sometimes occur\(^6\). (p.124).

Focusing on claims and claims costs as the measure of safety, and as the basis on which employer assessments are determined through experience-rating, may promote this practice.

Focusing on claim rate data has other limitations as well. It is a reactive rather than proactive approach, and may not identify problems early enough for effective intervention. Furthermore, claims data fails to accurately reflect the incidence of occupational disease, which may take years before it is manifested. As noted in the 1997 *Administrative Inventory*:

Claims data continue to underestimate the magnitude of occupational disease. Thus, the good claims histories of industries or firms may obscure problems stemming from occupational exposures to chemicals, radiation, and other health hazards. (p.105)

The Board could track other indicators of safety. It could, for example, track the number of organizations observed on inspection to have effective occupational health and safety programs with effective occupational health and safety committees. It might try to determine if there is a relationship between Prevention Division interventions and the extent to which effective OHS programs and OHS Committees are in place, or the extent to which employers and workers at the worksite understand and comply with the health and safety regulations that are relevant to their industry. The Board could track the level of knowledge, and reported adherence to regulations, amongst workers, supervisors and employers in specific industries. It could follow up workers and employers who have attended educational sessions to assess how their attitudes and behaviours have changed once back at work. Some of this research may be costly and time consuming, and employers may not always see it as directly relevant to the claims costs they are paying. Nevertheless, using multiple indicators such as these, and indicators that are tied as closely as possible to the type of intervention provided (e.g., specific knowledge gained and behavioural change in terms of OSH committee functioning after attending
OSH committee training), will ultimately be more instructive for the division than global indicators such as injury rates.

The Administrative Inventories pointed out that there is a considerable amount of data relevant to the prevention of injury and disease which is available to the Prevention Division, including enforcement activity data, health and safety committee minutes, and requests for and evaluations of educational activities, but that these data have “not been mined adequately”. According to these authors, the division’s targeting and evaluation activities are “as before, proceeding without a clear understanding of accident causation, the needed changes in the firm’s technology and work practices, and how to change behaviors of the key parties to workplace injury and accident prevention -- employers and workers” (p.107).

While agencies in other jurisdictions are reporting on outcomes such as claim and injury rates to their governance bodies, some are making significant progress in identifying and a broader range of program performance measures that more accurately depict the extent to which program objectives have been achieved (see further discussion in the Appendix).

It seems very reasonable to expect that, as the WCB increases its education of employers and workers, disseminates up-to-date regulations, and exerts a focused enforcement strategy with the worst offenders, workplace safety will improve and accident rates will go down. However, with its current measurement approach, the Prevention Division cannot identify the extent to which its efforts are responsible for a change in workplace health and safety.

2.8 Allocating Resources

A variety of funding structures are in place for occupational health and safety in other jurisdictions. Typically, occupational health and safety services are funded through employer assessments. In some jurisdictions the WCB, like the WCB of BC, provides both compensation and prevention services; in others, the WCB focuses exclusively on compensation and a portion of funds are extracted from employer assessments and transferred to the Ministry of Labour. In some cases public funds supplement employer
assessments. Penalties and fines might also be collected and used to supplement resources for occupational health and safety.

Comparing total administration figures for the Board with budget figures for the Prevention Division, it appears that between 1985 and 1997, the division’s budget has fluctuated between 15% and 20% of the total administration budget for the Board\(^65\). The 1997 *Annual Report*\(^66\) lists Prevention and Enforcement expenses at $35,057,000, which represents 17.5% of total administration expenses of $200,223,000, or 2.9% of the total budget for the Board including payments for claims ($1,202,943.00). The Prevention Division employed 385 full-time equivalents (FTEs) in 1997\(^67\), which equals about 16% of the Board’s total of 2,470 employees\(^68\).

According to the Board’s Annual Reports, the Prevention Division’s budget grew from $13,278 in 1985, or $19,050 after CPI adjustment for comparison with 1997 dollars, to $35,057 in 1997\(^69\). This 84% increase in budget corresponds to a 77% increase in the number of registered employers over the same time period\(^70\). The Prevention Division requested a budget increase (core operating and enhancements) to $44,585,728.00 in 1998.\(^71\) The budget for the division in 1998, according to the 1998 Corporate Business Plan, is $40,766,000, or 19.6% of administration expenses.

Based on a review of other jurisdictions in Canada conducted for the Royal Commission\(^72\), the total dollars allocated to occupational health and safety in BC is above average, but lower than the other two large Canadian provinces, Ontario and Quebec.

In Canada, some provinces and territories receive funding from the government in addition to employer funding. Alberta, Ontario, New Brunswick, Nova Scotia, and the Yukon receive some additional government funding. The government in the Northwest Territories has agreed to contribute a portion of the budget for occupational health and safety for three years until 1999, at which time funding will come directly from workers compensation.
The following jurisdictions receive government funding for OHS activities:

<table>
<thead>
<tr>
<th>% of OHS Budget Provided by Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta 41%</td>
</tr>
<tr>
<td>Ontario 27%</td>
</tr>
<tr>
<td>NB 19%</td>
</tr>
<tr>
<td>NS 50%</td>
</tr>
<tr>
<td>NWT 47%</td>
</tr>
<tr>
<td>Yukon 40%</td>
</tr>
</tbody>
</table>

Attempting to identify the proportion of resources allocated to prevention activities across jurisdictions is complicated by the data collection and reporting problems discussed throughout this report. Indeed, data obtained by the Royal Commission appeared to differ somewhat from that recently collected by the WCB and reported in the 1997 *Administrative Inventory*, although the WCB report calculated the total budget per capita, and the commission’s figures are based on dollars per worker covered by WCB legislation (workers covered by Occupational Health and Safety legislation was sought for the most accurate comparison, but was unavailable in some jurisdictions). Both reviews conclude that BC has one of the higher occupational health and safety budgets in Canada. The Royal Commission’s review found that BC’s budget is higher than 7 other provinces, and lower than 4 other provinces/territories. Compared to the two other large Canadian provinces with more than one million workers covered, BC’s occupational heath and safety budget is the lowest at approximately $19.53 per worker covered. Ontario’s rate calculated for workers covered by workers compensation legislation was $23.20, and Quebec’s rate was $27.52, per worker covered.

The Prevention Division, like other divisions within the Board, has implemented a number of new initiatives and strategies to improve efficiency and effectiveness. Whether or not the shifting of resources, the introduction of new initiatives, and the move toward consultation and quality inspections have been “good investments” on the part of the Prevention Division is not known. The allocation of resources to one area or another does not appear to have been based on an assessment of what works best, or on where the need has been proven to be greatest, since the Prevention Division has not conducted program evaluation nor formal needs assessments for most of its programs. Whether or not the allocation of funds to television advertisements emphasizing the
need to work safely is as cost-effective (i.e., in terms of having an impact on improved safety and reduced accidents in the workplace) as the allocation of the same funds to the training of occupational health and safety committee members in hazard recognition, for example, has not been assessed. In his July 18th presentation to the Royal Commission, the Vice-President of the Prevention Division at the time, Mr. Ralph McGinn, agreed that the Board has historically had difficulty measuring the effectiveness of its programs, and that because of the limited information available it can not make decisions about resource allocation the basis of program effectiveness.

The Prevention Division has made it clear that it has insufficient resources to conduct inspections of all workplaces with any degree of regularity. As will be discussed later in this report, the average employer may only receive an inspection once in 25 years, although the rate varies dramatically by employer size and industry.

The Prevention Division presents the new WorkSafe strategies and the Diamond project as attempts to address the need to improve safety with limited resources and a growing population of employers that must be served. It has not been established, however, that these strategies represent the most cost-effective use of resources. Decisions about new initiatives such as the Diamond program do not always appear to be based on sound analysis of costs and potential benefits. Assumptions are made that by improving the internal responsibility system the limited resources available to the external responsibility system will be freed up to be used more effectively, but the resources required to improve the internal responsibility system may themselves be high, and may represent an equal or greater drain on the Prevention Division than its more traditional activities. Whether or not a drain would occur, how long it might last, what the implications would be for those employers who are not included in the new initiatives, and what the actual benefits of this approach would be relative to other strategies, does not appear to have been analyzed in sufficient depth. Costing for the Diamond program has proven to be difficult.
2.9 Accountability

As discussed in the introduction to this section, the Office of the Auditor General of British Columbia has produced an Accountability Framework which it hopes will guide government agencies in planning, managing and reporting on results. This report states that:

Government reporting and management continues to focus heavily on resources, activities and compliance with rules. While these are important, more attention should be given to organizational and program results, and performance with respect to the way business is conducted. (p. 17).

Credibility implies transparency, relevance, reliability and timeliness. For example, effective performance reporting should encourage and facilitate easy comparisons among programs over time and support strategic decisions and operational management.

Performance monitoring helps clarify the purpose and goals of occupational health and safety programs and helps to communicate costs, results, and value. In order to be of significance to decision-makers performance monitoring requires:

- Organizational incentives to support performance monitoring including clear goals, and a strong, active management regime which pays attention to performance information (e.g. a commitment to demonstrate and report what results have been accomplished).
- Linking ongoing performance measurement with planning initiatives and periodic program and policy evaluations.
- Recognizing that stakeholders are a key and constructive reference for developing effective performance monitoring.
- Addressing more than traditional strictly quantitative aspects of performance to include a variety of measurable outcomes.
The Prevention Division has historically provided somewhat limited information in the Board’s Annual Reports with respect to its activities. Also, as will be discussed in the section on Enforcement, the Royal Commission has a number of concerns with respect to the information that the Prevention Division has access to in order to monitor the extent to which its policies and procedures are being carried out as intended, both in terms of information accuracy and availability.

The Board sought an independent assessment of its accountability and performance reporting through the Office of the Auditor General of BC, with the aim of improving and building upon its existing framework. The study used the accountability framework designed by the Auditor General’s Office (and discussed above) as well as other accepted effectiveness criteria (the Canadian Comprehensive Auditing Foundation’s “Twelve Attributes of Effectiveness” and the Canadian Institute of Chartered Accountant’s “Criteria for Control”) as a framework for analysis. Reviews of existing Board planning and reporting documents, and interviews with Board personnel and external stakeholders, were used to develop an understanding of the programs and of the key indicators that might be used. Logic models of key inputs, activities, outputs and outcomes were also prepared.

The report commended the Board for the progress it had made in performance measurement. While acknowledging this progress, the report pointed out that the Board needed to clarify its basic values and principles, that it needed to provide more information on critical corporate outcomes such as adequacy of benefits and workplace safety, and that it needed to enhance its measurement and reporting on levels of public awareness of WCB values and goals, regulations, and safety issues. It identified three key areas of performance for which the Board should be held accountable: mandate and direction of the WCB, outputs and outcomes of the WCB, and organizational capacity. In particular, the report recommended that the following areas of performance be included or enhanced in the WCB’s accountability reporting (p.3-4)77:

- that the WCB discuss its interpretation of its mandate in the annual report
- that the WCB report on its internal climate: the culture, attitudes, values, and skill base for key functions, such as benefit entitlement and rehabilitation
• that the WCB provide periodic assurance of the continued relevance, that is, the fit between the needs of clients and the services provided, by WCB programs, especially in prevention and rehabilitation
• that the WCB enhance its reporting on key corporate outcomes, including adequacy of compensation to injured workers, restoration of injured workers to pre-injury status, safety in the workplace, fairness of the funding load, and financial sustainability
• that the WCB enhance its reporting on service quality
• that the WCB measure and report on public awareness of the WCB’s mission, vision, values, and goals, as well as WCB regulations, and awareness of workplace safety issues
• that the WCB identify and report on significant secondary impacts
• that the WCB provide assurance on the quality of adjudication to its stakeholders and enhance its current reporting on overall efficiency, human resource management, management information, and risk management

As can be seen in this summary, a number of specific recommendations were made with respect to the content of performance indicators for specific program areas and for the organization as a whole. Recommendations specific to occupational health and safety were as follows:

10. Safety in the Workplace -- Injury Rates: That management define the seriousness of injuries and potential for improvement of the most serious injuries and provide this information to the Panel and in the annual report.

11. Safety in the Workplace -- Analysis of Causes of Injuries: That the reporting to the Panel and the annual report include a review of the significant causes of injuries and diseases in the workplace and an analysis of trends in the causes. This analysis should also involve a review of the underlying causes of injuries, including other factors that may affect worker and employer attitudes and behaviour, such as WCB legislation, regulations, and policies, as well as government policies. We recognize the difficulty in this type of analysis and suggest that the WCB conduct more research and apply existing research to completing this analysis.

12. Safety in the Workplace -- Compliance with Regulations: That WCB management continue to report on the number of additional assessments recommended and
imposed. The WCB should also report the number of inspection reports issued, including contextual information, and explore ways of reporting on the level of compliance it is seeing during its audits and inspections, and the outcomes of its site visits.

13. *Safety in the Workplace -- Impact on Targeted Firms:* That management enhance ways to measure the impact of prevention activities on the safety performance of targeted firms, to assess which activities have the greatest impact on which type of firms and under which specific circumstances. Results of these assessments should be reported to both the Panel and the external stakeholders.

29. *Public Awareness of Safety:* That the general awareness of and support for WCB regulations and workplace safety be included in the annual report.

**2.10 Jurisdictional Arrangements and Advantages/Disadvantages**

Depending on the jurisdiction, workers compensation and prevention may be provided through the same or different agencies. Also, the enforcement side of prevention may be provided through one agency, and the education and consultation side through another.

Canadian jurisdictions appear to have gone back and forth on the issue of whether or not prevention and compensation should be housed within the same agency. Commission research shows that prior to 1970 most jurisdictions administered both functions through their workers’ compensation boards. Through the 1970’s and 1980’s these functions were separated in all jurisdictions except Quebec and British Columbia; however, within the past few years, Boards have again taken over responsibility for prevention in New Brunswick, the Northwest Territories, the Yukon, and Prince Edward Island. The Ministry of Labour (or similar Ministry) is responsible for some or all aspects of occupational health and safety in Alberta, Manitoba, Newfoundland, Nova Scotia, Ontario, and Saskatchewan.

Cabinet retains the regulation-making power in all Canadian jurisdictions other than BC. In those jurisdictions that have separated occupational health and safety from the Boards, the Ministry provides prevention enforcement activities, but occupational training and education are typically provided by the Boards (or in some cases, by both the
Ministry and the Board). In some provinces, such as Ontario and Quebec, separate bipartite sectoral agencies provide education and support to employers and workers in their respective industries, as does the Farm and Ranch Safety and Health Association (FARSHA) in BC.

In summary, the following models are in place in Canada:

1) Workers compensation and prevention, including occupational health and safety policy, regulation setting, enforcement, consultation and education, are all provided by the same agency. This is the model that exists in BC.

2) Workers compensation and prevention, including occupational health and safety policy, regulation enforcement, consultation and education, are all provided by the same agency. Cabinet, however, retains the power over regulation setting (as it does in examples 3 and 4 below). This model applies in New Brunswick, Northwest Territories, Prince Edward Island, Quebec, and the Yukon.

3) Workers compensation and prevention are provided by the same agency, with some aspects of prevention allocated to a different agency. For example, the Workers' Compensation Board may be responsible for occupational health and safety education, but another agency may be responsible for enforcement of the regulations (or in some cases, both agencies provide education). This is the model in place in Alberta, Manitoba, and Ontario.

4) Workers compensation is provided by one agency, and all aspects of prevention are provided by another agency. The other agency is typically the Ministry of Labour. This is the model in place in Newfoundland, Nova Scotia, and Saskatchewan.

Several US jurisdictions also appear to provide enforcement and consultation through the same agency. The Oregon Occupational Safety and Health Division\textsuperscript{78}, for example, notes that it is charged with reducing and preventing injuries and disease through “occupational safety and health rules and regulations, unannounced inspection of workplaces, no-cost worksite consultative visits, training for employees and employers,
and research and outreach to provide needed safety information resources to Oregon workers and managers.”

Advantages and disadvantages of including occupational health and safety within the same organization have been reviewed by other jurisdictions considering how to proceed on this issue. The primary advantage cited has to do with linked databases, whereby the occupational health and safety department can have easy access to employer histories in terms of claims, and employers can be subject to safety incentive schemes such as experience-rating. The main disadvantage cited is that as compensation is the primary business of Boards, and the one for which most resources are allocated, occupational health and safety may become overwhelmed or driven by concerns of compensation, for example, by ignoring areas of risk that are non-compensable, or focusing on minimizing claims costs rather than minimizing injury and disease.

There is also the issue of whether or not to have health and safety educators and enforcers in the same role. One of the advantages is that the staff are already on site for routine inspections, so can provide further advice and assistance without duplication of resources. A major disadvantage is that the staff member may have trouble walking the line between enforcement and consultation, so that fewer sanctions are imposed in the name of establishing a positive, working relationship with the employer; furthermore, employers may be more reluctant to contact the agency for advice and assistance if they know that this could result in an order being written or further sanctions being imposed. Some interviewees told Royal Commission researchers that employers are reluctant to initiate contact with WCB Prevention Division officers for consultation and advice on occupational health and safety issues because they believe the officers will be obliged to write orders for any violations they see, even if the employers have contacted them in good faith.

In Australia, five of the nine jurisdictions have integrated compensation and health and safety functions. The Inquiry into Occupational Health and Safety in Australia recommended the integration of policy making functions for in all jurisdictions, even if the actual administration of functions remained separated. The primary advantage of this relationship is that the occupational health and safety policy makers could influence
premium rates, with higher rates for higher-risk employers. It also noted that communication channels should be opened so that claims data could be shared, but that occupational health and safety policy makers should supplement this “with data and evidence of their own.” Finally, it argued that public accountability could be jeopardized when the workers’ compensation agency develops and conducts injury and disease prevention activities independently of the occupational health and safety agency.

Queensland recently considered amalgamation of its occupational health and safety and compensation agencies, but concluded that they should remain separated. It also noted that better channels of communication could be achieved between the two separate agencies.

The 1981 Economic Council of Canada report entitled *Occupational Health and Safety: Issues and Alternatives* noted that prior to 1970 most provincial governments in Canada administered at least part of their occupational health and safety programs through their workers’ compensation boards, but that through the 1970’s all provinces except BC removed this function from the WCB’s. They discussed some of the factors which caused other provinces to remove jurisdiction from the WCB’s, much of which reflected concerns of labour, which included: concerns that WCB’s served primarily as insurance agencies for employers and were perceived as “at least as interested in protecting the employer as in serving injured workers”, emphasis on safety as opposed to health hazards due to the agency’s concern to minimize employer’s (who were viewed as their customer) claims liability, rare prosecutions, attribution of accidents to “worker carelessness or ineptitude”, inspections that involved employers but not employees, and employer appointments to boards with politicized management.

The potential advantages to having the prevention division within the WCB’s that they identified were the ability to determine the payments employers make to the insurance fund (enabling financial penalties to be imposed), have direct access to statistical data on injuries (so that there is greater incentive to match the data collected to the needs of the prevention division), and the possibility that employers may be more receptive to educational services provided by an insurance agency than by another type of agency.
In a separate project, researchers for the Royal Commission\textsuperscript{82} contacted occupational health and safety agencies in other Canadian jurisdictions in order to determine if there had been any analyses of the benefits of different types of structures for occupational health and safety. No jurisdiction had conducted a formal analysis of the advantages or disadvantages of integrated or separate structures. In its review, the commission’s researchers found that six of the twelve jurisdictions had a separate occupational health and safety agency that is a division or branch of a line department of government; in the remaining six jurisdictions the occupational health and safety function is a responsibility of the workers’ compensation board or commission. Interviews with representatives from other Canadian jurisdictions suggest that the decision to combine or separate OHS and compensation functions has typically been based on concerns about potential conflict of interest, or a response to resource constraints.

According to this review, where there is a separate agency responsible for occupational health and safety, the primary advantages were believed to be the avoidance of any perceived or actual conflict of interest and the independence to set priorities. The key disadvantage, according to many respondents, is that with occupational health and safety in a separate government department, it is subject to government budget and fiscal controls and constraints. Another disadvantage related to the ability to share information between the occupational health and safety division and the workers’ compensation agency. Where the workers’ compensation board is responsible for occupational health and safety, the key advantages cited were greater co-ordination of activities and sharing of information. Respondents felt that the key disadvantage was an inherent conflict of interest in the workers’ compensation agency having responsibility for occupational health and safety.
3.0 ENFORCEMENT APPROACH

3.1 Overview

The following chapter concludes that:

- It may take 25 years or more to inspect all of BC’s worksites at least once.
- The level of non-compliance is high, with nearly one in every two inspections resulting in orders for regulation violations, although these violations will vary in terms of the level of risk.
- The likelihood of on-site follow-up inspection is low, with only 1 in 5 inspections resulting in on-site follow-up; follow-up is much more common after inspections that have led to warning letters.
- About 2% of inspected employers receive penalties each year, with the average penalty being under $5,000.00.
- Some enforcement activities appear to have declined in recent years.
- The Prevention Division has limited information on its enforcement processes and outcomes, and is unable to provide information on the effectiveness of enforcement activities.
- Other jurisdictions have questioned the effectiveness of their enforcement activities, many concluding that the likelihood of inspection and size of penalty assessments are historically and currently too low. The ineffectiveness of enforcement may be due to the limited enforcement activity in place, rather than the actual ineffectiveness of enforcement as a prevention tool.

3.2 Planning and Allocation of Resources

There appears to be a trend in BC and in other jurisdictions toward targeting enforcement approaches for more efficient use of resources, and enhancing other types of consultative services.

In 1997, the Prevention Division operated on a budget of $35,057,000\(^83\) which was approximately 18% of administration costs, or 2.9% of the total WCB budget when
payments for claims are included. Historically and currently, the greatest proportion of the Prevention Division budget has gone to Field Operations/Field Services for inspections, accident investigations, and consultation. About of the division's current 385 FTEs are occupational safety and occupational hygiene officers.

The Board was asked to provide the Royal Commission with total number of Prevention Division employees and number of employees by program area from 1976 through 1997. The information that was provided was insufficient to conduct an accurate comparison across time in terms of field services staff and worksites for each year. This is because of several problems: lack of data on worksites for any years and on number of employers from 1976 through 1983; FTE for Field Operations (or Field Services for 1992 and prior) provided for Lower Mainland only from 1982 through 1984; no separation of FTE's by program area for 1993; concerns expressed by the Prevention Division about the reliability of the data. According to Prevention Division information, the total number of FTEs in the division dropped from 326 in 1982 to a low of 244 in 1986, then increased to 385 in 1997.

Data provided by the Prevention Division to the Royal Commission shows that there has been a decline in the proportion of inspections, and in the proportion of worksites inspected, over time (that is, a decline in the proportion of inspections and worksites inspected relative to the number of employers registered; there has also been a decline in the absolute number of inspections since 1990). The Prevention Division cautions against comparing numbers of inspections over time however, because of the fact that at one time, several inspection reports could be produced for one inspection, and quotas that were once in place no longer are. According to interviews, inspection quotas that field officers were once expected to meet would sometimes drive behaviour such as the completion of several quick inspections near month-end. The division reports that it is focusing on improved quality of inspections, so that while the total number of inspections has been declining, the total hours involved in inspection activity may not be. Furthermore, field officers have been called off to work on special projects over this time period, most notably regulation review, so that fewer resources have been available to allocate to inspections.
According to a 1981 Economic Council of Canada report entitled *Occupational Health and Safety: Issues and Alternatives*\(^9\) which examined BC and other provincial programs, in 1978 the BC WCB’s Prevention Services Division employed 65 inspectors and supervisors in accident prevention and 20 inspectors in industrial hygiene\(^9\). The labour force at that time was reported to be 1,000,000 and the number of “worksites” (which probably is more accurately “employers”) was 74,000. The report states that “The staff is sufficiently large to permit inspections ranging from a frequency of once every six months to once every four years” (p.183). It also notes that “The division is capable of undertaking 35,000 to 38,000 inspections per year. Each inspector is seen as capable of undertaking just under 500 inspections per year. In most cases, the number of actual inspections will be fewer. At most, two inspections per day are expected under normal conditions, which implies 450 to 500 inspections per year per inspector. The inspectors also perform educational functions” (p.183).

The 1992 *Administrative Inventory* notes that at the time of its review, regional managers set the following general quotas for field officer’s activity: 500-800 inspections for safety officers; 200-300 inspections for hygiene officers; 20 educational presentations for all officers; and 5 audits for all officers\(^9\). In 1992, when these quotas were in place, there were 154 field officers: 108 occupational safety officers, 42 occupational hygiene officers, and four occupational safety and hygiene officers.

The quotas suggested above mean that:

1) between 54,000 and 86,400 inspections could be conducted annually by occupational safety officers, and between 9,200 and 13,800 inspections could be conducted annually by occupational hygiene officers; in total, between 63,200 and 100,200 inspections could be conducted annually by safety and hygiene officers.

2) a total of 3080 educational presentations could be conducted by safety and hygiene officers.

3) a total of 770 program audits could be conducted by safety and hygiene officers.

WCB data provided to the Royal Commission, however, indicates that 46,193 inspections were conducted in 1992\(^9\), and a total of 16,816 worksites were inspected\(^9\). This means that the average field officer conducted about 300 inspections that year, and
was responsible for about 109 worksites. Taking the lowest end of the quota-derived inspection totals above (i.e., 63,200), this means that about 27% fewer inspections were conducted than were expected in 1992. The 1997 Administrative Inventory shows that 152 program reviews or audits were conducted in 1992, considerably lower than the 770 specified above. On the other hand, there were 4,240 educational presentations, 38% more than the targeted number (3,080).

According to interviews, these quotas are no longer in effect. Additionally, the 1997 Administrative Inventory notes that field officers are now accountable to their managers in terms of the total time spent on targets derived from WorkSafe (p.111).

In 1995, the Board’s report Making a Difference indicated that in British Columbia there are approximately 140,000 firms, 400,000 worksites, and 1.8 million workers. The report states that there are 193 occupational health and safety officers and that “with no repeat inspections and no responses to demands for inspections, it would take a minimum of 8 years to cover the 400,000 worksites”. Since about half of field officers’ time is spent responding to complaints and investigating accidents, this means that it could take 16 years to inspect all BC worksites.

More recent calculations suggest, however, that it may actually take 25 years to inspect all worksites just once, and even longer if growth and turnover amongst the employer population are taken into consideration. This estimate is based on 1996 figures of 400,000 worksites, and 15,758 worksites inspected in that year.

In 1996 and 1997, field officers completed 41,486 inspections and 35,894 inspections, respectively. This suggests that at that time each field officer was able to conduct 188 to 217 inspections annually, many of which would be repeat inspections. In the past five years, the division’s inspections covered about 16,750 worksites annually, with a high of 17,997 in 1995 and a low of 15,748 in 1996. Inspection activity has decreased somewhat in recent years, in part because of time devoted to regulation review and special projects. The number of worksites inspected has remained relatively constant over the past ten or so years (for example, 1986: 17,449; 1990: 16,620; 1994: 16,291), although the proportion has decreased due to steady increases in the number of employers. Assuming 155,000 employers and 400,000 worksites province
wide, in 1997 each officer was responsible for 812 employers and approximately 2100 worksites.

There are many differences between 1978, 1992, 1995 and 1997 that might explain some of the discrepancies between the reported frequency of inspection capabilities in early years and currently. Some of the data provided by the Prevention Division doesn’t match the 1981 report, so there may be differences in the way activities were measured then and now. The reported 74,000 worksites in 1978 is probably employers; if there are approximately 2.5 times as many worksites as employers, then the number of worksites in 1978 would have been 185,000 (Note: The WCB was unable to provide “number of worksites” for any years other than the estimate for 1996/97 of 400,000, updated to 450,000 in the 1998 review of the WCB Strategic Plan, and was only able to provide “number of employers” from 1984 on. The figures provided by the Prevention Division show 103,329 employers registered in 1984; the 1992 Annual Report shows 85,155 employers registered in 1984). As noted above, inspections may be more thorough and time consuming now than they were in the late 1970’s. In the July 18th presentation by the Prevention Division to the Royal Commission, it was stated that the decline in numbers of inspections was part of the division’s strategy, with an emphasis more on quality rather than quantity of inspections. Human resource policies may be quite different now than in the past, including more benefits (e.g., sick time, holiday time, SDO’s) which may reduce available time for inspections. Field officers in 1997 are expected to conducted program audits and accident investigations, and to follow-up warning letters with inspections (perhaps more follow-up in general), which may consume more time.

The current estimate of 25 years is based on the unlikely assumption that the number of worksites will stay constant over this time period; however, many employers will close down operations over the next 25 years, and many more new businesses will start up. For example, over the past 5 years, the number of businesses in B.C. grew at an average rate of 2% per year. Using this figure as an example, along with the numbers of employers and worksites used in Making a Difference, we might expect the number of employers to increase by 2,800 per year, and the number of worksites to increase by 8,000 per year (2% growth by 140,000 employers; 2% growth by 400,000 estimated
worksites). As mentioned previously, the worksites figure has recently been updated to 450,000.

It is also important to note that the Prevention Division’s WorkSafe strategies focus resources on specific industries and specific sizes of employers. The extent to which this means that resources are becoming even more constrained for other types of employers should be closely monitored, for example, by tracking inspection rates for employers varying by size and industry.

It is not possible to say whether allocating additional resources to the Prevention Division would enhance the division’s ability to improve health and safety in the workplace. While the division is now targeting certain industries and large employers for increased enforcement activity, and reports that a reduction in STD claim rates have occurred as a result of these Worksafe activities, the division has conducted little research on the effectiveness of its enforcement efforts. Consequently, it is difficult to identify the extent to which any change in claim and injury rates, or in other indicators of workplace health and safety, can be attributed to Prevention Division enforcement activities, as opposed to other factors (e.g., other Prevention Division activities, changes in the industrial mix).

While it is probably unlikely that an employer who sees a field officer once every 16 or 25 years is strongly influenced by the WCB, inspections on an annual (or more frequent) basis may have a deterrent effect. There are a number of employers who receive inspections on an annual or more frequent basis. As the division has access to a wide array of data on these employers - if it chooses to collect and analyze it - it should be possible to conduct research on the effects of enforcement initiatives. Combining this data with such things as a consistent application of orders, follow-up inspections, and where applicable, sanctions, could lead to some estimate of an optimal or at least improved frequency of inspection, orders and penalties based on the outcomes observed.

If the Prevention Division could show that its enforcement efforts had a direct link to health and safety improvements, and reduced accidents and disease, within the workplace, then presumably a case could be made to allocate additional resources to
this function. At the present time, however, optimal resource allocation for enforcement activities cannot be determined. Because similar problems exist with research in other jurisdictions (see Appendix), it is not possible to use these other jurisdictions as models. Furthermore, as there is no available evidence of the relative impacts of other division activities on workplace health and safety, it is not possible to determine if resources should be redistributed, for example, by increasing educational activities.

3.3 Developing Regulations

Regulations form the basis for enforcement activities. With changes in the nature of work and new hazards being discovered regularly, it is important that regulations are kept current.

The process of revising and updating regulations appears to be slow and time consuming, both in BC and in other jurisdictions (e.g., US). The current regulation review process in BC has taken years to complete, and came nearly 20 years after the last significant revision of the regulations (1978). Trends in certain injuries and diseases might be identified and dealt with earlier if a more effective process of monitoring trends, revising regulations, disseminating information and training workers and employers was in place. As noted above, an improved system for understanding injury causality would also assist the Board in identifying when new or modified regulations are required, as would an improved process for monitoring the usefulness of regulations.

In his 1965 report, Justice Tysoe referred to the delay at that time in updating regulations, and the implications for accident prevention:

New types of machines and machinery, which mean new hazards, are constantly being introduced, and the keeping of the Board’s accident regulations up to date at all times is a matter of vital importance. ...During the long delay in completing the review of the regulations and advancing the matter to the point where new and more appropriate regulations could be brought into force, more and more accidents to workmen were occurring. (p.120)
As discussed above, when asked by the Royal Commission to present any evidence that it had that orders were an effective way of improving safety, the division responded that the effectiveness of orders hinges on the effectiveness of the regulations, that the regulations are based on the accumulated experience of the Board and stakeholders, and that many of the regulations are based on intuitively obvious notions as to safety\textsuperscript{104}.

While intuition and direct experience are undoubtedly useful, they should not be considered equivalent to research evidence that could be used to supplement these impressions. Research evidence is particularly important when the value of a regulation is under debate, as has been the case with several of the regulations put forth in the most recent regulation review process.

With respect to ongoing monitoring of the regulations, the 1997 Administrative Inventory stated that (p.243):

> A process for ongoing review, evaluation, and timely update of regulations is clearly an issue in need of attention. It is also important to establish a mechanism to track problems with and glitches in the new regulations. Employers, workers, and field officers should be encouraged to provide feedback through this mechanism.

The Compensation Employees’ Union (CEU) submission to the Royal Commission also argued for an ongoing tracking and updating mechanism.

The Prevention Division is unable to identify whether or not a regulation has been violated in the case of an accident or injury, other than in the few cases where accident investigations have been conducted.

Other issues that need to be addressed with respect to regulations concern the amount of information available to employers and workers, and the Prevention Division’s role in enhancing awareness and understanding of the regulations. Reportedly, employers and workers, have difficulty at times interpreting the regulations. Additionally, there may be many workers and employers who do not understand their obligations with respect to the regulations.
In interviews, it was suggested that the Prevention Division could do more to assist employers and workers in knowing about and understanding their regulatory requirements. Reportedly, in recent training sessions on the new regulations, a considerable amount of time was spent providing employers with information on the old regulations that remained in effect, and not just on the new regulations.

3.4 Targeting

As discussed above, BC and other jurisdictions are trying to target their enforcement efforts for a more efficient use of scarce resources. BC seems to have had this strategy in place for some time. For example, the Prevention Division’s Policy and Procedure Manual states that:

The Board’s occupational safety and health officers conduct inspections on the basis of a high-hazard priority system; that is those industries which involve a higher risk to workers are inspected more frequently than lower-risk industries.

(Policy No: 1.3.1)

Similarly, the division’s new Draft Prevention Policies state that (A.5.2, p.2):

Board officers conduct inspections on the basis of a high-hazard priority system; that is, those industries which involve a higher risk to workers are inspected more frequently than lower-risk industries.

The Board’s recent Making a Difference report states that “… new strategies are needed to … focus resources for maximum effect (e.g., on industries and firms with highest overall number of claims and injury rates)”.

As with other activities within the Prevention Division and elsewhere in the Board, the division’s targeting strategy was being developed and was changing over the course of the Royal Commission.
The first two WorkSafe strategies state that high-risk industries, and large firms, will be targeted for Prevention Division activity. According to recent interviews, the Prevention Division provides lists of targeted employers to regional offices on a regular basis, and field officers are expected to concentrate their efforts on these targeted employers. Additionally, there have been some changes in the specific industries targeted.

