

gerencia de riesgos



English Appendix

YEAR IX - No. 35

3th. QUARTER 1991

EDITORIAL

FUNDACION MAPFRE ESTUDIOS

The Econometrics of Risks

On the 6th of June this year the Fundación MAPFRE Estudios held a one-day Conference on «The Economy of Risks and Safety», directed particularly at senior managers involved in the fields of Safety, Insurance, Finance and Risk-Management. It was concerned, as an introduction, with the integration of safety into management strategy, and then separate work-groups were held on Risk

Economy in general and the particular viewpoints of specific business activities.

This special issue includes the lectures given at this Conference, as well as conclusions arising from them and from the round tables, which were discussed and approved at the end.

The primary aim of the Conference was to encourage the consideration in greater depth of the economic concept of risk cost from the organization's point of view. In practice, there is a great division between the analysis of costs arising from protection and safety activities and that of financial costs arising from insurance and other similar matters. And this is so, even if defence of its survival when faced with the same thing: the likelihood of risks arising from random phenomena. This territory, which is coming to be known as «The Econometrics of Risks». Has hitherto been largely unexplored, although it is worth bearing in mind the recent work published by the Risk and Insurance Management Society (RIMS) in the United States, which analyses the total cost of risks in different business sectors as the result of painstaking research over the last few years. Even if this work may leave room for improvement in the future, it represents an important landmark and an example to be followed in other countries.

In fact, as a result of the Conference it was decided to undertake a statistical analysis of the cost of risks in Spanish business, to be carried out under the sponsorship of the Fundación MAPFRE Estudios, with the collaboration of different participating organisations, most notably the Asociación Española de Gerentes de Riesgos y Seguros, AGERS (Spanish Association of Risk and Insurance Managers). The purpose of such a survey would be two-fold: to discover, on the one hand, the true scale of the cost of risks in the companies as a whole; and, on the other, to help to make companies more aware of the actual concept of the total cost of risks as a business parameter, which is not sufficiently recognised.

We hope, in forthcoming issues of this magazine, to give more information about the progress of this work, and to encourage the various Associations of Risk and Insurance Managers of other countries, especially in Latin America, to undertake tasks of this nature.

Elsewhere in the Conference attention was drawn to the importance of measuring the efficiency and effectiveness of safety activities in reducing the company's rate of accidents. This brings in the concept of «costs avoided» which allows us to add another factor to the simple cost of risks as an aid to decision-making in risk management, especially as regards investment priorities.

We encourage the development of studies of this type, whether individual or deriving from business groups, or of a series of similar initiatives which would make possible the analysis of statistics of undoubted interest.

Finally, we would like to express our pleasure at the founding of the Asociación Venezolana de Administradores de Riesgos, ASVAR (Venezuelan Association of Risk Administrators), which has recently been set up by a group of important companies in that country. We send our best wishes to all its members, and urge its Management Committee to develop activities leading to the progress of the discipline of Risk Management in Venezuela. Wishing them success as they begin, we are delighted to offer them our whole-hearted support and cooperation.

INTEGRATION OF SAFETY INTO MANAGEMENT STRATEGY

Carlos Alvarez

MAPFRE MUTUA DE ACCIDENTES DE TRABAJO

1. *Evolution and trends in the concept of safety*

It is no easy matter to define Safety. This term, like Health, is —or can be— so wide-ranging as to be vague. But what is certain is that in the Company environment there is a continual widening of objectives in this area, whether as a result of the appearance of new risks, new social demands, or because of an ever-broadening approach to the subject.

These risks give rise to Safety as an accident prevention technique, Industrial Hygiene as a technique to prevent industrial illness, and Industrial Preventive Medicine as a medical speciality aimed at the prevention of both types of risk. Spain's «DATO Law» of 1900 led to the establishment of objective liability for risk on the part of the company, and to the creation of another important mechanism for dealing with professional risk: Industrial Accident Insurance, which was to become compulsory in 1932.

