What is "Risk Management" and Making it Work for Your Business

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On Sunday morning, the 2nd September 1666, the destruction of medieval London began. Within 5 days the city which Shakespeare had known was destroyed by fire. An area of one and a half miles by half a mile lay in ashes; 373 acres inside the city walls and 63 acres outside, 87 churches destroyed (including St. Paul's Cathedral) and 13,200 houses. The fire started in the house and shop of the baker to King Charles II in Pudding Lane (marked today by the Monument). The baker forgot to douse the fire in his oven on the previous night and embers set light to the nearby stacked firewood. By one o'clock in the morning, three hours after Farynor had gone to bed, the house and shop were well alight. Farynor's assistant woke finding the house full of smoke and then roused the household. Farynor, his wife and daughter and one servant escaped by climbing through an upstairs window and along the roof tops. Sparks from the burning house fell on hay and straw in the yard of the Star Inn at Fish Street Hill. In the strong winds that blew that morning, the sparks spread rapidly, setting fire to roofs and houses as they fell. From the Star Inn, the fire engulfed St. Margaret's church and then entered Thames Street. Here there were warehouses and wharves packed with flammable materials - oil, spirits, tallow, hemp, straw, coal etc. By now

the fire was far too fierce to be fought with the crude hand operated devices that were all that was available. By 8.00am, seven hours after the fire had started, the flames were half way across old London Bridge. Only the gap left by a previous fire in 1633 prevented the flames from crossing the bridge and starting new fires in Southwark on the south bank of the river. Although over three hundred years have passed since the fire of London, the insurance industry is still critically aware of the risks posed by bakeries with combustible construction, no fixed fire protection and no true emergency response programme in place!

The Present Insurance Market

The UK insurance market is cyclical in nature and at present is in the hard part of the cycle. Everyone is aware of the catastrophic losses Lloyd's of London suffered in the late 1980's, the collapse of insurance companies such as The Independent and the events of September 11, 2001, all of which have played a part in the hard market. Rating increases have been the norm now for the last three years. There are signs that the market is starting to soften, in so much that rate increases are less than the hundreds of percents that insured's have been used to over their most recent renewals. However, global property and casualty

insurers have lost over $200 billion of their reserves over the past two years in the wake of falling stock markets and increased level of claims, which has led to increased levels of fund raising and so the hard market looks set to continue.

Insurers are often criticised for their rate increases and the cyclical nature of the business. In some respects this is due to the abolition of tariff ratings and the introduction of full blown competition. To be fair to insurers though, they too are in business to make a profit - they do not underwrite for charity. As the days of big stock market returns have gone, insurance companies have re-focussed on technical ratings, rather than discounted rates. That is, the rates are derived from actuarial analysis and are adjusted by the underwriter according to their perception of risk. Clearly, an operation that includes hazardous processes and a combustible fire load taking

place in a combustible building is going to attract a higher rate than a non combustible occupancy, say a steel stockholder, in a non combustible building. This system is opposed to the days when companies wrote business for market share and were happy to heavily discount the technical rates. Along with rate increases, insured businesses have seen higher deductibles imposed, reductions in coverage and other requirements or warranties put in place as insurers seek to reduce their exposure.

Insurance is often referred to as a common pool and although many people may never have made an insurance claim personally, or as part of a company, there are many who have. The food industry, which baking is part of, has had greater than its fair share of losses over the past decade. The kind of losses it has also tend to be high profile and there is a definite perception in the insurance market that food related insured's can burn down at any moment. Also, because of the nature of the food supply chain, food related losses tend not only to have a high material damage value, but also a concentrated, high business interruption value; often more than the property damage value.

In recent years, there have also been a number of specific, high profile bakery losses. Some of these have attracted the attention of the Health and Safety Executive, others will be well known amongst members of this Society and include large commercial premises burning

down as well as smaller in-store bakeries (in large supermarket chains) being responsible for store burn outs. Insurers too, have long memories, as the business relies upon knowledge of loss to ensure that sufficient premium rates are achieved in similar facilities with a similar loss potential. Not to learn lessons from any loss is unforgivable.

What is Risk Management?

There are many definitions to the term risk management. For some, risk management is thought of as something that has to be done to keep insurers or regulators happy. However, it should be thought of more in terms of something that you want to do to protect and improve your business, rather than something you have to do. Risk management is about identifying risks or exposures to your business and dealing with them. This can be through elimination, reduction, control, risk transfer (insurance) or a combination of all four. Risk management must become a culture, a way of life within an organisation if it is to succeed and it is essential that it is supported from the boardroom through to the factory or shop floor.

Risk management can include dealing with occupational health and hygiene, safety, environment, insurance and loss prevention specialists. In the context of this forum, risk management is generally thought of as loss prevention. When considering a production chain, risk management should be about getting product to

market. Businesses simply cannot afford to have a loss. If covered by insurance, a company will be indemnified through its policy coverage, but by the time a new facility has been built, market share and brand value will undoubtedly have been affected. There have been a number of studies that followed businesses that had been affected by a large loss. The results of most of them showed that the producers suffered so much during the rebuild period that by the time the new facilities were ready to produce, the businesses never fully recovered and eventually failed.