The 1997 Administrative Inventory describes the Prevention Division’s targeting approach as follows (p.112):

This strategy is continually evolving and is derived from firm-based claims and accident information, assembled through the cooperative efforts of Field Operations, the Research and Evaluation Section, Statistical Services, and the AIRS Inquiry team (in ISD). WorkSafe anticipates that more than 40 percent and as much as 60 percent of worksite activities will be concentrated in six high-claim subclasses: logging, building construction, sawmills, heavy manufacturing, hospitals or health care, and trucking. The retail food industry makes up the seventh target area. In this sector, the 10 worst-case firms accounting for 45 percent of the claims are targeted for attention, as are supermarkets with more than 40 short- and long-term disability (STD/LTD) claims in a preceding five-year period. The latter represent about 40 percent of the operating locations in the industry and approximately 75 percent of the injuries. The 1997 WorkSafe plan is reviewing hotels and restaurants for possible exclusion as the eighth key industry.

Targeting enforcement activities to high-risk industries and employers may be a useful strategy, particularly as the Board will never achieve the level of resources required to ensure that all worksites receive regular contact from its prevention staff. It is important that the targeting approach is appropriate (i.e., that it effectively identifies the worksites that are at greatest risk), and that there remain sufficient resources available with which to address the needs of worksites not considered to be high-risk (e.g., to maintain sufficient deterrence, to provide ongoing consultation, to keep up-to-date on hazards and safe work practices).
The 1997 Administrative Inventory argues that the Prevention Division should expand the focus of its targeting system to include additional elements such as worksite hazards, the firm’s compliance history, workplace technologies and work organization, the functioning of health and safety committees, worker involvement in health and safety programs, and industrial relations (p.244).

In late 1997, the Board’s Internal Audit Department prepared a scoping report to outline potential issues and areas of risk for the Prevention Division. The potential issues outlined in the scoping document were to be examined in an audit, which remained to be completed as of the most recent interviews conducted for this report. The scoping document identified the following issues with respect to the Prevention Division’s targeting strategy (p.3-4):

- WorkSafe shifted the focus of Prevention activities from high risk/injury to high claims firms. WorkSafe targeting is heavily dependent on claims data, and less on compliance history, occupational/worksite hazards, workplace technologies, and the functioning of health and safety committees (reported in the 1997 Administrative Inventory). This is largely due to the lack of available accident and injury data, other than claims related data.
- Targeting is based on data (injury rates) that is up to 18 months old and may no longer be relevant. Also, new firms have no claims history and could be omitted from the targeting base.
- Further, for multi-location firms, the payroll data (which approximates the number of employees) cannot be attributed to regions to calculated regional injury rates.
- There may be some difficulty in ensuring a consistent targeting method among a group of geographically dispersed Officers and Managers. Targeting of firms is, for the most part, decided by Officers. Contribution Plans prepared by Officers (sign-off not required) are reportedly reviewed by Managers, but because WorkSafe is a new program, there is little experience on both the parts of the Manager and Officer.
- Regional Managers are instructed to report WorkSafe targets to Central Resources by September 1. Central Resources does not, however, monitor
that the WorkSafe Plan is being consistently applied. It is up to the Regional Managers to monitor this.

- The “2.2 firms per Officer/400 total” formula may result in inefficient allocation of resources (i.e., Officers target firms that fall under WorkSafe Strategies #1 and #2, but the selected firms may not have high injury/claims rates). In some regions, Officer resources are heavily committed to routine inspections and activities because of the nature of the industries in the area, but they must now also take on WorkSafe targets. Other areas may not have many WorkSafe industries and firms, and having to meet the 2.2 figure may result in diminishing returns if the Officer ends up targeting firms that have adequate health and safety programs.

The scoping document also pointed out that various strategies underway within the division may help to reduce some of the problems identified. For example, it is suggested that the AIRS Inquiry, Data Warehouse (Decision Support System), and Prevention Focus projects may provide better data for targeting and a standardized targeting methodology.

In interviews for the Royal Commission, field officers expressed concerns about being able to provide ongoing enforcement efforts while also addressing WorkSafe objectives with respect to targets. It was argued there were a lot of “great new ideas” but that they kept getting added on, so that now there are too many “number one priorities” and not enough clarity from senior management with respect to what the real priorities are: “you can’t accomplish seventeen number one priorities”. It was also noted that, for various reasons, targeted employers may not be those that are most hazardous (for example, as discussed above, they may simply be large employers, or they may be hazardous in one region but not in another).
3.5 Inspections

Number of Inspections

The WCAct provides for inspections by field officers, who must inform both a worker and an employer representative about the inspection once on site. When the field officer has completed the inspection, the officer must fill in an inspection report. The report describes any observed non-compliance with regulations, as well as any orders to take corrective action.

The inspection report is seen a tool for communicating with both employers and workers insofar as it must be posted. Inspections are also seen by the Prevention Division as “the teachable moment,” providing an opportunity to educate employers or workers in avoiding hazards and thereby avoiding accidents.

As discussed above, the Prevention Division has indicated that it has insufficient resources to conduct inspections on a regular basis. This issue has been an ongoing concern. In his 1965 report, Justice Tysoe noted:

There were suggestions from a number of representatives of both labour and industry that there are not sufficient inspectors for the amount of inspection work that should be done. ...It is of little value to promulgate accident regulations unless you are prepared to employ an adequate staff to ensure their enforcement. (p.121)

As discussed above, the number of employers registered with the Board has increased over time, and continues to increase. The number of inspections has declined in recent years. The proportion of inspections, relative to employers, has consequently also declined. These rates are illustrated in Figures 3 to 6.

Five- and ten-year inspection rates presented by subclass show considerable variation. Some subclasses that are not under WCB jurisdiction for prevention, such as mining, would be expected to show low rates of inspection. Some subclasses only came under WCB jurisdiction recently as a result of Bill 63, so there would be few
Figure 3: Number of Employers$^{107*}$

Figure Note: Higher numbers based on number of registered employers provided by the Prevention Division. Lower numbers presented in Board Annual Reports.

Figure 4: Number of Inspections (1976-1997)$^{108}$
Figure 5: Number of Worksites Inspected

Figure 6: Likelihood of Inspection
(Number of Inspections/Number of Registered Employers)
employers in these subclasses that would have been inspected to date. Additionally, some subclasses, such as Labour and Trade Unions (656) and Drafting and Design (747) have such low injury rates (0 and 1 respectively in 1995)111, that they would be expected to receive less attention than other subclasses. However, the 5-year and 10-year inspection rates suggest that for employers in many subclasses, it may be considerably longer than 25 years before they see a field officer. Excluding subclasses with only one or two employers, where 10-year inspection rates for the most part are 100%, only 6 of the remaining 70 subclasses identified had 10-year inspection rates over 50%. A further 6 subclasses had 10-year inspection rates of 40% to 49%, and 10 had inspection rates of 30% to 39%. Less than 20% of employers in subclasses such as Light Manufacturing (603), Clothing and Drape Manufacturing (618) and Grain and Seed Dealers (632) have been inspected in 10 years, and fewer than 10% of employers in subclasses like Apartment Building Operations (622) and Hotels and Restaurants (627) have been inspected in 10 years.

The Prevention Division’s Operating and Financial Report Year End 1996112 reports that “Field services continues to inspect all construction sites in BC.” However, in other data provided by the Board113 the inspection rate for construction trades (subclass 705), building construction (subclass 706), and heavy construction (subclass 725) over a five-year period suggests that this is not the case (705 5-year rate = 29%; 706 5-year rate = 27%; 725 5-year rate = 54%). Similar results were provided for construction over a ten-year period (705 10-year rate = 29%; 706 10-year rate = 27%; 725 10-year rate = 42%). Furthermore, in interviews with the Prevention Division, it was stated that the division is actually unable to inspect all construction sites with the level of current resources.

Most employers registered with the Board are small. Small employers tend to receive proportionally fewer inspections than large employers. For example, data provided by the Board shows that about 7% of small employers (11,466 of 163,885) were inspected in 1996, compared to about 39% of large employers (4,065 of 10,326)114. This has declined since 1990, when about 11% of small employers and 56% of large employers received inspections.

Data provided on the number of employees covered by inspections suggest that more workers may be covered by annual inspections than these numbers suggest. There are
problems with this analysis, however, because it is based on payroll figures for an employer rather than actual number of workers employed, as will be discussed in greater detail below. Using this payroll data, it appears that about 50% of workers were covered by inspections in 1996 -- 14% of workers employed by small employers, and 63% of workers employed by large employers\textsuperscript{115} (see Figure 7).

The analysis of number of employees covered by inspections is based on total payroll for employers inspected. An employer may have several worksites, with only a portion of these worksites inspected in a given year, but the analysis would indicate that workers at all worksites have been covered. The proportion of employees covered is derived from payroll figures, so it is not an exact representation of number of people employed. Finally, the figures provided are for each year separately; they cannot be summed to conclude, for example, that if 50% of employees are covered in one year, 100% will be covered in two years. Very often, the same large employers are subject to ongoing inspection activity each year, whereas a number of small employers may be rarely, if ever, inspected. Bearing these data problems in mind, there appears to have been a gradual decline in the proportion of employees covered by inspections over time. As the number of employers registered with the Board has increased, the number of Field Services staff has also increased, but apparently not sufficiently to maintain the level of inspection activity that was in place several years ago. As discussed elsewhere, other responsibilities that have been placed on field officers in recent years, as well as factors such as increases in leave time, may also explain the decline in activity.

Statistics on the number of reports and/or hours of inspections logged have, historically, been collected and reported over the years. The Prevention Division’s \textit{Monthly Statistical Reports} provide data by number of documents, hours spent inspecting, and the number of inspections by targeted industry (e.g., logging, sawmills, construction). However, similar information by targeted industry on follow-up inspections, orders issued and regulations violated, and the number of penalties assessed are not included.
**Figure 7: Proportion of Employees Covered by Inspections**

![Graph showing proportion of employees covered by inspections from 1987 to 1995 for different employer categories.](image)

*Inspection Consistency*

There have also been concerns expressed about field officer inconsistency in the past, and these concerns arose over the course of the Royal Commission hearings.

The 1997 Administrative Inventory notes:

Like their counterparts in the employer community, labour spoke of inconsistency in WCB inspection and enforcement activities. ...Many labour representatives believe the WCB’s commitment (and duty) to enforcing regulations has deteriorated. There is a perception that field officers have been told to employ a soft approach, write fewer orders, and recommend fewer sanctions. ...Some labour representatives commented that the Prevention Division does not adequately follow-up on its activities -- be they inspection or consultation and program reviews/audits (p.213)
Employers and employer groups ...were pleased with what they saw as a change in the Prevention Division’s approach to occupational health and safety -- that is, a new emphasis on education, consultation, and facilitation. ...Employers continue to complain of a lack of consistency in the WCB’s inspection, enforcement, and sanction processes, which create an uneven playing field for employers and may put some workers at undue risk. They blame this lack of consistency on a variety of factors, including officer recruitment and training, mixed and/or changing messages, inconsistencies among regional managers, lack of performance appraisal and feedback systems for officers, and the tendency of some officers -- as union members themselves -- to identify with workers and unions (p.219, 222)

With significant discretion provided to field officers in policy regarding whether to impose an order and whether to conduct a re-inspection to ensure compliance, and with the fluctuations over the years in Prevention Division philosophy with respect to the soft versus hard approach to enforcement, it should not be surprising that field officers might differ in the way they deal with similar situations. The Prevention Division presumably has access to data that it could use to try and get a more complete picture of the extent to which inconsistency is occurring. This might include, for example, analyzing responses to the 11 Deadly Sins, such as the circumstances under which penalties are or are not being imposed. Additionally, regional statistics on the allocation of orders, warning letters and penalties for comparable firms could be examined in order to determine if field officers in different regions appear to be implementing sanctions at about the same frequency.

There does appear to be some regional variation in the use of enforcement options, according to submissions to the Royal Commission, and as evidenced in patterns of inspections, orders and warning letters applied in the various regions over the past decade (see Table 2 and Figure 8). While the 10-year average number of orders in each region is within 26% of the overall 10-year average (1.53 orders per inspection), the number of warning letters (10-year average across regions is 1 warning letter for every 32 inspections) shows wider variation, particularly in the Kootenay region (1 warning letter for every 19 inspections, a variation of 68%)\(^\text{117}\). There is also variation
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<td>0.007</td>
<td>$4,771</td>
</tr>
<tr>
<td>Surrey/Langley/Abbotsford</td>
<td>8731</td>
<td>1.24</td>
<td>0.022</td>
<td>58</td>
<td>0.007</td>
<td>$4,048</td>
</tr>
<tr>
<td>Prince George/Fort St. John</td>
<td>4079</td>
<td>1.93</td>
<td>0.031</td>
<td>47</td>
<td>0.012</td>
<td>$5,104</td>
</tr>
<tr>
<td>Okanagan</td>
<td>5715</td>
<td>1.41</td>
<td>0.028</td>
<td>49</td>
<td>0.009</td>
<td>$4,285</td>
</tr>
<tr>
<td>South Vancouver Island</td>
<td>3257</td>
<td>1.40</td>
<td>0.031</td>
<td>31</td>
<td>0.010</td>
<td>$5,255</td>
</tr>
<tr>
<td>Courtenay/Campbell River/Terrace</td>
<td>1419</td>
<td>1.76</td>
<td>0.032</td>
<td>12</td>
<td>0.009</td>
<td>$5,244</td>
</tr>
<tr>
<td>Kootenay</td>
<td>2183</td>
<td>1.76</td>
<td>0.052</td>
<td>25</td>
<td>0.012</td>
<td>$4,579</td>
</tr>
<tr>
<td>Average (BC Total)</td>
<td>43091</td>
<td>1.53</td>
<td>0.031</td>
<td>365</td>
<td>0.009</td>
<td>$4,630</td>
</tr>
</tbody>
</table>

**Figure 8: Comparison of Penalties (1997 vs. 10 Year Average)**

[Chart showing comparison of penalties between 1996 and 10-year average for different regions]
in the number of penalties. While Vancouver companies receive an average number of orders and warning letters, they receive 56% more penalties per inspection, although the average dollar value of these penalties is the lowest of all regions.

The variation between regions could be attributed to a number of human and environmental factors. These could include different enforcement approaches used by different inspectors, the types of predominant industries in different regions, and the number of inspections (for example, fewer inspections of a worksite may result in a higher number of orders or warning letters per inspection).

The Board’s Internal Audit Department’s scoping report\textsuperscript{120} for the Prevention Division highlights inconsistency as a potential issue for further investigation:

\begin{quote}
There may be some inconsistency in inspection and enforcement. Different regions and different Officers may use different approaches in inspection and enforcement. Regional Managers rely on Officer’s experience and knowledge to carry-out complete inspections. There is no requirement for management review of inspection reports. Inspection checklists are not used by Officers. However, Regional Services is currently developing/documenting “best practices” for inspections, program reviews, and accident investigations, which could be used as guidelines in the future. (p.4)
\end{quote}

\textit{Quality of Inspections}

The Prevention Division indicates that it is working on improving the “quality” of its inspections. The Royal Commission asked the Prevention Division to provide the following with respect to the issue of quality of inspections\textsuperscript{121}: the way in which the division defines “quality inspections”, the criteria the division uses to ensure that inspections are high quality, the changes that are planned to improve quality, and how these will be monitored. In its response, the Prevention Division stated that “quality inspections” would involve the following:

\begin{itemize}
  \item Officer prepares employee report card in advance of inspection and when on site reviews this with workers and employer representatives so they might
better understand the human and financial costs of their workplace injuries. The report card outlines the highest-ranking occupations in terms of injuries and costs, the types of injuries, the history of a repeated non-compliance.

- Officer evaluates joint OHS committee minutes and activities and looks for opportunities to facilitate improved operations and internal responsibility.

- Officer inspects workplace with employer and worker representatives, writes orders and discusses reasons at closure conference.

- Officer talks to workers and supervisors during the inspection tour to look for opportunities for imparting knowledge/advice (teachable moment) and glean an insight into the commitment to OHS at the workplace.

- Officer offers to arrange professional assistance, if necessary, from engineering, hygiene, occupational health physicians and ergonomists or other board resources.

In terms of criteria, the division stated that whether or not these criteria were complied with should be reflected in the office’s inspection reports. These would “be expected to deal with broad issues relating to the functioning of the health and safety program as a whole (for example, the health and safety committee, accident investigations and inspections), not just individual violations of the regulations”.

With respect to changes and monitoring, the division stated that:

> The main method of ensuring quality inspections is by manager review and supervision of officer’s activities. They do this by reviewing reports of their activities, dealing with complaints and appeals concerning orders, and accompanying the officers on inspections. In addition, the effectiveness of officer’s activities can be monitored by reviewing the injury rates in the firms with which he or she is concerned.
Officers and managers conduct their activities in accordance with the Prevention Division’s Worksafe Plan. The Division also has a policy manual and operating instructions that provide guidelines to officers in their activities and promote consistency. The latter documents must be completely reviewed in light of the new *Occupational Safety and Health Regulations*.

Recent changes to the organization of the Prevention Division will have the affect of removing functions from line managers, thereby giving them more time to supervise officers. These changes will take time to become fully effective.

### 3.6 Accident Investigations

The Prevention Division’s *Draft Prevention Policies* state that (A 7, p.1):

Fatal accidents and most serious accidents are investigated by an officer of the Board. After an investigation, the officer will issue orders that may be required to rectify any violations of the regulations relevant to the accident.

According to the *1997 Administrative Inventory*, between 132 and 379 accident investigation reports were written each year between 1988 and 1996\(^\text{122}\). Using 1996 statistics on work-related fatalities, if all fatalities reported in that year were investigated (182)\(^\text{123}\), then 140 accident reports were written for “serious accidents”, for a total of 322 accident investigations that year. The same year about 189,000 injuries were reported\(^\text{124}\) and approximately 145,000 claims were first paid\(^\text{125}\).

Employers often fail to complete accident investigation reports though the regulations require them to do so\(^\text{126}\). For many accidents, therefore, there appears to be limited information gathered. The Prevention Division has also stated that the only source “where reliable information may be found on the causative effect of violations” is in accident investigations by the Board\(^\text{127}\). Thus, it is only in cases of some serious accidents and fatalities that the Board has accurate information on regulation violations in cases of injury or disease, and these represent less than 1% of injuries and diseases reported to the Board.
Issues with respect to the way in which accident investigations are conducted were not examined for this report. Other Royal Commission research has examined accident investigations with respect to fatalities.

3.7 Enforcement Options

Orders and Warning Letters

Orders are the first stage of sanctions for non-compliance, followed by warning letters. The Draft Prevention Policies state that:

(Policy A6 p.1)
An employer has an obligation to obey the regulations, not simply to obey orders of the Board’s officers after a violation, injury or disease has occurred.

Section 71 (2) of the WC Act states:

The board may issue orders and directions specifying the means of requirements to be adopted in any employment or place of employment for the prevention of injuries and occupational diseases.

(Policy A9 p.1)
The Division may send a warning letter to the senior management of a firm to draw attention to repeat orders, or to reinforce the seriousness of first time violations which present a high risk of severe injury or occupational disease.

...When a follow-up inspection reveals continued or repeat violation of the same section or sections of the regulations, the officer will normally issue repeat orders and recommend an additional assessment or prosecution.

The Board issued 54,137\textsuperscript{128} orders and 663 warning\textsuperscript{129} letters in 1997. The distributions of orders and warning letters over the past several years are presented in Table 3, and in Figures 9 and 10.
Table 3: Orders and Warning Letters

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Orders</td>
<td>61643</td>
<td>80455</td>
<td>77617</td>
<td>63786</td>
<td>58852</td>
<td>67262</td>
<td>53264</td>
<td>54137</td>
<td></td>
</tr>
<tr>
<td>Warning Letters</td>
<td>1506</td>
<td>1912</td>
<td>1361</td>
<td>1309</td>
<td>1246</td>
<td>1005</td>
<td>1100</td>
<td>790</td>
<td>663</td>
</tr>
</tbody>
</table>

Figure 9: Total Number of Orders

Figure 10: Number of Warning Letters
A concern expressed to the Royal Commission was that workers could not appeal the field officer’s decisions when orders and penalties were not applied. In some cases, workers perceived that field officers were too lenient, and they argued that it was not fair to allow employers to appeal issuance of sanctions with no similar right for workers to appeal non-issuance. Nova Scotia has recently made changes to its Occupational Health and Safety Act that provides both employers and employees the right to appeal decisions of officers.\(^{133}\)

Clearly, a large number of employers are in non-compliance with the regulations. According to information supplied by the Board to the Royal Commission, between 1988 and 1996, 42% to 56% of employers who were inspected received at least one order.\(^{134}\) Furthermore, those employers who receive an order usually receive more than one order. In 1996, for example, 53,264 orders were written for 17,468 employers, or an average of 3.05 orders per employer. These violations would be expected to vary in terms of seriousness and degree of risk. The present research did not examine this issue, but the Prevention Division has the information to be able to do so (at least with respect to the specific regulations cited in orders).

The Prevention Division’s Draft Operating Instructions include a general section on “follow-up inspections” (A5.5), as well as a specific section on follow-up on warning letters. These instructions were formerly contained within the division’s Policy and Procedure Manual, which was under revision at the time that this report was being drafted. The general section on follow-up inspections states that (A5.5 p.2):

> A follow-up inspection may be conducted to determine whether the orders issued on the last inspection have been complied with. Follow-up inspections are generally limited to activities or items cited during the last inspection and investigation of hazards reported since then.

The employer’s and the workers’ representative will be contacted at the start of the inspection and have a right to accompany the officer.
If a person has failed to comply with an order issued during a previous inspection the order will be re-issued and the officer may require the person to notify the Board when he or she has complied.

Orders will be issued for new hazards observed during a follow-up inspection.

The former *Policy and Procedure Manual* appeared to give less discretion with respect to follow-up, stating “A follow-up inspection *is conducted…*”, rather than *may be conducted*, as above. In the discussion on follow-up to warning letters, the *Draft Operating Instructions* state that (A9.1 p.1):

> A warning letter will be followed up within three months of the letter being sent. The officer will generally do a follow-up inspection after allowing reasonable time for senior management of the firm to react to the content of the letter.

The Prevention Division’s former *Policy and Procedure Manual* included the statement that (Policy No:1.4.1-2, page 1):

> In no case shall the follow-up inspection be delayed longer than three months.

The Prevention Division has made it clear that it is unable to inspect all British Columbia worksites, write orders, and then return to conduct follow-up inspections on a regular basis. Although the division’s policies seem to have indicated that orders are generally to be followed up with inspections, statistics provided to the commission show that field officers conduct follow-up inspections to confirm compliance with orders for corrective action for only 15% to 19%\(^{137}\) of inspections. Limited resources may constrain the level of re-inspection possible as field officers try to get out to as many worksites as possible, at least once in the year. Also, when follow-up inspections are not conducted, the Prevention Division reports that follow-up is done in alternative ways\(^{138}\). However, it would be important to identify the extent with this rate of on-site follow-up is sufficient to ensure that Prevention Division orders and the remedial steps required are taken seriously within the workplace. This may be an area for further research by the Board.
In particular, it would be important to identify the circumstances under which on-site follow-up is or is not being carried out, as well as the level of compliance that is observed on follow-up. This would be important to assess for follow-up after all levels of intervention — orders, warning letters, and penalties.

Data provided by the Prevention Division suggests that most, but not all, warning letters are followed up. The proportion of warning letters followed up by subsequent inspections appears to have declined somewhat since 1990. In 1990, 99% of warning letters were followed up with subsequent inspections, whereas for 1994, 1995 and 1996 the figures provided by the Prevention Division were 95%, 92% and 90%, respectively (see Table 4). The Prevention Division’s former Policy and Procedure Manual, and the current Draft Operating Instructions, provide clear direction with respect to follow-up on warning letters and the time frame in which these are to occur. Neither document appears to provide direction on follow-up to penalties.

A 1995 Audit of Field Services identified a number of issues with respect to follow-up procedures within the Prevention Division. The following are among its conclusions (p.6):

- The overall degree or timeliness of compliance with Prevention Division orders could not be determined due to the lack of an independent or universal process for confirming order compliance. Compliance verification was primarily performed by, and at the discretion of, the officer issuing the order.
- The automated system for managing order follow-up procedures could not be relied on to identify the degree of follow-up decided upon by the officers, as follow-up decisions were not consistently recorded on the system.
- The review of 34 instances in which a Warning Letter was issued to an employer revealed that in 14 cases some form of on-site follow-up was performed within 3 months of the letter. Of these 14 instances, only 2 were formally recorded on the Order Tracking system as “Follow-up inspections”. Prevention Division follow-up procedures for Warning Letters state that follow-up inspections must be performed within 3 months.
Table 4: Warning Letters and Follow-Up

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Warning Letters Issued</th>
<th>Number of Penalties downgraded to Warning Letters</th>
<th>Warning Letters followed up by subsequent inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>663</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>1996</td>
<td>774</td>
<td>29</td>
<td>720 (90%)</td>
</tr>
<tr>
<td>1995</td>
<td>1091</td>
<td>51</td>
<td>1050 (92%)</td>
</tr>
<tr>
<td>1994</td>
<td>993</td>
<td>23</td>
<td>970 (95%)</td>
</tr>
<tr>
<td>1993</td>
<td>1204</td>
<td>70</td>
<td>1264 (99%)</td>
</tr>
<tr>
<td>1992</td>
<td>1291</td>
<td>58</td>
<td>1323 (98%)</td>
</tr>
<tr>
<td>1991</td>
<td>1314</td>
<td>80</td>
<td>1383 (99%)</td>
</tr>
<tr>
<td>1990</td>
<td>1876</td>
<td>78</td>
<td>1928 (99%)</td>
</tr>
</tbody>
</table>

The last observation suggests that in 20 of the 34 cases audited, the procedure of follow-up inspection within 3 months following inspection was not carried out. Management’s written response to the audit at the time was that an operational procedure was instituted in 1994 to instruct officers to record inspections as follow-ups when appropriate such as after a warning letter was sent, and that the officers had been instructed to perform follow-ups on all firms that received warning letters (p.7).

It is also noted that a policy amendment was approved in November, 1994 which requires employers to post their responses to inspection orders so that workers are aware of actions taken.

Penalties

The Prevention Division’s *Briefing* document states that: “The Board has three main methods of enforcing compliance with the regulations if a person to whom an order has been issued does not comply:

- Additional assessments
- Closure Orders
- Prosecutions in the courts

Further, it states that “The most common means used by the Board to enforce the regulations is by levying additional assessments against employers under section 73(1) of the *WCAct*. “. The division’s *Draft Prevention Policies* state that an additional assessment will be considered when (A10.1, p.2):
1. an employer knowingly or with reckless disregard violates one or more sections of the regulations,
2. an employer is found in violation of the same section on more than one occasion, or different sections on more than one occasion where the number of violations indicate a general lack of commitment to workplace safety, or an employer has failed to comply with previous orders, or
3. an employer is found in a violation involving high risk of serious injury or occupational disease, or death.

The Prevention Division’s Draft Prevention Policies (A.10.2) contains a schedule of recommended sanctions, which vary by size of employer and “violation category”. The maximum penalty, or “additional assessment”, for a first time violation is $19,000 for the largest employer and $2,500 for a small employer, and can be applied for a Category A violation. Category A violations include the following situations:

- Serious injury or disease, or death;
- High risk of serious injury or disease, or death;
- Non-compliance was willful or with reckless regard.

Maximum penalties for less serious Category B violations are half of what they are for Category A violations (i.e., maximum $9,500 for the largest employer).

With respect to repeat violations and penalties above the maximum, the Draft Prevention Policies state that (A10 p.7):

Where notification of a proposed additional assessment is sent to an employer within 3 years of a decision imposing a prior additional assessment for the same or a similar violation, the relevant amounts under the tables are increased by 100% on each occasion. For example, if an assessment is proposed after 3 prior assessments within the 3 year period, the relevant amounts under the table would be increased by 300% (100% + 100% + 100%).
The Prevention Division has stated that between 1987 and mid-1997, a total of 19 employers received the maximum penalty of $30,000\(^{142}\) (Note: This was the maximum according to the Prevention Division policy at the time). Over this same time period, twelve employers received penalties in excess of $30,000\(^{143}\), presumably as a result of repeat and multiple violations. The Prevention Division was asked to provide the Royal Commission with the reasons why these employers had received penalties in excess of $30,000, and the division provided the following response\(^{144}\):

Each case depends on its facts to a large extent. To give reasons, it would be necessary to review each of the 12 files involved and summarize the case. Based on the data on the computer, the cases can be roughly categorized as follows:

- Fall protection 2
- Supervision, training and instruction 4
- Excavations 2
- Power line contact 1
- Coordination of subcontractors 1
- Explosives 2

Several other jurisdictions have questioned the extent to which their financial sanctions are high enough to serve as sufficient deterrents to employers, and have made recommendations to increase these sanctions (for example, to $250,000 in Nova Scotia; to $500,000 for corporations in Australia). Penalties for violations of environmental regulations can be in the millions of dollars.

The Prevention Division was asked to provide the Royal Commission with the following data on penalties:

- the number of penalties applied and collected over the past twenty years\(^{145}\);
- the proportion of inspections that have resulted in penalties over the past five years\(^{146}\); and,
- the proportion of inspections resulting in penalties that are followed-up with subsequent inspections\(^{147}\).
The Prevention Division was able to provide information on the number of penalties applied\textsuperscript{148}, but was unable to provide data on the number of penalties collected, because this is administered by the Assessment Department where sums received are not tracked by the type of payment owing\textsuperscript{149}:

| Penalties applied by Variance & Sanction Review are collected by the Collections Section of the Assessment Department. An employer will receive a statement detailing what items are being billed in what amounts. Upon request by employers, a statement could be reproduced for on an individual basis. However, once payment is received, the Assessment Department does not track whether the sum received was applied to an OHS penalty amount owing or other amounts owing (this includes other penalty amounts such as those that may be owing to compensation services); any sums paid are simply applied to the balance owing. Payment received is applied to an outstanding balance, not to a particular item purchased with the card. Assuming the Assessment Department follows through with timely collection of payments owing, this may have the same effect as if penalty collections were carried out by the Prevention Division. It does appear to be an area where the Prevention Division could assume some additional responsibility, however, at least in identifying if and when the penalty has been paid. There does not appear to be a specific policy with respect to follow-up after penalties are applied. Since orders and warning letters precede penalties, presumably the policy with respect to orders and warning letters would be in effect. The Prevention Division was unable to provide information on the proportion of inspections resulting in penalties that are followed up with repeat inspections. The division’s response to this request was as follows\textsuperscript{150}:

| The Information Services Division would have to run a report showing all Sanction Review numbers. Once this was received, the Variance and Sanction Review Section would have to check each SR number on mainframe, to see

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\textsuperscript{148} The number of penalties applied.

\textsuperscript{149} The type of payment owing.

\textsuperscript{150} The division’s response to the request.
which employer this applied to. After the employer’s number was obtained, the section would have to enter that into the system and review each firm’s history individually, checking to see any inspections done after the penalty and which of those inspections were on the same topic. The time estimate to complete this request is: 80 working days (About 7,000 data entries).

This kind of data would probably help the Prevention Division to monitor its activities and to achieve a better understanding of whether the elements of its enforcement activities are being carried out as they are expected to be, and to what extent these kinds of activities have an effect.

Over the past twenty years, the Board has applied annual penalties ranging from a low of 52 in 1978 to a high of 543 in 1990\(^\text{151}\). In 1990, there were 106,088 employers\(^\text{152}\) and the total value of the 543 penalties applied was $2,591,750. Since that year, penalties have fluctuated between 437 in 1991 to 260 in 1996, and from $2,190,250 in 1991 to $1,133,250 in 1996. In 1996, there were 149,582 registered employers\(^\text{153}\), and 260 penalties were applied. The number of penalties, total penalty dollars, and average dollar value of penalties, from 1987 through 1996, are presented in Figures 11 through 13.

According to policy, the Prevention Division will take a firm stand with respect to violations when it comes to 13 “High Risk Work Situations” or what were previously known as the “Eleven Deadly Sins”. These 13 High Risk Work Situations are listed in the Draft Prevention Policies (A10.1.3), including:

1. Working in an excavation over 4 feet deep without adequately supporting or sloping the sides of the excavation or adopting other safeguards allowed by the regulations.
2. Working within the specified minimum distances from unguarded overhead energized high voltage electrical conductors without complying with the requirements of the regulations.
Figure 9: Number of Penalties 1987-1996

Figure 10: Total Penalty Dollars 1987-1996
3. Working on equipment that is not locked-out when required.

3. Permitting workers to be exposed to situations or conditions that are immediately dangerous to life or health, including:
   a) Allowing workers into a confined space without following proper procedures.
   b) Exposing inadequately protected workers to an atmosphere where the concentration of oxygen or toxic air contaminants might cause immediate death or serious injury.
   c) Exposing workers to a potential explosion from surrounding materials

5. Permitting inadequately protected workers to be exposed to conditions that are likely to cause a chronic health effect. This includes, allowing workers to be exposed unprotected to airborne asbestos fibres or isocyanate vapours.

6. When operating mobile equipment:
   a) failing to have rollover protective structures (ROPS) on equipment where required by the regulations.
   b) failing to install or use seat belts where required by regulation.

7. Failing to fell all snags as required by the regulations.

8. Using domino falling procedures.

9. Leaving cut-up trees.
10. Failing to take appropriate measures to control the fall of trees, for example, not leaving sufficient holding wood, carelessly cutting off corners of holding wood, not placing the backcut higher than the undercut, failing to use wedges or failing to have wedging equipment immediately available.

11. Permitting workers, other than the faller and other persons permitted by the regulations, to be within the minimum two tree lengths of the tree being felled.

12. Allowing workers to work at elevations above 3 metres (10 feet) in height where there is a potential for a fall and the workers are not protected from falling by guardrails, harnesses or other effective means.

13. Allowing excavation work to sever an underground gas line or contact a buried, energized high voltage line.

As is illustrated above, five of the High Risk Violations apply to logging.

The following directions are provided in the recent Draft Prevention Policies (A10.1.3, p.3):

An additional assessment may be considered if an employer is found in a violation involving high risk of serious injury or occupational disease, or death. This will be determined in each case on the basis of the available evidence concerning the likelihood of an injury, disease or death occurring, the number of workers affected and the likely seriousness of any injury or disease.

Where an additional assessment is considered for a violation on the list set out below, the violation is assumed to be high risk in the absence of evidence showing the contrary.

More detailed guidelines with respect to the issuance of additional assessments are set out for field officers in the Draft Operating Instructions (A10). Included within these operating instructions, as it had been in the previous Policy and Procedure Manual (No: 1.4.3, p.1) are the following instructions (A10.1.3, p.1):

Whenever an officer observes one of the practices assumed to be high risk in policy 1.4.3, the officer must not only issue remedial orders but
also consider recommending an additional assessment. Where the officer considers such a recommendation is inappropriate, the officer must still issue the orders and document the reasons.

Based on this policy, it was expected that there would be a high number of penalty assessments when one of the High Risk Violations was witnessed on inspection, and that this would be an important area where field officer consistency could be monitored. The Prevention Division was asked to provide the commission with the number of cases in the past five years where one of the 11 Deadly Sins had been observed on inspection, and how many had resulted in penalties. The division replied that there is no definitive list of regulations applicable to the 11 Deadly Sins, but it was able to site several regulations that would apply. The proportion of inspections resulting in penalties for violations of these regulations was calculated to be about 5% -- or 1,000 penalties in 19,303 inspections where these violations had been observed on inspection within the past five years. The Prevention Division provided a number of reasons why penalties might not be applied under these conditions, such as when a variety of other indicators suggest that the employer has been sufficiently diligent (e.g., evidence that training was provided, functioning OSH program, etc.).

