



Loss Control TIPS

Technical Information Paper Series

Innovative Safety and Health SolutionsSM

Supporting the Need for Risk Management

Background

From newspaper headlines to the now smokeless boardrooms of countless businesses across the country, we are bombarded by phrases such as downsizing, outsourcing, resource stretching, and other euphemisms for cost containment measures. As our global economy causes competition to intensify, most businesses face new challenges to expand and prosper. It is no longer enough for companies simply to pass along their growing business expenses to their customers. Consequently, flattening or trimming budgets becomes, not just a matter of degree of profitability, but a matter of *survival*.

Surprisingly, some companies still look upon safety and risk management activities as more of a cash drain than as an essential part of their operations. When business “down” cycles occur, these same companies are quick to make cuts in staffing and support for their safety programs. Some go so far as to lay off their safety directors or discontinue safety incentive plans. Unfortunately, the savings gained through these short-sighted decisions can be quickly eroded by the costs of accidents and other inefficiencies caused by unsafe work practices.

A manager studying a company’s financial picture needs to *fully* understand how the direct and indirect costs of accidents and other losses impact the company’s bottom line. Property, vehicles, workers, and products must all be kept safe and in optimum condition in order for the company to be productive and efficient. A fire can totally shut a business down by destroying critical accounts receivable information, or by damaging the equipment, material and facilities necessary to sustain production, or by destroying finished products ready to ship to waiting customers. A collision between a company vehicle and a school bus can obviously lead to incredibly large liability expenses, not to mention the damage to the errant company’s public image. A defective product can result in huge expenses, ranging from the activities and costs necessary for a product recall to defense costs and settlements of unsuccessful suits.

While most business managers understand the financial consequences of these catastrophic events, many still fail to see how the smaller “everyday” losses can *also* significantly increase operating expenses. The same job hindrances and unsafe work practices that contribute to work-related accidents can also contribute to damaged equipment and property, traffic accidents, reduced production, more raw material scrap, and an overall increase in the cost of doing business.

To be successful, today’s safety director or risk manager must be able to “sell” top management on the concept that *production safety and operational efficiency are interrelated*. For example, it is not unusual for production to actually increase after a barrier guard has been installed on a previously unprotected



machine, because when a machine operator feels more protected from the hazardous moving parts, he or she is better able to focus attention on smooth production. A worker who knows—and uses—the proper methods of performing a particular task is more likely to meet the intended quality standards *and* do the job safely, with less risk of an accident. Companies that truly believe that safety and efficient production go hand in hand stand a better chance of surviving in today’s highly competitive market place.

Before a risk manager can convince management counterparts of the *economic importance* of an effective safety program, he or she must overcome one key dilemma. For years, safety professionals across the country have struggled to *quantify* the dollar savings achieved through implementation of various safety initiatives. While the direct and immediate benefits of many safety activities are obvious, it is important to educate management in the less immediate, but no less important, benefits of less obvious safety efforts.

For example, during a routine tour of the plant, the safety director observes a new process where a protective paint coating is applied to a metal part. The employees use a flammable solvent to clean the paint-spraying equipment. At the suggestion of the safety director, workers substitute a non-flammable solvent for the flammable solvent, with no loss of cleaning effectiveness or appreciable increase in cost. However, due to the substitution of the non-flammable solvent, the potential for fire in this particular area of the plant has been significantly reduced.

Now, while the safety director’s suggestion has clearly made the plant—and its contents, including workers—safer from fire, the dilemma comes in *quantifying* the positive financial impact of this safety initiative. Had a fire started from the use, storage, or disposal of the originally-used flammable cleaning solvent, someone would have developed a loss estimate for the property damages, bodily injury and loss of business income that resulted. However, how will the safety director quantify the money saved by the company through the *prevention* of a fire? Ironically, the more efficient and effective a safety program is, the more *transparent* it appears to senior management. Accident-free work, well-maintained equipment and facilities, and a secure, safe property are not as noticeable to management as are accidents, equipment break-downs, crime, and fires. Staff positions and programs that cannot be specifically linked to the company’s bottom-line profits are more vulnerable to cut-backs during business downturns.