But these days there are new work risks in addition to the classic objectives of Industrial Risk Prevention. For example the unsuitability of these new jobs to the physical and mental capacity of the worker, and the consequences of the pressure and monotony of the tasks. Because of their impact both in and outside the workplace, the length of the working day, timetables, work content, and work organisation are all being brought into question.

Much progress has been made in the last twenty years in the legislation of several countries to improve the work environment. But references to these subjects exist much nearer to home and to the present:

EEC Directive of 12th June 1989, known as the «Health & Safety Framework Directive» quotes general objectives of businessmen as «adapting work to the individual with particular reference to the concept of jobs, such as choice of work-teams, and work and production methods, in particular to cut down monotonous and repetitive work, and to reduce its adverse effects on health». EEC member states must implement the terms of this directive by 31st December 1992.

The wide variety of risks has given rise to different approaches, seeking to achieve a broad view and treatment of them within the strategy of the company.

Among these it is worth remembering the concept of Total Loss Control, which has not in fact been widely accepted in Spain, possibly because it has not been properly understood. It represented a great advance in the broad overview of company risk, adding to strictly industrial risks those arising from material damage, environmental damage, product safety, etc. Furthermore, the importance it gave to recording accidents and incidents, as well as simple material losses, gave an added impetus to risk detection mechanisms. Nevertheless, in Spain the system was accused of being too complicated to administer, and thus very difficult to implement. Only very well-organized companies were able to adopt it.

Professionals linked to the insurance business proposed a broader-based approach than total Loss Control itself. This was Risk Management, which referring to pure risks as a whole (i. e. those which can only produce losses) looks at prevention and insurance through the steps of identification, evaluation, risk control, retention, and the shifting to insurance of the consequences of risks which are considered suitable, or which it is not felt necessary to accept directly.

In any case, we are now in a general trend towards what some call «Total Safety».

2. The concept of Total Safety

On 13th April 1986, with the NICOYA Declaration, the MAPFRE Foundation began a process of reflection, study and internal debate, with the aim of working out some principles, philosophy and general guidelines which, drawing on their own and other's experience, would enable the achievement of the aim stated in their statutes of «promoting safety in all its forms».

The welfare of the individual and the common good are thus the first elements defining the concept known as Total Safety, which includes:

- a) The prevention of personal or material risks or injury.
- b) The fight against their negative consequences.
- c) The direct promotion of the interests of the individual (considered as a citizen and as a worker) in the company and in society.

To transfer this concept into the company environment, we have to define within that company what areas are to be included in Risk Prevention, in the fight against their consequences, and what are to be the targets to promote and reinforce.

Within the concept of Total Safety in the company falls the whole range of activities comprised in Risk Management, Total Loss Control, Ergonomics, and also techniques for the overall treatment of professional risk. It would include «safety», «security», and also some other techniques such as «preventive maintenance».

The most obvious targets to promote and reinforce would be: Worker Health; his/her Quality of Life at work; the Environment; Product Safety; and the economic, technical and cultural capital of the Company.

It would also be necessary (perhaps surprisingly) to bring into the Total Safety Concept such things as productivity,

product quality, and competitiveness all of which, in fact, guarantee the stability of the company, profits, as well as the maintenance and creation of jobs within the actual field of work safety.

3. The need to integrate safety into company strategy

As with quality, there are two ways to approach the effect of safety:

1. Because «safety is something which can harm a company if it is not borne in mind», and
2. Beyond this point, to turn Safety into a strategic factor which can produce results.

There are many factors which today, and even more in the future, will force companies into attaining basic levels of safety.

What is more, a clean and pleasant working environment encourages all concerned to keep it that way, and gives a subliminal message of «quality».

It is difficult to make quality a natural consequence of the production process unless we pay attention to the ergonomic conditions in which it is carried out.

