

# Safety & The Bottom Line: Proving The Financial Benefits Of Your Safety Initiatives

Presented at: Proactive Accident and Incident Reporting & Investigation Conference.  
IIR Ltd, Stakis St Ermins Hotel, London, 7-8 Dec 1999.

W.P Van Den Raad  
BSMS Inc. Franklin, IN, 46131, USA

## Introduction

There are three commonly accepted reasons for reducing accidents at work i.e. legislation, humanistic and moral considerations and economic considerations. Very often though the last one, economic considerations, tends to be forgotten. It is, however, accepted in industry that "Good Safety is Good Business". In 1990, the CBI estimated that for each accident, whether investigated or not costs £1500. Thus, they tried to highlight the economic argument.

One of the reasons that the economics of safety often takes a back seat could be that managers do not always realise the true cost of accidents. This is often brought about by the way that accident costs are used in industry. Responsibility is often seen as the domain of the Safety Department, which means that the knowledge about accident costs tend to be divorced from the rest of the business.

But let us first look at this demon called accident costs. It is first of all important to remember that the actual cost of accidents is industry specific. However, there are some principals that can be generally applied.

## Calculating just how much an accident really costs your business

In calculating just how much accidents costs your business there are firstly two types of costs that needs to be considered i.e. direct costs and indirect costs. *Direct costs* typically reflect those that are directly associated with the accident, e.g. investigation costs (i.e. how many people involved multiplied by the number of man hours multiplied by the average hourly salary), Production downtime (e.g. time spent by first-aider with injured person, time spent by co-workers in attendance to injured person, and actual downtime of all the production processes), medical expenses, damage to equipment or product, sick pay, repairs, legal costs, court fines etc. The *indirect costs* typically includes costs that are indirectly linked to the accident, e.g. employers and public liability claims, business interruption, product liability, training of replacement staff, loss of goodwill, loss of corporate image, etc.

Another distinction between different types of costs is that some costs can be insured against, but others not. From an economic point of view, the latter distinction may be seen as more important. It is clear from studies that have been done by the HSE and others that the ratio between insured and uninsured costs leads to an iceberg effect.

The exact ratio will differ between industries, but the effect is the same: the uninsured costs far outweigh the insured costs. It is these uninsured costs that come straight off the company's 'bottom-line' profits. The HSE estimates that for small businesses the ratio of insured to uninsured costs range anywhere between 2 to 36 times the insured costs, but the average uninsured losses are about 10 times the amount paid in insurance premiums. Thus, for every £1 recovered from insurance, your company is absorbing an average £10 which can only come off your profits.

If you want just an idea of how much accidents are costing your organisation you can use these ratios to calculate the cost of accidents. If you want a more accurate picture you need carry out your own study. To do this you would work out the costs of accident fitting the definition of "any event where there was the risk of harm and which (a.) damages property, equipment or materials, or, (b.) delays production or service and which costs you time and money"

Include the costs of all accidents and ill health occurrences. It is common practise not to include accidents that could not have been prevented, but take care, because for example an unforeseeable machine breakdown may be due to inadequate maintenance, or an accident that seems to be due to an employees carelessness may be due to lack of supervision or training.

You also have to remember the hidden costs, in particular the costs incurred by the diversion of people's time to deal with the accident. These can include helping the injured person, giving first aid, cleaning up, reschedule production, accident investigation, preparing reports, repairs, etc. You would also need to include costs of changes to machinery, safety devises or procedures, hire costs of temporary equipment, waste disposal, temporary labour, customer penalties, and possibly fines and costs from prosecution.

The longer you run your study, the more accurate your results will be. If you integrate the costing study with your existing accident reporting and investigation procedure, you will be able to make individual managers in the business accountable for uninsured accident costs, thereby providing them with an economic incentive for implementing remedial actions. One step further would be to charge the cost of an accident to individual departments, but finance remedial actions from a central fund. The effect that this has on the departmental manager is that it is costly to have accidents, but not to prevent them.

### **Case examples that demonstrate the financial benefits of a safer workplace**

Case studies of companies with average accident records show that the cost of accidents take a huge chunk out of their profits each year. An engineering company employing 60 people has 6 minor injury accidents in a month, at an average cost of £40.00. Thus with 72 minor injuries per year the company can expect a cost of £2880/year just on minor accidents alone. If the company works on a profit margin of 5%, they need to generate sales to the order of £57600.00, or at a profit margin of 10% nearly £29000. ((Cost of accidents/profit margin)\*100)

A chemical company, part of a large multinational, employed 80 people. 7 Lost Time Accidents and 16 minor injury accidents resulted in an accident cost of £47,000 for the year. This represented nearly 4% of their annual profit, which led the Managing director to say "If we didn't have any accidents, we could have shut up shop for two weeks with everybody on full pay, without affecting the profit".