Exploring the Cost of Risk

A critical part of a risk manager’s job is to educate top management about the costs of risk faced by all businesses. Senior management who does not understand the cost of risk will tend to focus only on the obvious expense of insurance premiums, and will miss the bigger picture, which includes potentially significant savings through effective risk management.

At a minimum, the cost of risk includes these components:

- 1) Insurance premiums and related fees
- 2) Self-insured expenses
- 3) Costs involved with improving safety and reducing accident risks
- 4) Expenses related to administration of the risk management program

These four risk costs can be understood by looking at the fictitious “Carwell Corporation.”

The Carwell Corporation auctions used vehicles. Carwell doesn’t take ownership of the vehicles, but charges a fee to both the seller and the buyer to facilitate the sale. Carwell offers various services, including transporting vehicles to the auction facility, performing minor mechanical and body repairs,

detailing the vehicles to enhance their appearance, and selling the vehicles at auction with all the related paper transactions.

The *first* cost of risk to Carwell is the premiums paid to an insurance company for insurance protection. To cover their insurance needs, Carwell spends approximately \$400,000 annually.

The *second* cost of risk is incurred by accident expenses that are not covered by conventional insurance. This lack of insurance can be both intentional and unintentional. As the name implies, intentional risks are those that Carwell knows exist, but that it chooses to self-insure when and if they occur. A company can *intentionally* select deductibles or self-insured retentions that place more of the burden for the cost of accidents on the company itself. Unfortunately, businesses can also *unintentionally* bear the cost of accidents by failing to obtain adequate insurance coverages. This generally happens when a company does not fully understand what their insurance protection includes or excludes, or when a company fails to perceive a hazard that should be insured.

For example, suppose Carwell Corporation has selected a Garage Liability policy with a \$5,000 deductible and a \$500,000 aggregate. Carwell also absorbs all medical-only Workers' Compensation claims up to \$500. In addition, Carwell typically self-insures repairs of minor scrapes and dents that occur when vehicles are moved within the auction facility. During the course of the policy period, then, Carwell incurs these intentional self insured expenses, in addition to the insurance premiums paid:

Self Insured Expenses During This Period	Cost
15 medical-only Workers' Compensation cases under \$500	\$5,000
10 minor vehicle repairs	2,000
12 Garage Liability claims within the deductible	50,000
Shock Garage Liability loss above the aggregate	46,000
Total Self-Insured Expenses	\$103,000

The *third* cost of risk relates to expenses Carwell incurs proactively to reduce its accident risks. Let's say that Carwell decides it would be good for business to add a snack bar in the auto auction building. To minimize the potential for fire (due to the cooking hazard), Carwell installs an automatic extinguishing system which costs \$12,000. Due to the number of slips and falls in the vehicle cleaning area, Carwell has also installed a non-slip floor at a cost of \$17,000. A number of the Carwell staff who wash the vehicles developed skin irritations associated with the detergent used for carwashing. A substitute detergent was found that eliminated most of these rashes, at an additional cost of \$6,000 per year. Finally, Carwell distributes about \$5,000 annually as part of its safety incentive program. The total cost of these proactive risk control measures is \$40,000:

Proactive Risk Control Measures During This Period	Cost
Automatic Extinguishing System	\$12,000
Non-Slip Floor	17,000
Substitute Detergent	6,000
Safety Incentive Program	5,000
Total Cost of Proactive Risk Control Costs	\$40,000

The *fourth* and final cost of risk associated with any company's business pursuits has to do with the overall overhead costs of administering the safety and risk management program. Examples of overhead expenses include portions of salaries for the employees responsible for overseeing the various safety activities (e.g., employee health nurse, safety director, and the time of safety committee members during



meetings and accident investigations, etc.). Carwell estimates that the total cost of administering the safety program is \$57,000 annually.