Ergonomics is concerned with the search for «comfort» in the physical and mental environment of the workplace. In this sense it is another step forward in medicine and industrial health and safety, since only with these can we protect the worker from the risk of industrial accidents or illness.

4. How to carry out safety integration

Although there is no universally-accepted definition of Integrated Safety, it can be said to be «a concept or philosophy of the organisation and development of safety within a company, whereby we consider:

— that safety is an indivisible and intrinsic part of work practices, and

— that as a result, responsibilities and functions relating to safety fall directly on the organisation of the company which ultimately bears the responsibility for organising work, and for coordination of all objectives. This integration must take place in the conception, design, installation, and operational phases».

In some areas of safety there are legal reasons for this integration: safety in the workplace is considered as the worker's right and the company's duty, and regulations impose obligations on management, supervisors, and the individual worker. Thus in this area we can talk of legal reasons for the integration of safety.

However, the basic reason for integration is quite simply a practical one: efficient activity through greater rationality.

In the old type of «specific» safety, and in practice, responsibility was assigned to one department («The Safety Department»), but authority and resources went to other departments. Naturally enough, results could never be very good.

To summarise, then, the principles for the introduction of Safety are as follows:

1. Integration of Safety into operational procedures.
Study groups.

2. Advisory service available to Management and other services. Provides means for control and implementation.

3. All members of the organisation to carry out safety, control and implementation tasks.

4. Planning of activities, and control and follow-up of the plans.

5. Collaboration of workers' representatives in the prevention of labour risks.

6. Specific training at all levels.

Starting from these Principles, the organisation of Total Company Safety should be adapted to the characteristics and organisation of the company.

To be realistic, however, we should not ignore the difficulties which will arise in the introduction of Total Safety.

Total Safety, Integrated Safety and Research are for us the keys to the future, and require the collaboration of all involved.

THE COST AND COST-EFFECTIVENESS OF SAFETY

Enrique de las Alas
FEIQUE, FEDERACION EMPRESARIAL INDUSTRIA QUIMICA ESPAÑOLA

1. Introduction

The question of the cost of safety in industry is a matter which has generated much discussion, for many reasons.

These include the following:

- Quantifying the cost of safety.
- Quantifying the cost of accidents.

- The search for an economic basis for investment decisions.
- The search for a basis for the calculation of insurance.
- The search for a basis for insurance strategy.

This refers only to tangible costs, in economic terms, and does not take into account the human aspects involved in accidents.

Nevertheless in different fields figures and coefficients have been obtained which, although they cannot always be taken literally, can be used to give some idea of the scale of the problem and to take certain decisions.

In all events the effort of emphasising the problem of safety and its cost-effectiveness is useful in showing the true importance of safety for the individual and society, and in providing a better picture of what is happening around us.

2. New Product Research

In Europe, according to Directive 67/584 and its so-called Sixth Amendment, which has been included in Spanish law (Royal Decree 2216/85), it is now necessary, before putting a new substance on the market, to notify the relevant authorities. This notification consists of a lengthy report showing the results of mandatory research into the effect of the substance on man and the environment, specifying its uses and the type of packaging and labelling.

Industry surveys have been done showing the expected cost increases, which of course vary widely from product to product. If the product is shown to be harmless or not dangerous right from the beginning of the research, research can be completed quite quickly. But if we are dealing with a complex product with possible adverse or side-effects, the research chain may extend as far as complicated and very lengthy toxicological and ecotoxicological investigations.

3. New plant projects

The product is ready. Now a factory must be built, and for this a plan must be drawn up. Many technical and eco-

nomic questions are raised in carrying this out, but there are a whole set of them which are closely linked to safety. Among others these include:

- Choice of raw materials.
- Supply.
- Storage.
- Environmental impact.
- Process safety.
- Process safety.
- Risk analysis.

The type of materials used and the way they are supplied will dictate the decision on how to store them safely, and, of course, in compliance with legal requirements which are mostly safety demands such as, for example, the need to keep tanks a specified distance apart, with the consequent considerable effect on site requirements.