The Prevention Division was also asked to provide the Royal Commission with information on the number of employers who are in compliance on follow-up inspection, but the division was unable to provide this information. The division does not appear to have a process in place to track compliance levels after enforcement activity.

The 1997 Administrative Inventory reports that among the issues raised by labour representatives in their interviews was that the Prevention Division "does not adequately follow-up on its activities -- be they inspection or consultation and program reviews/audits."

Closures

Closure orders issued by field officers are covered under Sections 70(1)(c) and 74(1) of the WCAct. Field officers may issue closure orders effective for up to 24 hours; if an
employer continues in non-compliance, the Board may shut down an operation for a longer period of time. The policy with respect to closure orders appears in Draft Prevention Policies (A11), and procedures for closure orders are detailed for field officers in Draft Operating Instructions (A11).

The Prevention Division reports having issued five or fewer closure orders per year over the past twenty years\textsuperscript{160}, with the one exception occurring in 1990 where there were 12 closures. Since 1991, most years have seen either 2 or 4 closure orders. Few employers have received two or more closure orders: in 1991 and 1992, one employer had two closure orders, and in 1992 and 1994 one employer had a closure order in each year\textsuperscript{161}.

Prosecutions

The Prevention Division can use prosecutions as a further step to enforce adherence to health and safety regulations. Prosecutions are covered in Draft Prevention Policies (A12) and in corresponding Draft Operating Instructions (A12).

The Prevention Division reported that between 1976 and 1986, there were 17 prosecutions pursued against employers, and 12 pursued against workers or supervisors. There are currently 11 prosecutions in process\textsuperscript{162}.

\textbf{3. 8 Appeals}

Informal Appeals/Reviews

Within the Prevention Division, for some decisions, the first level of informal appeal is to have the decision reviewed by the officer’s Regional Manager. After this, a review can be requested at the level of the Director of Field Operations, and after this, at the level of Vice-President of the Prevention Division.

However, there are different appeal options, depending upon the decision being appealed.
Employers can request variances to existing regulations through Variance and Sanction Review (VSR). As stated in the 1997 Administrative Inventory (p.155) “employers can secure a review of variance decisions through the Variance and Sanction Review unit, although the Policy Manual is silent on how an employer might further appeal such a decision.” It appears, according to the Draft Prevention Policies (B2.5, p.2), that appeals to the Vice-President are the highest level of appeal possible on variance decisions.

The Prevention Division’s Draft Prevention Policies addresses informal appeals with respect to orders in section A 6.5, Appeals Concerning Orders, and formal employer appeals of penalty decision in section A 10.6, Appeals Concerning Additional Assessment. The former policy states, in part (A6.5, p.3):

As officers of the Board carry out inspections and issue orders or directives, there will, at times, be disagreement with employers, workers or other parties at the workplace.

…If the parties and the officer cannot resolve a dispute, section 2.6(2) of the OHS Regulation provides a right of appeal. It states that “any person affected by an order or directive issued by an officer, or by the decision of an officer not to write an order or directive under this Regulation, may appeal to the board.”

The Board recognizes three levels of appeal where no additional assessment is proposed in respect of an order:

1. The employer or other person concerned may, within 90 calendar days of the issue of the order or the decision not to issue an order, request a review or a hearing with the officer’s manager.
2. Should the decision of the manager not resolve the disagreement, the affected person may, within 60 calendar days of the manager’s decision, appeal to the director of the manager’s department or another assistant director or director assigned that function in writing by the vice-president.
3. If the above steps fail to resolve the issue, an appeal can be made, within 60 calendar days of the decision under step 2, to the vice-president.
The Prevention Division was unable to provide information to the Royal Commission on informal appeals against orders. The division reported that they had only just recently begun to track appeals, and then only for appeals to the Director and to the Vice-President\textsuperscript{164}.

Penalty recommendations by field officers are reviewed and finalized by Variance and Sanction Review.

The 1997 \textit{Administrative Inventory} states that (p.153):

There are both informal and formal avenues of appeal within the WCB for employers who disagree with the outcome of an inspection. The informal process of disputing orders and warning letters entails interaction with officers, managers, and others within the Prevention Division. The first-level of the formal appeal process is conducted by the Variance and Sanction Review (VSR) unit in the Prevention Division. VSR hears disputes about recommended sanctions (penalty assessments). Employers can appeal the results of this process to the second level of appeal, which is conducted by the Appeal Division. Workers and their unions have the right to participate in all formal and informal appeal processes.

With respect to penalties and the VSR process, the 1997 \textit{Administrative Inventory} (p.4) states that:

…an officer’s recommendation for a penalty assessment is reviewed by his Regional Manager who forwards it to VSR, along with copies of relevant inspection reports, photographs, and the officer-prepared summary of information outlining why a penalty should be considered. A “show-cause” letter is issued… Upon receipt of the letter, the employer has 21 days to submit a written reply or request an oral penalty review. A penalty officer in VSR reviews the written submission or conducts the hearing. No suspension of compliance orders is permitted during the review process.
The Variance and Sanction Review process does not operate like a managerial review process. As described by the Prevention Division, its role is as follows:

(The Variance and Sanction Review) section makes the initial decision on the additional assessment. It is not a review process. Policy 1.4.1-1 of the Prevention Division, *Policy and Procedure Manual*, allows a Variance and Sanction Review Officer to reconsider a decision. However, it is rare for this to occur and there are no statistics on it. There is no other right of review for the employer within the Prevention Division. The employer must launch an appeal to the Appeal Division.

It appears, therefore, that the Variance and Sanction Review process is an administrative process in place to provide a separate assessment of the merits of a penalty recommendation. This is an automatic process that occurs for all field officer penalty recommendations. It is unlike other managerial review processes, whereby the employer requests a review of a decision that was made and the manager reconsiders it. In Variance and Sanction Review, employers can participate if they choose to do so and present their case against receiving a penalty, and this information is considered in the decision. However, the decision on a penalty is never final until the Variance and Sanction Review process makes that decision (i.e., a penalty decision is never a final decision of a field officer), and after that, it appears that for the most part employers take their appeal outside the division to the Appeal Division.

The 1997 *Administrative Inventory* notes that in the last few years, about 85% of the decisions reviewed by Variance and Sanction Review have resulted in the imposition of penalty assessments, although the total dollar amount of the penalties was reduced after review. The *Administrative Inventory* also states that in recent years fewer penalties are being taken to the formal appeal process after being imposed by Variance and Sanction Review.

Some interviewees suggested that the various informal review options rarely result in satisfaction from the point of view of the employer, and that they tend to delay the process.
Formal Appeals

Unlike other types of Board decisions, Prevention Division decisions on penalties can only be appealed at one formal appeal level – the Appeal Division.

The Appeal Division hears the following types of employer appeals of Prevention Division decisions:\(^{169}\):

1. Section 73 prevention penalty appeals under Section 96 (6) (c)
2. First-aid penalties levied under Section 70

The Prevention Division’s Draft *Prevention Policies*\(^{170}\) A10.6., addresses employer appeals of penalty decisions, as follows (A 10.6, p.11):

The decision of an officer to levy an additional penalty assessment may be appealed to the Appeal Division under section 96 (6) of the *WC Act* or, in the case of an assessment for a first aid violation, under section 96 (6.1), on the grounds of error of law or fact or contravention of a published policy of the Governors. An appeal must be commenced within 30 days of the decision or within a longer period the Chief Appeal Commissioner may allow.

In recent years, about one-quarter of those penalties that are not withdrawn or reduced by VSR are brought to formal appeal (data presented in 1997 *Administrative Inventory*\(^{171}\)). The number of VSR decisions being appealed by employers has steadily declined since 1991 (data presented in 1997 *Administrative Inventory*\(^{172}\)). For example, in 1992, fully 69% of VSR decisions were taken to the formal level of appeal.

More VSR decisions have been upheld by the Appeal Division in recent years. For example, in 1991 and 1992, about 30% of appeals of VSR decisions were allowed, compared with less than 10% in 1996 and 1997\(^{173}\).

Data on formal appeals of penalty decisions are presented in Table 5.
Table 5: Employer Appeals of Prevention Division Decisions to the Appeal Division

<table>
<thead>
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<tr>
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<td>88</td>
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<td>9</td>
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<td>94</td>
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<td>79</td>
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<td>6</td>
<td>3</td>
<td>8</td>
<td>3</td>
<td>4</td>
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<tr>
<td>Total Decisions (see Note 2)</td>
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<td>9%</td>
<td>8%</td>
<td>13%</td>
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</tr>
<tr>
<td>Other (see Note 2, 3)</td>
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<td></td>
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<tr>
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<tr>
<td>Deny</td>
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<td>7</td>
<td>18</td>
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<td>8</td>
<td>23</td>
<td>8</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Allow Rate</td>
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<td>17%</td>
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<tr>
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<td>148</td>
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<td>9%</td>
<td>10%</td>
<td>12%</td>
<td>8%</td>
<td>9%</td>
</tr>
</tbody>
</table>

3.9 Effectiveness

It is probable that the effectiveness of enforcement activity is dependent upon a number of factors, including:

- the relevance of the regulations being enforced (i.e., the extent to which the regulations address important workplace hazards)
- the reasonableness of the regulations (i.e., the extent to which they provide useful information with respect to the hazards, potential consequences, and risk control measures)
• the extent to which employers and workers are aware of and understand their responsibilities with respect to the regulations
• the likelihood of receiving an inspection to monitor compliance with the regulations
• the usefulness of the inspection (i.e., the extent to which the inspection addresses relevant regulations and hazards, and the extent to which it provides the appropriate information, orders for change, and/or further incentives)
• the technical feasibility of being able to make the change recommended as a result of the inspection (e.g., amount of time allotted, amount of change required)
• the likelihood of follow-up occurring on orders and other incentives (e.g., warning letters and penalties) to ensure that there has been compliance
• the likelihood of receiving any further consequence for continued non-compliance (e.g., closure, financial penalties, prosecutions)
• the size of the penalty for continued non-compliance

The Royal Commission asked several questions of the Prevention Division with respect to measurement of effectiveness. One of these questions pertained specifically to orders, as follows: What evidence does the Board have that orders are an effective way of improving safety? The Prevention Division’s response is presented in part below: 

Employers and workers are required to comply with the regulations on their own initiative. Their responsibility does not commence when a Board officer visits their business, finds a violation and issues an order. One of the main functions of the order is simply to point out and record that a violation of the law has occurred. Therefore, the effectiveness of orders really hinges on the effectiveness of the regulations.

…the Board has not until recently carried out formal research into the occurrence of injuries and diseases in order to determine the effectiveness of its activities. This does not mean that there is no evidence to support the need for the regulations and their contents. The regulations are based on the accumulated experience of the Board, workers and employers as to what causes injuries.
Many of the regulations are based on intuitively obvious notions as to safety, for example, that a dangerous moving part on a machine or a deep pit should be guarded to prevent persons falling into it.

Where a Board officer visits a site for the first time, he may write several orders. The officer will usually follow up the inspection a few weeks later. Usually, the officer will then find compliance with the regulations or at least fewer violations than before. It is a matter of common sense that, if the regulations are accepted as promoting health and safety, the effect of the order is to improve the safety condition of the workplace.

There are many factors, however, that can influence whether or not orders are effective, such as the extent to which officers are citing regulations that are truly relevant to health and safety at that worksite. Where knowledge is sufficient and incentive is required to ensure that a change is made, there may need to be on-site follow-up to ensure that the change was made, consequences if the change was not made, and then follow-up again after the consequence to ensure that the change was made. According to research discussed below, in some cases it may be the occurrence of the inspection that leads to a change, but the extent to which a consequence (i.e., penalty) for non-compliance occurs as a result of the inspection.

As discussed earlier, when the Royal Commission asked the Prevention Division to provide information on (1) the proportion of orders that are followed up with repeat inspections, and (2) the level of compliance when these follow up inspections are made, the data provided indicated that only between 15% and 19% of orders are followed up with repeat inspections\textsuperscript{176}. Information requested on the level of compliance observed on these follow up inspections was never received.

Furthermore, the regulations have been outdated for some time and the Prevention Division does not assess the extent to which accidents occurring today are a result of current regulation violations or other factors. Monitoring the extent to which regulation violations are associated with injuries and disease does not appear to be a priority for the division.
The Prevention Division was asked to confirm that there was no process in place to systematically collect and analyze data on the specific regulations violated in the case of an accident or injury. The Prevention Division confirmed that this was true, but provided an explanation. Part of this explanation was as follows:

Regulations are needed to provide a minimum legal standard over the long term but are more of a final resource if education and consultation fail. It would nevertheless be desirable to have good data linking claims to violations but for several reasons this may only be possible to a limited extent.

…In order to relate accidents or injuries to violations, a system would need, firstly, a way of categorizing accidents or injuries and, secondly, a process for assigning specific regulation violations to accident/injury causes. The Board’s Statistical Department has the first but not the second. Prevention Division officers who investigate accidents can do the second but do not now have access to the first. Nor is there an effective way of electronically recording their findings. The Board is considering an electronic accident investigation system for officers but this would not solve all the problems. There could be a significant cost in increasing the amount of accident investigations in order to obtain data regarding regulation violations for a larger number of accidents.

The Prevention Division also appears to have limited information on the extent to which employers and workers are aware of and understand the regulations.

In other questions, the Prevention Division was asked to describe any research that had been done on the effectiveness and efficiency of prevention programs, including assessments of impacts of inspections, penalties, orders, or policy changes, and any comprehensive evaluation studies. As noted above, the Prevention Division’s response was that in the past, separate research into the effectiveness of Prevention Division programs had not been conducted. The division also reported that:

Prior to 1994, the focus of the Prevention Division tended to be more on compliance with the regulations. This meant that the main measures used to evaluate results were number and type of inspections, orders, penalties and
other such occurrences. However, reduction of injuries was never absent as an objective.... The “Worksafe” strategy under which the Board has been operating since about 1994 still emphasizes regulatory compliance. However, it attaches central importance to occupational injury and disease reduction. …In 1996, a Research and Evaluation Section was created to obtain the necessary data and support the system. It issues reports on industries analyzing the data and suggesting the problem areas. The system is also evaluated in part using the same data through the issuing of monthly and quarterly reports. An Evaluation Strategy for the Worksafe Key Performance Indicators has been developed.

In response to the above question, the division also attached a number of recent surveys and reports, some of which are discussed below, and others of which are summarized in the Appendix.

The Prevention Division regularly monitors overall injury rates and claims patterns for targeted industries. Issues with respect to claim and injury rates as indicators of performance have already been discussed at length earlier in this report, as have the findings over the past few years with respect to STD, LTD and Fatals for targeted industries. Royal Commission researchers were informed in interviews that there are no available comparisons as of yet on claim patterns for regionally-targeted firms relative to non-targeted firms.

There have apparently been some other analyses of enforcement impacts examining patterns in claims data in the past. These analyses were not included by the Prevention Division in the list of research on the effectiveness of Prevention Division programs, but they are referred to by the 1997 Administrative Inventory, as follows (p.101):

Paradoxically, changes in claims rates are not seen in those subclasses that have experienced the greatest change in inspection activity (Mason, 1995b). Some field officers suggest that this might be explained by inspections that continue to focus on the plant and its violations of regulations, rather than on the source of the accidents/injury, which might require intervention beyond regulatory compliance. To help resolve this apparent anomaly, Statistical Services has suggested matching the 400
firms identified for 1997 targeting (through the excess injury approach) with appropriate comparison firms. Statistical Services will then compare their relative injury experience in 1997 and beyond. Although there will be limitations on the validity of what can be concluded from this approach, it is expected to advance the WCB’s knowledge base of injury prevention.

There have been two Administrative Inventories that have examined the Prevention Division, as well as Internal Audits conducted through the Board’s Internal Audit Department. The Administrative Inventories address a number of positive features of the Prevention Division as well as some of the concerns. Many of the points raised by the Administrative Inventories, and by the audits, have been highlighted in this report.

A pilot survey on Field Services was conducted in 1997 to assess employer and worker satisfaction with field officers’ worksite visits. The survey assessed overall satisfaction with the visit, perceived value of the visit in enhancing health and safety at the worksite, accuracy of information provided, professionalism and courteousness, ability to answer questions, and knowledge of and use of various WCB publications. Two regions were assessed, using two different distribution methods. In one region, 211 surveys packages were mailed out after the visit, with two copies of the survey in each package or a total of 422 surveys, and 77 usable surveys were returned, for a return rate of 18%. In the other region, field officers left the surveys at the worksite after their visit. The report notes that “It is difficult to quantify the exact number of surveys that were actually delivered by officers and left at worksites”, but only 13 were returned. Consequently, the analysis was based on 90 usable surveys, with about equal numbers of employer and worker respondents (44.4% and 41.1% respectively), and about 13% “other” (e.g., supervisors).

Seventy-three percent of respondents reported that the purpose of the visit was inspection, in comparison with 9.0% who reported the visit was for consultation, 3.4% for education, and 4.5% for accident investigation. Satisfaction levels were between 4 and 5 on a 5-point scale (5 = high satisfaction) with, for example, a score of 4.31 on overall satisfaction, and a score of 4.34 on the value of the visit in enhancing health and safety at the worksite. Workers and employers were about equally satisfied on all measures. Respondents were also asked to indicate if they were aware of and had used other
Board services (from a list of 10 other services), and to indicate their levels of satisfaction with these services. Six of the ten services were used by at least 15 of the 90 respondents in the past 6 months, including posters, publications, First Aid, AIRS, Hearing Conservation, and the Information Line. Of these, satisfaction was highest for First Aid (4.0) and lowest for AIRS (3.47). (Satisfaction levels reported by less than 15 respondents excluded).

According to the Prevention Division’s First Quarter Report of 1998, a satisfaction survey was also sent in the last quarter of 1997 to employers and workers after a visit by a Prevention Officer. In this report and in interviews it was noted that a postal disruption impeded the survey, but the report states that over 400 surveys were returned from five regions (the total number of surveys distributed was not indicated in this report). Some of the findings were as follows: 70% were satisfied with the Prevention Officer’s ability to answer questions; 74% were satisfied with the officer’s professionalism and courteousness; 67% were satisfied with the accuracy of the information provided; and 63% were satisfied with the value of the visit in terms of enhancing health and safety.

In interviews, some concern was expressed about the methodology used for the field officer survey, in particular, that responses to the survey were sometimes given in the presence of the field officers whose work the employer was commenting upon.

Some field officers also pointed out in interviews that “our job is sometimes making people unhappy” (for example, by writing an order or penalty to require an employer to make a change he/she might not otherwise make), so that measuring results by how many people are satisfied is not necessarily always appropriate for the division.

Available research evidence from other jurisdictions suggests that enforcement is not always effective in promoting workplace safety; however, it is not clear that the enforcement approach being assessed was sufficiently resourced to provide a realistic deterrent effect. Low penalties have been cited as a possible explanation for the limited deterrence effect (Research discussed in the Appendix). As discussed above, there may be other aspects of enforcement activities that make them more or less successful, such as the quality of the inspection and the extent to which it focuses on issues and processes that are critical to improving health and safety within each particular worksite.
Studies that examine changes that occur amongst employers subject to intensive or focused enforcement activity might be more likely to uncover impacts than studies that look at impacts of “enforcement” among employers as a whole.

In summary, based on the information provided to the Royal Commission by the Prevention Division, it appears that the average employer has a chance of being inspected less than once in 25 years. On inspection, there appears to be a high proportion of employers who are in non-compliance with the regulations, although the proportion in serious violation needs further study. Furthermore, the proportion who continue to be in non-compliance upon follow-up inspection is not known, and also requires further study. There is a high chance of receiving an order as a result of an inspection, but the chance of receiving a warning letter or a penalty is low (for example, in 1996, 260 penalties for 15,748 worksites inspected means 1.7% of inspected worksites received a penalty). Often, the employer will receive orders and warnings before the penalty is applied, and these may or may not be followed up to ensure that compliance has been achieved.

Any evaluation of the effectiveness of enforcement the Prevention Division would need to consider both process and outcome issues. Based on the evidence provided by the Prevention Division to the Royal Commission, it appears that:

- the division has insufficient resources to conduct inspections for many employers on a regular basis;
- the division has limited information on the extent to which its enforcement policies are being implemented; and,
- the division has limited information on the effectiveness of its enforcement policies and programs.
4.0 INTERNAL RESPONSIBILITY

4.1 Overview

The major conclusions in this chapter are:

- The Prevention Division is moving toward a model of Internal Responsibility, which is part of a shift toward increased consultative support for employers and workers.
- At present, regulations relating to occupational health and safety committees and programs are in place, but the Prevention Division may have difficulty at times monitoring and enforcing these regulations. The Prevention Division could make greater use of the information it now has available on committees and programs to influence programs and services.
- Some research suggests that occupational health and safety committees may be effective in improving workplace health and safety, provided that a number of conditions are in place, such as management support for the committee and sufficient training of members.
- The Prevention Division’s new project, the Diamond Concept, is similar to programs in other jurisdictions aimed at enhancing internal responsibility and targeting enforcement efforts; at this point, the project remains in a conceptual stage, and many key elements have not been finalized.
- There is a role for enforcement and a role for internal responsibility systems; the necessary conditions for the success of each approach need to be identified and made a part of each approach.

4.2 Elements of Internal Responsibility

Internal responsibility is the philosophy that employers and workers at the worksite can and should be responsible for their own health and safety. Many Canadian jurisdictions, including BC, are moving away from a strict enforcement approach toward endorsement of an internal responsibility system (IRS).
The emphasis in an Internal Responsibility System is on consultation, rather than confrontation, which is the approach most associated with traditional enforcement models. The effectiveness of enforcement approaches is limited for the following reasons:

• Underlying the enforcement approach is the assumption that workplace accidents are caused by a lack of concern for the regulations, which may actually represent only a proportion, and perhaps a small proportion, of the causes of accidents. For example, some accidents could be prevented if employers and workers were more fully aware of, and had an understanding of, the regulations. Some may benefit more from strategies aimed at increasing knowledge and understanding; others may already have effective programs in place and may simply need occasional support.

• It is widely acknowledged that there are insufficient resources for inspections to serve as a reasonable deterrent for the average employer. Even if the WCB’s resources were doubled, the average employer could still only expect to be inspected about once every 12 years or more.

• Employers and workers know their own work environments, and are theoretically in the best position to remedy safety hazards. Since OHS standards often represent the minimal standards of compliance, employers and workers who take on the responsibility for health and safety at their own worksites have the capacity to do more than maintain minimal standards as required by the regulations. Hazards can be identified before accidents occur and solutions can be designed to meet the unique needs of each worksite.

Adopting an internal responsibility system does not minimize the responsibility of the occupational health and safety agency. In addition to consultation and enforcement roles, occupational health and safety agencies should also be actively promoting health and safety monitoring and intervention systems at the worksite. These include:

• facilitating the development of a “safety culture” by working with senior executives to identify the importance of health and safety and the strategies to improve performance in this area;
• providing technical support and advice to employers and workers on identifying hazards and the appropriate remedial actions;
• training occupational health and safety committee members;
• training employers and workers in high-hazard industries;
• providing standards for occupational health and safety programs and occupational health and safety committees, and implementing effective monitoring programs to ensure that these standards are met;
• responding in a timely manner to requests for assistance from employers, workers, and OHS committee representatives;
• advocating for changes in legislation to empower workers, supervisors, OHS committee members and others who may take responsibility for identifying hazards and initiating remedial actions;
• allowing sufficient flexibility to support employers and workers in establishing health and safety procedures that meet the needs of their worksites while conforming to agency expectations; and
• ensuring that sufficient incentives are in place for compliance, and sufficient consequences are in place for noncompliance.

While adopting IRS does not necessarily mean that there will be less inspection activity, it does require the occupational health and safety agency to innovate and develop new strategies and activities. For example, it may require:

• more intervention with senior executives and those who make decisions about health and safety;
• a stronger stand be taken with respect to legislation that empowers workers at the worksite;
• that enforcement officers be ready to intervene in a timely manner when called in to support a worksite; and
• that the agency commit more resources to on-site consultation and education, and offer other educational tools and opportunities outside the worksite, to ensure that worksite health and safety representatives are competent in recognizing and dealing with safety hazards.
Previous Royal Commission inquiries into workers compensation in BC have addressed internal versus traditional (sometimes referred to as “external”) agency-driven responsibility for prevention. In 1952 Chief Justice Sloan stated:\footnote{180}:

\begin{quote}
Success of any accident-prevention programme, assuming it to be intelligently designed to meet the causes of injury when understood, depends on safe working conditions and upon an active, educated and management-directed co-operation between management and labour, such as joint safety committees, training of supervisors, job training for workmen, job assignments and pre-assignment physical appraisal.
\end{quote}

\begin{quote}
...Men cannot be made safety-minded by legislation. Unless there is the will to safety, all the regulations in the world will not by themselves prevent accidents. Alternatively, the desire to minimize hazards needs as its aid the promulgation and enforcement of fundamental regulations governing the operations of machines and the conduct of men. These two essentials must both be present in order to have and maintain an efficient accident-prevention programme.
\end{quote}

\subsection*{4.3 Joint Health and Safety Committees}

Labour submissions to the Royal Commission identified a number of problems with the way joint health and safety committees (JHSC’s) function in BC. They noted that since committee representatives serve an advisory role, they have no real power at the worksite, they cannot ensure that needed changes will take place, and they fear employer recrimination. Another concern expressed by workers was that committee members are sometimes required to meet on personal, unpaid time. Over the course of discussions with respect to the new regulations, labour representatives were in favour of mandating health and safety committees for all workplaces with 20 or more employees, whereas employers argued that different industries should have different requirements depending upon their level of hazard\footnote{181}.

In BC, provisions with respect to occupational health and safety committees, and with
respect to worker and employer rights and responsibilities, are contained within the regulations rather than the statute. These tend to be contentious issues that are difficult to resolve, and indeed remained unresolved in the Board’s most recent regulation review process. In other jurisdictions, these provisions are contained within the statute.

Part 3 (Rights and Responsibilities) of BC’s new *Occupational Health and Safety Regulation* includes the following sections:

- Occupational Health and Safety Programs
- Occupational Health and Safety Committees
- Investigation and Reports
- Workplace Inspections
- Correction of Unsafe Conditions
- Instruction of Workers
- Refusal of Unsafe Work

Regulation 3.1 of the new *Occupational Health and Safety Regulation* requires that an occupational health and safety program must be initiated and maintained by each employer having:

- workplaces with twenty or more workers that are classified as “A” or “B” hazard by the Board’s First Aid Regulations
- workplaces with fifty or more workers that are classified as C hazard

Smaller employers are required by regulation 3.2 to maintain a less formal program which must include regular monthly meetings.

Also included in Part 3 of the regulation are the OH&S Committee requirements regarding membership which include:

- an occupational health and safety committee must have at least four regular members, employed at the operation and experienced in the types of work carried on at this type of operation;
- committee membership is chosen by and representing the workers and the employer, but in no case may the employer’s representatives outnumber those of the workers
The current regulations provide committees with powers to recommend change but not to enforce change. The OH&S Regulation 3.6(1) stipulates that Occupational Health and Safety Committees “must assist in creating a safe place of work, must recommend actions which will improve the effectiveness of the occupational health and safety program, and must promote compliance with this regulation.” Under 3.6(2a), the Committee shall “recommend measures required to attain compliance with this regulation and the correction of hazardous conditions”, and under 3.6(2c) “consider recommendations from the work force in respect to occupational health and safety matters and recommend implementation where warranted.”

There is no provision in the current regulations for training for OHS committee members. Employers are obligated to instruct workers in the safe performance of their duties in OH&S Regulation 3.22.

The Royal Commission asked the Prevention Division what studies it has undertaken to assess the effectiveness of IRS\textsuperscript{182}. The division reported that it had conducted an extensive literature search on joint health and safety committees, the findings of which are discussed in greater detail below, and that it provided a grant to researchers at Simon Fraser University to examine the effectiveness of JOHSCs (Joint Occupational Health and Safety Committees) in reducing fatalities and injuries in BC forest products mills. Among the key findings from this research were\textsuperscript{183}:

- Almost all mills communicate JHSC meeting results to employees, most commonly by posting the meeting minutes. Mills that posted meeting minutes had fewer serious accidents.

- Mills with longer meetings and that recorded meeting minutes and sent this information to WCB had lower serious accident rates.

- Most JHSC’s are responsible for inspecting the workplace, investigating accidents, determining the causes of work injuries, and reviewing the mill’s OHS programs and practices.
• Mill health and safety inspections occurred monthly on average and were conducted almost exclusively by JHSC members.

• Almost all employee and management JHSC representatives receive some form of health and safety training, most commonly on WHMIS and accident prevention. Only half of employee representatives receive training on WCB regulations.

• The type of OHS training for employee JHSC representatives is not associated with accident rates. However, mills with lower serious accident rates tend to offer more training to management JHSC representatives.

• Mills with lower accident rates tend to offer more safety training courses to employees, managers or both.

• JHSC representatives believe that mill employees have a fairly low level of knowledge regarding WCB regulations, only a fair understanding of OHS hazards, and a moderate level of concern for OHS hazards. Mill managers were rated higher than employees in terms of their understanding or and concern for OHS hazards.

• Nearly three-fourths of surveyed mills conduct safety audits. Most are conducted monthly or annually and typically involve JHSC representatives. Mills that conduct audits have lower serious accident rates.

• Mills with higher job satisfaction, an emphasis on work teams, good quality communication, an emphasis on product/service quality and a readiness to adopt new practices or technologies have significantly lower minor accidents.

The study also found that lower minor accident rates were associated with committees that were rated as more “effective”, and that lower serious accident rates were associated with committees that represented decision-making bodies as opposed to simply serving advisory or information sharing roles.

The Board has copies of JHSC minutes which, if collected and retained on a consistent basis, could be analyzed with a view to determining the features associated with
success and the features that serve as barriers to change. This analysis would be limited if worksites are inconsistent in submitting their minutes, or if only certain types of worksites submit minutes (for example, those with committees that meet regularly, which may be more effective overall than those which meet intermittently). The Board could also conduct its own original research, for example, by carrying out surveys within worksites that are required by the regulations to have committees in place.

Based on their literature review, the Prevention Division concluded that the principal factors that have been identified as contributing to the effectiveness of JHSC’s include:

- a strong commitment from both management and labour to jointly solve workplace problems;
- good labour relations;
- senior management participation in JHSC meetings and demonstrated responsiveness to the concerns raised by the committee;
- a bipartite structure with equal representation of workers and management
- a proactive approach to preventing injury and illness, rather than simply after-the-fact investigation of accidents;
- a well-developed and formalized procedure for meetings, inspections and record-keeping;
- encouragement of workers to report incidents and potential hazards;
- joint training of committee members; and
- education of workers in safe and appropriate work procedures.

The Prevention Division also stated in its response to this question that:

Researchers have also noted that mandating JHSCs does not automatically result in improved OHS performance nor does it result in improvements at all workplaces. JHSCs have been shown to be less effective in workplaces where there is little or no commitment to occupational health and safety on the part of senior management -- in these situations, it may be necessary for government and regulatory agencies to take special measures to educate workers and employers of the potential benefits of joint management of occupational health and
safety, as well as to ensure that committee members have the knowledge and the authority to internally regulate health and safety matters.

When asked by the Royal Commission about the kind of support JHSCs committees need to ensure safety at the worksite\textsuperscript{184}, the Prevention Division discussed, on the basis of this research in other jurisdictions, the need for training on inspections, hazard identification, and accident investigations. The division also stated that “compliance with regulations mandating JHSCs should be evaluated and enforced when necessary. Measures of compliance should include a number of factors, such as the age and the structure of the committee, the scope of its activity and the extent to which its procedures are formalized.”

In BC, JHSCs are required to meet monthly, and to provide minutes of those monthly meetings to the Prevention Division, as stipulated in OH&S Regulation 3.6 (2) (e):

\textbf{(e)} record the proceedings of the committee in a form acceptable to the board, and forward the minutes promptly to the employer, who must:

i. make copies available to those involved in the occupational health and safety program,

ii. forward a copy to the nearest board office, and

iii. if requested, forward copies to the organization representing the workers.

The regulations do not say what the format of the minutes should be in order to be “acceptable to the Board”. It also does not appear that the \textit{Draft Prevention Policies} or the \textit{Draft Operating Instructions} provide field officers with directions on how soon after receipt the minutes are to be reviewed, what information is to be considered, or what response may be expected from the Board. It is unclear how systematically the field officers review the minutes and what follow-up actions, if any, are taken. In a response from the Prevention Division to the Royal Commission with respect to OSH Committees, it is stated that “There is no prescribed standard or format for minutes. The experience is that there is much variability.”\textsuperscript{185}
The Board has indicated that it receives thousands of sets of minutes from JHSCs and that field officers are responsible for reviewing them in order to identify issues that need further investigation. The Royal Commission has been advised that the Board does not keep copies of the minutes, but destroys them after they have been reviewed and in some cases acted upon\textsuperscript{186}, and that officers exercise their discretion when determining what actions to take upon reviewing the minutes. The Royal Commission is unaware of any guidance that is provided to officers in this regard either in the Officer Instructions contained on their mobile office systems or in other training materials. The BC Federation of Labour indicated in its submission to the Royal Commission that during the recent regulation review process, the Prevention Division was unable to specify the number of health and safety committees that exist in BC. The Prevention Division also informed the Royal Commission that it could estimate how many employers should have committees, based on the regulation requirements, but could not specify how many actually existed\textsuperscript{187}.

The \textit{1997 Administrative Inventory} argues that (p.98):

\begin{quote}
With the increased regulatory and inspection emphasis on health and safety programs (and audits), the information contained in the minutes of health and safety committee meetings could be very important. Even though it may be unrealistic to develop a computerized system to collect and analyze information contained in these minutes, officers may use the minutes to guide their inspections, obtain information that might be difficult to get from workers through the inspection process, and further identify and target problems in need of intervention. Additionally, it might be useful for the WCB to gather data on the activities and number of active health and safety committees in the province by work location.
\end{quote}

The \textit{1997 Administrative Inventory} also states that “Regulation 4.06 (2) (e) requires employers to forward copies of these minutes to the nearest Board office. In practice, this is seldom done” (p.98).

Field officers interact with health and safety committee members during site inspections and accident investigations, and part of their role is to educate while on site.
Additionally, the 1996 Annual Report shows that 20 Safety Committee Seminars were provided by the Prevention Division’s Education and Outreach Section, which were attended by a total of 380 students. This number dropped in 1997, with 9 Safety Committee Seminars were hosted for 193 students (some OSH Committee courses were likely provided that year by Education Partners).

Requiring JHSC’s to submit their minutes may serve little purpose if there is no follow-through to ensure that the minutes are submitted, if the minutes are not routinely analyzed and acted upon, and if there is limited guidance as to what issues should be monitored. There may be more support that the Prevention Division could provide to occupational health and safety committees, and more that could be done in terms of analyzing the data that could be available from these minutes. This might include, for example, establishing an expected reporting format and communicating this to the committees and to field officers, ensuring that the minutes are submitted on a regular basis from worksites that are required to submit them, and establishing a standard process for analyzing and acting upon the minutes, both at the individual worksite level and at a higher level (e.g., to determine training needs and as input into training design). This seems particularly important in view of the very favourable research that the Prevention Division has cited with respect to committees, and the features that have been identified in the research as important for the success of these committees.