Carwell's total cost of risk including each of the four *cost of risk* elements (as outlined at the beginning of this article) for one year is as follows:

Cost of Risk Factors During This Period	Specific Cost
Insurance Premiums	\$400,000
Self Insured Accident Costs	103,000
Risk Control Expenses	40,000
Safety Program Administrative Expenses	57,000
Total Cost of Risk	\$600,000

The \$400,000 for insurance premiums is only *part* of the Company's actual loss (risk expense) picture. The ultimate goal for the safety director or risk manager of any business is to do more than just focus on reducing the accidents that directly impact the insurance premiums. The safety director or risk manager must also take into account the *total cost of risk* for the company, thereby freeing up as much capital as possible for actual business production.

When senior management understands just how much money can be saved by controlling the risk of doing business, they generally give more support to proactive safety initiatives. Based on Carwell Corporation's scenario, it is clear that businesses need to do more than focus purely on insurance costs when they make important business decisions.

Additional Risk Finance Issues

The key question then, is "*How can the safety director (or outside Loss Control Consultant) express risk in financial terms so that senior management better understands and supports loss prevention measures?*"

A safety director can link accident costs to the bottom line finances of a company in a number of ways, such as:

- By showing how the experience modifier for the Workers' Compensation line is costing the company critical premium dollars.
- By choosing wisely between guaranteed cost versus loss sensitive insurance plans, and by showing how to maximize insurance premium returns by controlling accidents.
- By demonstrating exactly how accident costs and insurance expenses directly impact company profits.
- By uncovering the hidden, uninsured costs associated with direct accident expenses.

Experience Modification Factor

The premiums that a business pays to purchase conventional Workers' Compensation insurance are impacted by its *experience modifier*, which factors in employee claims for the past three years (excluding the current period). This experience modifier, which is developed by the National Council on Compensation Insurance (NCCI), is based upon the individual loss experience for each business. In simple terms, companies that do a better job at controlling their losses than other similar businesses in their specific classification will have experience modifiers less than 1.0.

In developing an experience modification factor for a specific company, NCCI places greater emphasis on the *frequency* of accidents than on the *cost* of these accidents. This approach is based on the premise that accident frequency breeds severity, and that chance alone often determines how costly an accident will be. For example, look at two similar accidents where employees slip on the ice in an office parking lot. In the first instance, the employee is able to catch herself on a nearby vehicle, which partially breaks her fall. She sustains only minor bruises, with incurred medical expenses of only \$125. The second employee, who is carrying a portable computer, slips on the ice. The resulting fall causes a fractured arm and a damaged company computer; the total cost is \$13,500.

Since most accidents have the potential to include large claim costs, the manner in which the NCCI calculates experience modifications should encourage companies to lower their accident *frequency*, reducing the risk for accidents to occur in the first place. For example, all things being equal, a bakery that has had two employee accidents with total incurred expenses of \$35,000 is a better insurance risk than a comparable bakery that has had twelve employee accidents costing \$30,000 during the same period. This is true because any one of the twelve accidents could have been extremely costly.

The way NCCI calculates the experience modification for a particular business illustrates the emphasis placed on controlling accident frequency. All Workers' Compensation accidents up to \$5,000 are factored into the experience modification formula as *primary losses*. Accident amounts above the \$5,000 threshold are placed in an *excess loss* category. (Each state also sets an accident limit to further limit the amount of excess loss that will be used as a ratable loss in the experience modification calculations.) The experience modification formula places a significant weighting on losses at the primary loss level, a lesser weighting on losses in the excess loss category, and no weighting on loss amounts that exceed the state accident limit.

Without actually computing a specific experience modifier, we can still see how this critical factor influences a company's Workers' Compensation insurance costs.¹ For example, suppose BX Chemical Corporation has an experience modification of 1.25. The company's manual Workers' Compensation premium is \$100,000. Applying the experience modifier of 1.25, the adjusted premium becomes \$125,000. The bottom line is that BX Chemical is paying an extra \$25,000 annually because its experience modifier of 1.25 is greater than the comparable industry average modifier of 1.0. Considering that many similar businesses that have earned experience modifiers well *below* 1.0, BX Chemical could realize significant premium savings by reducing its employee injury rate.

Guaranteed Cost Versus Loss-Sensitive Insurance Plans

Two distinctly different forms of insurance approaches are commonly used in providing Workers' Compensation coverages: *guaranteed cost* plans and *loss-sensitive* plans.