4. Industrial Safety

Once the scheme has been drawn up, the project must be carried out in conditions of safety for the personnel, the installations, and for the nearby communities. Taking the World of Work as a whole, industrial accidents are a major blight, with an estimated economic cost of between one and three per cent of the GNP, and prevention running at twice this figure. Thus the cost of safety and of uncertainty reaches between three and nine per cent of GNP, an amount which needs no further comment.

However, for all the enormity of this figure, it is so diluted among thousands of work locations that considerations of cost-effectiveness have little real influence within the company, although in some cases they may influence some legislation or the activity of factory inspectors.

Furthermore, there arises here —with the object of calculating cost-effectiveness— the question of who pays the cost of accidents: the economic cost to the company is very

different from the cost to the injured individual and to society as a whole, since items such as medical expenses, loss of present and future earnings, permanent disability, etc, would have to be taken into account.

5. Transport Safety

The transport of dangerous materials is a potentially very high-risk activity. It should be remembered that each year 7,000 million kilometre/tonnes of dangerous goods are moved on land, with a further considerable volume of dangerous materials moved by sea and air.

Each of these transport movements is subject to voluminous regulations, in the order of 500 pages each, which are updated every few years and which deal exclusively with safety.

6. Product Safety

Reference has already been made to product safety when mentioning the Sixth Amendment and Royal Decree 2216/85. This safety—which must start right at the beginning by making products which are as far as possible intrinsically safe—must continue in the adequate handling, transport, packaging, consumer use, and safe disposal.

New Community legislation on manufacturer accountability and the industrial philosophy which is beginning to be developed under the title of «Responsible Care» means that the manufacturer must watch his products «from cradle to grave».

This product surveillance is called «Product Stewardship» and carries with it a tremendous burden of information, preparation and follow-up, which is difficult to quantify overall.

7. Environmental Protection

As far as studies on environmental impact are concerned—and these too are a safety requirement—we can say that they are hugely expensive and also permanent, since possible

effects of the activity on the local flora and fauna must be monitored for the whole period of operation.

In the chemical industry it is calculated that, of all investment made, from 10 to 20% (with an average of 15% and peaks of 25%) is dedicated to environmental protection. In addition, running costs are calculated at 1% per annum on sales. Spain sells about 4.1 billion pesetas worth of chemical products a year, which means that the effective cost of environmental defence is an estimated 41,000 million pesetas a year.

If we bear in mind that there is a ratio of investment to sales of about 0.8, total industry investment is of about 32.8 billion pesetas, of which about 10% (3.2 billion) are for environmental protection.

8. Conclusions

As stated before, one of the prices of safety is the blocking of progress, and we shall never know the real cost to us of the inventions which will never be made.

In any case, and so as not to finish leaving a feeling of futility, there does exist a tool, not explicitly stated, but which lies behind many actions and many pieces of legislation, and this consists of considering problems in three risk categories:

- Unavoidable risks
- Acceptable risks
- Unacceptable risks

There will be times when risks are inevitable, since the overall drawbacks or the short-term drawbacks could be even worse.

Many of the decisions on safety matters are taken against the background of these three types of risk, although occasionally they may not be financially quantifiable.

The problem of cost-effectiveness is something altogether separate, since in the decision-making process it is

necessary to define what is or is not acceptable which, when talking of human lives, leads us into very sensitive territory.

The solution to this problem is relatively simply stated: we must arrive at industrial risks which are equivalent to those of everyday life.

But again we reach a new frontier —that of the perception of risk on the part of society, which views it differently according to whether it is familiar with a particular danger, has any control over it, and is able to understand it.