4.4 Occupational Health and Safety Programs

As discussed above, OH&S Regulation 3.1 requires employers with a work force of twenty or more workers, in an industry classified as “A” or “B” hazard in the First Aid Regulations, or a work force of fifty or more workers in an industry classified as “C” hazard in the First Aid Regulations, to have an occupational health and safety program.

Regulation 3.4 outlines the requirements of the occupational health and safety program which include:

a) a statement of the employer’s aims and the responsibilities of the employer, supervisors and workers,
b) provision for regular inspection of premises, equipment, work methods, and work practices, at appropriate intervals, to ensure that prompt action is undertaken to connect any hazardous conditions found, as required by sections 3.15 to 3.19,

c) appropriate written instructions, available for reference by all workers, to supplement this Occupational Health and Safety Regulation,

d) provision for holding periodic management meetings for the purpose of reviewing health and safety activities and accident trends, and for the determination of necessary courses of action.

e) Provision for the prompt investigation of accidents to determine the action necessary to prevent their recurrence, as required by sections 3.7 to 3.14,

f) the maintenance of records and statistics, including reports of inspections, and accident investigations, with the provision for making this information available to the occupational health and safety committee and, upon request, to an officer, the union representing the workers at the workplace or, if there is no union, the workers at the workplace,


g) the establishment and maintenance of an occupational health and safety committee, constituted and function by sections 3.5 and 3.6, and

h) provision by the employer for the instruction and supervision of workers in the safe performance of their work, as required by section 3.22.

Under 3.2 of the regulations, smaller employers with a workforce of less than twenty workers are required to maintain a less formal program based on regular monthly meetings with employees for discussion of health and safety matters. The regulation stipulates that the employer shall maintain a record of the meetings and the matters discussed.
Field officers conduct program reviews or audits of health and safety programs as part of their field activities. According to the 1997 Administrative Inventory (p.119):

...safety and hygiene officers conduct in-depth inspections and reviews of these programs in firms with poor claims records. These program reviews (formerly called health and safety audits) are conducted to determine the existence, adequacy, and quality of the employer’s health and safety program and to provide employers with education and consultation on how to improve their programs. ...If the firm’s program is non-existent or totally inadequate, the officer will write specific orders and offer assistance to the employer on how to establish a program. No review is considered complete until a basic program is in place.

The 1997 Administrative Inventory, also notes that between 1991 and 1996 the number of program reviews that were conducted ranged from a low of 150 in 1991 to a high of 757 in 1994\(^{189}\). In 1996, 391 program reviews were reportedly conducted, although this figure was based on preliminary data. The follow-up “…is done most often through return visits, but can occur via telephone calls or letters.”\(^{190}\)

The Prevention Division has indicated that part of the training process for all field officers is a 3-day Safety and Health Program Evaluation session to enable them to audit/evaluate occupational health and safety programs\(^{191}\).

Unlike BC, many jurisdictions provide information in their Annual Reports on health and safety programs and committees. The Commission de la sante et de la securite du travail du Quebec (CSST), for example, provides a list by industry of the number of worksites with prevention programs, health programs, health and safety committees, and prevention representatives\(^{192}\). Similarly, Alberta has as one of its key performance measures, “the number of companies which have established effective health and safety programs” – to be counted as effective, a company must have successfully passed an external audit of the health and safety management systems at their workplace.\(^{193}\)
In a response to a request from the Royal Commission to the Prevention Division with respect to occupational health and safety programs, and occupational health and safety program audits, it was stated that:\footnote{194}:

Section 4 of the Industrial Health and Safety Regulations requires every workplace to have either a formal or informal health and safety program.

...The Board has no statistics on which firms have programs. The requirement to have a formal program depends on the First Aid Hazard category and the number of employees. The Board does not have good data linking specific firms or subclasses to their hazard category.

The Board’s statistics on number of employees would in any event be misleading in this context. They are derived by dividing a firm’s payroll by an average salary. If, for example, a construction company employed 24 people over the six months it took to do a project, and was not working for the other six months of the year, the Board’s statistics would show 12 person years for that firm. This data would suggest a formal program was not required whereas in fact it was required.

Bearing in mind the above caveats, the Statistics Department provides the following estimates of employers with the numbers of employees covered by section 4.02 (1) in 1996:

<table>
<thead>
<tr>
<th>personyears range</th>
<th>number of employers (industries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-50</td>
<td>6,600</td>
</tr>
<tr>
<td>50+</td>
<td>4,000</td>
</tr>
</tbody>
</table>

While employers with programs are required under section 4.06 (2) (e) to forward minutes of health and safety committees to the Board, the Board does not keep track of those received. Other than by visiting the worksite, the Board has no means of checking whether the obligation to send in minutes was honoured. The Board does not visit every workplace.
When an officer does visit a worksite, he or she will consider whether a program exists and issue an order under section 4 if it does not. Therefore, the number of inspections where these orders are written might provide a rough idea of the employers not having programs.

The Board provided the following data on the times when sections 4.02(1) and (2) were cited:

<table>
<thead>
<tr>
<th>Section No.</th>
<th>1994 inspections</th>
<th>% of 1994 inspections</th>
<th>1995 inspections</th>
<th>% of 1995 inspections</th>
<th>1996 inspections</th>
<th>% of 1996 inspections</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.02(1)</td>
<td>1185</td>
<td>2.8%</td>
<td>1182</td>
<td>2.5%</td>
<td>931</td>
<td>2.2%</td>
</tr>
<tr>
<td>4.02(2)</td>
<td>382</td>
<td>0.9%</td>
<td>381</td>
<td>0.8%</td>
<td>343</td>
<td>0.8%</td>
</tr>
</tbody>
</table>

While it appears that the Board expects audits of health and safety programs to be conducted, these represent a relatively small part of field officers’ work. The fact that program audits are conducted in firms with poor safety records but not as a standard practice for other employers (as noted in the 1997 Administrative Inventory) suggests that this activity has been more reactive than proactive. Similar to employer accident investigation reports and occupational health and safety committees, this area is one where employer responsibilities are defined in the regulations but where the Board may have difficulty monitoring and enforcing.

**4.5 The DIAMOND Project**

In the Board’s 1996 Strategic Plan, the Board proposed a new strategy called the “Diamond” Concept described as a:

...framework for focusing resources on firms which demonstrate above-average injury rates. Under the framework, firm performance is monitored and measured with evaluation criteria that focus on worker participation and involvement and management commitment. (p.24)
The draft *Diamond Project Business Case*\(^{196}\) describes the Diamond Model as follows:

Using the injury rate as a basis for measurement of OHS performance\(^{197}\), the distribution of individual firms relative to their sub-class, or to the province as a whole, would roughly fall into a diamond shaped model. Perched at the top of the *Diamond* are those special firms that achieve excellence in OHS performance and programs while those challenged firms with a complete absence of effective OHS programs firmly reside at the bottom. The bulk of BC firms are distributed between these extremes with those at the sub-class average injury rate at the midpoint of the *Diamond*.

Simply stated, the Diamond Concept views the performance of firms along a continuum, like the standard bell curve, with most firms somewhere in the centre, and a small proportion at either extreme. The strategy of *Diamond* is to focus enforcement efforts on the "large and challenged firms"\(^{198}\) (p.9). In this respect, the Diamond Concept defines the process to be followed for WorkSafe strategies #1 and #2, focusing on industries and employers with high claim rates. As discussed in 1997 *Briefing*, the Diamond project is a “framework for achieving the general objectives of the Board’s strategic plan. It aims to efficiently target the Board’s resources to where they are most required in a manner that takes account of a firm’s prevention and claims management programs.” (p.42)\(^{199}\).

According to the Board, the Diamond concept was modeled on OSHA’s Maine 200 Program and the Voluntary Protection Program (VPP). These programs were chosen because of their success in identifying hazards and reducing injury rates. Maine 200 and VPP employers and workers are encouraged to take responsibility for health and safety at their worksites, with financial incentives for those that do, and increased enforcement efforts and consequences for those that do not.

While many features still have to be developed, it appears that the main incentive offered to employers to participate in the *Diamond* program is public recognition for employers in the top end of the Diamond. This recognition will be based on program audits conducted by external auditors as a check on effectiveness of employer’s OHS.
programs, and enhanced enforcement activities for those in the lower end. Currently there are no financial incentives other than those that exist already under ERA, although changes to ERA are being considered which will increase the incentives and disincentives, particularly for large employers.

The 1996 (and more current 1998 draft) Strategic Plan promises that the Diamond concept will:

- provide customized and cohesive services to both small and large firms;
- develop new and innovative ways to encourage workplace cooperation; and,
- create mechanisms to facilitate increased internal responsibility for occupational safety and health. (p. 24)

The 1997 Diamond Project Business Case identifies the following internal challenges to the development of the project (p.9-11):

- there are few consultative tools available to field officers and a large proportion of field officers have not received training in and are unaccustomed to the consultative approach.
- there are few automated means available whereby OHS performance results achieved by Board interventions with individual firms can be identified and tracked; without claims costs information, it is impossible to identify the financial benefits delivered by the project to the firm or to the Board
- the ESS (Employer Services Strategy) Project may develop revised Experience Rating and new Incentive Rating approaches, and the Prevention Division will need to develop systems and approaches to support effective OHS programs and to identify ineffective OHS programs focused on Incentive Ratings
- the implementation of risk management, case management, active vocational rehabilitation, and program management approaches will require coordination between Prevention, Compensation Services and Assessments

As mentioned above, a number of major elements of the project have not been developed or finalized, including:
- financial incentives
- the safety audit
- cost-benefit projections

Financial Incentives

There is some question as to the extent to which enhanced financial incentives will be part of the *Diamond Concept*. In a submission to the Board’s Senior Executive Committee on March 14, 1997, the Prevention Division stated that it had assigned resources to work with the Assessment Model team of the ESS project and that “the cooperative development on the Assessment Model, especially incentive rating, in conjunction with ESS and compensation is a key requirement of the Diamond Strategy.” In interviews with the Royal Commission, it was stated that the key program design feature associated with program effectiveness in other jurisdictions is the provision of financial incentives to employers. However, it was also noted that there has been opposition to enhanced financial incentives on the part of labour. If enhanced financial incentives are not included in the design, the assumption is that informing employers of how their current rates will be reduced by improving safety performance under the existing Experience-Rated Assessment plan, and providing employers with public recognition for their efforts, will provide sufficient incentive.

In their submissions to the Royal Commission, employer representatives believe that the Board is developing financial incentives as part of the Diamond program. This misconception may arise, in part, from the Board’s own documents. For example, in its 1996 Annual Report, the Board states that:

... employers with sound programs and good health and safety records are being recognized by the WCB as role models for other employers. A new Employer Services Strategy (ESS) formulated in 1996 will look at incentive options for employers who contribute to driving down the province’s injury rate. A major program tied into the ESS is the “Diamond Project” designed to measure employers’ safety and prevention performance against their peers. (p. 5)
As discussed above, changes to ERA are being considered for the near future, such as increased demerits and different approaches to accommodate large versus small employers.

*Occupational Health and Safety Audits*

Occupational health and safety audits, conducted by external auditors, will provide the Prevention Division with information regarding the employer’s eligibility for “Star” status under Diamond. The Royal Commission has been informed that one large employer in the lumber sector, Weyerhaeuser Pulp and Paper in Kamloops, was recently involved in developing a safety audit that could be used for the Diamond Project. This safety audit was then distributed to three sawmill firms to pilot test: Westcoast Cellulibre Fraser Miller Sawmill, Slocan Forest Products Radium Sawmill and Canadian Forest Products Isle Pierre Sawmill. The approximate cost of the audit, to be paid for by the employer, had not been determined by the Prevention Division. The Prevention Division appears to have spent considerable time and effort working with employers to develop this very detailed and comprehensive audit. According to interviews, it appears that this initial audit may be more extensive than employers will be willing to use, and it has now been revised.

*Cost-Benefit Projections*

The Prevention Division has had some difficulty finalizing cost-benefit projections for the Diamond Concept. The 1997 First Quarter Operating Report states that the Historical Profile prototype was placed in production, the analysis phase of the Current Profile concept was completed, and a business case had been prepared tying the concept to Historical Profile Enhancement. According to interviews, the Diamond Business Case cost-benefit projections proposed by an external consultant in June, 1997 were not accepted by the Prevention Division, and further cost-benefit projections had not been finalized.
Other Issues

A number of other elements need to be in place before Diamond can be implemented, including a variety of field officer “intervention tools and support systems” including new automated tools. Additionally, there appears to be no discussion within the plan regarding services that will be provided to employers who do not fall at either end of the scale (the majority of employers) nor how these employers might be encouraged to move forward to the top of the Diamond. Finally, the Diamond Concept documents provide little guidance on how to promote the cooperative approach between the Board, employers and workers, that the model requires. The idea is that employers are given a choice between partnership with the Board or the conventional enforcement approach. The role of workers is not documented; the focus of the program is on employers.

Business plans and project documents from the Board’s Employer Services Strategy (ESS) make numerous references to the Diamond Project. Many of these references leave the impression that the Diamond Project is past the conceptual stage, however there clearly remain many aspects of the project that need to be finalized.

In a response to a Royal Commission request for information regarding Diamond, sent to the Board in November, 1997, the Prevention Division stated that:

The Diamond program is planned to be fully operational within the next 18 to 24 months. By fully operational, we mean it will have become an integral part of the regional offices’ prevention tools and be administered by local prevention officers. At that time, we expect about 50 employers to be participating, covering about 15,000 employees. Initially, large to medium employers with greater resources and ability to support prevention programs will be the major participants.

Once this program is administered by the regions, a larger proportion of smaller firms will participate. The program will continue to expand once it is fully operational as local prevention officers identify, motivate, and assist firms to participate. After 5 years, it is projected that about 1000 firms should be in the program covering roughly 100,000 employees.
We regard this program as a change in prevention methodology that responds to the needs of the ever changing business environment. Its applicability is expected to grow with time.

The Diamond Project seems to be consistent with trends in other jurisdictions. It is an approach which acknowledges that a strong commitment to health and safety does exist within some workplaces, and that the “one-size-fits all” enforcement strategy may not be the optimal approach for these kinds of firms. It may also have the potential to free up resources for enforcement with other firms, although this is a testable hypothesis only (for example, this assumes that consultation and support with employers at the high end of the Diamond will be less time consuming than standard inspections that would have been carried out).

### 4.6 Workers Rights and Responsibilities

Various rights and responsibilities can be found in the OH&S regulations, rather than in the legislation itself. Most of these can be found in Part 3 (Rights and Responsibilities), such as the right to refuse unsafe work (3.24), right to know about actual and potential dangers (instruction of workers covered in 3.22); and responsibility to report unsafe conditions (3.20).

As indicated in the submissions to the Royal Commission, many members of the labour community are very much in favour of stronger rights for workers in the legislation, including stronger work refusal provisions.

### 4.7 Employer Rights and Responsibilities

There are a variety of regulations that pertain to employer responsibilities that are also covered in Part 3 of the regulations. These include responsibilities with respect to occupational health and safety programs and committees (3.1-3.6), accident investigations and reporting (3.7-3.14), workplace inspections (3.15-3.18), correction of unsafe conditions (3.19-3.21), and instruction of workers (3.22). Some general responsibilities are also covered in other sections of the
regulations, such as maintenance of safe premises (4.1, 4.2 and 4.3), provision of personal protective equipment (8.2.2), and training in handling of hazardous substances/WHMIS (5.6, 5.7). Supervisors responsibilities with respect to instruction and ensuring work is performed without undue risk is covered in section 3.23.

The OH&S Regulation (3.15) require that employers conduct regular inspections of their places of employment:

> Every employer must ensure that regular inspections are made of all workplaces, including buildings, structures, grounds, excavations, tools, equipment, machinery and work methods and practices, at intervals that will prevent the development of unsafe working conditions.

### 4.8 Effectiveness

There are some indications in other jurisdictions that promoting internal responsibility, through joint health and safety committees, and consultation committed to providing effective occupational health and safety programs, may have a positive effect on health and safety. However, these studies are preliminary and cannot be considered definitive.

For example, as discussed in the Appendix, Lewchuk, Robb and Walters (1996) examined the impact of the 1978 *Occupational Health and Safety Act* (Bill 70), which mandated health and safety committees in Ontario in most workplaces with more than 20 workers, on lost time accidents in that province. They found reductions in lost time accidents associated with both the introduction of Bill 70, and with the introduction of joint health and safety committees within specific worksites. However, they also found that it was only those worksites where joint health and safety committees were implemented prior to or immediately upon the introduction of the new legislation (i.e., through choice rather than obligation) that experienced significant reductions in accidents. These authors conclude:

> Simply mandating committees is unlikely to have much effect at workplaces where the Internal Responsibility System and the co-
management of health and safety matters is not embraced by management and/or labour. At these workplaces, special measures may be needed to educate labour and management of the potential benefits of co-management as well as measures to ensure that committee members have the knowledge and authority to internally regulate health and safety matters. (p.236)

Some research suggests that support from all levels within the organization, including top level commitment, is necessary in order for workplace health and safety programs to work. In an earlier US study, Kochan, Dyer and Lipsky (1977)\textsuperscript{205} reported that committees were more effective when there was cooperation between labour and management, however they did not examine the impact on accident rates. Typically, rights are discussed along with decisions to implement committees (i.e., the right to know, the right to participate and the right to refuse unsafe work). However, some of this research suggests that efforts to foster a cooperative climate and to promote commitment to health and safety throughout the organization may be more effective than legislating powers.

Other research has examined the impacts of programs like the Diamond concept on occupational health and safety. While some of this research seems to indicate that a consultative approach can be effective, there may be some problems with this research. For example, the U.S. Department of Labor's OSHA report on the Maine Top 200 Program\textsuperscript{206} states:

The Maine Top 200 Program is demonstrating that partnerships can achieve improvement in the safety and health of the workplace while meeting agency goals. ... Employers and employees have, through self audit of their workplaces, identified over 180,000 hazards and abated over 70 percent of those hazards to date. One hundred targeted on-site inspections have been conducted to verify the abatement of hazards. ...This abatement effort represents a significant reinvestment in the work places of Maine of nearly $100,000,000 (estimated on local knowledge). ...While the state of Maine's employers, on average, have experienced a 27 percent decrease in worker's compensation compensable claims,
employers in the Maine Top 200 Program have realized a 47.3 percent
decrease in such claims. ...Approximately 65 percent of the employers in
the program have experienced reductions in their injury and illness
incident rates.

On the other hand, a study by Mendeloff (1996)\textsuperscript{207} at the University of Pittsburgh
concludes:

Attempts to assess the impact of the Top 200 program on injuries and
illness are plagued by many difficulties. At the same time that the
program was introduced, the State severely cut back benefits and eligibility for its workers’ compensation (WC) program and also established an insurance company which increased loss control activities at a large number of the State’s firms.

The spectacular drop in Maine’s WC claims from 1990 to 1994 cannot, except in small part, be attributed to the Top 200 Program. The analyses done so far do not provide clear evidence that the program has changed injury rates. Further analysis of 1994 and 1995 data may be useful. (p.2)

The WCB of BC does not appear to have conducted little research on the effectiveness of the Internal Responsibility System by, for example, identifying characteristics of effective occupational health and safety programs and committees within BC or comparing employers with excellent and poor safety records to determine employee and worker perceptions of the key elements of worksite-based health and safety.

A 1981 Economic Council of Canada report \textit{entitled Occupational Health and Safety: Issues and Alternatives}\textsuperscript{208} states that “The British Columbia program has provided for a system of safety committees since the early 1920s. More than 3,000 committees are now in existence. …in fifty years of operation the Board has made no effort to objectively evaluate the effectiveness of these committees.”. The situation remains virtually unchanged today. The Prevention Division was unable to provide the Royal Commission with basic information on the number of committees in place in BC workplaces\textsuperscript{209}. One study on joint health and safety committees (JHSC), funded by the
Prevention Division’s Grants and Awards program, was completed recently. This study provides a number of important observations that appear to be consistent with research in other jurisdictions. The research itself is somewhat limited in terms of the extent to which broad conclusions about JHSC effectiveness can be drawn, because it focused exclusively on committees in a small sample of forest product mills, and because of other methodological reasons discussed by the researchers210.

In interviews for the Royal Commission, Prevention Division management stated that, rather than a shift away from enforcement and toward consultation, the shift was toward an assessment of which mix of strategies is best for which firms: “The issue is that I go into this firm recognizing what the priority issues are for the firm and then I use the strategy I need to use.”

However, there were also concerns expressed in interviews about the ability of the Prevention Division to serve as “consultant” or “educator” with employers, when officers also have to maintain an enforcement role. Some interviewees said the Prevention Division should separate enforcement from consultation roles. It was argued that employers are not comfortable with Prevention field officers (because they expect to get dealt with in a punitive manner even if it was the employer who initially asked the Board for assistance). From this perspective, if there were consultants who did not have enforcement responsibilities, they could have employers into the Board for consultation rather than going out to their worksites where they would might see a violation that they’d feel compelled to deal with.

5.0 EDUCATION

5.1 Overview

The major conclusions in this chapter are:

- the Prevention Division has offered a variety of courses, presentations and educational materials in occupational health and safety; training has also been provided by other individuals and organizations in BC
• partnership models have recently been developed with the local colleges; there is a need to closely monitor the quality and effectiveness of training provided by external providers
• effective management of education and training requires establishing priorities, monitoring needs and availability, establishing standards for external providers, and evaluation
• training may improve workplace safety, as there appears to be a relationship between training and knowledge of regulations, and between OSH Committee training and reduced injury rates
• the Board has conducted some analyses of education services, but needs to do more in this area; in particular, needs assessments, and evaluations of impacts on workplace health and safety, would be useful
• the media efforts by the Board need to be carefully examined, to determine objectives, expected outcomes, capacity to achieve these outcomes, and cost-effectiveness

5.2 Planning and Allocation of Resources

Under section 71 (4), the WCAct empowers the Board to provide education to employers and workers, as follows:

(4) The board may engage in and carry on a general educational program for employers, employees and the general public in relation to the prevention of accidents and industrial diseases, first aid and the general operations and responsibilities of the board, and for that purpose may advertise, sponsor contests and award prizes, scholarships and other monetary rewards...

A first step to understanding what role education should play in occupational health and safety, would be to assess the extent to which lack of education (i.e., lack of awareness and understanding of hazards and strategies) is a factor in occupational injury and disease, and then to identify what information seems to be lacking.
Research suggests that awareness and understanding of occupational health and safety, including its importance, its causes, the regulations which guide it, and the ways of effectively managing it, are limited. For example, Australia’s *Inquiry into Occupational Health and Safety* concluded that (p.220):

- awareness of occupational health and safety (both at the workplace and in the community) is poor
- many believe that accidents are caused by worker carelessness and are considered a fact of life

Epidemiological studies in the United States have found that only 5 to 20 percent of employees are well informed about the safety and health risks associated with their jobs.\(^{211}\)

Angus Reid conducted a survey of young workers for the Board at the PNE Job Fair in June 1997\(^{212}\). A total of 446 young workers, of the estimated 4,000 present, participated in the survey. Among the findings were:

- young workers see themselves as primarily responsible for workplace safety (39%), followed by employers (36%) and co-workers (25%)
- 7 in 10 say they are aware of worker rights such as training and orientation under WCB regulations
- when asked about their awareness of health and safety regulations that the employer must follow, only 33% reported that they know of these regulations; of those who are aware of health and safety regulations, 22% were aware of regulations related to cleanliness/sanitation, 12% referred to safety standards/constructional standards, 12% referred to safety equipment/safety clothing, 12% referred to the requirement to inform employees of hazards\(^ {213}\).
- 56% of respondents had received workplace safety education or training at school, and those who had were more aware of their rights (63%) than those who had not (35%)

The Board has also examined levels of awareness as part of its evaluation of media campaigns. Angus Reid was commissioned to conduct an advertising tracking study to
measure the effects of the Board’s WorkSafe communications strategy, which included an initial print advertising campaign in September, 1996, followed by television advertising. In early September, prior to the Board’s launching of the campaign, Angus Reid conducted a survey of 400 adults in BC to assess awareness and attitudes toward workplace safety\textsuperscript{214}. This initial survey found that:

- on a top-of-mind basis, accidents in the workplace were seen as less of an important public concern than other issues tested; 65% agreed that accidents in the workplace form an important public concern, compared with 94% with regard to impaired driving, 75% for excessive speeding, and 71% for teen pregnancy.
- nevertheless, when asked directly, 80% agreed with the statement that reducing accidents in the workplace is an important public issue, and 87% agree that their own safety at work is an important issue for them.

The ad tracking results are discussed further below, in the section on “Effectiveness”.

The 1997 Administrative Inventory notes that small business employers and representatives voiced concerns that the WCB was not doing enough to educate small and medium-sized businesses about their health and safety responsibilities (p.225). They suggested that many small business employers know little about the WCB, occupational health and safety, and their regulatory requirements. They suggested that the Board work with other organizations that can reach small businesses, such as the Chamber of Commerce, and to disseminate sector-specific manuals of regulations.

Similarly, in interviews conducted for the Royal Commission, it was argued that the Prevention Division has provided insufficient information to employers with respect to their regulatory requirements and on upcoming regulatory changes. Some interviewees felt that the information provided to small business employers was not relevant to their needs. It was also observed that in recent information sessions for employers on the new regulations, employers often seemed to have limited knowledge and understanding of the existing regulations that needed to be addressed.
Limited awareness of hazards and regulatory requirements may contribute in a minor or major way to injuries and diseases within BC workplaces. If awareness is low, education and media campaigns may be particularly important. The Royal Commission found little evidence of activity on the part of the Prevention Division to monitor levels of awareness of hazards, regulatory requirements, and strategies to enhance safety amongst employers and workers. The Auditor General’s report on the Boards accountability reporting noted that the Board does assess public awareness of safety to some extent through its Angus Reid polls, but recommended greater attention be paid to assessing and reporting on levels of awareness. In particular, the report recommended that the Board measure and report on public awareness of WCB regulations, and awareness of workplace safety issues.\textsuperscript{215}

5.3 Educational Services Provided Within and Outside of the Board

Occupational health and safety programs are provided by a variety of individuals and organizations outside the WCB, including colleges, unions and employer associations. As discussed below, some of these organizations provide these courses independently of the WCB; others are being developed in partnership with the WCB.

In November, 1994, the Prevention Division produced a report entitled \textit{A Discussion Paper on Worker Training in Occupational Health and Safety in British Columbia}\textsuperscript{216} which stated:

\begin{quote}
In British Columbia, some worker training in occupational health and safety is currently being provided through a variety of means. Despite the existence of an array of services and some very high quality programs, however, worker training in occupational health and safety in British Columbia lacks leadership, coordination and consistency in relation to standards, curricula and monitoring mechanisms. (p.i)
\end{quote}
The report pointed out that currently in BC, a variety of providers offer training for workers, including:

- WCB
- UBC (Masters in Occupational Health)
- BCIT (one-year certificate program and two-year diploma program on Occupational Health and Safety)
- Community Colleges (different courses, such as Occupational First Aid and Workplace Hazardous Materials Information System)
- various industry associations, Canadian Labour Congress, and various labour unions, provide courses on topics such as Occupational Health and Safety, Introduction to Occupational Hygiene, Health and safety Committees, and WHMIS, as well as industry-specific topics (e.g., Asbestos and Confined Spaces)

The report proposed a new structure for worker training, modeled after the Workplace Health and Safety Agency (WHSA) in Ontario and the Occupational Health and Safety Association (OSHA) in the United States. The proposed structure consisted of three components: (1) a central administrative organization, (2) a small group of development and training centres, and (3) a larger set of accredited delivery agencies (p.11). The functions of each of these were listed as follows:

Central Administration Organization

- Assess needs to determine scope and priority of training and nature of necessary programs and courses.
- Establish Development and Training Centres.
- Coordinate development of programs and courses and review their standards.
- Set standards for delivery of training and qualifications of instructors.
- Accredit delivery agencies.

Development and Training Centres

- Set standards for programs and courses.
- Develop and evaluate programs and courses.
• Administer and deliver training.
• Offer train-the-trainer programs.

Accredited Delivery Agencies
• Administer and deliver training.
• Evaluate programs and courses.

Feedback on the proposal was requested from stakeholders. The Board stated that this discussion paper “was intended to provoke thought and discussion on key issues in relation to what a workable system might include”217.

In 1996, the division produced another discussion paper on training needs, entitled A Discussion on OH&S Training Needs: Content, Delivery, Recognition, which was based on information collected through focus groups with employers, workers and education providers across the province. It concluded that:
• a variety of organizations currently provide training, which varies in terms of quality
• workers in large firms, and in manufacturing and industrial sectors, receive relatively more training than workers in small firms and in other industrial sectors
• there is a need to develop competencies in WHMIS, musculoskeletal injury prevention, basic hazard and risk recognition, and safety and health responsibilities, and there is a need to improve access to core training for workers
• there is a need for education of employers, particularly contractors and small business owners, in employer responsibilities and practicing due diligence
• there is a need to ensure appropriate, practical, quality training, and to ensure that persons trained can demonstrate that they learned what was required

This report appears to place the WCB in the role of the Central Administration Organization, as outlined above, identifying needs, developing courses, developing Standard Lesson Plans, establishing trainer criteria and monitoring and evaluating. The “Actions” developed based on the findings from the focus groups were to (p.8):
1. Develop a more comprehensive and cost effective safety and health training system under the WorkSafe banner which provides opportunity for broad, voluntary participation, recognizes excellence in training development, delivery and trainee achievement, and has the ability to link training providers and resources with training needs.

2. Develop a two part WorkSafe training delivery model in which the WCB partners with education institutions and agencies to deliver core programs and works with firms, unions and other organizations or recognized providers to deliver specialized safety and health training to workers.

3. Develop WorkSafe training modules and packages with exams specific to interpretation of WCB legislation, regulations and safe practices, distribute to education partners and recognized training providers (where appropriate), and monitor application.

4. Establish WorkSafe standard criteria for training programs and trainers in conjunction with employer and worker representatives to promote consistency, quality, and continuity.

5. Develop WorkSafe recognition for achievement system for core programs and for education institutions, trainers, agencies and recognized providers that offer or develop training under the WorkSafe banner.

At the time of the 1997 Administrative Inventory, it was noted that the recommendations from this report were being pursued by the Board with five publicly-funded educational institutions; according to more recent Prevention Division documents, a total of 19 institutions and 45 campuses are now participating. In its 1997 Business Plan, the Prevention Division identifies “Benchmarking” as one of its initiatives, as follows (p.59):

Benchmarking - given that Outreach-Education is interested in changing its focus from offering programs in a few locations to working with Education Partners (schools, colleges, OHO/OSO’s, etc.) across the province to deliver OSH training programs it is imperative that we define how we are going to define success and track our activity in a meaningful way for management reporting and for customer information requirements.
The Business Plan sets out three tasks to address benchmarking, projected to cost $15,000, including: conducting a “best practices” review of several OSH and Health public education programs to examine their evaluation methodologies and techniques (hiring graduate students from Adult Education and Occupational Health to carry out); using a working session/workshop to establish baseline data requirements, data gathering methodologies and strategies, and design the evaluation database structure (involving Outreach-Education and OHO/OSO’s); and developing the evaluation database (working with ISD to implement in ACCESS).

**WCB’s Current Role in Occupational Health and Safety Training**

The Prevention Division’s Education and Outreach Section has provided a number of educational services. As discussed in *Briefing*, the Outreach and Education Section of the Prevention Division (p.18-19):

- Administers the Young Workers and WorkSafe Education Partners programs
- Delivers and administers for persons inside and outside the Board certain standard education courses, for example, industrial health and safety committees, violence in the workplace or the industrial hygiene program
- Develops education programs concerning new regulations or other areas for persons inside and outside the Board, including conducting a needs analysis, program design and development, piloting and evaluation
- Maintains the instructional resource centre (a collection of materials and equipment that can be used by persons inside and outside the Board in making presentations).

Included within this section are the technical writers who produce the Board’s publications on workplace health and safety.

The Prevention Division defines its education services and resources allocated for education differently in various documents. Apart from Education and Outreach, it is clear that that educational, training and information services are also provided formally or informally by various staff in other sections. The Royal Commission was provided with a draft document entitled *Education and Information Services Provided by the*
Prevention Division of the Workers’ Compensation Board of BC, which describes the various services provided by Outreach; Field Operations; Engineering, Ergonomics and Occupational Health; Hearing Conservation; Certification; Laboratory Services; AIRS, and Public Affairs.

The following services are outlined:

1. Outreach

   a) Education Partnerships: purpose is to develop educational programs and courses in partnership with colleges, schools, industry, labour, and others to bring safety and health education into the community. For example:
      College WorkSafe Education Programs, offered by BC colleges on topics such as Occupational Safety and Health in Small Business, Hazard Recognition and Control, Occupational Safety and Health Committee Training
      Student WorkSafe is a resource package made available to schools for use in their Career and Personal Planning (CAPP) programs. It is designed to be delivered to Grades 10 to 12.

   b) Education Services: goal is to make educational resources available to employers, workers, and the public. Includes resources for special audiences such as young children, awareness programs for new regulations, piloting of train-the-trainer programs, and production of standard lesson plans. Courses offered in Richmond (and in some area offices) include:
      Occupational Safety and Health Program
      Executive Seminar on Occupational Safety and Health
      Seminar for Safety and Health Committee Members
      Risk Assessment Workshop on Workplace Violence
      Principles of Industrial Ventilation

   c) Technical Services: produces pamphlets, booklets, and safe work practices manuals on WCB regulations, how to implement safety and health programs, and
how to control specific workplace hazards; also provides a telephone Information Line and coordinates Prevention Division’s part of WCB Web Site

2. Field Operations
Safety and hygiene officers deliver health and safety presentations on a variety of topics including: Inspections, Accident Investigations, Training and Instruction of Workers, Safety and Health Committees and Programs, Crew Talks, Lock-Out Procedures, Confined Space Entry, Excavation and Shoring, and Respirators

3. Engineering, Ergonomics and Occupational Health

a) The Engineering Section provides consultation to WCB staff and industry, and offers a two-day course on the principles of industrial ventilation (as above under Outreach). It also produces two publications that cover regulatory requirements, equipment standards, personal protective equipment, and other topics.

b) Ergonomics also provide consultative services, and publish periodic information sheets on ergonomic issues such as back belts, wrist braces, and computer equipment.

c) Occupational health physicians provide consultation to employers, workers and physicians on work-related medical issues, and are available for presentations on occupational health promotion programs.

4. Hearing Conservation

In addition to consultation and data analysis activities, the Hearing Conservation section provides a four-day Industrial Audiometric Technician Training Course. Audiologists also provide consultation and presentations on noise regulations, hearing conservation programs, and hearing protection at the worksite, and maintain a number of supplier lists.
5. Certification

a) The First Aid Section trains and certifies First Aid instructors, develops and distributes courses for Levels 1 to 3 First Aid Certificates and Transportation Endorsement, examines and certifies candidates in these courses, and monitors First Aid courses provided by external providers. First Aid officers also offer consultation and presentations to industry on first aid regulatory requirements and other first aid issues, and maintain a list occupational first aid training agencies.

b) Blasting and Diving provides blaster’s certificates and diving examinations and certificates. The coordinator is available for consultation and presentations to industry on regulatory requirements and blasting and diving safety issues. The section also maintains a list of trainers for divers.