A risk managed business will be less susceptible to interruption to production, damage to reputation and loss of custom. It follows that a risk managed business is a more attractive proposition for insurers and more favourable terms should be attainable. These days more than ever, you need to be risk managed and be seen to be risk managed. The aim of this paper is to offer some practical advice with addressing risk management of production facilities.

Operational Risk Management

The main priority in terms of property loss control, is to prevent burning the production facility down.

Top causes of loss

Statistics show that in most industry groups, the top four causes of loss are:

- Arson

- Electrical

- Contractors

- Hot work

As causes of loss, it is certainly possible to reduce their frequency, often with little or no capital expenditure. Arsonists can be deterred by site security - fencing, access controls, CCTV, lighting and ensuring that combustible materials (pallets, plastic trays or waste card) are kept well away from buildings. Thorough electrical maintenance programmes can be implemented to ensure all electrical installations are in good shape. Contractors must be rigorously controlled so that those who work on your site are competent and follow your rules. Finally, all hot work losses are avoidable. Work can be undertaken safely and correctly if a good management and training system is in place.

Industry specific special hazards Once the top four causes have been dealt with, then it is industry specific special hazards that have to be tackled.

In the baking industry there is a mix of hazards. Generally, in a modern industrial bakery there can be ovens, fryers, thermal fluid systems and ammonia systems.

Ovens

A variety of ovens and similar types of equipment such as griddles may be present in bakeries. Risks include combustible deposits which can build up in the oven and combustible residues present in the extraction duct work. This risk is significantly influenced by composition of the materials in process, particularly their oil and fat content. For example, the increased popularity of oil-rich speciality breads has increased

inherent hazard at some bakeries, necessitating improved cleaning and maintenance regimes. Exhaust ductwork should not pass through combustible construction and should be arranged to allow laminar airflow. Oven duct temperature monitors should be provided. Burner systems should be maintained regularly and operators trained sufficiently to understand the oven's operation.

Fryers

Fryers are perhaps not traditionally associated with bakeries, but as businesses seek ways to include added value processes, their use is becoming more common. Deep Fat Frying operations have been responsible for a large number of catastrophic losses in the Food Industry. There are a number of reasons for this, including the change from soya oil to

rapeseed, inadequately arranged extraction systems, poor local construction and inadequate fire protection

systems. This operation is probably the most hazardous in the food industry. Managing these types of systems requires operator training, spill response

programmes, considering location and surrounding construction within a factory, maintenance, instrumentation and control and adequacy of fixed fire protection.

Thermal Fluid (Heat Transfer Fluid) Systems

There are large numbers of thermal fluid systems in operation across all industry sectors. They are used to provide process heat, commonly to deep fat fryers. These systems

have the potential to create severe fires as they involve the pumping of hot flammable liquids virtually always well above their flash point. Systems often have large tanks and high flow rates and piping and user equipment may be located throughout the facility. These systems are reliable if installed and maintained correctly. The most common causes of loss are due to either inadequate condition monitoring of the thermal fluid oil, or incorrect installation of the system. Losses have been caused by a build up of light ends in thermal fluid, a build up of carbon deposits within the heater coils, or auto ignition of

deposits in absorbent insulation from leaks in the system. Again, management of these systems requires operator training, spill response programmes, considering location within a factory, maintenance, instrumentation and control and possibly protection such as sprinklers in areas where thermal oil equipment is present.

Ammonia systems

Ammonia is an efficient refrigerant and is commonly found where bakeries have large temperature controlled storage areas. Ammonia is flammable in air in comparatively high concentrations, but a major leak may result in an explosion. Ammonia presents a particular Health and Safety exposure and requires careful control and installation.

Dust Explosion

The storage and use of combustible dusts such as sugar, dextrose and flour presents a set

of unique exposures. In large commercial bakeries, bulk storage is the norm. There is significant experience, albeit mostly in North America, of dust explosions causing the loss of manufacturing operations. Primary explosions typically occur in dust handling or storage equipment which can then make dust lying on other surface in the building airborne. It is typically the secondary explosion involving this airborne dust in the building that is most destructive. Consequently good housekeeping to minimise accumulation of dust on surfaces is essential. Inception is reduced through good equipment design supported by proper maintenance and operating procedures.

Human Element

In addition to controlling special hazards and mitigating the 4 top causes of loss, it should be the objective of a risk managed business to achieve best practice in all other human element areas of loss prevention. This includes emergency response, maintenance of utilities, housekeeping and self inspection, management of change and incipient fire fighting training. Also, control of smoking throughout a facility is essential. Either a site-wide, enforced no smoking policy or a policy of controlled smoking areas being provided should be implemented. Smoking is often forgotten as a major cause of loss in industrial facilities.