FINANCIAL PARTICIPATION THROUGH INSURANCE

Jesús Ibarra
GIL Y CARVAJAL

Every company manager knows that Risk, and therefore Insurance, has important implications for his company's profit and loss account. The problem arises when it comes to evaluating the adequacy and effectiveness of the company's response to the following three questions, which are of vital importance, albeit not widely known:

- What can go wrong? (Risk evaluation).
- How can we avoid or minimise it? (Risk Control).
- How much will we have to pay for it? (Risk Finance).

The answer to these questions changes with time. Today's company faces problems not thought of even a few decades ago, facing as it does significant changes which increase the risk of loss:

- Accumulation of wealth.
- Apparent increase in the frequency of natural disasters.
- International expansion into troubled areas.

- Higher levels of complaints.
- Systematic increase in supplier— dependency.
- Economic crisis.

There is a need for a parameter to measure effectiveness in the cost of risk control as it affects the company: i.e. the economic implications of risk in the company's operations.

1. The concept of risk cost

Risk Cost is defined as the sum of the following items:

- Insurance premiums.
- Losses taken and absorbed.
- Cost and expenses of prevention and control of risks.
- Cost and expenses of administration.

The aim of the Risk Cost parameter is to assist risk managers in:

- Analysing the development within their company of Risk Cost and its constituent parts over time, facilitating the evaluation of the efficiency of cost control in insurance, prevention, administration, etc.
- Comparing the Risk Cost of the company with that of other companies of the same size and activity.

Table 1 (see in enclosed revue «Gerencia de Riesgos») shows the average Risk Cost for different sectors:

It can be seen that the sectors with the highest Risk Cost are the transport, chemical and construction industries.

The difference in insurance premiums between the United States and Spain is due largely to the high cost of Civil Liability in the U.S.A.

2. Calculation of risk cost

The decision making process leading to the optimum balance between the constituent elements of Risk Cost implies a continuous cost-benefit analysis, including a careful selection of methods of reducing loss (Risk Control) and a fine adjustment of deductions and transfer of losses (Risk Finance).

Therefore, before going on to the calculation of Risk Cost it is necessary to define some basic criteria for taking decisions on the Control and Finance of risks.

● Risk Control

The decision as to what risk control measures to take should be made in full consideration of risks affecting the company. A common error is to subordinate the decision to implement a risk control measure simply to short-term savings in insurance premiums.

It should be borne in mind that the cost of insu-

rance of most industrial risks presupposes a higher than average level of risk control. This is largely due to the competitiveness of the insurance market. As a result the payback period for investment in safety measures, based purely on insurance premiums, is normally long— if it exists at all.

● Financing of Risk

There is a broad range of formulae of varying levels of sophistication, according to the characteristics of each individual company. In the following, we refer to what could be called a basic model, that is:

- To insure possible loss-producing risks which could have an appreciable effect on company results.
- Not to insure minor recurring losses where insurance and administration costs could be higher than the losses.

In order to achieve the optimum cost benefit, the introduction of a risk finance programme requires the examination of many factors, including:

- Determining the extent of cover.
- Establishing retention levels.
- Compensation levels.
- Transfer of risk to the insurance market.

3. The cost of property risk

The calculation of the cost of property risks implies the evaluation of risks which could cause damage or loss of capital, such as: fire, explosion, natural hazards (flood, earthquake, lightning, wind, rain, etc), damage to machinery, interruption of production (loss of sales, additional costs), transport of goods, others.

Once the risks have been identified and quantified, suitable decisions can be taken regarding their control, their transfer to the insurance market, or their retention by the company.

The cost of property risks is determined by adding the following:

- a) Insurance premiums.
- b) Expected losses.

4. Cost of civil liability

The cost of civil liability includes expected losses and insurance premiums.

— The sectors with highest civil liability costs are construction and chemicals.

— The cost of civil liability in the United States and Spain are not comparable.

— Also, while Spain opts for low franchise and liability levels, the U.S.A. opts for high franchise and liability levels.