6. Laboratory Services

Laboratory Services provides analytical, educational and technical support services to WCB and industry, and offers two formal courses including an Asbestos Identification Workshop and an Asbestos Fibre Counting Workshop.

7. Public Affairs

Public Affairs provides speakers, information and displays for conferences, trade show and other events.

The list provided also included AIRS. Perhaps AIRS is considered an “information service” in some respects; nevertheless, it seems misplaced as part of this list of services.

The Prevention Division’s WorkSafe Strategy #3 aims to improve outreach and education as follows:\(^{220}\):
Given that there are an estimated 400,000 worksites in the Province and that the Division has 187 field officers to conduct inspections, investigations and respond to complaints, it is critical to promote self-compliance with the regulations by employers and workers and to increase the overall level of safety awareness. This objective is even more important for young workers who have 50% higher frequency of injury when compared to workers over 20 years of age. Furthermore, the Division strives to enhance public awareness such that needless loss of life or debilitating injury is unacceptable in the workplace. (p.13)

WorkSafe objectives for 1995 and 1996 for Strategy # 3 were to develop programs to build safety awareness in the schools, and to increase public awareness of occupational hazards and risks through a variety of means, including public media campaigns. These strategies are discussed in some detail below. The objectives of Strategy #3 listed in the Prevention Division’s 1997 Business Plan, were as follows (p.33):

- the development of a comprehensive communications strategy for the general public
- implementing a specific program for youth in the elementary and high school system
- expanding the availability of OHS information and courses through the colleges/industry/associations and the Internet

Significant additions to Strategy #3 objectives in the 1998 Business Plan include: (p.45)

- revising the Young worker campaign to include a focus on employer responsibilities
- the identification and production of pamphlets that address the health and safety needs of small business

Table 6 presents data provided by the 1997 Administrative Inventory on the formal courses provided by the Prevention Division between 1991 and 1996\textsuperscript{221}.
Table 6: Number of Attendees at Formal Courses Offered by Prevention Division

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OSH Programs (Making It Work)</td>
<td>248</td>
<td>320</td>
<td>152</td>
<td>116</td>
<td>66</td>
<td>100</td>
</tr>
<tr>
<td>Executive Seminar</td>
<td>104</td>
<td>460</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Safety Diploma Course</td>
<td>--</td>
<td>40</td>
<td>40</td>
<td>20</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Hygiene Diploma Course</td>
<td>20</td>
<td>20</td>
<td>19</td>
<td>19</td>
<td>--</td>
<td>20</td>
</tr>
<tr>
<td>Industrial Ventilation</td>
<td>23</td>
<td>11</td>
<td>53</td>
<td>17</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Safety Committee Seminar</td>
<td>274</td>
<td>780</td>
<td>429</td>
<td>361</td>
<td>261</td>
<td>380</td>
</tr>
<tr>
<td>Violence Risk Assessment Workshop</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>739</td>
<td>184</td>
<td>80</td>
</tr>
<tr>
<td>Distance Learning</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>94</td>
<td>102</td>
<td>158</td>
</tr>
<tr>
<td>Asbestos Identification Workshop</td>
<td>16</td>
<td>12</td>
<td>13</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Asbestos Fibre Counting Workshop</td>
<td>18</td>
<td>9</td>
<td>4</td>
<td>--</td>
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</tr>
</tbody>
</table>

Table 7 presents data from the 1997 Annual Report on total courses for employers and workers, and student hours, in 1997.
Table 7: Courses Offered in 1997

<table>
<thead>
<tr>
<th>Course</th>
<th>1997 Students</th>
<th>1997 Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXTERNAL EDUCATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSH Program</td>
<td>75</td>
<td>4</td>
</tr>
<tr>
<td>Safety Committee Seminar</td>
<td>193</td>
<td>9</td>
</tr>
<tr>
<td>Ventilation Course</td>
<td>38</td>
<td>4</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>Industry Education through WCB Education Partners</td>
<td>678</td>
<td>53</td>
</tr>
<tr>
<td>Safety Diploma Program</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Hygiene Diploma Program</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Miscellaneous Presentations</td>
<td>975</td>
<td>34</td>
</tr>
<tr>
<td>Distance Learning</td>
<td>124</td>
<td>124</td>
</tr>
</tbody>
</table>

As of 1997, the following courses were listed as part of the WorkSafe *Partnerships* program:\(^{223}\):

- Occupational Safety and Health for Small Business
- Hazard Recognition and Control
- Finding Solutions to Musculoskeletal and Repetitive Strain Injury
- Occupational Safety and Health Committee Training
- Supervisor Safety Management

Each course had between 4 and 7 core topics (e.g., Due Diligence, Investigation of Accidents and Diseases), as well as a set of electives (e.g., Return to Work). Some of the core topics for one course serve as electives for other courses.
The 1997 Annual Report notes that Partnerships in Education at that time offered six courses (p.15):

In partnership with a network of 40 educational institutions, the WCB has also increased accessibility to post-secondary health and safety education throughout the province. Launched in 1996, the WorkSafe Education Program consists of six courses including Safety and Health in Small Business, Hazard Recognition and Control, and Supervisor Safety Management. More than 5000 people participated in the courses in 1997. In 1998, more courses will be offered in more communities.

The 1997 Prevention Division Year End Report indicates that the two most popular courses are the Supervisor’s Management of Health & Safety and the Safety Committee training, followed by the Hazard Recognition course. It also notes that “significantly more work is required in the marketing of the Small Business course.”

The Board’s Annual Reports provide information on types of courses taught, number of courses of each type taught, number of students in attendance, and student exposure hours. The Board does not collect statistics on the proportion of those attending the Prevention Division’s courses who are workers or employers. The 1997 Administrative Inventory states, however, that “With the exception of the Safety Committee course which attracts large numbers of workers, most courses are attended primarily (but not exclusively) by supervisors and employer representatives” (p.172).

The Outreach and Education section has been extensively involved in recent years in educating young people through the school system. These programs are aimed at enhancing safety awareness at a young age – as early as Kindergarten – and promoting safety consciousness amongst youth who tend to have high rates of injury.

Standards, Monitoring and Evaluation Criteria

The 1997 Administrative Inventory offered the following suggestions with respect to the Prevention Division’s education partnerships (p.175):
As the WCB pursues these types of partnership models for education and training, it should engage members of the Prevention Division and the stakeholder communities in a dialogue about the following issues:

- How will the WCB monitor and evaluate the quality and effectiveness of the training courses/programs and the instructors over time? …
- Are certain courses and programs best delivered by the WCB? To what extent should field officers and other WCB subject matter experts be involved in any training done by colleges and other external groups?
- Should some of the courses be competency-based? How will students be evaluated?
- How should WCB resources be allocated between supporting the education function of field officers (and others within the Prevention Division) and supporting external “partners”?

The Prevention Division has developed course curricula for the colleges, including training materials and course evaluation forms, which were provided to the Royal Commission. The Board was also asked to provide standardization criteria, however these do not appear to be available. The extent to which the Prevention Division has developed standards for these courses, and is monitoring the colleges and instructors with respect to these standards, is not clear.

The Board’s Internal Audit Department’s scoping report for the Prevention Division, referred to in earlier chapters, identified the following issues with respect to the Prevention Division’s Outreach and Education Services (p.5):

1. Outreach and Education does not appear to have developed evaluation benchmarks to measure corporate and public awareness. Performance measurement, to date, has consisted primarily of evaluating feedback from participants, instructors, and course coordinators. One of the functions of Education Services, according to its 1997 Business Plan, is to measure the Section’s performance by benchmarking. The Section intends to develop these benchmarks, in part, by exchanging ideas and reviewing best practices
with other similar organizations. We were informed that there is a need for more communication and other provincial WCBs and BC crown corporations (e.g. ICBC) for this specific purpose.

2. According to the Manager, Outreach and Education, due to a higher acceptance rate than anticipated, the Education Partners program may have difficulty maintaining sufficient quality control over all its education network courses. This may also be a concern as the Department proceeds with its recognized programs strategy.

3. Technical Services may be unable to complete planned revisions to publications (to conform to the new OH&S Regulations) on a timely basis. Many more publications were identified as requiring revisions than initially expected following Technical Services’ comprehensive internal Publications Review. Successful completion of all the promised new publications depends, in part, on the availability of various subject matter experts, including Officers and Managers.

Some of those interviewed for the Royal Commission expressed concerns about the community college courses, including the observation that instructors at the community colleges may not have sufficient experience to ensure that the course is meaningful and relevant to employers and workers, that some courses had been dropped because of insufficient enrollment, and that the cost of the courses may be too high for some workers and employers to be able or willing to attend.

*Media Campaigns*

The WCB introduced WorkSafe ads as part of Strategy 3 which involved “creating posters, billboards, pamphlet, print, radio and TV spots, to both improve the individual’s responsibility and awareness to work safely, as well as build family and peer pressure to come home alive and whole” (p.14). As part of this strategy, in 1996, the Board introduced television advertisements under the WorkSafe banner. The advertisements depicted various scenes with friends and family members waiting for someone to return from work. The main message of the ad is to work safely as others are depending on you. The ads do not appear to provide suggestions or information regarding workplace
health and safety, but appear to be aimed at general attitudes. In interviews for the Royal Commission, it was explained that the ads aimed to address general perceptions first (i.e., the importance of workplace safety and the Board's role in promoting this), and that subsequent messages would focus on more specific aspects of safety.

With respect to the Prevention Division's outreach campaigns, the 1997 Administrative Inventory had the following comments:

> The Prevention Division has embarked on a series of outreach campaigns aimed at school children, young workers, high-risk workers, and the public. These are costly ventures, and they warrant evaluation. This will be challenging, given the historic difficulty of evaluating the effectiveness of public education campaigns. Thus, evaluation criteria will need to be broad-based and creative. Additionally, resource constraints suggest that the WCB try to identify other partners for such outreach activities who may be able to share in the expense. (p.245).

The Prevention Division undertook a variety of other public affairs activities in addition to the television ad campaign, including:

- newspaper advertising for WorkSafe
- agriculture campaign and associated news stories
- logging campaign and associated newspaper stories (20 stories) and radio interviews (4)
- sawmill campaign and associated newspaper stories (10 stories) and radio interviews (9)
- young worker program, with television (5 stories/interviews), radio (16 stories/interviews) and print coverage (30 stories)
- penalty action releases which generated 46 newspaper stories

Newspaper articles produced through press releases initiated by the Board seem to have considerable potential for educating the public on specific hazards and strategies. Unlike the brief television ads that are aimed at providing a powerful but simple message, these articles can contain relatively detailed information targeted to a particular audience. The Prevention Division appears to be taking a
more proactive role in developing positive and informative messages through
these channels.

The Prevention Division’s 1998 *Business Plan for Prevention Public Affairs*\(^{228}\)
identified the following strengths and weaknesses for the unit (p.4):

Key strengths include the success of media relations campaigns and the
increase in positive media coverage and stakeholder contact. As a result
of these activities and other initiatives, public support for the WCB to take
an advocacy role in health and safety is growing. Internal recognition of
the role communications play to supporting the Prevention Division and
its goals is also increasing.

A major obstacle facing Public Affairs is the lack of resources (staff)
available to undertake new activities, act upon opportunities and expand
upon programs. With only the Public Affairs manager as the sole
employee in the service centre, resources are limited. Another obstacle
is the lack of consumer research/evaluation undertaken to determine the
effects of public affairs initiatives, Prevention programs, campaigns and
other initiatives in increasing awareness.

### 5.3 Effectiveness

In the first Prevention Division *Administrative Inventory*\(^{229}\), published in 1992, the
assessment of effectiveness of educational activities in the Prevention Division
was addressed as follows (p.93):

... the fundamental goal of the WCB’s educational activities is to positively
affect workplace health and safety. At present, there has been little
attention given to assessing the effectiveness of the OSH Division’s
educational activities. The Division collects information on the number of
educational presentations made by field officers. Except for monitoring
officer activity, these data seem to serve little other useful purpose at this
time. The Education Section also collects information on formal courses given, number in attendance, and satisfaction with the course. While these data can inform decisions about expanding or contracting the courses given, they provide no information about effectiveness.

One of the critical points made here is that the goal of educational activities is to impact health and safety, so that impacts on health and safety should be the focus of evaluation efforts. At present, the Prevention Division has data on number of courses provided, and the combined number of workers and employers in attendance, but it does not appear to collect further background information on attendees (e.g., proportion of workers versus employers in attendance, occupation; industry seems to be a category now included on the college course evaluations). The Prevention Division also does not appear to assess the relationship between training and other available indicators of workplace safety, or to assess workplace safety knowledge, understanding, and behaviour before and after training.

Evaluation issues identified in the 1997 Administrative Inventory are somewhat different than those outlined in 1992, due to the changes in the Education and Outreach section as a result of WorkSafe. The 1997 Administrative Inventory states that (p.245):

We support the development of a more comprehensive safety and health training system in the province through WCB partnerships with educational institutions and other community-based organizations. At the same time, it is important that the WCB consider how it will monitor and assure the quality and effectiveness of these external courses and instructors over time, as well as the satisfaction of the course participants. The partnerships will also require the Division to make decisions on how best to allocate its education resources (financial and human) between internal activities and supporting those of external partners.

The Prevention Division has embarked on a series of outreach campaigns aimed at school children, young workers, high-risk workers, and the public. These are costly ventures, and they warrant evaluation.
This will be challenging, given the historic difficulty of evaluating the effectiveness of public education campaigns.

The role of education and training within the Prevention Division is not entirely clear, and this may account for why, as discussed below, the Prevention Division’s course evaluations fail to address impacts. For example, the 1997 *Administrative Inventory* states that instructors in the Outreach-Education Section believe that a distinction must be drawn between “education” and “training”, and that the courses that they provide “seek to ‘educate’, i.e., to provide information about what can or needs to be done. The courses are not competency-based; for the most part, they do not ‘train’ students in how to get the thing done, nor do they examine students for ability to do something.” (p.173), although there are exceptions (e.g., First Aid training).

Almost all of the surveys and studies that the Prevention Division listed, in response to the Royal Commission’s request for any research done on the effectiveness and efficiency of prevention programs since 1976, pertained to education and outreach. The following surveys and studies related to education and outreach were listed:

- 1996 External Customer Service Satisfaction Survey (to evaluate the Prevention Information Line)
- 1997 audit of WCB prevention publications, for accuracy, ease of readability, quality and usability
- 1996 Communications audit, which involved a focus group review of prevention publications for usability and visual impact (report dated January 28, 1997)
- Course evaluation forms
  - Safety and Health Committee Course
  - Industrial First Aid
- 1994 discussion paper on worker training in occupational health and safety in BC
- 1996 focus group review of OHS training and training delivery needs
- evaluation survey for Student WorkSafe (grades 10-12) CAPP (Career and Personal Planning)
• results of a focus group conducted to evaluate the effectiveness of the format of the regulations

Each of these reports is summarized in the Appendix. Based on a review of these reports, it is apparent that the Prevention Division gathers considerable information on satisfaction with education and outreach services provided, and that satisfaction levels tend to be relatively high (e.g., 87% satisfied with Information Line Services; majority of respondents agree or strongly agree with favourable statements on course delivery). However, the division collects very limited information on impacts of programs and information on actual workplace health and safety efforts. Furthermore, there is only limited attention to features of program and services that can be modified to improve effectiveness.

Despite the limitations of most of these reports, however, there are some that have examined training needs in some depth, from the perspective of employers and workers. The report on training using focus groups conducted by the Prevention Division in April, 1996, discussed above, seems to provide a good overview of the kinds of issues that the Prevention Division needs to consider in designing, delivering, and monitoring occupational health and safety training in BC.

The Prevention Division was also asked by the Royal Commission about external research, as follows (Question II-7):

What, if any, external reviews, evaluations, or assessments have been undertaken by independent (arms-length) consultants of the Board prevention programs to ascertain if these programs have had an impact on workplace injury and disease? For example, has there been an external evaluation of reduction in claims rates that can be reasonably associated or linked to enforcement activities?

In response, the Board referred to the 1992 and 1997 Administrative Inventories, a 1976 review of organization and administration (P.S. Ross and Partners), and the following other studies:
• 1991 study by Salisbury, Brubaker, Hertzman and Loeb, entitled *Fatalities among British Columbia Fallers and Buckers 1981-7*
• 1995 study by Boris and Roberts entitled *Report of Review of Provision of Hearing Aids to WCB Clients*
• 1996 study by Putterman entitled *Evaluation of the 1994/95 Logging Campaign Success in Reducing Injuries*
• 1996-97 Angus Reid Ad Tracking studies, Waves 1-3
• 1997 Angus Reid PNE Job Fair Survey (Young Workers)

These reports are also summarized in the Appendix. The study on logging campaign success concluded that a mandatory Falling and Bucking Training Program seemed to be associated with a reduction in STD claims in some regions, but that further controlled research would be required to confirm the impact. This study examined changes in STD claim rates over a six-month period (July to December, 1994). The study did not assess whether or not employers had implemented the training program, nor did it assess trends in other types of claims (e.g., fatalities or LTD). Also, in October and November of 1994, radio advertisements to promote safe logging practices were aired; however the author noted that there was insufficient data to isolate the effects of the radio advertisements.

Evaluation projects undertaken during 1997 include those listed in the 1997 Prevention Division Year End Report (p.16):

• analysis of the External Line Survey was completed and a report was produced.
• a formative evaluation study of the Kindergarten - Grade 1 component of the Kindergarten - Grade 9 Student WorkSafe program was scoped out . . . the evaluation study will take place during the last half of the 1997-98 school year.
Media Campaigns

The Board’s WorkSafe television advertising campaign appears to be aimed at promoting an attitude that workplace safety is important. The ads do not appear to be aimed at providing information about what can be done to improve workplace safety. Evaluations of media impacts seem focused more on impressions of the WCB than on impacts on safety. Whether or not changing a general attitude that workplace safety is important ultimately results in a change in behaviour is not known, and the WCB did not assess this as part of this first round of television advertisements.

The introduction to the ad tracking research discusses the goals and objectives of the campaign as follows: “the overall objective of raising public awareness about workplace safety issues. Ultimately the goal is to affect people’s attitudes about the importance of workplace safety as a public issue, as well as their own behaviour in the workplace.”

In interviews, it was explained that the strategy is to start with general impressions first, and move to more specific messages in subsequent steps. Evaluations have focused on impressions of the WCB in part because these ads have an additional objective of promoting the WCB as an organization concerned with improving occupational health and safety.

Angus Reid conducted four “waves” of ad tracking for the WCB, conducted before the start of the first ad campaign in 1996, immediately after, and then again after the second ad campaign in 1997. Among the results of the Angus Reid ad tracking survey completed just as the first television ad campaign was ending in December, 1996, were that:

- in terms of awareness of the ads themselves, there was an increase of 21% over “phantom awareness levels” (i.e., awareness before the ads are played)
- 36% of those who saw the ads correctly identified WCB as the sponsor
• 71% say the ads make them feel more favourably toward the WCB

However, the study also found that (p.4):

• While many respondents are aware of the advertisements, a wave-to-wave comparison shows no significant change in top-of-mind attitudes toward the importance of workplace safety issues.

• Attitudes toward the importance of workplace safety measured later in the survey, after the issue has been introduced, remain very supportive, although are virtually unchanged from the first wave.

As indicated in the discussion of results, to expect change this early, after one wave of advertisements, may be unrealistic. The ad tracking studies indicate that the objective of enhanced attitudes toward workplace safety have not yet been achieved by the ads. The report’s conclusions suggest that more of the same may be needed before a change takes place.

After the second wave of advertisements in April, May, and June of 1997, involving the same ads with minor changes, Angus Reid conducted the third and fourth waves of ad tracking. Similar to previous results, the ads were received positively and reactions to the WCB as a sponsor were positive. The fourth wave report also noted that with each wave there had been increases in the level of public support for the WCB’s advocacy role and sponsorship of the campaign with respect to safety. However, attitudes toward safety remained unchanged. In terms of overall corporate effectiveness, the last wave found that the WCB was rated lower than in previous waves, a finding which the report attributed in part to negative publicity associated with the Royal Commission.

The ad tracking studies found that the messages intended to be conveyed by the ads were not always clear. The messages identified by viewers in Wave 3, for example, were:
• “Friends”: of those who saw the ad, 31% said the message was “don’t drink and drive”; 26% said ICBC was the sponsor; 26% said the message was loss of loved ones or people not coming home; 17% said it was to be careful, or referred to work-related death
• “Kids”: 18% said the message is safety at work; 13% said the message is be careful; 13% said the message concerns the parent not being around or pay attention to your kids
• “Partners”: 33% said the message is safety; 22% said the message is loss of loved ones/people not coming home

The extent to which top-of-mind awareness is what is needed to improve workplace safety, versus concrete information on workplace hazards and what to do about them, is not known. The ad tracking studies did not ask viewers questions regarding the extent to which the ads had any impact on their own work behaviour.

In the Prevention Division’s Operating and Financial Report, Year End 1996, results of the Angus Reid ad tracking are presented as follows (p.16):

• unaided awareness of workplace safety advertising rose from the “phantom” awareness level of 30% pre-advertising to 47% post-advertising
• awareness of the tagline “WorkSafe” has increased 11 points to 57%

Results regarding the lack of change in attitudes toward workplace safety as a result of the ads are not discussed in the report.

In summary, while the WorkSafe television ads may be useful in promoting the WCB as an advocate of workplace safety, it is not clear that they are having any impact on workplace safety. Attitudes toward safety remain relatively unchanged, and beyond attitudes, actual impacts on workplace safety are not being measured by the ad tracking studies. The extent to which these ads represent a cost-effective strategy on the part of the division, relative to other kinds of efforts to promote workplace safety, is also not clear. Another campaign of similar ads was initiated by the Board in 1998.
5.4 Alternatives

The Australian Inquiry into Occupational Health and Safety found that in that country:

At times, the rationale for government involvement in (education and training) appears unclear and ill-defined. Furthermore, many of the government policies and programs are not evaluated on a regular basis, making it difficult to judge their effectiveness. (p.219)

Regulatory reforms were proposed in Australia, as a result of the Inquiry into Occupational Health and Safety in 1995, which would “reinforce employers’ responsibility to exercise their duty of care” (p.219). Among its recommendations were that: “employers be required to train all employees in occupational health and safety to the point where they attain the core competencies specified in regulation” (p.233). This Inquiry argued that “core competencies” should be developed by the National Occupational Health and Safety Commission and should be defined in subordinate legislation. The Inquiry also had a number of other recommendations:

- (G)overnments encourage the private provision of workplace-specific advice on occupational health and safety. Governments should inform employers about the potential role such advice can play and consider facilitating a voluntary accreditation system. (p.227)
- The use of accredited trainers should be mandatory for health and safety representative and occupational health and safety committee member training and accredited by the State or Territory OHS agency. (p.233)

Issues that the Board may need to consider with respect to occupational health and safety training relate to both content and process issues. With respect to content, needs assessments should be conducted to assess the major areas where training seems to be lacking, and research should be carried out in order to develop an understanding of what types of training are associated with enhanced health and safety and reduced
accident rates within workplaces. It would also be useful to have a better understanding of the extent to which employers and workers are familiar with the significant hazards and regulations relevant to their industries, as well as their rights and responsibilities under the regulations. Additionally, it would be useful for the Board to conduct research to identify the kinds of critical information required to facilitate effective occupational health and safety programs and committees.

In addition to content issues, there are a number of process options to consider. Training could be provided by the Board, by existing educational institutions, and by a variety of other agencies and individuals, including unions and employer associations. Where several organizations are involved, performance standards, monitoring and evaluation mechanisms should be in place to ensure consistency and quality of training. Finally, there may be a number of funding arrangements possible, including subsidization by the Board through employer assessments, direct payment by employers, payment by workers, or some combination of these.
6.0 RESEARCH

6.1 Overview

The major conclusions in this chapter are that:

- Research and evaluation appears to have received low priority by the Prevention Division, despite the commonly recognized need to measure program impacts and to justify program expenditures given limited resources.
- Research conducted in recent years does not appear to have provided the Prevention Division with the kinds of answers it requires to develop and improve programs and services.
- The Prevention Division has not had a system in place until recently to account for and track funds allocated for research, grants, and awards.
- The priorities for 1998 for the revised Grants and Awards program entitled Finding Solutions appear to be geared toward providing more relevant information for programming purposes; in the past year, there have been enhanced resources allocated to research within the Division.

6.2 Purpose/Structure of Research Capabilities (Internal and External)

Research and Evaluation

The Prevention Division has access to research and evaluation through the recently developed Research and Evaluation section of Central Operations. As discussed throughout this report, there are many areas where program evaluation could assist the Prevention Division, particularly in program planning and design. There has been limited work in this area to date.

In the 1996 Briefing document, the Research and Evaluation department is described as follows (p.20):

This section was created in 1995 to generate research into causality and data analysis required to effectively target the Prevention Division’s activities. It
produces monthly, quarterly and year-end prevention statistical reports as well as industry specific injury reports, for example, related to logging.

The 1997 Administrative Inventory reports that the Research and Evaluation Section conducts program evaluation, research into causality, and data analysis to facilitate effective targeting of the division’s activities. It also notes that the section generates monthly, quarterly and yearly statistical reports, and some industry and hazard-specific reports (p.35). Much of the data provided in the Key Performance Indicator reports and more detailed monthly statistical reports is compiled by Research and Evaluation (p.104):

The newly created Research and Evaluation Section prepares informative monthly statistical reports that include activities of the Prevention Division related to risk evaluation (fatal accident reports by activity types, fatality details, and breakdown of claims data in key industries) and risk reduction (worksite activities in key industries, including inspections, contacts, program reviews, accident reports, claims investigations, and time spent in education and consultation; first aid certificates issued; information line calls; penalties recommended, finalized and pending; AIRS implementation; and information on laboratory services, audiology and hearing conservation activities). These reports provide trend data for the current year and previous year for comparison.

The Prevention Division’s 1997 Year End Operating Report reports that in 1997, the Research and Evaluation section “began to focus more attention on internal and external program evaluations”, and listed a number of evaluation projects as well as Technical and Focus Reports underway or completed. These included:

- analysis of the external Information Line Survey
- internal field staff survey for the Information Line
- worker/employer satisfaction survey of field officer visits
- study of CAPP Students safety training and experience
- survey of secondary school librarians
- initiation of the formative evaluation of the Kindergarten to Grade 1 component of the Kindergarten to Grade 9 Student WorkSafe program
• Focus Reports started or completed for various industries (Construction industry, Hotel and Restaurant industry, Heavy Manufacturing industry)
• technical/statistical reports on claims in specific industries (disability claims in the Provincial Government, accidents in the Fishing Industry, technical report on the Agriculture industry, traumatic fatalities in the Logging industry, technical reports on schools and school boards)
• fact sheets on young workers
• continued production of monthly, quarterly and KPI reports

The division’s Performance Plans for Research and Evaluation in 1998 list these kinds of activities as well as activities concerned with targeting (e.g., developing management information reports for targeted firms under strategy #1 and strategy #2) and supporting the Grants and Awards function (e.g., reviewing grant proposals; summarizing grants that are funded for announcement).

The division’s First Quarter Report for 1998 describe the following activities under “Research and Evaluation” related to Strategy #5 “Addressing Causality” (p.22):

• finalized report on disability and fatal claims in the Fishing industry
• completed Focus Report on Hotels and Restaurants
• worked on the second edition of the Focus Report Protecting Young Workers
• background work and industry consultation for the Focus Report on the Heavy Manufacturing Industry
• prepared accident and injury statistical data for presentation by Regional Services to various sectors
• tested the AIRS inquiry database system

It appears, based on the documents reviewed, that the Research and Evaluation section provides support to the division in carrying out and monitoring its WorkSafe strategies. This support includes producing basic statistics on activities and outcomes in term of claim and injury rates. Additionally, the section has conducted some surveys with respect to divisional activities, such as Field Services and the Information Line.
As discussed elsewhere in this report, the activity and outcome measures used by the division appear to be limited in terms of how they can contribute to program planning and design. Increases or decreases in claims and injury rates can be attributed to a variety of factors, not only to the actions of the Prevention Division. Furthermore, there is no way of identifying the particular contribution to improvements in workplace safety made by the different Prevention Division programs and services. The KPI’s and monthly statistical reports produced provide some important information for monitoring activities and outputs year over year, but they provide only a cursory overview of what services are being provided, to whom, and to what extent they are achieving their intended results.

The Focus Reports, some of which appear to be produced in part or exclusively by Research and Evaluation (others are produced by Engineering), have also been discussed elsewhere in this report. These reports go considerably beyond the standard presentation of accident causality data, and seem to have great potential to assist industry sectors in focusing their efforts on the critical contributors to serious or fatal injuries.

It is not clear how the research conducted through Research and Evaluation in its first years contributed to program planning and design, although it should be noted that evaluations conducted in the past year have not been reviewed for this update. The early studies that were reviewed, including the satisfaction surveys that have been conducted, provide overall levels of satisfaction with various services but appear to provide little in the way of directions for service improvements, or information on actual impacts on workplace safety. In some cases, lack of information needed to calculate response rates, or low response rates, also reduce the usefulness of the surveys.

There are several ways in which Research and Evaluation might be able to further assist divisional programs. For example, Field Services activities could be evaluated in more depth in order to better understand in what ways inspection, consultation and educational activities contribute to enhanced workplace safety, and under what conditions they are likely to be more or less successful. This kind of research could also help to describe and clarify how these services are actually being delivered (e.g., quality inspections; follow-up). It could also help to clarify the state of knowledge and
understanding amongst employers and workers with respect to critical hazards and solutions within their particular workplaces. Other areas where research is needed to assist in program design and improve program delivery are discussed elsewhere in this report.

Grants and Awards

The Prevention Division also has access to research through its Grants and Awards program. The 1997 Administrative Inventory discusses some of the history and the current status of this program, as follows:

Recognizing the importance of supporting research and training to improve workplace health and safety in the province, the WCB has had a grants and awards program for a number of years. For several years, the program was in disarray. In 1996, it was reviewed, and new procedures were put into place, including a process of peer review and an annual call for proposals, which specifies topics of interest and priorities. Now called Finding Solutions, the grants and awards program provides financial assistance to industry, labour, and the research community in support of research and educational projects that:

1) promote early identification and prevention of workplace risks;
2) investigate methods for reducing workplace risks; 3) evaluate post-injury rehabilitation strategies; or 4) promote effective education on health and safety risks (p.99).

The Prevention Division could make use of its Grants and Awards program by funding research that it may be unable to carry out internally, for example, research that requires particular technical expertise that may not exist in the division. As noted in the Administrative Inventory, the grants and awards program:

...can generate research and information on a wide spectrum of critical subjects, such as accident, injury, and disease causation, primary prevention, recognition and surveillance of occupational disease, and effectiveness of preventive interventions. ...At this time, a dissemination
strategy for research reports is under development, and it is not clear how the Board will use the information and findings generated through (the) program to enhance its policy and decision making. However, the program is (a) valuable adjunct to Board activities and an important first step in establishing a strong research function at the Board. (p.99).

The Prevention Division has not effectively monitored the work carried out through the Grants and Awards program in the past. A 1996 Audit of the Grants and Awards program rated four of the seven key program functions “unsatisfactory”, including budgeting and accountability of funds, obtaining grant proposals, monitoring project deliverables and communication and reporting of results. Two of the key functions received ratings of “needs improvement”, including proposal evaluation and recommendation process, and accumulation of grants and awards management information. On one of the seven key program functions, authorization of grants, a rating of “satisfactory” was received.

With respect to the six key program areas (i.e., of the seven areas assessed in total, with four rated “unsatisfactory” and two rated “needs improvement”) identified in the audit, the following points were made (quotes p.1-2):

- The G&A (Grants and Awards) program did not maintain an appropriate system of budgeting and accounting for funds. Grants were not accounted for until they were paid, and there was no system in place to track outstanding grant commitments.” The budget for 1995 was used almost entirely to fund projects committed to in prior years, and at the time of the audit had commitments in excess of $1 Million. As a result, the audit suggested that the program may not be able to fund many new projects in the future.
- “The G&A Advisory Committee did not consult with community and representative groups to identify and prioritize areas requiring research, as required in the G&A Policy”. There was no formal proposal solicitation process and all grant proposals were unsolicited.
- “During the period examined, there were no formal proposal evaluation criteria.” Some of the proposals submitted did not contain sufficient detail to make decisions (e.g., detailed budgets, planned starting and end dates) .
During the audit period, the G&A Committee was in the process of developing these criteria.

- “The G&A program did not have a process to track and follow-up on project deliverables. As a result, the G&A Advisory Committee was unable to assess the overall effectiveness of the G&A program. Further, our review of grant files revealed that interim and final reports were not always received, and that where reports were received, the G&A Advisory Committee did not adequately evaluate the projects or discuss the results.” The audit noted that in some cases the grant agreements did not specify report due dates, and that reports seemed to be provided only when recipients were requesting additional funding.

- “The G&A Advisory Committee did not report the results of projects funded to the SEC or to the Panel of Administrators; nor did it communicate the results to representative communities, as required in the G&A Advisory Committee Terms of Reference.”

- “Only limited management information pertaining to the G&A program was collected to assist in the management and administration of the program.”

Furthermore, even on the key issue area “authorization of grants”, there were concerns with the process. For example, two projects that the G&A Committee had felt were outside the mandate of the program and had recommended that grants not be issued for them, had received grants anyway. Also, though multi-year grants required approval from the Board of Governors, two had been passed without approval because annual payments were structured as separate single-year grants.

The Management Response to several of the above audit’s recommendations was that a number of procedures would be implemented to improve tracking and accountability. With respect to recommendations regarding communication and reporting of funding results, the Management Response was “The process for formal review will be implemented, however, due to the fact that these reports were not required or may never have been received in the past, the ability to report on past results is limited. This will be corrected with new procedures and requirements which will enable a report on results and ...progress of all funded projects” (p.12).
A follow-up audit was conducted a year later on March 24, 1997\textsuperscript{238}, which concluded that 16 of the 17 recommendations made in the original audit were fully implemented, and sufficient action was taken or planned on the remaining recommendation. Management reported that, for example, formal submission criteria were developed and a peer review process was put in place. Additionally, they stated that an internal survey was conducted of a broad cross section of management and professionals concerned with research at the Board, and this questionnaire was also used to survey external constituents; this survey was used by the Advisory Committee to determine the priorities for 1997 (p.2)

In the follow-up audit, management’s response to recommendation 5.6 that “The Coordinator, G&A Advisory Committee, should maintain a schedule of interim and final report due dates, and should initiate follow-up action if the reports are not delivered by the agreed upon dates” (p.4) was as follows: “The administrative assistant has developed a ‘bring forward’ procedure to identify any outstanding reports. Any delinquent reports are brought to the Coordinator’s attention for follow-up.” (p.4).