In small firms the cost of accidents can be even higher. A transport company employing 80 people had a total cost of accident bill of £195000. This represented 1.8% of their operating costs and 37% of their annual profits. The greater cost of accidents were due to the fact that most of the accidents also involved damage to plant or equipment, and subsequent loss of business.

### **Analysing the Return on Investment (ROI) of increased expenditure on safety programs**

One important point to remember is that when integrating safety into the business it then carries the same responsibility as the rest of the business. One of the main responsibilities is return on investment. The logical conclusion from this is that funding for safety programs could be more easily acquired if it can be seen as an investment, rather than just "spending money on safety". A proposal for expenditure on a safety program can be prepared and put forward in exactly the same way as a proposal for e.g. a new piece of equipment for the factory. The bottom line of such a proposal is to show that spending the money will have a positive effect on the company's profitability in the future.

This provides us with another reason to calculate the cost of accidents, as this information would form an important part of the proposal. The other important part of the proposal would then of course be the anticipated reduction in accidents brought about by implementing the safety program. This information can be more difficult to get, but most reputable providers and consultants should be able to provide an expected % reduction in accidents based on past experience. Once you have got this information it really becomes a case of simple mathematics.

Let us take the case of the transport company mentioned earlier. If the company decides to implement e.g. a behavioural based program to reduce the accidents we can calculate the ROI. The cost for implementing such a program in a company of that size would be approximately £40K. This cost would include consultancy, software, training, and personnel resources (i.e. time involvement). From our experience we know that successful implementation of a behavioural safety programme will result in a 40% reduction in accidents within the first 6-9 months. If the company's accident bill was £195000 for a year, this equates to an average reduction of £78000 in the first 6-9 months, providing a return on investment of  $\frac{£78K - 40K}{40K} = 95\%$ . To some companies this could represent the difference between an overall trading profit or loss. Needless to say this level of benefits would continue year on year as the behavioural safety initiative would continue to deliver the same rate of accident reductions.

These figures are borne out by actual behavioural safety implementations. For example, One company in the East of England started behavioural safety in Sept 1997 when their lost time accident rate was 2.6, meaning that 2.6 people per hundred were suffering a lost time accident (LTA). With 850 people on site this equated to 22 LTA's per annum. The average cost per LTA was £10K, totalling an average £220K per annum. By Sept 98 the LTA rate was reduced to 1 (i.e. One person per hundred employees was suffering an LTA) with 8 LTA injuries occurring. Thus the reduction in LTA's was 62%. In financial terms this represents a saving of £140K giving a return on investment of 250% (i.e. £140K LTA costs minus £40K behavioural safety costs = £100K. £100K divided by £40K = 2.5 multiplied by 100 = 250%). In other words, for every pound spent on the initiative a return of £2.50p was produced. However, the return on investment increased again by Sept 1999 when the LTA rate was (and still is) Zero. Thus, compared to Sept 1997, the ROI on the original £40K investment in the second year of the behavioural safety initiative was a further 550% (i.e. £220K), representing £5.50p for every pound spent. Thus for every pound spent the total ROI over two years was  $£5.50 + £2.50 = £8.00$ . Although these figures exclude reductions in minor injuries they clearly demonstrate that the payback from investing in a behavioural safety initiative can be considerable.

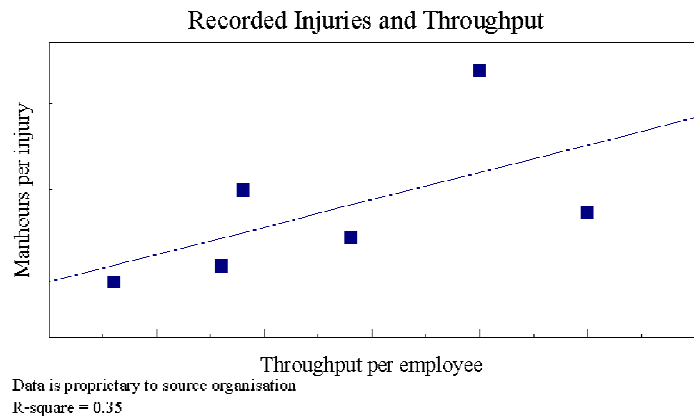
Additional ROI can also be demonstrated by the positive impact safety improvements exert on productivity. Foster Wheeler Energy UK Ltd conducted an interesting statistical study of their construction performance records and safety improvements for a 17 year period, encompassing some 19 construction projects (Stewart & Townsend, 1999). Four financial indicators were used.