— In the United States 60% of companies surveyed have limits in excess of 2,500 million pesetas (US \$25 million), while in Spain 45% have limits of less than 500 million (US \$500,000), while in Spain more than 80% of companies have franchises of less than one million pesetas (US \$10,000).

5. Cost of personal insurance

The cost of personal risks forms part of the company's salary policy or, in the wider sense, of its compensation policy.

Compulsory cover, which is basically that required by Social Security, is:

- Death (widows' and orphans' pensions).
- Invalidity (pension or lump-sum).
- Retirement (pensions).

— Sickness (medical assistance).

Since these costs are compulsory, they are not included in the cost of personal risk.

The cost of voluntary benefits in addition to Social Security, Whether on the company's own initiative or as a result of social pressure, varies according to the level of benefits provided, including:

- Life and accident insurance.
- Health insurance (medical benefits).
- Retirement saving plans and pension funds (retirement benefits).

Generally, it can be said that the cost of a Benefits Plan (excluding Social Security costs) for a company is between five and ten percent of total payroll costs, although some companies exceed this figure.

For risk cover (death and invalidity) a low percentage of payroll costs, say 1%, may be enough to provide valuable benefits.

6. Cost of risk control

The calculation of the cost of Risk Control should take into account internal and external costs (equipment and personnel) in the following areas: health and safety in the workplace, protection of Goods (fire, explosion, etc) environment, transport safety, security, supervision, control of access.

- Quality control and product safety.
- Maintenance.

7. Administration costs

Finally, administration costs must be taken into account. These include:

- The cost of the Risk Control Department.
- The cost of other specialist staff in the company.

- Fees for external services.

As a guide, an average amount of 0.0115% of turnover could be allocated to risk administration costs.

COSTS AND BENEFITS OF ENVIRONMENTAL MANAGEMENT

Jorge Landaluce
T.M. CONSULT

The subject of environment management refers to systems used by a company to ensure that it adapts its activities to its surroundings and respects the environment and the health of human beings.

Traditionally, companies have always responded to legal requirements on the environment, through the control and limitation of effluent in order to comply with legal standards. The limits were mainly technical, and consisted in the installation of purification plants for water and air. The result from a financial point of view is an increase in production costs. From this it is obvious that environment management represents a cost to the company: that of not polluting, or of polluting less.

With the passing of time legislation has become more extensive, the limits stricter, and the requirements for the disposal of effluent more demanding. The controls imposed by the Authorities are greater, and the public is more sensitive to industrial pollution. All of this means a greater demand for ever more sophisticated purification equipment, more complex effluent disposal systems, waste levies, an increase in fines, and greater need for control and observation. In short, the cost of treatment and disposal of waste is increasing steadily, and the benefit to the company, if any, is not evident.

With the increase of costs in the late 70s and early 80s, some large companies began to apply environmental policies

based on resolving the fundamental problem— that is by cutting down the generation of waste, instead of controlling or treating it. Experience has led to two important new developments:

- 1) The solution to a factory's environmental problems needs well-defined and very specific management procedures, and
- 2) It is possible to obtain additional benefits from the changes introduced, which offset environmental costs overall.

As to the first point, greater importance is now given to being actual management matters concerning the organisation of environmental services, line responsibilities, decision-making procedures, standards of operation and control, audits, etc. Environmental management is beginning to be thought of as the whole set of systems which allow the company to comply, at minimum cost, with legal requirements and social expectations on the environment. In this context, management systems must facilitate:

- Analysis of the level of compliance with environmental legislation.
- Evaluation of the risks posed by installations or products to the environment or to the public.

- The development and introduction of methods and processes to permit improvement in legal compliance and risk reduction.

- Evaluation of the costs and benefits of environmental management.

As to the second point, the approach which seeks the origins and causes of environmental problems has allowed us to confirm the possibility of making significant savings in raw materials, power, effluent treatment costs, reduction in insurance premiums, and even further benefits such as recovery of by-products, better product quality, better process yields, etc. Many of the problems of pollution are due to inadequately functioning equipment, or unsatisfactory process yields, and their resolution not only helps to improve the environment, but also production levels and product quality.