Nevertheless, it appears that at this late date problems in tracking still exist. For example, a Simon Fraser University study on OHS committees received funding of $45,340.00 for research from the Board in 1993. As of June 1997 the report had still not been received. Near the end of June 1997, the Royal Commission requested information from the Board on research on the effectiveness of OHS Committees. On July 16, 1997, the Prevention Division contacted the researchers to request the report and the Board received the report on October 14, 1997. The researcher contracted to carry out the study returned $30,000 to the board as the project was completed significantly under budget.

A 1996 review by an external consultant, which summarized the projects funded by the WCB to the present\textsuperscript{239}, was also provided to the Royal Commission. This review identified similar problems in the documentation and tracking of projects, and offered several recommendations for improvement.

In 1996, the Board funded 10 projects for a total of $292,753.00 (1997 Administrative Inventory, p.109; also listed on page 48 of the 1996 Annual Report). The 1996 Annual
Report states that in addition to the $290,000 provided through “Finding Solutions”, another $1,670,000 was provided for other grants, including annual grants to the BC Cancer Agency and the BCIT Entrance Scholarship Fund. It appears that some of the grants and awards address research questions, while others provide support to individual employers for projects (which may have applicability to other employers, for examples, as models of effective approaches). Examples of the former include the Work Health Foundation’s evaluation of methods to prevent serious injuries among health care workers and Vancouver Hospital and Health Sciences Centre Spinal Unit’s evaluation of physician practices in the treatment of acute back pain. Examples of employer grants include those to B.C. Ferries for the redesign of toll booths and AM-PM Tree Services for the development of written safe work practices for utility arborists.

The Administrative Inventory listed the priorities for Grants and Awards in 1997 (p.99):

- evaluation of interventions to prevent musculoskeletal injuries
- improving the effectiveness of interventions related to substance abuse in the workplace
- identification of organizational attributes that positively impact injuries, rehabilitation and return-to-work, and evaluation of related interventions
- identification and evaluation of substitutes for hazardous products
- causation and the prevention of occupational lung disease

The 1997 Annual Report provides the following information on Partnerships in Research for the most recent year (p.14-15):

Finding Solutions is the WCB’s annual grant program supporting research and training projects designed to improve safety and health in the workplace. In 1997, the WCB awarded close to $500,000 to fund 14 new projects. About half of the research grants address sprain and strain injuries, the single largest source of short-term disability claims in B.C. Other grants include $46,958 for expanding safety training for power-line technicians; $32,000 for analyzing occupational risks in the school system; and $19,8000 for producing a violence prevention video for taxicab drivers.
The WCB also provides ongoing support for BCIT student scholarships in occupational health and safety and for BC Cancer Agency research on causes of cancer in the workplace. In 1997, the WCB renewed a long-term partnership with the BC Cancer Agency with a $1.2-milion, five-year grant.

Priorities for *Finding Solutions* in 1998 are as follows:

- Work and organizational culture and its impact on occupational health and safety, and rehabilitation in the workplace
- Evaluation of factors affecting health and safety risks
- Development of interventions related to specific risks
- Evaluation of interventions to promote occupational health, safety and rehabilitation

The Prevention Division provided the Royal Commission with a variety of materials on the current *Finding Solutions* program, including application guidelines and evaluation criteria. The evaluation criteria used to assess proposals, listed in these documents, were in four categories with several indicators for each category: Potential Benefits (e.g., contribution to a priority issue); Project Quality (e.g., originality/innovativeness); Analytical/Evaluation Plan (e.g., the nature and quality of current knowledge, research or training on this issue), and Project Feasibility (e.g., appropriateness of the budget and timeline). These kinds of improvements would be expected to help ensure that the projects funded through Grants and Awards are useful to the Prevention Division and to others served by the project.

The addition of the Strategic Projects section to the division in 1998, overseeing research funding, is also a positive move toward enhancing the division’s capability and use of research.

### 6.3 Effectiveness

The Research and Evaluation Section produces regular reports on Prevention Division activities and performance measures selected by divisional executive. The limitations of
these performance measures, particularly injury rate, have been discussed previously. Focus Reports do appear to hold some promise in terms of isolating the causes of industry-specific injuries and fatalities. Some evaluation studies have also been conducted. The Research and Evaluation Unit appears to provide a variety of other services to management within the division, beyond evaluation (for example, the 1998 Performance Plan\textsuperscript{241} includes a number of activities that are supportive of targeting activities and Grants and Awards). It may be difficult to carry out extensive evaluations within this unit with limited resources and multiple information demands from other areas. The Board has expressed a commitment to research and evaluation to varying degrees over the years but at least until recently did not appear to have to have made this a priority in the Prevention Division. The 1998 Business Plan acknowledged the need for additional resources within this unit, and included an additional researcher within the budget\textsuperscript{242}.

Also until recently, research conducted through Grants and Awards has not been monitored or tracked, and in some cases research has been funded but reports of results have not been forthcoming. In the past, there did not appear to be a well-managed approach to establishing priorities, or using existing program needs to drive research requests. Under these conditions, it would have been impossible for the Prevention Division to take advantage of this research to improve programming. Recent changes to Grants and Awards and increased funding for research within the Prevention Division are positive steps.

\subsection*{6.4 Alternatives}

Evaluation of occupational health and safety programs seems to be lacking in many jurisdictions across Canada and outside of Canada, although some jurisdictions (e.g., Ontario) have had rather extensive evaluation resources at least until recently. Various arrangements for research grants and support are in place.

The Prevention Division could have a process in place to establish research and evaluation priorities that ties in more closely with program design and delivery than currently appears to be the case. This requires that sufficient resources are committed to its evaluation section so that comprehensive and meaningful evaluations of programs
can be carried out. This may require a mix of internally conducted and externally contracted research projects. If the Board is to take advantages of expertise available through academic institutions, it should be responsible for ensuring that this research is meaningful, conducted as cost-effectively as possible, completed, and utilized by the Prevention Division.
7.0 FINANCIAL INCENTIVES

7.1 Overview

The major conclusions in this chapter are:

- the first objective of the Board’s Experience-Rated Assessment Plan (ERA) is to promote safety
- until recently, the Prevention Division and the Assessment Department functioned relatively independently, so that the potential link between ERA and safety was not maximized
- an internal Board study found that there are a number of design flaws with ERA, and that it has not accomplished its objective of improved safety
- follow-up to this study found a decrease in health care and short-term disability claim rates since ERA, an increase in long-term disability claim rates, an increase in short-term disability claim costs and a reduction in the average cost of long-term disability claims
- changes to ERA and other financial incentive plans are currently being considered by the Financial Services Division

7.2 Role of Prevention in Designing/Integration with Financial Incentive Plans

Employer assessments are mandated under Section 39 of the WCA Act. Section 42 of the Act defines the Board’s authority to vary assessments on the basis of a firm’s accident rate:

42. The board shall establish sub-classifications, differentials and proportions in the rates as between the different kinds of employment in the same class as may be considered just; and where the board thinks a particular industry or plant is shown to be so circumscribed or conducted that the hazard or cost of compensation differ from the average of the class or subclass to which the industry or plant is assigned, the board shall confer or impose on that industry or plant a special rate, differential or assessment to correspond with the relative hazard or cost of
compensation of that industry or plant, and for that purpose may also adopt a system of experience rating.

Since its introduction in 1986, nearly all243 employers registered with the Board have paid premiums under the Experience-Rated Assessment Plan (ERA). The Workers’ Compensation Board Reporter Decision No. 401 (June 27, 1986) defines the objectives of ERA as follows:

It is, firstly, to promote improved workplace safety, and, secondly, to provide assessment equity.

Similarly, the Assessment Department’s Policy and Procedure Manual (No.:30:50:41) states:

The ERA program attempts to promote a positive safety attitude and provide equity through a system of recognition and accountability for claims costs arising out of an individual firm’s operations. It is also a system of checks and balances which means that if assessment is to be refunded to a firm for a better than average claims cost record it must be counterbalanced by an increase in assessments to firms whose record is worse than average.

ERA assigns merit or demerit ratings to a maximum of +/- 33.3% of the base rate for large employers, or 16.67% for small employers. The ERA plan compares thirty months of claims costs incurred by the employer and the employer’s payroll, with the subclass claims costs and payroll, to determine if the employer falls above or below the average for his/her subclass.

Despite the officially acknowledged first and primary objective of ERA, that is, to promote workplace safety, ERA has remained from its inception a financial assessment plan, administered by the Assessment Department exclusively, and relatively detached from the activities of the Prevention Division. The ERA Evaluation Planning Report244 describes the plan’s relationship with the Prevention Division, as follows:
Assessment Department staff collect the penalties that Prevention Division personnel have levied against employers. The Assessment Department database is used by the Prevention Division to identify demerit employers for inspection activities. Prevention also accesses information from the Assessment Department as needed, where the employment relationship is in question, or to determine subclass hazard rates for targeting educational services. At present, there are no other formalized linkages between the two departments. ...Since an explicit objective of ERA is to enhance safety attitudes within the workplace, it would be expected that some linkage would be made with preventative activities within the Board, specifically through the Prevention Division (p.26-27).

The 1992 Workers’ Compensation Board of British Columbia: Assessment Department Administrative Inventory also referred to the need for a link between Prevention and ERA:

...there may be a number of areas where ERA safety-enhancing performance could be immediately improved. First, it would be desirable to provide greater linkage between OSH inspections and penalty assessments and ERA merits and demerits. It is unfortunate that this opportunity to use financial incentives to reinforce safety performance incentives was missed in the original design of the ERA program (p.64).

The 1992 Administrative Inventory also argued for an empirical study of the movements in merits and demerits, and Prevention Division inspection results, to determine whether or not ERA was providing a sufficient incentive for safety.

There have been concerns expressed that experience-rating programs do not increase attention to safety, but rather, to the reduction of claims. There are a number of actions that can result in reduced claims and claims costs, including effective health and safety programs and early return-to-work programs; however, as discussed earlier in this report, claims suppression can also result in reduced claims and claims costs. Kralj
(1994) discusses the ways in which experience-rating can focus attention on reducing claims costs, as follows:

The employer can reduce his costs of occupational injuries by preventing accidents as well as by engaging in activities that minimize the costs of accidents once they occur. We can divide these latter activities into two categories: intended and unintended. Activities which were intended to be generated by experience rating are actions that minimize the severity of injuries likely to be caused by an accident as well as activities aimed at minimizing the injured workers' duration of absence from work. This may include the provision of protective equipment such as safety goggles, protective headgear, machine guards and in-plant first aid. Medical rehabilitation, retraining and job modification activities may be included in this category. Unintended employer activities which can result in workers' compensation accident cost reductions include excessive claims management, sub-contracting of most hazardous activities, excessive demand for (relief of costs), excessive or frivolous protests and appeals of injured workers claims. (p.45-46).

The ERA Planning Report cites a report by Goldfarb Consultants conducted in 1988 to assess attitudes toward ERA, which found that:

- 82% of employers agreed that ERA provides incentive for employers to place greater emphasis on health and safety (although less than half of these employers felt ERA had encouraged their own company to do so);
- however, 32% of employers agreed that ERA could encourage some employers to not report workplace injuries, and 31% felt they would be better off paying small claims directly rather than letting these affect their ERA rate.

Evidence of claims suppression is very hard to substantiate. Some argue that this is an inevitable and pervasive consequence of experience rating, but few studies have been able to prove that this is indeed the case. Kralj (1994) found, in a small number of case studies that he conducted, that large employers tended to view experience-rating as having influenced them to focus on claims
cost control, and that some of these employers elected to incur costs for minor or short-term duration claims rather than having workers go through the WCB. Other research through the Research and Evaluation branch of the WCB in Ontario found few cases that could suggest failure to report claims or claims suppression. The Board’s ERA evaluation also found that, when asked directly, few employers reported claims management activities. Other approaches to assessing claims management beyond self-report may be useful.

7.3 Effectiveness

Studies of the impacts of experience-rating tend to be econometric analyses which test experience-rating against other factors believed to influence claim rates. Some reviews of these studies suggest that the results are inconclusive, or that more research is needed to draw definitive conclusions. Burton and Chelius (1997) illustrate the differing viewpoints, as follows:

One survey of the literature by Boden (1995:225) concluded that: “research on the safety impacts has not provided a clear answer to whether workers’ compensation improves workplace safety.” In contrast, a recent survey by Butler (1994:I-87) found that, with the exception of the study by Chelius and Smith (1983), most recent studies provide statistically significant evidence that experience rating “has had at least some role in improving workplace safety for large firms.” Based on our knowledge of the literature, we believe the Butler conclusion is more reasonable, although additional research is clearly warranted in order to support this finding.

In a review of research on experience-rating conducted for the Royal Commission, Hyatt and Thomason (1998) conclude that, taken together, the studies on experience-rating “suggest that experience rating may well be associated with a reduction in the incidence of occupational injuries” (p.42). They also note, however, that these studies are based on reductions in claims associated with experience-rating, and that there remains the possibility that the reduction in claims is due to claims management rather than accident
prevention efforts. Their review also found that the evidence from studies on the impact of experience-rating on injury severity was less consistent than the evidence on claim rates. Finally, they point out that it is important to recognize the weakness of much of the prior research on experience-rating, none of which has involved the use of a true random experiment.

Employer surveys can enhance our understanding by examining reported impacts beyond claim rates. For example, Kralj (1994) surveyed Ontario employers about the WCB’s New Experimental Experience Rating (NEER) plan and found that employers with a good understanding of how the experience-rating plan worked were more likely to have changed their safety practices than were those with less understanding. Most large employers were aware of the plan but only 39% understood how it worked; large employers were more aware and knowledgeable than were medium-sized and small employers. Research for the National Council on Compensation Insurance (NCCI) in the US (Kahley & Sornberger, 1994) also found favourable impacts on safety efforts.

An evaluation of ERA was conducted by the Board’s Internal Audit and Evaluation Department in 1995. This was a comprehensive evaluation that involved literature and document reviews, analysis of existing Board data, personal interviews and an employer survey. Three external experts in the area of experience rating and workplace health and safety assisted with the study, including Dr. James Chelius, Dr. Kip Viscusi, and Dr. Doug Hyatt. Following the evaluation and in order to further assess the impacts of ERA, Dr. Doug Hyatt conducted an econometric analysis on a dataset of 24,375 firms continuously registered for ten years (i.e., before and after the implementation of ERA), which is discussed further below.

The Board’s evaluation study found that ERA was not achieving either of its two primary objectives -- safety and assessment equity -- particularly well. The evaluation’s employer survey found that only 54% of employers were aware of the ERA plan and how it affected their rates. Large employers were much more aware of ERA than were small employers. Most employers are small (e.g., about 69% had annual assessments under $2,000 at the time of the study), so for them the minimal change in assessments with an ERA merit or demerit may simply not have been worth any change in safety practices.
As discussed above, ERA is based on claims costs, and there are many ways to reduce claims costs (e.g., claims management, early return-to-work programs). The study noted that WCB assessments had been increasing for many firms because of the subclass base rate increases; consequently, they may have seen little or no change in their overall assessments even if their safety performance improved.

With ERA capped at 33.3%, some firms can go for years with high claims costs that far exceed their overall assessments. Similarly, other employers can go for years with an excellent safety performance and pay rates far in excess of their costs. The evaluation found that 16,874 active firms maintained maximum merits over a 5-year period (1988-1992), and had claims costs that were $9 million to $11 Million less than their assessments payable in each of these years (for a total of $51 Million more in assessments than claims costs over the 5-year period). The evaluation also found that 368 firms maintained maximum demerits over the same 5-year period, incurring total claims costs that were $3 million to $7 Million more than their assessments payable in each of these years (for a total of $23 Million more in claims costs than assessments payable over the 5-year period). Under these conditions, it is questionable whether or not ERA is severing as an incentive to promote safe or to deter unsafe practices.

The study found that just over half of employers who were aware of ERA, and who has undertaken new activities to reduce injuries, said that ERA had at least a moderate influence on this decision.

There were a variety of suggestions for changes to ERA in order to enhance its safety impacts. For example, it was suggested that assessments could be linked not only to claims costs but to safety inspections or audits. It was also suggested that a variable maximum merit limit could be imposed for employers who are continuously at maximum merit.

Part of ERA’s failure to impact safety as well as it might appeared to be due to the way it was administered -- as an assessment plan detached from the Board’s other occupational health and safety efforts. According to interviewees 252, the ERA statement provided assessment information via complex formulas that employers didn’t understand. Up until the time of the evaluation, the ERA statement provided no advice.
to the employer on how to improve the firm’s safety performance and lower assessment rates. Interviewees offered a number of suggestions to improve communication about ERA in order to increase its impact on health and safety:

They suggested that the Board provide more useful information on the Era letter and on other correspondence it sends. For example, the Era letter could contain tips on safety, a contact person for further safety information, more employer-specific information on the Era rating including the actual dollar amount of costs or savings that it will mean to them, and how they compare to their true competitors (i.e., claims patterns of a subset of more similar employers in the subclass rather than the entire subclass). ...The ERA letter should be written in simple language and geared to the educational level of the average employer. ...Targeting Era information to higher level decision-makers and safety officers was recommended, instead of dealing solely with accountants and bookkeepers (p.22).

An econometric analysis conducted by Hyatt (1996)\textsuperscript{253} following the evaluation study found that ERA was associated with reduction in health care only, short-term disability, and fatal claims, but with an increase in long-term disability claims. Additionally, an overall higher per-claim cost for short-term disability and first paid claims was associated with ERA, a finding which may suggest an incentive to shift costs outside of ERA’s 30-month window (i.e., the period of time in which claims costs are captured for ERA purposes).

Further analyses on ERA conducted for the Royal Commission (Hyatt and Thomason, 1998)\textsuperscript{254} found that both small and large firms respond to ERA in approximately the same way in terms of reductions in total first paid, health care only, and short-term disability claim rates, as well as increases in long-term disability claim rates. At the same time, both small and large firms experienced growth in the average cost per claim of total first paid, health care only and short-term disability claims, and a reduction in the average cost of long-term disability claims. Hyatt and Thomason inferred from these findings that firms respond to incentives in ERA by extending short-term disability benefits beyond the “30-month window” (i.e., the window of time in which claim costs
can be attributed to the employer; costs incurred on a claim after 30 months are not included in the employer’s experience-rate).

7.4 Alternatives

Some very large employers (usually government, public agencies, crown corporations, public transport) can be on self-insurance schemes, whereby they pay the full cost of compensation for their employee claims. Some jurisdictions offer experience-rating only to large employers, and most adjust the incentive levels according to employer size. Some offer financial incentive plans that are tied to indicators of firm safety other than claims costs, such as having an effective health and safety program.

The Association of Workers’ Compensation Boards of Canada publishes an annual review of experience rating programs in Canada. The 1997 review reported that all jurisdictions in Canada have at least some form of experience-rating plan, with the exception of the Yukon, which discontinued its plan in 1996. Most plans are based on claims costs, although they differ on some features, such as which costs are included, the size of the merit or demerit, and how the costs are determined (e.g., prospective versus retrospective plans).

A few provinces offer plans based on activities other than claims costs. Ontario has two experience-rated plans based on claims experience (the New Experimental Experience Rating, and the CAD-7 or Council Amendment to Draft #7 plan), and two plans based on other factors. Ontario’s Workwell program, and its Safe Communities Incentive Program, are described as follows (p.40-41):

WORKWELL
Firms with good accident cost and frequency records, and a good compliance record with the provincial government’s health and safety standards are selected for a Workwell audit. Prevention rebates range from 10% - 75% of assessments, to a maximum of $100,000 per firm. To qualify, firms must have little or no work injury lost-time and they must have an organizational health and safety program in place to contain accidents. Successful employers are permitted to use the Workwell logo
in their promotions and advertisements for a twelve month period following the award.

The program (can also issue) additional assessments.... Workwell staff evaluate employers with either particularly poor injury records for their rate group, or a history of non-compliance with the *Occupational Health and Safety Act.* ...The employer is provided with a copy of the criteria by which the workplace is to be evaluated. The criteria fall within the following categories: health and safety policies and procedures; health and safety program development; health and safety program implementation; and health and safety program promotion and communication. ...(If corrective action is not taken), surcharges range from 10 - 75% of assessment to a maximum of $100,000.

**SAFE COMMUNITIES INCENTIVE PROGRAM**

The Safe Communities Incentive Program was introduced in 1997. It is an experience rating group plan for small employers that participate in their local Safe Communities program. A Safe Communities program is a community based health and safety initiative, the goal of which is to create a healthy and safe environment for all community residents to live, work and play in. The safe community approach works by linking chambers of commerce, community health and safety organizations, and provincial ministries of labour.

SCIP is open to employers with operations in communities having a local steering committee and an action plan that has been accepted by the WCB. An employer may apply to participate in SCIP if: it is a registered Schedule 1 firm contributing $90,000 or less in annual WCB premiums and; it agrees to participate in the evaluation of its health and safety practices and procedures.

Under SCIP the WCB treats the accident costs of the employer group as if it were one large firm. The group receives a 75% refund on any savings
that are realized due to improved health and safety practices. Surcharges are not issued.

Newfoundland and Labrador offer and Experience Rating Plan and a Worksafe Plan. The Worksafe Plan was implemented in 1996. If firms pass a safety audit, have claims costs lower than expected claims costs (based on the firm’s historic claims costs), and have an assessment balance that is in good standing, they are eligible for a refund equal to 50% of the difference between actual and expected claims costs. The audit involves a variety of data collection methods (document review, walk-through inspection and interviews with management and employees), and covers employee training, hazard analysis, workplace inspections, personal protective equipment, engineering controls, and a number of other topics. Employers have the option of applying for a one-time interest free loan of up to $50,000 to cover costs for safety initiatives.

Hyatt and Thomason (1998) point out that there are at least five issues that must be addressed in the design of experience-rating programs:

- the problem of small employers
- the appropriate measure of “experience”
- long latency claims (e.g., diseases that don’t surface until some time after initial exposure)
- long-tailed claims (i.e., claims that are paid over an extended period of time, such as long-term disability claims)
- the relative advantages of prospective versus retrospective rating

The Board is currently examining alternatives to the current ERA. Among the changes that have been considered are different plans for small and large employers, and modifications to the 33.3% cap on merits and demerits. The Prevention Division’s Diamond Program, which includes an audit of firm safety programs, may be tied into ERA, although Diamond may simply use the existing plan as an incentive (i.e., clarifying the existing costs and benefits to employers that exist under ERA, rather than offering increased financial incentives over and above those offered through ERA).
Alternatives to the current ERA, recommended in submissions to the Royal Commission, include: making employer assessments and other financial incentives contingent on indicators of safety other than claim costs (e.g., the diligence and effectiveness of employer prevention programs, cooperation with the OSH committee, practices and programs to facilitate return-to-work of disabled workers); if other indicators are used, that these be objective measures (i.e., and not subjective impressions), and that both frequency of claims and claims costs be considered as indicators of safety; to first assess the cause of the accident, and then apply experience-rating only when the employer is at fault (i.e., ERA assumes fault in all cases).

Prevention penalties operate as a separate financial incentive from ERA. One suggestion in interviews was that the money collected in a Prevention penalty be used to improve the employer’s health and safety program, to provide training for the employer and workers, or for other activities aimed directly at helping to improve the safety of the workplace where the penalty was incurred, rather than going back into the Board’s general assessment fund.
APPENDIX: Related Literature and Findings from Other Jurisdictions

PROGRAM MANAGEMENT

1. Overview

A review of programs in place in other jurisdictions, and literature in the field, suggests that management of prevention programs could benefit from:

- a comprehensive strategy that acknowledges the existence of multiple causes of workplace injuries and disease, including worker and employer knowledge and motivation, and technological factors, and that directs its various prevention activities toward these causes;
- understanding the differences between the needs of employers and workers in companies varying by size and industry, with strategies tailored to these unique needs;
- processes that support a workplace culture of health and safety, by providing intervention with executives/major decision-makers in the organization, supporting health and safety committees, and helping to build effective occupational health and safety programs for monitoring and intervention at the worksite;
- ongoing program evaluation to determine program effectiveness.

2. Sources of Work-Related Injuries

On the basis of available U.S. data, Herrington and Morse (1995)\textsuperscript{256} conclude that the four top industrial groups for fatalities in that country are consistently mining, construction, transportation, and agriculture (which includes forestry and fish). They note that these four industries account for less than 20% of the workforce but greater than 50% of occupational fatalities, with annual rates of between 20 and 28 per 100,000 workers.

Herrington and Morse (1995) also report that the highest rates of disabling injuries in the private sector occur in construction, agriculture (including forestry and fishing) and
manufacturing. Mining and transportation industries also show high rates of disabling injuries. Finer industry breakdowns illustrate that the highest rates of injury occur within shipbuilding and repairing, special product sawmills, and meat packing plants (with reported rates per 100 full-time workers of 18.1, 13.7 and 13.4, respectively).

In Canada, work-related fatalities are most likely to occur in construction, manufacturing, transportation, and mining. With respect to work-related injuries, workers in manufacturing, fishing, forestry and mining have higher rates of injury than those in other industrial sectors (discussed in Statistics Canada: Work Injuries: 1992-1994 (Last Issue), p.5). The greatest number of time-loss injuries in Canada (i.e., not accounting for number of workers within the industry) are reported in manufacturing, retail trade, health and social services, construction, government services, and transportation and storage, in part because these industries employ proportionately more employees than other industries.

In both Canada and the U.S., workplace fatalities are substantially higher among males than among females, which probably reflects the greater proportion of males employed in hazardous occupations. Conclusions on age differences in the number of fatalities and work-related injuries depend upon the units of measurement. Herrington and Morse (1995) state that age-specific fatality rates are greatest amongst workers over 60, but that the largest number of fatalities occur among workers in their twenties and thirties. They also note that younger workers usually have higher injury rates. Australia presents data supporting both perspectives: some reports show that that both number of workplace fatalities and incidence rate of fatality increases with age, whereas others show higher fatality rates amongst 20 to 34 year olds.

OSHA data provided by Herrington and Morse (1995) indicates that injury rates are more than twice as high amongst employers who employ fewer than 20 employees than they are amongst employers with 20 to 29 employees, and more than three times as high than employers with 100 or more employees.

Herrington and Morse (1995) note that the current systems for reporting occupational injury and disease are “seriously flawed”. In support of this contention, they cite a recent review of injury surveillance that concluded that a number of improvements are
needed, including detailed denominator data (e.g., age, gender, occupation), an improved coding system to capture etiology and injury causation, clarification of the distribution of physical hazards with collection of data on workplace features (e.g., equipment, processes, physical features), and better reporting of health outcomes by health care providers to better understand the injury and to ensure all work-related injuries are captured (even if they are not “reportable”).

Strahlendorf (1996) discusses a number of theories of accident causation. One of the major theories to influence occupational health and safety was the Heinrich Domino Theory. This theory is based on the assumption that accidents occur as a result of the person, starting with ancestry and social environment, leading to personal faults (e.g., recklessness), then the unsafe act, followed by the accident and injury. Strahlendorf notes that “it is critical to Heinrich’s original model that the overwhelming majority of accidents are caused by ‘unsafe acts’ as opposed to ‘unsafe conditions’” (p.9). The practical effect of using this model, according to Strahlendorf, is that focusing on unsafe acts means close supervision, lots of rules, and a heavy discipline procedure, the emphasis of traditional accident prevention programs (i.e., enforcement).

Strahlendorf (1996) also discusses variations on the Heinrich model. Frank Bird’s Domino theory broadens causal factors to include those other than the “fault of persons”. He provided lists of unsafe acts, unsafe conditions, basic causes and examples of lack of control on the part of management. Bird defines lack of management control in terms of failures on the part of the supervisor, however, and does not go further into the structure of the organization. A more compelling model is Adams’ Up-Dated Accident Sequence, which includes three aspects of management structure that may be associated with accident causality: the objectives set by management, organizational structure, and operations. According to Strahlendorf, Adams’ model is a more sophisticated model which stimulates thinking about ways to “attack simultaneously on all fronts”. He also argues that it is the Adams’ model that is consistent with the Internal Responsibility System.

Australia’s Inquiry into Occupational Health and Safety states that:
Workplace injuries usually result from a chain of events involving a number of contributory factors. Preventing injury requires identifying these factors and determining which are the most controllable. ...Looked at it from this perspective, the cause of occupational injury and disease is the failure of business to implement management systems which:

- collect information on the factors contributing to workplace injury or disease;
- correctly identify those factors which are controllable; and
- implement and regularly review control measures.

This approach to looking at the causes of occupational injury and disease is fruitful because it identifies how to prevent injuries. It contrasts with approaches that focus on workers’ actions at the time of injury, which tend to identify worker behaviour as the single cause of injuries. (p.21)

The Australian report also notes that there is general agreement in the field that workplace injury and disease have multiple causes “often involving a buildup over time of many factors that contribute to the ultimate outcome” (p.21). Nevertheless, the descriptors in the National Data Set for Compensation-based Statistics in Australian, like those in Canada, define a single event (e.g., in Canada, struck by) and its immediate outcome (e.g., back strain), rather than the factors that led up to the event.

Australia\textsuperscript{262} commissioned a study of work-related injury and disease. Based on an analysis of 3,991 case histories, this report drew the following conclusions about the sources of injury (p.338):

- it is more important to change the behaviour of those higher up the management chain if safety outcomes are to be improved;
- lack of information is seen as more significant than lack of skills in many circumstances;
- managers at all levels require greater knowledge and skills in interpreting OHS information and translating this in an understandable way to their workers;
• the workplace culture, including the way work is organized, can directly affect personal behaviour at work -- particularly important in high risk industries;
• better information on damaging occurrences is needed;
• although larger organizations can often rely on experience and history to predict future damaging occurrences and hence attempt to control them, smaller organizations are not likely to have the history or experience to do the same;
• there is a lack of recognition of the overwhelming importance of permanent damaging occurrences; and
• ‘causality’ needs to be analyzed on a case-by-case basis and the results should be communicated widely. (p.338-339)

3. Prevention Objectives and Strategies

The prevention of workplace injuries and disease can be considered in a number of ways, such as promotion of a "healthy workplace", reducing the potential impacts of a hazard that exists, and reducing the likelihood of re-injury. The way in which a statute defines prevention, and the way in which the authority responsible for administering this statute interprets this definition to define its own purpose, will be reflected in the kinds of services provided.

Andersson and Menckel (1995) organize the various conceptual models of prevention in terms of five dimensions, the most common of which concerns the “temporal” course of events (in other words, the time-dimension relating to the course of the disease/injury). These authors draw from models that define activities in the area of illness and disease prevention (“primary”, “secondary” and “tertiary” prevention) and those models that focus on accident prevention, to classify interventions at three temporal levels:

• risk elimination, which includes proactive measures aimed at physical and situational conditions to remove a risk at its source (e.g., health promotion)
• risk modification, which is concerned with making changes to a system with a given source of risk, in order to reduce the risk of an accident and its severity
• consequence mitigation, which refers to protection of the individual from an accident after the event has occurred (e.g., rehabilitation)

Some prevention models draw a distinction between interventions that are “active” or presuppose action on the part of the individual (e.g., car seat belts) versus “passive” interventions that are built into the environment itself and have an effect regardless of human activation (e.g., car air bags)\textsuperscript{266}. "Engineering controls" which contain hazards at their source (e.g., re-designed dry cleaning equipment which eliminates the need for a worker to transfer chemically treated clothes from one machine to another), or that interfere with hazards on the path of transmission to the worker (e.g., installation of guards to protect hands and fingers from getting caught in machinery), are often more reliable than controls that focus on workers protecting themselves from hazards (e.g., through personal protective equipment such as protective eyewear and hard hats)\textsuperscript{267}. This distinction amongst preventative measures is commonly referred to as the "hierarchy of controls".\textsuperscript{268}

The U.S. National Committee for Injury Prevention and Control\textsuperscript{269} summarize available strategies for injury prevention as follows:

\ldots the passage and enforcement of new laws or the increased enforcement of existing laws, the education of the public at large or of targeted groups, efforts to alter specific injury-related behaviors, or changes in the design of products or of the physical environment. (p.10).

They note that these approaches are not mutually exclusive and that they can often be combined effectively. Similarly, Zwerling, Daltroy, Fine, Johnston, Melius and Silverstein (1997)\textsuperscript{270} identify four categories of occupational injury interventions:

• engineering interventions, targeting the physical work environment;
• administrative interventions, focusing on procedures and policies;
• personal interventions, addressing worker behavior, education, and training; and,
• multiple interventions, involving a combination of approaches (p.165).
4. Other Jurisdictions Provide a Combination of Enforcement, Consultation, Education, and Research

Various mission statements, goals and objectives of occupational health and safety programs are expressed in the documents available from other jurisdictions.

Nova Scotia’s Department of Labour\textsuperscript{271} states that the objectives of its Occupational Health and Safety Division are to:

- reduce the incidence of accidents and illness of employees;
- improve health and safety conditions in the workplace by means of research, education, promotion and enforcement of legislation

The Division discusses its “fundamental principles” in terms of endorsement of the internal responsibility system; the government’s role in terms of supporting, moderating, educating and enforcing, and protecting both workplace parties and the public; universal application of the Act, and its presentation in “plain language”; the articulation of rights and responsibilities; the exclusive jurisdiction over enforcement by the Department of Labour; and coordination with the workers compensation in planning and monitoring initiatives.

Manitoba Department of Labour’s Workplace Safety and Health Division\textsuperscript{272} provides the following “statement of purpose”:

Our Purpose is to Serve Manitobans Through:

- the promotion of safety, health and fair and equitable treatment in the workplace;
- the enhancement of public safety;
- the fostering of a stable labour relations climate; and
- the support of workplace training and adjustment.

The Division states that in order to achieve its goals it will:

- subscribe to the principles of accountability, efficiency and effectiveness in the use of public funds;
• recognize that staff are our most important resource and the key to achieving our purpose;
• develop a flexible organization, responsive to changing needs and circumstances; and
• promote consistently the principle that safe workplaces, fair employment practices, and harmonious labour relations are essential to the economic and social well-being of Manitobans.

The Division of Workplace Health and Safety in Queensland273, Australia states its objectives as follows:

• To ensure the best possible Workplace Health and Safety Legislation and Standards are available.
• To ensure safe work practices are implemented at workplaces.
• To ensure clients have access to effective consultation, information, education, and training in Workplace Health & Safety.
• To ensure staff are well trained and equipped to deliver services that are valued by clients.

These statements of purpose reflect the endorsement of multiple strategies, including enforcement, consultation and education.

Some jurisdictions indicate that they are targeting high claim industries, for cooperative programs, education, and enforcement. OSHA274, for example, reports that one of its strategies is to target industries with the largest number of workplace injuries; they note that employees in health care, fast food, temporary service companies, and automobile repair facilities have injury and illness rates that equal or exceed high-hazard manufacturing industries such as steel, textiles and paper.

Australia’s Inquiry into Occupational Health and Safety275 states that while most jurisdictions in that country target enforcement efforts on the basis of workers’ compensation claims data, this may not always be the most efficient use of resources.
4. There is a Growing Recognition of the Need to Manage Prevention Strategies with Different Objectives

An understanding of what causes workplace accidents and illness should underlie prevention approaches. In some cases, accidents may be caused by willful worker violation of regulations, and in others, willful employer violation of regulations. Lack of knowledge of regulations may also play a role in many types of accidents. Effective health and safety committees may lead to reduced potential for accidents because of heightened monitoring and early intervention. The influence of these kinds of variables should be considered in planning.