As the term implies, companies that purchase *guaranteed cost* insurance coverage pay a guaranteed, fixed amount for the policy period; this amount is not subject to further adjustments, regardless of the losses that occur during this period. A guaranteed cost policy is a good example of risk transfer in that the insured business has transferred the risk to the insurance carrier, who is then responsible for all the claim costs from covered losses. While businesses that purchase guaranteed cost policies are shielded from the immediate and direct costs of their accidents, the previous section on experience modifiers explains why companies cannot totally escape their accident experience. (In addition, businesses will always bear the hidden or indirect costs of accidents and other losses, as described below.)

With *loss sensitive* insurance coverage, the company shares the burden of its loss expenses with the insurance carrier. These plans are frequently referred to as *retrospective* policies, because what the company pays for insurance during that period is based on the losses sustained during *that same* period. In simplified terms, retrospective insurance is a *cost-plus* approach, because typically the insured company pays for the cost of its losses *plus* an additional amount to offset the insurance carrier's expenses and profit margin. A retrospective policy establishes set minimum and maximum premium levels. If the company does an unusually good job of controlling accident risks and associated expenses, then its final premium will be at or near the minimum level. If the company experiences major losses during the policy period, then its final premium will be closer to the maximum premium. The insurer and the company agree on the maximum premium level at the start of the policy period. Typically, the first calculation of the adjusted retrospective premium is made eighteen months after the start of the policy period, with additional adjustments made every six months thereafter until all the claims have been closed.

Another example illustrates the concept of the maximum premium. In the past, XYZ Corp. has experienced a high frequency and severity of Workers' Compensation claims. Within the last two years, however, XYZ has implemented an effective safety program and has significantly reduced workers' compensation claims. Due to the success of its progressive risk management efforts, XYZ Corp. has decided to shift from the guaranteed cost form of Workers' Compensation insurance to a retrospective form. XYZ Corp. hopes that the success of its safety program will result in reduced insurance premiums.

Confident in its risk management controls, XYZ Corp. agrees on a 1.50 maximum premium factor. The standard premium developed for this account for a retrospectively rated plan is \$2,000,000. By applying the 1.50 maximum factor, XYZ Corp. *could* pay as much as \$3,000,000 for Workers' Compensation coverage for that policy period should their ultimate ratable losses exceed a set amount.

Although there is considerable risk associated with retrospective insurance plans, significant savings can be realized through good safety performance. Under a retrospective policy, the insurance carrier typically indicates what insurance savings the company might achieve by demonstrating good safety performance during the policy period. The table below illustrates how substantial the savings (or the additional premium penalties) can be under a particular retrospective insurance plan.

Ultimate Ratable Losses	Estimated Total Risk Premium	Estimated Retro Return or (Additional Premium)	
\$500,000	\$1,589,169	\$869,823	Return
\$800,000	\$1,933,266	\$525,726	Return
\$1,200,000	\$2,392,062	\$66,930	Return
\$1,600,000	\$2,850,859	\$391,867	(Additional Premium)
\$2,000,000	\$3,309,657	\$850,665	(Additional Premium)

[Note: These figures were taken from an actual retrospective insurance quote, and are provided for illustrative purposes. The details showing how these premium returns or additional premium charges were derived have not been included for the sake of brevity.]

When, as in this example, there is a potential range of \$1,720,488 (\$869,823 best premium return plus \$850,665 greatest additional premium) between what a business can recoup in returned premium versus what they could pay in additional premium, this should provide plenty of incentive to top management to take safety seriously. The role of the safety director or risk manager becomes even more critical to the bottom line profits of any company that chooses a loss-sensitive insurance plan.



Losses Versus Profits

Some companies seem oblivious to the extent to which accident costs act as a drain on production and profits. To illustrate, suppose that a manufacturing company sells widgets at a profit margin of 10%. The company has a retrospective rated Workers' Compensation policy, and has finished the year with \$400,000 in paid losses (claims). The company's final insurance costs for the \$400,000 in claims comes to \$530,000.