1. COST RATIO -  $(\text{Total project control budget cost}) / (\text{Actual project cost})$
2. SCHEDULE RATIO -  $(\text{Planned construction span in months}) / (\text{Actual construction span in months})$
  
1. SAFETY -  $(\text{Actual or estimated exposure man-hours in millions}) / (\text{No of lost time injuries})$
2. PRODUCTIVITY RATIO -  $(\text{Budget field man-hours}) / (\text{Actual field man-hours})$ .

They found a 65% degree of overlap between improving safety and improving productivity indicating that the cost benefits of safety are significantly higher than previously calculated using the model of reduced unplanned costs. This research showed that halving the LTA rate produced a 6% increase in productivity. Even if the cost benefit is as low as a 1% improvement in productivity, it would mean a significant annual saving. For example, a company expending 1 million man-hours a year (approximately 500 employees) at an average direct labour cost of £30 per hour would make an annual labour cost saving of £300,000.

In a follow-up study with a cattle farm and meat processing company, the cost benefit from safety and productivity was compared with the cost benefit from safety and reduced accidents.

According to the traditional cost benefit approach of reducing unplanned costs, the internal rate of return for the cost of implementing and maintaining the safety management system was 7%. However this took no credit for improving productivity. As shown in figure 1, during the study period, productivity improved by 11%. Four per cent of this can be attributed to the association between productivity and safety.



The on-site health and safety professional indicated that improvements made for safety reasons such as better ergonomics and housekeeping had also increased productivity. Risk assessment techniques learned for safety management was also proving useful to the business operation. As an indication of the potential cost benefit analysis, a conservative 1% improvement in productivity was attributed to safety. This increased the internal rate of return from 7% to 30%.

### **Working with the finance department**

The people in your finance department are the experts in calculating and tracking costs. Make use of them. As mentioned earlier, it could be a good idea to make departmental managers responsible for accident costs. By including a cost analysis in every accident investigation, your financial department can track these costs by department. This data can then be in annual reports, for capital expenditure requests and even form part of individual manager's annual performance appraisal. (Departmental contribution to profit minus departmental cost of accidents = real contribution from department).

By close working with your finance department it also becomes possible to provide economic evidence in favour of the more everyday safety systems that companies employ, not just the major projects. It becomes possible to calculate the ROI from risk assessments, safety training, engineering fixes, permit to work systems etc. To do this we need to consider the cost of the service against the expected benefits. In terms of risk assessments, such an economic analysis may help us to make a more informed decision about whether a "low" risk is adequately controlled or not.

### **Using financial data as part of your overall communication to the board with regards to safety issues**

One of the lessons I have learned is that the route to a director's heart is through his wallet. I learned this from a CEO who was in a meeting with a gaggle of researchers from the research and development department. They

were all putting forward all kinds of justifications for funding for a piece of research. In the end he said to the "Gentlemen, there is only one question I want you to answer. Will it make money?"

And in terms of improving health and safety performance we will be able to answer "Yes, it makes money."

Firstly, from a loss control perspective we have seen that there is a considerable ROI from reducing accidents in that it keeps the hard earned profit where it belongs, as profit and not as losses.

Secondly we have seen that an improvement in safety performance actually increases productivity, and increased productivity means increase in profit

And thirdly, although we have been concentrating on the economic perspective, no responsible company can forget to look at the human cost. This calculation cannot be done with a calculator but has to be done with the heart. The ROI in human terms is the satisfaction to know that your employees are safe and that you are doing your part to help ensure this. After all, the rest is only money.

## **References**

Stewart, D.A., & Townsend, A.S. (1999) Is there more to "health and safety is good business" than avoiding unplanned costs? A study into the link between safety performance and business performance. *Foster Wheeler Energy UK Ltd.*

*Health and Safety Executive.*(1992) *The Costs of Accidents at Work: Five case Studies*, HSE Books.