Alberta has developed a framework within which to view occupational health and safety that considers three “layers” that must be addressed in order to effect change in workplace safety: motivation, ability and action. Different types of programs focus on different layers: for example, financial incentives are aimed at the level of motivation, and ability is addressed through various training and other initiatives.

Australia’s Inquiry into Occupational Health and Safety\textsuperscript{276} states that firms with “best practice” in workplace health and safety have the following features (p.25):

- commitment by top management to improving workplace safety performance;
- integration of safety into the responsibilities of line managers;
- joint management of safety by managers and workers; and
- a systems approach.

The report goes on to say that the “systems” approach to managing safety includes (p.25):

- policy and planning to determine OHS objectives and strategies;
- the allocation of responsibilities and accountability arrangements for meeting these objectives;
- the systematic identification, assessment and control of hazards;
- participation and consultation by managers and workers in determining ways to improve health and safety;
• education and training of managers and workers; and
• auditing to ensure that the system is implemented and performing against objectives.

Its conclusions are as follows (p.26):

The Commission’s findings about the prevention of work-related injury and disease have a number of important implications for government. The first is that it is not possible for governments to legislate for every possible sequence of events that could lead to workplace injury. This follows directly from the finding that a range of factors contribute to workplace injury, and these are specific to each enterprise’s circumstances. As a result, there are limits to what governments can do to improve workplace safety, because prevention strategies must be tailored to each enterprise’s circumstances.

This suggests that it is more appropriate for government to enact legislation which establishes and enforces the responsibilities of employers and employees for workplace safety. It is also important that the regulatory regime encourages employers to adopt a systems approach to managing safety, and gives them the flexibility to adopt the approaches to prevention most suited to their circumstances. (p.26)

7. Accountability and Performance Measurement

The recent Inquiry into Occupational Health and Safety in Australia 277 examined performance measures used in various Australian jurisdictions. Some of these related to outputs or service delivery expectations for the agency, whereas others related more directly to outcomes. In general, the Inquiry found that the accountability arrangements for the agencies were deficient, and that little effort was being made to assess the benefits of individual programs. The report states:

Basic questions about Australia’s OHS performance cannot be answered due to a lack of reliable data. Agencies rarely undertake formal program
The lack of performance measures mitigates against assessing the effectiveness of OHS policies and programs, potentially compromising their effectiveness. It prevents agencies continuously improving their policies and programs. It precludes informed decisions about the best mix of prevention programs, such as the balance between enforcement and workers’ compensation for generating incentives for safety. (p.46)

The U.S. Government Performance and Results Act of 1993 requires Federal agencies to submit to the Office of Management and Budget a strategic plan for program activities. Agencies are required to submit an annual performance plan and an annual performance report that illustrates the extent to which they have achieved their performance goals. OSHA was one of the agencies involved in piloting its performance measurement under this statutory requirement.

OSHA’s 1996 Performance Report outlines the agency’s performance plan, performance results, the evolution of its performance measurement system, progress on program evaluation, and detailed analysis of its performance indicators. The Agency cites three types of measures:

1. Primary outcomes including: changes in magnitude of occupational injuries and illnesses, changes in trenching/excavation fatalities, changes in injury/illness rates (Maine and Wisconsin 200 Programs)

2. Intermediate outcomes including: consultation visits, programmed, and non-programmed inspections for significant hazard identification and hazard abatement time, complaint response time, consultation response time, cost per person trained, evaluation score on courses offered and negotiated rule making.

3. Three types of activities: onsite intervention, off-site intervention and leveraged intervention (VPP is an example of a leveraging programs or activity, which is one that has the potential to reach or impact the safety or health at new or additional establishments/worksites or of employees/employers with minimal additional OSHA involvement and/or expenditure of resources).

Evaluation of OSHA’s programs is still at a very preliminary stage. It reported that in 1996 it began developing program evaluation criteria for the Voluntary Protection
Program (VPP), Cooperative Compliance Program, both which will be completed in 1997.

Manitoba Department of Labour’s Workplace Safety and Health Division appears to have implemented an approach to planning and intervention that integrates principles of accountability. Its “Multi-year Strategic Plan” document includes background information on how input into the plan was obtained and trends in the nature of work as well as injury and disease that influenced the plan. The plan also notes that the division evaluates and reports on its effectiveness using the framework established by the Canadian Comprehensive Auditing Foundation. The Division notes that a critical component of any plan is to develop methods to measure success, and that specific components of its strategic plan will be evaluated to measure effectiveness and provide direction for future plans.

Alberta’s WCB includes “accountability” and “efficiency and effectiveness” in its twelve core values listed in its 1994 to 1998 Strategic Plan. They also report that they are using a “corporate scorecard”, which is an integrated and balanced set of performance measures including:

1. The number of companies which have established effective health and safety programs ---this measure provides a description of the effectiveness of the Department in the integration of health and safety management systems into the corporate culture of Alberta companies. To be counted as effective, a company must have successfully passed an external audit of the health and safety management systems at their workplaces.
2. Client satisfaction with the delivery of occupational health and safety services
3. reduction in lost time injury claim rates distinguished for all industries, field compliance programs, Worksafe 2000 employers, and certificate of recognition holders.

In response to recommendations put forth by the Workplace Health and Safety Review Panel, Ontario is working on identifying priorities for occupational health and safety, including developing a performance measurement and monitoring system to assess whether or not it is achieving the goal of prevention of injury and illness. The Ministry of Labour’s 1996 Business Plan established the core business of occupational health
and safety programs to “set, communicate and enforce standards to improve the health
and safety of workers”. The identified outcome was to “create an environment that will
make Ontario workplaces the safest in the world”. Two of the proposed performance
measures include: (1) “measure the flexibility and simplicity of the health and safety
system” (2) “measure the increase in enforcement activities in non-compliant
workplaces”.

**ENFORCEMENT**

1. **Enforcement in Other Jurisdictions**

Several jurisdictions have identified the fact that due to resource limitations, enforcement
efforts must be targeted to those industries and employers where the need is greatest.

Manitoba Department of Labour’s Workplace Safety and Health Division\(^{283}\) states that
“the Division will be guided by the fact that that the resources of government are not
infinite. Decisions must be made on a regular basis to target activities in an appropriate
manner to those industries and occupations where workers are at the greatest risk.”

OSHA\(^{284}\) states that in the past it has used a ‘one-size-fits-all’ regulatory approach that
has treated conscientious employers no differently from those who place workers at risk.
OSHA proposes to offer employers a choice:

**For firms with strong and effective health and safety program:**

**partnership.** We recognize that many, if not most, employers are
interested in protecting the safety of their workers. Those who choose to
work with their employees and with OSHA in reducing injuries and
illnesses will find OSHA to be a willing partner. For fully committed
employers who are truly exceptional in eliminating hazards and reducing
injuries and illnesses, OSHA will provide special recognition including: the
lowest priority for enforcement inspections (which, given remaining
priorities, means that inspections will be quite rare), the highest priority for
assistance, appropriate regulatory relief, and penalty reductions of up to
100%. For those firms that are well intentioned but have room for improvement, OSHA will offer a sliding scale of incentives depending upon the degree to which the employer demonstrates real effort to find and fix hazards.

**For firms that do not implement strong and effective health and safety programs: traditional OSHA enforcement.** In contrast, firms that do not step up their efforts to ensure safety in the workplace will continue to face strong and traditional OSHA enforcement procedures. (In time, the spread of health and safety programs will allow OSHA to devote greater enforcement resources to these firms). In short, for those who have a history of endangering their employees and are unwilling to change, OSHA will rigorously enforce the law without compromise to assure that there are serious consequences for serious offenders.

It is through this approach that the Maine 200 programs, discussed in the section on Internal Responsibility, were developed.

As noted by Reinhart (1995)²⁸⁵:

> It would require thousands more OSHA inspectors and literally billions more in funding for OSHA to be able to inspect each workplace once each year. Given the strict fiscal constraints facing all government agencies (including OSHA), and the remote chance that funding for the federal OSHA program will increase substantially, it is vitally important to explore ways of supplementing OSHA’s scarce resources with other workplace-based preventive activities. By requiring preventive safety and health programs and joint safety and health committees, and authorizing those committees to conduct regular inspections, we can greatly expand the opportunities for detecting and correcting hazards before injuries and illnesses occur. This is what both the state initiatives and the core of proposed federal OSH Act legislation are all about. (p.I-79)
OSHA is also modifying its enforcement strategy in some industries to focus inspections only on the top hazards. In construction companies, for example, where OSHA finds an effective health and safety program, its inspectors will conduct an inspection focused on only the top four hazards (i.e., falls from heights, electrocution, crushing injuries such as trench cave-ins, and being struck by material or equipment), and then leave the site. Those employers who do not have effective health and safety programs receive complete site inspections. (OSHA also indicates that it is expanding the focused inspection to other employment sectors, and will work with these other sectors to identify the most serious hazards specific to that industry).

The Australian Inquiry into Occupational Health and Safety identified a number of concerns with respect to the enforcement approach in that country (p.38-41):

- in most jurisdictions, advice and compliance notices are used as a first response; the current enforcement approach does not deter those who breach regulations because there is no penalty involved with advice and compliance notices
- although OHS agencies spend about 60 percent of their budget on enforcement, penalties are issued in less than 10 percent of cases
- on average, employers in breach can expect to receive a $20 penalty and a lot of free advice; this does not deter others because the expected penalty is too low
- there is a role for the provision of advice by OHS agencies; however, this should be provided separately so that deterrence is not compromised.

2. Regulations

Attempts have been made to harmonize regulations across jurisdictions, although not always with success. In Ontario, one of the reforms planned is a move toward performance-based legislation. As stated by the Ministry of Labour:

Health and safety legislation that is inflexible and highly prescriptive is recognized as a barrier to compliance in many workplaces. Prescriptive legislation sets out detailed instructions for compliance, leaving little room
for discretion, even if the same or better results could be achieved another way. The focus tends to be on the process and not the outcome.

In contrast, performance-based legislation sets out the objectives or goals to be achieved rather than the steps to be followed. The employer has the freedom to tailor a compliance strategy to a specific workplace. In so doing, creative and innovative mechanisms can be used to address the issues of highest priority within the individual workplace. (p.8).

Reportedly, the United Kingdom, the European Union, and Australia are moving to performance-based legislation, as are Saskatchewan, Alberta, Newfoundland and Manitoba. The US is also moving toward performance-based regulations. OSHA notes that it is moving to “common sense regulation”, whereby it will “change its regulations by identifying clear and sensible priorities, focusing on key building block rules, eliminating or fixing out of date and confusing standards, and emphasizing interaction with business and labor in the development of rules.” OSHA has used focus groups to assess problems with the readability and format of its rules. Some of the priority areas will be built into regulations, whereas others will be addressed through consultative workplans. OSHA plans to take a “flexible, performance-based approach”, that will “maximize use of performance standards that set outcome goals for regulated workplaces and minimize the use of design standards that mandate the process by which employers must meet their obligations.” OSHA has in place 695 rules that it is looking to improve and update, consolidating some and eliminating others, and rewriting them in “plain English”.

3. Penalties

In a review of the Occupational Health and Safety Act in Saskatchewan in 1989 it was recommended that:

- fines for contravening the Act or regulations should be increased substantially
- at the time, maximum fines were $10,000, with $5,000 for a first offense, and $500 and $1,000 per day for continuing offenses
• it was agreed that fines should be increased to the range of $250,000 to $500,000

It was also recommended that fines be imposed for an employer’s failure to report on progress made in complying with the order or notice of contravention, or failure to comply with the order, in the amounts of $200 and $500 respectively.

In Nova Scotia’s review of its occupational health and safety act, there was consensus amongst the members of the Advisory Council that an increase was needed, but disagreement as to the appropriate levels. The report notes that the maximum fines in the other maritime provinces at the time were as follows: Prince Edward Island, New Brunswick and Newfoundland were $2,000, $15,000 and $50,000. It also notes, however, that much higher levels have been adopted in other provinces and that low penalty levels are usually found in jurisdictions where the legislation has not been recently reviewed. Nova Scotia recently finalized changes to its new Occupational Health and Safety Act, with penalties rising from $10,000 to $250,000.

The Australian Inquiry into Occupational Health and Safety calculated the probability of inspection, probability of penalty, and average penalty across all jurisdictions in that country. The report concluded that “For all jurisdictions the expected penalty is negligible. The Commission estimates that offenders face an expected penalty of less than $20 when averaged over all the jurisdictions.” (p.114). The report also noted that “On average, workplaces face a 22 per cent chance of being inspected in a year. If they are in breach, there is a 5 per cent chance of being convicted” (p.114). It was recommended that penalties be increased to at least $100,000 for individuals and $500,000 for corporations.

4. Effectiveness

It has often been concluded that enforcement has had little if any effect on occupational health and safety (reviews in Smith, 1992; McGarity and Shapiro, 1993; Lyons, 1996). Most of the research has focused on the impacts of OSHA in the US. Other research suggests that the extent to which enforcement will impact health and safety depends on the nature of the enforcement activity.
McGarity and Shapiro (1993) review the research on OSHA’s impacts on accident rates, and point out that three different approaches have been used:

- studies that have compared injury rates before and after OSHA was established
- studies that use statistical models to analyze changes in the injury rate by, for example, using a variable that measures specific OSHA activity such as number of inspections per year
- studies that compare injury rates of companies that have been inspected with those that have not

Regardless of approach, most of the studies have reportedly found little or no impact on injury rates, with a few exceptions.

In his recent review, Lyons (1996) concludes:

In theory, when penalties and inspection frequency are increased the expected costs of noncompliance increase and more firms choose to comply more fully with regulations. However, empirical tests of OSHA’s “adversarial” enforcement strategy show that OSHA has had a relatively minor impact on safety levels. Some studies fail to find any evidence that OSHA has had an impact on workplace safety, although most show that OSHA’s enforcement reduces injury rates by 1 percent to 3 percent. (p.ix)

Similarly, Burton and Chelius (1997) report that “The evidence indicates that the OSHAct has been largely ineffective in reducing workplace fatalities and injuries.” (p.282).

In Quebec, Lanoie (1992) examined the impact of accident prevention (including inspections and penalties), experience rating and compensation on the frequency and severity of workplace accidents and found that at best, Quebec prevention policies had only a minor impact on accident frequency.
There are many reasons why enforcement, on its own, is not likely to have an impact. These include:

- enforcement assumes the cause of the accident is failure to comply with regulations
- the likelihood of receiving an inspection, of receiving a penalty, and of having the penalty enforced, is extremely low

As noted by Reinhart (1995), at its current rate of inspection federal OSHA can inspect workplaces about once every 87 years.

McGarity and Shapiro (1993) discuss this problem:

In attempting to devise an effective enforcement program, OSHA faces a crucial puzzle: How can it convince employers to achieve compliance despite the fact they are unlikely to be inspected? ...In deciding whether to comply, employers will compare the costs of compliance and noncompliance. Compliance costs include the expense of purchasing safety equipment or taking other preventive steps that OSHA requires. Noncompliance costs are related to the probability an employer will be inspected and the size of the penalties that will be assessed for any violations that are found. ...If OSHA is to have an effective enforcement program, it must increase the probability that dangerous workplaces will be inspected and, if violations are found, that stiff penalties will be assessed. OSHA’s attitude concerning these critical elements of an effective enforcement policy has traditionally been one of complacency. (p.212)

McGarity and Shapiro (1993) also discuss the deterrent effects of penalties, and point out that OSHA has often not imposed its maximum penalties, even in cases of fatalities. At the time of writing, OSHA could enforce a maximum penalty of $70,000, if the violation was willful or a repeat violation. A person convicted of a fine in Ontario can receive a penalty of up to $25,000 or 12 months in prison, or both. Corporations can be fined up to $500,000. In Alberta, the fine can be up to $150,000 for a first offense, and up to $300,000 for a second offense. Additionally, there is a fine of up to $10,000 for each day the first offense continues, and up to $20,000 for each day the second offense
continues. In Saskatchewan, the maximum fine is $300,000 for a serious injury or fatality. For a first offense the fine can be up to $50,000, with $5,000 each day the offense continues. The extent to which these fines represent a sufficient deterrent to employers is not known.

It may be the case that, if the likelihood of inspection is increased, along with the likelihood of receiving a significant penalty, enforcement could have an impact. Burton and Chelius (1997) note that:

Several recent studies have provided a more favourable assessment of the OSHA inspection process. Weil (1996) examined the custom woodworking industry and found that OSHA inspections resulted in improved compliance with a set of OSHA standards particularly relevant for that industry. However, Weil was unable to determine if the improved compliance with OSHA standards resulted in lower injury rates. Even more promising results were provided by Gray and Sholtz (1991), who examined firms that had been inspected more than once for exceeding OSHA exposure limits for dangerous substances and found that the effect of an inspection leading to a penalty was to reduce the firm’s injury rate by 20 percent over the following three years (p.277).

Burton and Chelius suggest that OSHA’s enforcement activity might be more effective if inspection activity was more frequent (the average establishment receives an OSHA inspection only once in about 80 plus years); monetary penalties were increased; or, criminal sanctions were used more frequently. However, they note that some critics are skeptical that these efforts would make a difference. They also cite research to suggest that the costs for compliance with OSHA standards may far exceed the benefits in terms of savings from reduced injuries, which is partly due to the excessive stringency of OSHA standards.

Research in Oregon has attempted to isolate the effects of a variety of new initiatives on the injury rate in that state. With respect to enforcement, Hecker, Gwartney and Barlow (1995) drew the following very tentative conclusions (p.18):
Preliminary analysis of these measures suggest that, in general, Oregon OSHA enforcement became more aggressive in the period under study. The numbers suggest that for employers acting rationally, it is not the greater threat of being inspected so much as the consequences of being inspected that would impact their behavior. Increased penalties and publicity about them, and a lesser willingness of OR-OSHA to compromise on citations and penalties, made employers more concerned about the impact of OR-OSHA enforcement action.

The authors make it clear that many changes took place at the same time in Oregon with respect to health and safety, and that there needs to be more research before the effects of specific changes in legislation and enforcement approaches on injury rates can be determined.

Weil (1997) presents a framework for evaluating the impacts of regulation, which outlines what he believes are the critical components and their relationships. These include the Act and regulations, the structure of workplace enforcement (e.g., the role of the enforcement agency, and the penalty/sanction policy), the firm’s compliance behaviour (e.g., internal costs of compliance), and outcomes, including unintended consequences. He suggests, for example, that “The likelihood that a given labor statute…will result in desired labor market/public policy outcomes …depends upon two intermediate steps: how regulations are actually enforced or administered in practice …and how firms react in response to enforcement activity” (p.440).
INTERNAL RESPONSIBILITY SYSTEM

1. The Nature of Internal Responsibility

As discussed above, many Canadian jurisdictions appear to be moving toward an internal responsibility system. A consultative approach may be implemented by an occupational health and safety agency for several reasons:

- a recognition that hazardous worksite conditions may be attributable to a variety of factors, only one of which might be intentional employer negligence
- a recognition that workers and employers at the site may be the best equipped to monitor and address health and safety issues
- a recognition that prevention resources are insufficient to rely strictly on a general approach to enforcement
- a recognition that the enforcement approach may not be the most effective

Nova Scotia expressly declares its endorsement within the Act and within its statement of principles. New Brunswick’s new Workplace Health, Safety and Compensation Commission states that:

...the role of the officers goes far beyond workplace inspections. Their focus is on educating employers and workers, advocating voluntary compliance with regulations and safety procedures, and fostering development of an internal responsibility system -- recognition that the parties in the workplace are responsible for their own health and safety. With a joint buy-in to voluntary compliance by management and workers, the need for written orders to correct problems is reduced.

Ontario recently brought responsibility for occupational health and safety under the WCB. The province’s Ministry of Labour is now in the process of reviewing its Occupational Health and Safety Act. Ontario’s Ministry of Labour intends to establish the internal responsibility system as the foundation for Ontario’s approach to occupational health and safety (p.12), a process which began in the 1970’s in that province. The Ministry notes that its Occupational Health and Safety Act “fosters the internal responsibility system in several ways: by requiring a joint health and safety
committee or a worker health and safety representative; by requiring employers to have a health and safety policy and program; and by making officers of a corporation directly responsible for health and safety.” (p.7). While its Act does not include endorsement of the internal responsibility system within its purpose clause, this is one of the options being considered. The objectives of this review\textsuperscript{307} illustrate the directions Ontario is heading in with respect to occupational health and safety:

1) to clearly establish and maintain the internal responsibility system as the foundation for Ontario’s approach to occupational health and safety.
2) to design legislation that is flexible in terms of how compliance is achieved and maintained.
3) to streamline the Act by eliminating red tape and any overlap and duplication with other legislation, both provincial and federal.
4) to make the Act easier to understand and apply.

OSHA\textsuperscript{308} provides incentives (in the form of penalty reductions) to employers with effective health and safety programs. OSHA states that as evidence of a program’s effectiveness, it would be expected to find:

- that the workplace has a low injury and illness rate;
- that the employer has in fact found and fixed most hazards;
- that the workplace has not been cited in the past three years for the gravest types of violations;
- that the inspection was not prompted by an employee fatality or catastrophic accident;
- that any violations found in the current inspection are comparatively minor; and,
- that the employer is prepared to correct any violations found.

Alberta Labour\textsuperscript{309} states that it implements its occupational health and safety programs in line with a model which provides three “layers” of the OHS process: motivation, ability and action. According to Alberta Labour, “(e)ach of the layers must exist in order for significant improvements in workplace health and safety to occur.”. Financial incentives, including penalties, are part of what is provided to improve motivation. Ability is addressed through education and consultation, including promoting the establishment of effective occupational health and safety programs. At the level of “action”, Alberta
Labour evaluates and monitors health and safety systems of individual employers, and provides feedback on their progress.

In a recent paper, Lewchuk (1994)\(^{310}\) discusses the existing research on IRS as follows:

Much less empirical work has been done of the effect of the internal responsibility system on health and safety performance. The potential benefits and limitations of this approach to health and safety regulation are well documented. Giving workers more authority to regulate their own workplaces is intuitively appealing. At the same time it is also widely recognized that most joint committees have limited executive authority and that the labour members lack the authority or resources to force the committees to deal with important issues. It is argued that serious problems, especially those which would increase costs, get ignored and committees are largely powerless in the face of employers who continue to give health and safety a low priority (see Bernard nd; DeMatteo 1991). Recent reforms in Ontario and the creation of the Workplace Health and Safety Agency were motivated in part by a desire to bolster joint committees by providing labour members with more training and resources. The limited empirical data on the internal responsibility system suggests that in Ontario it has taken root in most firms. Committees are widespread and most are active (See Advisory Council 1986). In Ontario and Quebec there is evidence that at least in some workplaces the internal responsibility system and joint committees have reduced injury rates and improved problem-solving at the workplace level (Tuohy & Simard 1993; Workplace Health and Safety Agency 1994). There is widespread agreement that in the non-union sector the internal responsibility system has not flourished.

2. Occupational Health and Safety Committees

The workplace Occupational Health and Safety Committee is a mechanism for promoting collaboration between employers and workers around workplace health and safety, and as such, is likely an important element of an internal responsibility system.
In the 1992 *Administrative Inventory*, it is argued that “for the concept of internal responsibility to really work, workplace-based health and safety programs, including joint health and safety committees, must be operational and effective.” (p.78). This will require, the authors suggest, regulations that address experience, training, information, resources, respect, support, and authority.

Saskatchewan was the first Canadian province to mandate joint occupational health and safety committees, in 1972\(^{311}\). The legislative requirements for occupational health and safety committees in Canada are addressed in detail in a subsequent paper.

As of 1994 in the US, thirteen states required employers to establish safety and health programs, and thirteen states required joint health and safety committees for some employers\(^{312}\). Laws with respect to these programs and committees vary, with some including all employers and others limiting coverage to employers of a certain size or “hazard” level. Some specify minimum requirements for a valid committee, whereas others do not. The OSH Act reforms were to extend these requirements to all states.

There is research to suggest that, depending upon their particular characteristics, health and safety committees can be an effective means of preventing workplace injury and disease, although not all reviewers agree that evidence on impacts exists. Lewchuk, Robb and Walters (1996)\(^{313}\) examined the impact of the 1978 *Occupational Health and Safety Act* (Bill 70), which mandated health and safety committees in Ontario in most workplaces with more than 20 workers, on lost time accidents in that province. In the same study, they tested the effects of having a joint health and safety committee in place. They found reductions in lost time accidents associated with both the introduction of Bill 70, and with the introduction of joint health and safety committees within specific worksites. However, they also found that it was only those worksites where joint health and safety committees were implemented prior to or immediately upon the introduction of the new legislation (i.e., through choice rather than obligation) that experienced significant reductions in accidents. These authors conclude:

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Simply mandating committees is unlikely to have much effect at workplaces where the Internal Responsibility System and the co-management of health and safety matters is not embraced by management and/or labour. At these workplaces, special measures may
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be needed to educate labour and management of the potential benefits of co-management as well as measures to ensure that committee members have the knowledge and authority to internally regulate health and safety matters. (p.236)

Shannon et al. (1992)\textsuperscript{314} found that committees that required external problem-solving mechanisms were less likely to have lower accident rates. Tuohy and Simard (1993)\textsuperscript{315} found that injury and illness rates were reduced with bipartite committees with a broad scope of activities and institutionalized procedures. Lewchuk et al. (1996) note that these studies did not compare workplaces with and without committees (i.e., they only compared workplaces with committees with different features), so that conclusions regarding the direct impact of the committees on illness and injury cannot be drawn.

Reinhart (1995) notes that in Oregon, injuries and fatalities decreased by 10% after safety and health committee requirements and other reforms were enacted in 1990. However, when several changes occur in legislation at one time, it is difficult to isolate the impacts of specific reforms such as instituting mandatory health and safety committees.

Some research suggests that support from all levels within the organization, including top level commitment, is necessary in order for workplace health and safety programs to work. In an earlier US study, Kochan, Dyer and Lipsky (1977)\textsuperscript{316} reported that committees were more effective when there was cooperation between labour and management, however they did not examine the impact on accident rates. Typically, rights are discussed along with decisions to implement committees (i.e., the right to know, the right to participate and the right to refuse unsafe work). However, some of this research suggests that efforts to foster a cooperative climate and to promote commitment to health and safety throughout the organization may be more effective than legislating powers.

3. Specialized Intensive Interventions with Select Companies/Industries

An approach that seems to be becoming increasingly popular is the use of specialized intensive interventions with select companies and/or industries.
In the US, the Maine 200 program is one such initiative. The program was implemented in 1993 with 200 employers (1300 worksites). Through this program, employers with the highest number of injuries are provided with a choice: to work in partnership with OSHA or be faced with increased enforcement activity. Participating firms receive assistance in developing health and safety programs and low priority for inspection. The program has now been expanded to other states.

The Workplace Health, Safety and Compensation Commission of New Brunswick began a pilot project in 1994 called the “Risk Management Initiative”, that initially involved 100 companies for “evaluation and assistance in problem-solving, ultimately leading to a process of continual improvement.” In-depth audits were conducted in 1995 and 1996, and workplaces with the most improvement over the two-year period are eligible for a 5% rebate of their 1995 premiums along with cash awards of $5,000.

In Ontario, the Workwell Programme has the following characteristics:

The Workwell Programme, introduced by the Ontario Workers’ Compensation Board in 1989, contains elements of both the internal responsibility system and economic incentives based on experience rated insurance premiums. Under the Workwell Programme, the Board encourages firms to regulate their own health and safety hazards through formal health and safety programmes and the internal responsibility system. Firms are expected to provide health and safety training, have a functioning health and safety committee, and provide written documentation of managerial commitment to occupational health and safety and their health and safety goals. Those willing to embrace formal health and safety programmes and their internal responsibility system are eligible for premium rebates. Those without such a system expose themselves to possible premium surcharges.

Lewchuk (1994) examined the characteristics of a small number (n=26 and n =7) of high and low accident firms with passing scores on their Workwell audits. He found that the high accident group employed younger workers with less seniority, and that workers in
the high accident group were less empowered and had less authority to make decisions affecting productivity, were less likely to push for improvements in health and safety and were less likely to have an active joint health and safety committee, than the low accident group. He concludes that these kinds of programs may not improve working conditions in workplaces where workers are not empowered. This study was based on a small sample, but illustrates not only the issue of empowerment in legislation but also the care that needs to be taken in conducting health and safety audits.

OSHA\textsuperscript{319} reports that the Maine 200 program has had promising results, with the participating employers identifying more than fourteen times as many hazards as would have been identified by OSHA inspectors (which relates in part to the fact that inspectors could not have visited all 1300 worksites), and with nearly sixty percent of employers showing reduced injury and illness rates. OSHA notes that it will expand the most successful features of the program nationwide, and that these features include:

- using worksite specific data to help identify high hazard workplaces
- providing information to employers about effective safety and health programs
- offering employers a choice in how they want to work with OSHA
- ensuring management commitment and worker involvement
- modifying enforcement policies for high-performance employers

In an OSHA memo, which addressed a number of core elements of Maine 200 programs, the following expectations of health and safety programs were presented:

The essential elements which comprise an effective, comprehensive program are: Management Commitment and Employee Participation; Workplace Analysis; Hazard Prevention and Control; Safety and Health Training; and Verification of Abatement. The Safety and Health Program is not limited to serious injuries and illnesses at the workplace. Management clearly demonstrates - by involvement, support and example - the primary importance of safety and health for everyone on the worksite.
Employees and their representatives must be afforded the opportunity to participate in all phases of this program from the outset and for its duration. Participation includes but is not limited to: assisting in the initial safety and health program review (if such program exists); hazard identification; abatement of hazards; formation/revision of comprehensive safety and health programs; employee training; attendance at all related meetings; and access to documents pertinent to this program. The program should further ensure that companies abide by Section 11(c) of the Act, in that they do not discriminate or take reprisal actions against employees who participate in any aspect of the program or report illnesses or injuries.

Authorized employee representatives are to receive a copy of all correspondence with employers. Initial correspondence with employers should include a copy of employee rights under the Act, verifying adequate employee participation.

The program should also make clear that only those employers with a comprehensive safety and health program are eligible for good faith penalty adjustments or focused inspections.

Employers who do not live up to their partnership commitment are to receive no penalty adjustments (excepting size of establishment) or any other partnership benefits.

A study by Mendeloff (1996) at the University of Pittsburgh, discussed above concluded however that (p.2) “Attempts to assess the impact of the Top 200 program on injuries and illness are plagued by many difficulties. … The spectacular drop in Maine’s WC claims from 1990 to 1994 cannot, except in small part, be attributed to the Top 200 Program. The analyses done so far do not provide clear evidence that the program has changed injury rates.”

Many jurisdictions appear to be concluding that traditional enforcement approaches are not being effective, that with limited resources only a fraction of workplaces can receive
inspections each year, and that more intelligent targeting of enforcement efforts along with enhanced consultative and educational activities may be a more effective strategy.

In a recent review of “Best Practices” in occupational health and safety, Ignatieff (1996) recommends:

...a new paradigm in which the broadly defined health and safety system, with support from the government, re-invents itself to empower all stakeholders, including the smallest components, to take responsibility for the concrete actions that are within their capacity. (p.23).

Similarly, a review of “Best Practices” conducted for the Inquiry into Occupational Health and Safety in Australia concluded that OHS best practice is driven by a strong health and safety culture within the company, and that in order to achieve this culture there needs to be: impetus for change; top management commitment; workplace participation and consultation; integrated quality approaches to management; management systems approach; line management responsibility and accountability; and benchmarking performance.

Australia’s Inquiry into Occupational Health and Safety states that (p.20-21):

Workplace injuries usually result from a chain of events involving a number of contributory factors. Preventing injury requires identifying these factors and determining which are the most controllable. ...Looked at from this perspective, the cause of occupational injury and disease is the failure of businesses to implement management systems which:

- collect information on the factors contributing to workplace injury or disease;
- correctly identify those factors which are controllable;
- implement and regularly review control measures.

This report goes on to say (p.25):
Good management is the key to the prevention of work-related injury and disease. Workplace injury is caused by a multitude of factors, such as workplace hazards, work organization and workers’ skills and behaviour, and these vary between enterprises. For this reason, prevention strategies must be tailored to each enterprise’s circumstances, and can only be determined by the management and workers in each enterprise.

Features of enterprises that are best practice in workplace health and safety are:

- commitment by top management to improving safety performance;
- integration of safety into the responsibilities of line managers;
- joint management of safety by managers and workers; and
- a systems approach.

**EDUCATION**

All jurisdictions appear to provide training and education in addition to enforcement and on-site consultation. Educational activities may be provided by the Board, the Ministry (usually Ministry of Labour), or in some cases, both.

The Workplace Health, Safety and Compensation Commission of New Brunswick\(^{323}\) states that:

The common denominator through most of the Commission’s health and safety program interventions is education which assumes three forms:

- awareness sessions to identify issues in the workplace;
- education, which promotes understanding of these issues; and
- training, which provides workplaces with the knowledge and information to resolve these issues.

The WHSCC reports that in 1995, its education section provided 32 workshops to 4,300 participants. Topics included: Cues for Sawmill Health and Safety, Health and Safety for Small Business, Health and Safety Conditions in Autobody Shops,
and Advanced Presentation Skills. Additionally, the WHSCC notes that on-site sessions were provided specific to the workplace. The WHSCC also notes that the officers use a “train-the-trainer” approach which “extends the reach of education programs to a potential 30,000 workers in 80 workplaces each year.”

In Manitoba, the Workplace Health and Safety Division of the Ministry of Labour handles most prevention activities, rather than the Workers Compensation Board. The WCB does report, however, that it sponsors conferences and projects geared to reduce workplace injuries and occupational disease and to increase awareness of workplace accidents, and that it develops enhanced statistics to help employers understand their assessment costs.

In Ontario, certification training is an important part of the province’s health and safety system, and with prevention now under the authority of the WCB, it is to set province-wide training standards and to approve training programs and providers who meet these standards.

Workers new to a job are often more likely to have accidents, which suggests the importance of safety training overall.

Australia’s Inquiry into Occupational Health and Safety states that:

Awareness, training and education are essential inputs to the management of safety in the workplace. Without them employers and employees are unlikely to adequately recognize hazards and implement risk management measures. (p.219)

In Australia, as in Canada, a variety of organizations are involved in providing occupational health and safety training, including government, unions, employer associations, employers and health and safety professionals.

Alberta Labour illustrates its view with respect to knowledge and ability:
Motivation alone cannot produce the action necessary to improve health and safety practices. Employers need to have the knowledge and ability to take action. By assisting them to become self-reliant, Alberta Labour emphasizes injury prevention strategies, not just claims reduction.

The knowledge skills required by employers and workers to develop and implement effective health and safety management systems include:

- Management commitment and worker involvement
- Hazard identification and evaluation
- Hazard control techniques
- Workplace inspection procedures
- Worker education and training strategies
- Development of safe work procedures
- Incident investigation techniques

...Many of Alberta Labour’s OHS activities are focused on encouraging and facilitating the development of the necessary skills among employers. These activities include:

- Promoting greater self-reliance among businesses in the establishment and operation of effective OHS programs
- Establishing and promoting effective health and safety standards
- Providing professional/technical support
- Communicating the results of research into health and safety issues, practices, technology, etc.
- Education and training of workers, managers and others
- Ensuring the availability of OHS-related information to all workers and the public
- Promoting the sharing of information among employers and other stakeholders
- Identifying emerging OHS issues at the local, national and international levels and providing information to Alberta work sites
A major role of Alberta Labour is to support workers and employers in gaining the knowledge and skills necessary for them to be able to achieve voluntary compliance with accepted standards and to move towards greater improvements in health and safety practices. (p.5-6).