How likely is it that top management understands how much additional sales revenue will be required just to offset the Workers' Compensation costs? The additional revenue can be calculated as follows:

$$\frac{\$530,000 \text{ WC Insurance Expense}}{10\% \text{ Profit Margin}} = \$5.3 \text{ Million in Sales}$$

The effort required to produce and sell an additional \$5.3 million worth of widgets in order to produce the 10% profit margin required to cover the \$530,000 outlay in insurance costs would be a sizable drain on any company's production! This example should make clear how much of a burden the cost of risk is to *all* businesses.

Direct Versus Indirect Costs

Up to this point, our examples have pertained to the *direct costs* associated with accidents. For example, suppose an employee suffers a strained back while lifting a box of paper supplies in the storeroom. This back strain leads to incurred medical expenses of \$1,700 and an additional \$2,600 in indemnity costs for the lost time, resulting in a total of \$4,300 in *direct costs* associated with this material handling accident.

Since most businesses purchase Workers' Compensation insurance, direct accident expenses such as these are typically paid by an insurance carrier. Because the insurer picks up these direct expenses, the company management may fall prey to the "out of sight, out of mind" perspective, thinking that because all apparent costs are paid by the insurer, the company need not act to reduce accident costs. The company management may review the periodic loss runs supplied by the insurance carrier, which detail the various incurred claim costs, but as long as the insurer pays these direct accident expenses, the insured company may not understand the immediate but *hidden* impact of accidents on its bottom line finances. This is particularly true if the insured company has purchased a guaranteed cost policy that isn't subject to additional charges for poor loss experience. Some less-sophisticated businesses maintain a cavalier attitude about accidents and their related expenses, indicating that "that's what we buy insurance for."

What *all* businesses need to understand is that accidents also contain certain *indirect* expenses that *cannot* be reimbursed through insurance. Many safety experts indicate that these indirect or "hidden" accident costs are equal to *or greater than* direct costs. Typical indirect costs include:

- Lost productivity of injured or killed worker(s)
- Lost productivity of employees who assist in the rescue, clean-up, repairs, etc., necessitated by the accident
- Lost productivity of employees who are idled during or immediately after the accident, or who are kept idle by damaged machinery, debris, HazMat spills, etc.
- Loss of efficiency due to break-up of experienced teams or lowered morale caused by injury or death of co-worker(s)
- Overtime expenses incurred by additional staff needed to make up for the lost worker(s)
- Damage to materials, equipment, vehicles, etc., caused the accident

- Lost time of supervisors and management who must respond to the accident (assisting injured workers, conducting accident investigation, dealing with regulatory agencies, dealing with the news media, etc.)
- Lost time and expense of completing paper work (accident reports, reports to regulatory agencies, etc.)
- Cost of first aid supplies used to treat the injured
- Costs of hiring and training new employees to fill in for the injured or replace the dead
- Negative impact on customer relations due to reduction in quality or service
- Loss of customer loyalty due to negative publicity
- Increase in future insurance costs due to increased accident frequency or severity

Since these indirect costs are *not* covered by traditional insurance, they represent a serious drain on a company's financial resources. The safety director *must* understand this critical risk management concept before he or she can convince the company's senior management of the importance of controlling accidents.

Conclusion

Senior management is keenly sensitive to a healthy bottom line, and will devote attention and support to those activities and programs that best contribute to growth and profit. Each type of business pursuit carries its own "cost of risk" that involves *much more* than just the cost of insurance premiums or the direct expenses of accidents which are typically covered by insurance. Once the safety director or risk manager understands these important risk management principles, he or she must strive to demonstrate to top management that he or she can best support the production and profit goals of the company by investing wisely in safety.

Notes

1. For further details on computing experience modifiers, refer to *The ABC's of Revised Experience Rating*, which is available through NCCI. Contact NCCI, Customer Service, 750 Park of Commerce Drive, Boca Raton, FL. 33487-3621, Phone (561) 997-1000.

For more information, contact your local Hartford agent or your Hartford Loss Control Consultant. Visit The Hartford's Loss Control web site at <http://www.thehartford.com/corporate/losscontrol/>

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