Construction

It is possible for a facility to influence the likelihood of an event occurring from the top

causes of loss. It is more difficult to alter the construction, which is an inherent feature of the production facility that in some instances can be the main influencing factor in the severity of a fire. Preferably, production would be undertaken in noncombustible, fully sprinkler protected buildings. However, there are very few of these around as the majority are combustible, non-sprinklered buildings, some of which have combustible composite panels installed. Construction changes and / or sprinkler retro fits are possible

but may not be affordable or feasible. Most large construction and protection issues tend to be addressed during new build projects. Therefore, it is often necessary to undertake a detailed analysis of construction types and materials and to ensure that the correct materials to slow down or prevent fire spread are used in potentially hazardous areas. This can be achieved by removing combustible construction and replacing with approved or non combustible alternatives in these areas. This selective, risk assessment based approach brings about a significant improvement in risk without the significant cost and disruption involved with wholesale removal of combustible construction or retro-fitting of sprinkler protection. For many businesses this offers the most cost effective means of managing a combustible construction hazard.

Cultural change

The essence of risk management is to be able to demonstrate that you are aware of the inherent

hazards and that they are considered and controlled. It is about showing that you are in control of the risk and being able to demonstrate this to interested parties.

Identification is achieved using experienced loss prevention professionals. Use of risk engineering techniques such as risk profiling, loss expectancy analysis and the prevention measures that are put in place can help risk management be achieved at site level.

Whilst individual site surveys have an important role to play, they in themselves cannot be considered to be representative of a risk management process or culture that may or may not be present within an organisation. In simple terms a site evaluation represents a "snap shot" view of a facility. A successful risk engineering strategy ensures that for the other 364 days a year the practices and procedures aspired to are actually implemented. It will involve a site survey process, but will also look beyond it to a wider more influential process of implementing a successful risk engineering approach aimed at protecting business assets, production processes and ultimately shareholder value. The advantage of a strategy approach is two fold - not only is priority given to reducing exposures critical to the group, but also the risk culture and way of working benefit. In all of this, the most influential people are those directly responsible for running a facility, and by working with them more directly, a resilient risk management culture which ensures risk engineering

practices and procedures are adopted on a day-to-day basis can be implemented.

Corporately, it is about reviewing all the information available to ensure that if there is a production interruption at one facility then another facility can continue to produce, even if that facility is outside of your own group of companies.

Summary

This paper is written with property loss control in mind and it assumes that the necessary health and safety measures that have to be taken by law to allow businesses to run are in place. We all live with risk. There is a risk associated with getting out of bed in the morning and driving or walking to work and indeed there is a risk associated with staying in bed all day. Some are risk adverse and some love to take risks and are attracted to risk. Baking and associated food production is inherently hazardous and is often carried out in buildings that themselves will burn due to the materials that they are constructed of.

Over time, if good risk management can be implemented, then although the potential for loss will never be eradicated, the frequency and potential severity of the loss will reduce. In turn, when it comes to dealing with insurers, they are more likely to insure those who can clearly demonstrate risk management than those whose information is unclear or whose risk management strategy is non-existent. As such, in an ever hardening market, this approach will pay

dividends by allowing the insurance purchase to proceed as fairly as possible. This approach has also recently been endorsed by the Association of British Insurers (ABI) in its May 2003 Technical Briefing: Fire Performance Of Sandwich Panel Systems. In the briefing, one of the main messages for underwriters is that fire safety management and risk assessment are key elements in making a risk insurable.

Question: David Roberts

All businesses train firstaiders, you said you thought training people in basic level firefighting would be a desirable objective.

Yes the primary objective is not to put anybody's life in danger and if everyone gets out of a building and no life is lost that is a success. When we talk about training we are talking about a team of people, not everybody, hand on people and rather than watching a video of how to let off a fire extinguisher they get actually have practical training because if you can get to a fire early and actually get the correct extinguishing media on it the chances of preventing a full scale burn out is greater. So it's really about identifying the right individuals to train. Buildings are full of extinguishers and fire hoses and to have people not knowing how to use them seems daft.

Question: John White, London

The Federation of Bakers operates a very successful contractors passport scheme where we accredit not only the individual contractors but the companies that employ them as well and I was wondering how significant you felt contractors passport schemes generally were to riskmanagement?

Answer - I think they are a very good idea. When we talk about contractors and loss there seems to be a perception among contractors that they can come onto your site and do what they like, so you may have hundreds of employees on a site that work by your rules but you bring a team of guys in to do a bit of work on the roof and they can do what they like. Now the contractors passport type of schemes are saying that the contractors are taking the time to actually be involved with yourselves, to show willing and they should give you some level of comfort when you are bringing contractors on site who have signed up to a passport scheme although I would say that even then that doesn't always necessarily mean that you can assume everything is fine and you should still be having some kind of perhaps permit system or site induction at each site looking for a specific risk assessment rather than a generic risk assessment to make sure that when they are on your site they do there what you think they are there to do and not what they think they are there to do.