In 1995, Alberta Labour Occupational Health and Safety held a series of meetings with stakeholders to “determine which existing occupational health and safety services belong inside government, which services belong outside, and to identify new service requirements not currently available.” This report had a number of recommendations, including that: Alberta Labour continue to provide its collaborative Partnerships approach; that it continue to legislate, audit, set standards and investigate fatalities, serious injuries and imminent danger complaints; and that outside organizations could offer some of the health and safety services, including educational, technical and professional services, provided by Alberta Labour. With respect to education, the stakeholders recommended that private industry, labour organizations, and educational institutions should deliver training and education programs. They also suggested that:

- Government could set standards, while private industry delivers training and educational programs. In many cases, government would play a train-the-trainer role, providing information to industry groups who then pass the information on to workers and employers.

- Safety associations have a large part to play in the area of training and education. This is a natural and ideal role for safety associations.

- Educators also have a large part to play. From kindergarten to Doctorate programs, occupational health and safety must become part of the curriculum. Job Safety Skills should become a credited high school course.

- Occupational health and safety should also be incorporated into the educational curriculum of all health professionals

- With mandatory courses, an advisory committee could oversee course content and set course standards.

There may be ways to improve education for new employers. Could new businesses receive health and safety information when they apply for business licenses and open a WCB account? (p.12)
EXPRESS-DATED ASSESSMENTS

1. Experience Rating in Canada

All Canadian jurisdictions have one or more experience-rated assessment plans. Research evidence is mixed with respect to the impact of experience-rating on employers health and safety efforts, although some have argued that it is one of the few effective measures (Burton & Chelius, 1997). The Board’s own study of its ERA program concluded that it appeared to be ineffective in achieving its safety objective for a variety of reasons, including limited employer awareness and minimal incentives. Follow-up research found, however, that some reduction in claims was associated with Era, particularly reductions in health-care only and short-term disability claims.

3. Other Incentives for Occupational Health and Safety Efforts

Most experience-rating plans adjust assessments up or down on the basis of claims experience. In some jurisdictions, incentives are provided for intermediate steps, such as the implementation of health and safety programs. Alberta offers a program called the Voluntary Incentive Plan (VIP) which provides employers who choose to participate in the program with incentives for reducing injuries through effective health and safety programs. Through this program, industry and safety associations, and Alberta Labour, provide audits of health and safety programs as well as training, and the employer is expected to meet the health and safety program standards of Alberta Labour’s Certificate of Recognition within three years of joining VIP. Alberta also offers a more traditional experience-rating plan that adjusts assessments up or down to a maximum of 40% depending upon their claim costs (Compulsory Experience Rating Plan).

Ontario is also considering ways to provide increased financial incentives to employers. As part of their reform effort, Ontario’s Ministry of Labour is considering voluntary initiatives to encourage employers to develop excellent health and safety programs, along with increased latitude to the workplace to develop these programs.
OSHA grants penalty reductions up to 100% for employers with superior health and safety programs (there appears to be no financial reward, but simply an avoidance of a financial disincentive).
APPENDIX 2: Summary of WCB Research

The Board was asked by the commission to “Describe in detail any research that has been done on the effectiveness and efficiency of prevention programs since about 1976. This includes any assessments of impacts of inspections, penalties, orders, policy changes, as well as comprehensive evaluations of programs.”

The Board’s response was that, generally speaking, the Board has not historically conducted separate research into the efficiency and effectiveness of prevention programs. However, several reports that have examined different aspects of Prevention Division services were attached, including:

- Audits (Internal Audit, WCB) of Field Services and Grants and Awards
- 1996 Prevention Division Information Line Satisfaction Survey
- Final Recommendations: Prevention Communications Audit (WCB Prevention publications)
- Course Evaluation forms (Safety and Health Committee course evaluation form; surveys of industrial first aid attendant candidates)
- CAPP Survey
- 1996 WCB Communications Audit (extract)
- A Discussion of OH&S Needs, Content, Delivery, Recognition (1991)
- Results of the BC Workers’ Compensation Board Regulation Format Research
- Pilot survey of worker’s and employer’s satisfaction with Field Services

Additionally, the Board was asked the following question by the commission: “What, if any, external reviews, evaluations or assessments have been undertaken by independent (arms-length) consultants of the Board prevention programs to ascertain if these programs have had an impact on workplace injury and disease.” The Board’s response referred to the two Administrative Inventories, and a 1976 review by P.S. Ross and Partners, and included the following attached reports:
• Fatalities Among British Columbia Fallers and Buckers 1981-1987
• Analysis of the Effects of a Mandatory Training Program on Faller and Bucker Monthly STD Claim Rates
• WorkSafe Ad Tracking (Waves 1,2,3)
• WCB PNE Job Fair Survey

Some of these studies have been discussed in detail in the main report; others are discussed below.
1) External Customer Service Satisfaction Survey

Information Line Survey

In November and December 1996, the Prevention Division conducted a telephone survey of 73 external callers to the Prevention Division’s Information Line. A total of 85 callers out of 620, who called during the two weeks that the study was conducted, agreed to participate in the survey, and of these 73 subsequently completed the survey, for a response rate of 12%. Fifty-two percent of the callers were “workers”, 22% were “employers”, and the rest were “other” (e.g., self-employed; student). Questions asked were:

- Did the caller call the Info Line directly?
- How satisfied was the caller with the response they received? (42% = very satisfied)
- How courteous was the specialist?
- Did the officer spent enough, too much, or not enough time with them on the call?
- Was the response received in a timely manner?
- How the service was rated, from poor to excellent? (82% = 4,5 on 5 point scale, with 5 = excellent)
- How likely would they be to call the Information Line again? (98.6% would call again)

The open-ended question at the end provided some indication of how the service might be improved so that it can better assist people with health and safety problems that they are encountering at work. For example, it was suggested that: the Information Line should have specialists for various industries, that written information should be provided to supplement the verbal information over the phone, that there should be more publicity on how to access information, that there should be greater access (e.g., make line available longer than regular working hours) or that there were limitations in terms of information that was made available.
It is important to note that this survey had an extremely small sample size and response rate (12% -- and since it was voluntary, brings into question the extent to which this represents a population of satisfied customers only), and that it dealt with service delivery issues primarily and could not be considered an assessment of effectiveness of the Information Line. Important questions related to effectiveness -- such as to what extent the caller believes they will be able to use the information at work for various purposes, such as to improve the functioning of their health and safety program or committee or to remedy a particular hazard that they had observed, were not assessed.

Employer and Worker Satisfaction Survey (Pilot Study)

The Board also conducted an employer and worker satisfaction survey (pilot study) for field officer visits. Two regions were assessed, using two different distribution methods. In one region, 211 surveys packages were mailed out after the visit, with two copies of the survey in each package or a total of 422 surveys, and 77 usable surveys were returned, for a return rate of 18%. In the other region, field officers left the surveys at the worksite after their visit. The report notes that "It is difficult to quantify the exact number of surveys that were actually delivered by officers and left at worksites", but only 13 were returned. Consequently, the survey was based on 90 usable surveys, with about equal numbers of employer and worker respondents (44.4% and 41.1% respectively), and about 13% “other” (e.g., supervisors). Seventy-three percent of respondents reported that the purpose of the visit was inspection, in comparison with 9.0% who reported the visit was for consultation, 3.4% for education, and 4.5% for accident investigation. Satisfaction levels were between 4 and 5 on a 5-point scale (5=high satisfaction) with, for example, a score of 4.31 on overall satisfaction, and a score of 4.34 on the value of the visit in enhancing health and safety at the worksite. Workers and employers were about equally satisfied on all measures. Respondents were also asked to indicate if they were aware of and had used other Board services (from a list of 10 other services), and to indicate their levels of satisfaction with these services. Six of the ten services were used by at least 15 of the 90 respondents in the past 6 months, including
posters, publications, First Aid, AIRS, Hearing Conservation, and the Information Line. Of these, satisfaction was highest for First Aid (4.0) and lowest for AIRS (3.47).

2) 1997 and 1996 Publications/Communications audits

*WCB Communications Audit: Focus Groups*

In 1996 the Angus Reid Group conducted four focus groups to assess the Board’s print communications\(^{335}\) (Note: The full report was not provided to the Royal Commission, only selected pages). According to this document, prior to the focus groups, Cossette Advertising had completed a full audit of all of WCB’s publications and had proposed a new organizing system, with information classified into three broad areas: employer-directed, worker-directed, and prevention/safety-oriented. Four focus groups were conducted, with small and large business representatives, safety/health officers, and claimants. The focus groups were aimed at assessing what information stakeholders require from the WCB, their general perceptions of the WCB’s current written communications, how they currently obtain written information, and perceptions of the proposed re-organization of materials and proposed graphic approaches.

Many of the findings appear to relate to format and image -- for example, glossy stock, cover photo. There were also comments about the way the WCB is reflected in the written material -- “communicates a WCB that is unorganized, bureaucratic, unapproachable and old-fashioned. Respondents are looking for a more human, a more empathic and a more approachable WCB that is not being communicated on paper, nor in their on-going dealings with the Board.” (p.5). The findings that relate to prevention content, discussed in the excerpts provided, are as follows:

- Employers and especially safety officers really like the *Prevention at Work newsletter*, read it regularly, and believe the content to be interesting and relevant because it talks about real-life situations; they also like the *Penalty Actions* feature, in terms of reading about other company’s citations and it provides motivation for their company to stay off the list; some respondents said that they photocopy relevant articles and pass them on to employees, or post them on staff bulletin boards.
• The safety-oriented books (e.g., *Gearing up for Safety, Breathe Safer*) also have several strengths, are simply written (and have a number of positive format and image attributes).
• Key safety issues identified as important in their workplaces were: violence (between customers and employees and among employees), back injuries, soft tissue/ergonomic injuries, and hygiene.
• Reaction was generally positive to the safety materials (again, mostly format and image attributes discussed).
• Awareness was greatest for the *Back Talk* booklet (many claimants and employers had read it).
• The regulations booklets (apparently new, revised) were viewed as practical and useful reference manuals — “‘instructive’ but officious and somewhat boring”.
• Of all written communications, posters were widely used and appreciated, were memorable, and were “an effective method of on-going safety reinforcement”; most motivational were those with graphic depictions of injuries.

*Prevention Communications Audit*

The 1997 Prevention Communications Audit\(^336\) involved a review of 115 publications (manuals, booklets, and pamphlets), 139 placards, and 130 posters produced by the Board and related to occupational health and safety. The purpose of the audit was to identify outdated material that should be discontinued, similar material that should be merged, and material that needs to be revised according to the new regulations. The review was overseen by the Technical Writing Group in Outreach, in consultation with Editorial, Design and Printing. Prevention managers, field officers, engineers, ergonomists, audiologists, first aid officers, and other subject-matter experts were involved in assessing the materials.

The report notes that some of the materials in the WCB’s Films and Posters dates back to the 1960’s, and that no review has ever been conducted to assess these publications and measure their effectiveness. In this audit, it appears that Prevention Division personnel were consulted on “the purpose of each publication, its intended audience,
reprinting history, and effectiveness and viability, as well as recommendations for future development.” (n.p.) It does not appear that effectiveness was measured from the point of view of employers and workers. The document provides a brief overview of the audit, followed by samples and lists of the materials and the recommendation that was made. Its final recommendations were to cancel 51 posters, 29 placards/stickers, and 8 books/pamphlets/manuals, and to revise 37 posters, 44 placards/stickers, and 47 books/pamphlets/manuals.

3) Course Evaluation Forms

The Board stated in response to Question II-6 of the commission’s June, 1997 request that each course has an evaluation form completed by participants, like the Safety and Health Committee Evaluation Form which was provided as an example.

*Safety and Health Committee Evaluation Form*

The Safety and Health Committee Evaluation Form contains 16 questions. The first nine questions are standard course evaluation-type questions, for example, clearly explained course objectives, clear and well-paced presentations, useful activities, and knowledgeable instructor. The tenth question asks the respondent to indicate to what extent he/she will be able to apply the course content at their workplace. The remaining six questions are open-ended questions that ask if the respondent would like any topics given more, or less, emphasis; suggestions for changes to the course; suggestions for additional courses; comments on the course registration package; and any further comments.

*CAPP Survey*

The Board also conducts a survey of students and teachers using the Student WorkSafe materials in the Career and Personal Planning (CAPP) curriculum. The CAPP survey contains thirteen questions or groups of questions which ask about: the respondent’s safety training received through their CAPP work experience (if it was received and who trained them), whether or not they had to do something at work for which they were not trained, whether or not they received sufficient training to do the job safely, extent to
which supervision was adequate, use of personal protective equipment (was it needed, was it supplied, did the respondent purchase it), participation in the Student WorkSafe program (did they participate before the work experience and would they recommend it to others), whether or not the student has seen a WCB officer, whether or not the student discussed the WCB 5 point safety card with their work experience sponsor, and to describe the attitude toward safety at the work placement site. Other questions ask about previous work experience, gender, when the work experience was completed, and whether or not they had ever seen or heard WCB ads.

*Industrial and Occupational First Aid Evaluations*

The First Aid evaluations are surveys similar to the course evaluations discussed above. The evaluation forms collect personal information first, including educational background, age, previous first aid or medical training, hazard classification of the industry in which the respondent works, whether or not they currently hold First Aid certificate and how long they’ve held it, why they took this course, what course they took, and who paid for the course. Respondents are asked to indicate to what extent they agree with general comments about the course, such as whether or not it met their expectations, and whether or not it will change the way they deal with patients or the extent to which they acquired skills to function effectively as a First Aid attendant in industry. They are also asked about the usefulness of the training manual, a number of questions about the instructor and the exam, and finally a number of questions about what they liked/disliked most and what they would like to see changed. Most of the questions are open-ended so that there appears to be some rich information that could be content-analyzed, however it does not appear that this was done.

4) Training Needs

The two reports on training needs are discussed in the text of the main report.

5) Regulation Format

MarkTrend conducted in-person evaluation sessions with 151 individuals (37 WCB OSH Officers, 13 Advisory Committee Members, and 101 members of the General Business
Population, which was equally split between employer and worker representatives), to assess use and perceptions of current regulations, and preferred format for revised regulations. Among the findings were that: 50% of users assessed the current regulations as good and 33% assessed them as satisfactory; users were more satisfied with attributes like storage and durability than with content and format, and only 40% gave good or excellent ratings to the regulations in terms of providing comprehensive and detailed information and being able to find information quickly and easily; OSH officers were more critical than other groups; 56% of users mentioned improving the index as an area needing improvement; in terms of format for the new regulations, the vast majority of users preferred a set of core regulations with industry-specific regulations published separately.

EXTERNAL RESEARCH

1) Fatalities Among British Columbia Fallers and Buckers 1981-7, by D.A. Salisbury, R. Brubaker, C. Hertzman, & G.R. Loeb

This study reviewed 87 cases of fatalities among fallers and buckers in BC to “gain insights into the potential risk factors and to identify weaknesses in the routinely collected data which, if corrected, might facilitate future research”. (p.32)

Fatalities examined were those that occurred between 1981 and 1987. The researchers reviewed files provided by the Chief Coroner of BC, which included autopsy reports, police reports and other information on the accident. Among the findings were that:

- Between 35% and 37% of accidents occurred to those in their first five years of experience.
- 58.2% of the fatalities showed evidence of “bad practice” such as “domino falling” or “working too close”.
- In 39% of the accidents, supervision was judged inadequate.
- In 32.1% of the accidents the WCB regulation that requires that another worker check regularly for the wellbeing of the faller was not followed.
• A variety of “environmental” factors played a role, such as “hangups” where a falling tree catches on another tree or snag instead of falling straight, weather, and steepness of the slope; environmental factors were implicated in 55.2% of accidents.

The researchers pointed out that (p.36):

The thrust of the accident investigations by the coroner’s office and the WCB focus specifically on the sequence of events during the accident. Understanding causality is much more difficult and requires an investigation into the factors involved before the accident took place. In this respect, the information collected to date may not be as useful in understanding the etiology of accidents and in recommending preventive actions as other information could be. (p.36)

The researchers recommended Human Factors Investigations that examine preceding lifestyle and personality factors leading up to an accident. They also noted that detailed denominator data that would provide information on rates of occurrence was lacking (p.33):

In order to obtain denominator data, we contacted the employers, the union, the provincial Forestry Ministry, the Canadian Forestry Service, Labour Canada and the Worker’s Compensation Board of British Columbia. None of these organizations had any reliable estimate of the number of people employed as fallers in B.C. Therefore, we do not know the numbers of fallers and buckers employed each year, their overall experience, age profiles, proportion of time spent in different kinds of terrain or weather conditions, and how frequently “bad” falling practices occur which do not result in deaths.

2) Analysis of the Effects of a Mandatory Training Program on Faller and Bucker Monthly STD Claim Rates by M.L. Puterman, July 5, 1996
In September 1993, the WCB set a June 30, 1994 deadline for forestry employers to implement a mandatory Falling and Bucking Training Program. This study examined changes in STD claim rates over a six month period (July to December, 1994). The study found that there was a significant reduction in STD claims in the Interior Region and on Vancouver Island. Reductions were non-significant in the Northern Region, and the Kootenays, and rates remained unchanged in the Lower Mainland. The study did not assess whether or not employers had implemented the training program, nor did it assess trends in other types of claims (e.g., fatalities or LTD). Also, in October and November of 1994, radio advertisements to promote safe logging practices were aired; however the author noted that there was insufficient data to isolate the effects of the radio advertisements. He also noted that a controlled study with a longer post observation period would be necessary to confirm any effects of the training program.

3) Report of the Review of Provision of Hearing Aids to WCB Clients by Patricia Boris Aud (C), Consulting Audiologist, & Margaret Roberts Aud (C), Manager, January, 1995

Between 1978 and 1984, hearing aids were provided to WCB clients by the WCB in-house program. Between 1984 and 1986, these were dispensed by the Ministry of Health audiologists, and after 1986 by these and others, including private practice audiologists and hearing aid dealers/hearing instrument specialists. According to the report, most WCB clients now receive hearing aids from private practice audiologists or dealers.

The evaluation came about in part as a result of a 66.3% increase in costs for January to March, 1994 relative to the same period in 1993. The cost of the program in 1994 was approximately $9,000.

The evaluation included a client file review and a review of alternative service paradigms in other jurisdictions, as well as ten interviews with service providers. The findings were that some service providers provided unsatisfactory audiometric assessments, that there was a misinterpretation and manipulation of a guideline instituted by the WCB that hearing aids “could” be replaced without prior authorization by the WCB after 4 years (but not that they should be or necessarily need to be replaced), reports requesting replacement were often misleading and not factual, some service providers advised
claimants to take new hearing aids sooner than necessary or to take more expensive hearing aids than necessary, unnecessary return visits resulted in added costs, and a number of invoicing problems existed (e.g., invoiced twice for same hearing aid fitting).

Service providers also had a number of concerns about their dealings with the WCB, such as delay in receipt of payment and information, and inconsistency on the part of WCB policy for claimants (“WCB sometimes will approve changes in hearing aids to appease difficult claimants”).

Review of other programs revealed a number of options that could be pursued by the WCB such as product and service grid systems, dispensing standards, equipment, site and accreditation requirements, and direct billing.

The report concludes that at present, the Hearing Aid program has few controls and no easy way of monitoring expenditures. It recommended an internal audit of hearing loss claim files to assess fraud, and a number of measures to ensure fiscal responsibility and accountability, including clearer guidelines (including a grid system specifying frequency of service and allowable products) for service providers, a computerized coding system to track products and service providers, follow-up by the WCB with claimants, and the addition of two WCB staff: an audiologist to be available to review files and serve as a resource to claims adjudicators, and a clerk to sample claim files, collect data and assess costs and invoice errors.
Endnotes

2 For example, no waiting period for claims.
9 BC’s rates were provided by the Prevention Division in response to Royal Commission request dated June 23, 1997, Response to Question I-8. Canada’s rates were taken from Human Resource and Development Canada’s Occupational Injuries and Their Cost in Canada 1991-1995, and from their most recent statistics (1992-1996p), provided through their Website. The HRDC statistics for BC do not match the statistics provided by the WCB of BC to the Royal Commission. BC’s rates provided to the Royal Commission are higher than those reported by HRDC so that the difference between BC and Canada may be somewhat less if HRDC’s statistics for BC were to be used for comparison purposes.
Prevention Division structure prior to the recent change is described in *Prevention Division Briefing*. Prepared by: Nick Attewell, Manager Prevention Policy, November 19, 1996. Prevention Division, Workers’ Compensation Board of B.C. (p.14-20).


1997 *Administrative Inventory* (ibid) (p.213).

1997 *Administrative Inventory* (ibid) (p.219)

WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated August 18, 1997, Response to Question II-3.

Excel Spreadsheet attached to this graph contains 4 different sources of Penalty data. The graph is based on #1.


Source: Excel Spreadsheet attached to this graph contains 4 different sources of Penalty data. The graph is based on #1. (Note: Penalty dollars have not been CPI adjusted).


1997 *Administrative Inventory* (ibid) (p.228)

1997 *Administrative Inventory* (ibid) (p.242)
WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated August 18, 1997, Response to Question 1.


1997 *Administrative Inventory* (ibid) (p.133)

WCB of BC Annual Report. Statistics ’97 (p.4)

WCB of BC Annual Report. Statistics ’97 (p.20)

1997 *Administrative Inventory* (ibid) (p.239).


see Workers Compensation Board of BC, *Annual Reports*.


WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated August 18, 1997, Response to Question 1.

Data provided in 1997 *Administrative Inventory* (ibid) (p.133)

WCB of BC. *Annual Report, Statistics ’97* (p.20).


WCB Presentation to the Royal Commission, July 18, 1997.

1992 *Administrative Inventory* (ibid) (p.196).

1997 *Administrative Inventory* (ibid). (p.xxi).

1997 *Administrative Inventory* (ibid). (p.94).


Commissioner, The Honorable Mr. Justice Charles W. Tysoe, The Province of British Columbia.

1997 Administrative Inventory (ibid) (p.89, p.246).


WCB of BC. Prevention Division. 1998 Business Plan. Prepared for: Prevention Division. Prepared by: P. Wolczuk/P. Meaney. January 6, 1998.(p.15,58) indicates 1997 projected FTE=385.5; the list of permanent staff positions (p.25) totals to 405 (which, it is stated, does not include the 43 new positions identified in the enhancement request for 1998); the Prevention Division’s response to Q.I.1 of the Commission’s June 23, 1997 request regarding FTE’s shows 388.93 budgeted in 1997.

WCB of BC. Annual Report 1997 (p.21).


WCB of BC. Prevention Division. 1998 Business Plan (p.91)


97 Administrative Inventory (ibid) (p.29).


Oregon Department of Consumer and Business Services, Oregon Occupational Safety and Health Division (OR-OSHA), Internet information titled “A Word From the Administrator”, 1997.

This argument is presented by Professor Michael Quinlan, Head of the school of Industrial Relations, University of New South Wales, in a submission to the Inquiry into Workers’ Compensation and Related Matters in Queensland, June 30, 1996. (p.180).


WCB of BC. Prevention Division. Response to Royal Commission Request dated August 18, 1997, Response to Question 14. (Provided in attachment to letter from Prevention Division dated March 11, 1998): Field Officers by Region (total OSO’s and OHO’s = 191; WCB of BC. Prevention Division Briefing. Prepared by: Nick Attewell, Manager, Prevention Policy. November 19, 1996. (p.14) states that there are 190 Occupational Safety and Hygiene Officers; 1997 Administrative Inventory (p.30) indicates that there were a total of 188 OSO’s and OHO’s, with 5 vacancies.

88 WCB of BC. Prevention Division. 1998 Business Plan. Prepared for: Prevention Division. Prepared by: P. Wolczuk/P. Meaney. January 6, 1998.(p.15,58) indicates 1997 projected FTE=385.5; the list of permanent staff positions (p.25) totals to 405 (which, it is stated, does not include the 43 new positions identified in the enhancement request for 1998); the Prevention Division’s response to Q.I.1 of the Commission’s June 23, 1997 request regarding FTE’s shows 388.93 budgeted in 1997.

89 WCB of BC. Prevention Division. Support Information for Prevention Division Presentation to the Royal Commission, July 18, 1997. Response to Question I-3 and I-9. (Number of worksites inspected, number of inspections, and number of registered employers)


91 Additionally, according to the report, the division employed 25 people in education and 11 in first aid.

92 1992 An Administrative Inventory (ibid) (p.125).


95 1997 Administrative Inventory (p.133).

96 1997 Administrative Inventory (p.198).

97 For further discussion of this issue, see the Prevention Division response to Royal Commission Request dated March 16, 1998, Question 5 (A-K), and Prevention Division Response dated April 21, 1998.


99 Assuming 191 OHO’s and OSO’s.


107 Source: Excel Spreadsheet attached to this graph contains 2 different sources of data on Number of Employers.


(Note: Not all registered employers are under the jurisdiction of the Prevention Division).


110 Source:

2. Number of Employers: WCB of BC Annual Reports 1992 (Part 1, p.68), 1997 (p.48). (Not all registered employers are under the jurisdiction of the Prevention Division)

111 WCB of BC.  Annual Report Statistics’ 97. (p.47)
114 WCB of BC.  Prevention Division.  Support Information for Prevention Division Presentation to the Royal Commission, July 18, 1997.  Response to Question III-2 and III-3.  Revised data provided by the Board in Response to Q.5 of Request dated November 5, 1997. (Response notes that previous data were not accurate).
Amounts by Region by Year. Created on 98/01/15). “10 Year Average” calculated as total number of penalties 1987-1996 divided by 10 (See Excel Spreadsheet “10-Year Regional Averages Spreadsheet.XLS”) Note: 1997 omitted due to incomplete data.


1997 Administrative Inventory (ibid) (p.133). 105 conducted in 1993 but data not comparable to other years.

WCB of BC. Annual Report. Statistics ’97 (p.4)

Source:


Source: Excel spreadsheet attached to this graph contains 2 different sources of Warning Letter data. The graph is based on #1.


BC. *Annual Report*, Statistics ’97 (p.71). Data on warning letters provided in response to this questions differs from data on warning letters provided in response to request for regional data: Response to Royal Commission Request. Request dated August 18, 1997. Response in Vol. 2 Binder. Q. 14. It was necessary to use the different figures here because they were the ones used by the Prevention Division to calculate the percentage of warning letters followed up with inspections.


145 Royal Commission Request dated June 23, 1997, Question I-5; response in WCB of BC. Prevention Division. Response to Question I-5, Support Information for Prevention Division Presentation to the Royal Commission, July 18, 1997; also attachment to letter from the Board to the Royal Commission dated July 2, 1997 and cover memo for Section I, Factual Information), Support Information for Prevention Division Presentation to the Royal Commission, July 18, 1997.


149 WCB of BC. Prevention Division. Response to Question I-5 & I-6 (Cover memo for Section I, Factual Information), Support Information for Prevention Division Presentation to the Royal Commission, July 18, 1997.


151 1976-1986 Data on Total nNumber of Penalties and Total Dollar Value of Penalties: Provided by WCB of BC. Prevention Division in Response dated Jan. 29, 1998 (directing RC to replace previous information provided for these years with these numbers). Note: 1997 data provided only includes up to November, 1997, so is omitted from this graph.

152 WCB of BC. *Annual Report* 1997 (p.48).


154 Source: Excel Spreadsheet attached to this graph contains 4 different sources of Penalty data. The graph is based on #1.

1. 1987-1996 Data: Provided by Prevention Division in Response dated Jan. 29, 1998 (directing RC to replace previous information provided for these years with these numbers). Note: 1997 data provided only includes up to November, 1997, so is omitted from this graph.


155 Source: Excel Spreadsheet attached to this graph contains 4 different sources of Penalty data. The graph is based on #1.
1. 1987-1996 Data: Provided by Prevention Division in Response dated Jan. 29, 1998 (directing RC to replace previous information provided for these years with these numbers). Note: 1997 data provided only includes up to November, 1997, so is omitted from this graph.


Source: Excel Spreadsheet attached to this graph contains Source # 1 above for Number of Penalties and Source #1 above for Penalty Dollars. Source #1 (as above) is WCB of BC. Prevention Division. 1987-1996 Data: Provided by Prevention Division in Response dated Jan. 29, 1998 (directing RC to replace previous information provided for these years with these numbers). Average penalty for each year is calculated by dividing the total dollar value of penalties for the year by the total number of penalties for the year. Note: 1997 data provided only includes up to November, 1997, so is omitted from this graph.


158 Royal Commission Request dated August 18, 1997, Question 13; non-response followed-up with Royal Commission Request dated March 16, 1998. See also Prevention Division letters to the Royal Commission dated March 11, 1998 and attachment to letter dated April 21, 1998, response to Question 8, requesting clarification. Subsequent discussion between researchers with the Prevention Division to clarify the request. No data were provided following the discussion.

159 1997 Administrative Inventory (ibid) (p.213).

160 WCB of BC. Prevention Division. Response to Question I-7, Support Information for Prevention Division Presentation to the Royal Commission, July 18, 1997; data on closure orders over 24 hours in length only, as stated in cover memo from the Board.


165 Letter to Patrick Lewis, Executive Director, Royal Commission on Workers’ Compensation in BC, from Brenda Karp, Acting Director, Central Resources, Prevention Division, WCB, July 7, 1998.

166 1997 Administrative Inventory (ibid) (p.155,162).

167 1997 Administrative Inventory (ibid) (p.155,162).

168 1997 Administrative Inventory (ibid) (p.158,163).

169 The Appeal Division of the Workers’ Compensation Board of British Columbia, p.4-5; in Appeal Division Operational Status Report, December 6, 1996.


171 1997 Administrative Inventory (ibid) (p.162,163); 1995, the last year of data presented, shows an appeal rate of 27%; 1997 data from 1997 Annual Report on Penalties Recommended shows 379, and appeals initiated according to data provided by the Appeal Division for 1997 shows 94, for a rate of 25%. 1996 data is not clear, but total appeals initiated is similar to 1995 and 1997.

172 1997 Administrative Inventory (ibid) (p.162,163)

Data provided to the Royal Commission by the Appeal Division in response to Royal Commission Request to the Rehabilitation and Compensation Services Division dated February 9, 1998, Response to
Question 12.

Data provided to the Royal Commission by the Appeal Division in response to Royal Commission Request to the Rehabilitation and Compensation Services Division dated February 9, 1998, Response to Question 12.

Note 1: From 3/6/91 to 31/12/91. The Appeal Division came into being on June 3, 1991.
Note 2: A small number of appeals were heard regarding miscellaneous issues such as overpayments and late filings. There were only 3 appeals of First Aid penalties over this time period.
Note 3: Allow rates calculated on very small numbers of decisions are not meaningful. Allow rates not presented where total decisions fall below 10.
Note 4: “Total Appeals Initiated” reflects the total number of appeals filed; the other data in this table reflects the total number of decisions made.


WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated August 18, 1997, Response to Question 1.


Discussed in the 1997 Administrative Inventory (ibid) p.76.


Havlovic, S.J., & McShane, S.L. (1997). The effectiveness of joint health and safety committees (JHSCs) and safety training in reducing fatalities and injuries in British Columbia forest product mills. Faculty of Business Administration, Simon Fraser University. Submitted to the Workers’ Compensation Board of British Columbia, October 1997.


WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated August 18, 1997, Response to Question 11.

WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated November 5, 1997, Response to Question 11.

WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated November 5, 1997, Response to Question 2, and Response to Question 11.

WCB of BC. Annual Report. (p.67).

1997 Administrative Inventory (ibid) (p.133).

1997 Administrative Inventory (ibid) (p.119).


WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated November 5, 1997, Response to Question 2.

Data on number of times section cited is from WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated November 5, 1997, Response to Question 2; Data on number of inspections for each of the three years is from WCB of BC. Prevention Division, Support Information for Prevention Division Presentation to the Royal Commission, July 18, 1997. Response to Question I-3.


The document’s footnote to this statement is “While we believe that, for the long term, a multifaceted
indicator for OHS performance should [sic] measurements of process and severity, for purposes of this presentation injury rate has been used.”


WCB of BC. Prevention Division, Response to the Royal Commission’s Request dated November 5, 1997, Response to Question 12.


For example, one constituent group reportedly discouraged participants from completing the questionnaire, which resulted in a lower response rate than expected (p.8). Additionally, with data collected at one point in time, it is difficult to determine the direction of causality (p.52). For example, as discussed by the authors, favourable management/employee JHSC relations are associated with lower accident rates. This may mean favourable relations lead to better safety and health conditions which lead to lower accident rates, or that because of lower accident rates relations are more favourable (p.14).


A smaller percentage were aware of other types of regulations, ranging from 4% to 9% of respondents.


WCB of BC. *Education and Information Services Provided by the Prevention Division of the Workers’ Compensation Board of BC*. DRAFT. June 4, 1997.


1997 *Administrative Inventory* (ibid) (p.200)

WCB of BC. Annual Report Statistics ’97 (p.70). Statistics directly related to the Diploma courses in Safety and Hygiene that were transferred to BCIT in 1997 were not available at the time of printing of the 1997 Annual Report.

WCB of BC. Prevention Division. Support Information for Prevention Division Presentation to the Royal Commission, August 18, 1997. Response to Question 21; College WorkSafe Education Update.
Some employers are still considered “Deposit Accounts” and these employers pay their full claims costs directly; until 1994, some employers could register voluntarily, and these employers were base-rated.


These five dimensions are: (a) the temporal course of events; (b) the division into levels (macro, meso and micro); (c) the degree of generality/specificity of the type of disease; (d) the direction of the preventive process (“bottom-up” or “top-down”); and, (e) the trichotomy “host-agent/vehicle-environment” (or man-machine-environment, as is preferred in ergonomics) (p.765).

Primary prevention takes place before the appearance of the disease; secondary and tertiary prevention take place at different stages in the further development of the disease (p.757).


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Nova Scotia Department of Labour, Occupational Health and Safety Division, 2.2 Objectives (24 March 1996).

Multi-Year Strategic Plan of the Manitoba Workplace Safety and Health Division, 1994-1996 (October, 1994).

Division of Workplace Health and Safety, Department of Training and Industrial Relations, Queensland Government, Internet information titled “Welcome to the Division of Workplace Health and Safety”, 1997.

The United States Department of Labor, Occupational Safety and Health Administration, Internet information titled “The New OSH: Reinventing Worker Safety and Health”, 1997.


319 The United States Department of Labor, Occupational Safety and Health Administration, Internet information titled “The New OSHA: Reinventing Worker Safety and Health”, 1997.


324 Workplace Health, Safety and Compensation Commission of New Brunswick, *WHSCC Programs and Services Can Help*, Internet publication.


329 *Prevention Division Information Line Satisfaction Survey Results*. Prevention Division, Workers’ Compensation Board of BC, Research and Evaluation Section, 1/20/97.