The following are the main benefits which the company can draw from this approach to environmental management:

1) *Reduction in normal costs*

- Greater process yields
- Reduced wastage of raw material and power
- Lower manpower requirements (e.g. for cleaning)
- Lower effluent treatment and disposal costs

2) *Reduction in hidden costs*

- Sampling and analysis of waste and effluent
- Levies and taxes
- Permits (investigations)
- Administration (reports, letters, records, etc)

3) *Reduction in civil liability costs*

- Cost of recovery of contaminated land
- Personal injury
- Property damage

4) *Benefits from waste recovery*

- Conversion of waste into raw material or products
- Recovery or reactivation of catalysts, activated carbon, etc
- Solvent recovery
- Recycling of acid and alkaline waste
- Recycling of some usable components of waste
- Energy recovery by incineration
- Reprocessing of other unspecified products

5) *Less tangible benefits*

- Positive consumer response to safer or more ecological products
- Better employee relations
- Improvement of corporate image

The evaluation of environmental costs and benefits should be the top priority of environmental management, and is an invaluable decision-making aid. It is necessary to know the cost arising from waste, including waste water and gases, and to charge them to the relevant production units.

Environmental management also generates its own administrative and personnel costs. Generally speaking, the environmental organisation needs one responsible person per plant and an overall company head at corporate level. In the case of large companies (holding companies, or groups with different businesses) it may be necessary to have someone directly answerable to the Chairman, as well as a delegate in each business or company, reporting to the appropriate General Manager.

The highest budget item of these departments is normally for the commissioning of research. This allows for the commissioning of experts in specific fields, and provides the company with valuable information about possible attendant risks, solutions, and very often a means of communicating to the Government authorities responsible for environmental control. As for the rest, investment and expenses relating to environmental improvements should fall on the line departments affected, in

such a way that costs, although they are generally classified as environmental costs, are included in the cost of production.

Conclusions

Society is demanding higher and levels of safety and environmental responsibility from industry and from its pro-

ducts. This means wider legislation and more public control. The right approach to the solutions is based on having effective systems of environmental management within companies. These can help to bring the company's operations into line with its responsibilities to the environment and to its legal liabilities, at the same time making best economic use of available resources.

THE ECONOMICS OF RISK IN THE BUILDING AND CIVIL ENGINEERING INDUSTRIES

When considering the subject of Company Safety Risks in the Construction Sector, we must take into account the particular characteristics of the sector, which is quite unlike other industrial activities.

The most noticeable feature is the mobility of the work-site, both in time and in space, since the works are of limited (albeit sometimes considerable) duration and the work-place ceases to exist once the work is complete.

Another peculiarity, arising from this, is that the work is carried out in the open, without specific premises, very often on a public right of way, or partly blocking it, and disturbing other busy public installations or sites, and with its own pace of operation.

Building starts from nothing and has an end-product of great size which is unique, since it is not a mass-produced item. It uses a variety of materials, takes place at great heights and long distances, and the work is done or is based on the product itself.

In addition, large numbers of people are involved, from different companies, trades, and professions, all moving

around the work-site. There is a high turnover of staff, some of whom may not be properly trained.

All these factors lead to high risk in the Construction Industry. This is the case in all countries.

As a result of the higher level of risk, there are more, and more serious, accidents in the Construction Industry than in others.

The control and reduction of these risks are important tasks for companies. But the enormous variety of dangerous situations is an element which hinders the analysis of the sources of risk, and it also makes it more difficult to apply corrective measures. Nonetheless, in recent years there have been significant advances in the battle against risks in the construction industry. Before looking at some of the sources of danger and their possible solutions, it is worth considering the situation of the industry within the context of the economy.

The total turnover of the construction sector in Spain in 1990 was 5.7 billion pesetas (about US \$57.000 million), showing an increase of 9% over 1989 at constant values (source:

SEOPAN). At the end of 1990 the workforce involved was 1.25 million (source: INE).

As far as accidents are concerned, they should be treated very literally in industrial accident statistics— that is, those which occur in the work-place, and omitting accidents on the way to work, and illnesses such as heart-attacks, strokes, etc which, although quite rightly counted as industrial accidents for social security purposes, are outside the control of the company.

This is particularly relevant in the case of the construction industry, which has a highly mobile work-force, both with regard to travelling to the site and in job-related travel.

In recent years, with the upturn in the economy, there has been an increase in the number of accidents in the building sector, both overall and at all levels— minor, major and fatal.

But this upward trend has also been seen in other EEC countries, during the same time period and to the same degree, bearing in mind that some of these countries are more highly developed, which is reflected in the level of construction safety.

1. Construction risks. Cost of accidents

We have seen that the level of danger in the construction industry is higher than in other industrial sectors, but it is worth highlighting the most significant areas of risk in this sector.

According to research carried out in the European Community, the cost of accidents in the construction industry is about 3% of the total turnover of the sector, representing between seven and ten percent of the total payroll cost, without taking into account the value of human life (which, although it is incalculable, sometimes has an economic cost).

From the production figures mentioned previously, the impact of the cost of accidents can easily be judged. But the impact is greater if we consider that, according to the same EEC report, the profits of companies in the sector vary from on to

three per cent of turnover. In other words, profits and the cost of accidents are about the same.

2. Prevention of risk and attendant costs

Faced with figures of this size, what is the cost of accident prevention on work— sites? It is very variable, since no two sites are the same, and the circumstances vary from day to day on each site.

The EEC report establishes different rates for the cost of prevention, according to the work being carried out:

- 1.5% of turnover in companies involved purely in building (earth-moving, erection and brick-work).
- 0.5% of turnover in companies doing finishing and installation.
- 5% of turnover in companies involved in roofing, decking etc.

As an overall cost for joint protection, they apply a rate of 1.5% of sector turnover. This can only serve as a very general guide, since no percentage should be fixed to apply to all activities.

To this should be added the cost of each company's safety organization, medical services, and safety review and maintenance. In Spain, referring to companies belonging to SEOPAN, it is calculated that about 2-2.2% of turnover is allocated to risk protection, taking into account the factors mentioned above.

3. Risk-prevention measures

Faced with this situation, it is obvious that more preventive action must be taken in the construction industry. But, given that this involves many factors and levels, the different types and degrees of action should be clearly distinguished.

Among the wide range of possibilities, the following may be high-lighted as the most important:

- a) Adequate staff training
- b) Adequate compliance with legal requirements
- c) Introduction of new methods of construction and organization.

The construction sector, with its inherent flexibility, will adapt itself to these new ways, with the result that all of us who work in it will benefit, and at the same time society in general will have lower social and economic costs as a result of the reduction of the accident rate in the Construction industry.

THE ECONOMICS OF PRODUCT AND IMAGE RISKS

Teresa Dorn
BURSON MARSTELLER

In recent years there has been an increase in the number of corporate crises and disasters of a world-wide nature. We are all too well aware of events which have affected business in the petrochemical, agrochemical, motor vehicle, financial, pharmaceutical and food and drink sectors.

The types of risk which have arisen include explosions, collisions, subsidence, industrial accidents, product failure, terrorist attacks, product adulteration, sabotage and pollution. Cases such as El Casón, los Alfaques, and Vandellós have become household words thanks to their media impact.

The majority of managers are fully prepared to handle foreseeable emergencies promptly and with adequate systems and procedures. But disasters change all the rules. The management of a crisis is totally different from the day-to-day running of the company. Control systems turn to chaos and lack of direction. Risk-management programmes may prove to be inadequate, or financial back-up may be insufficient. And furthermore the company's senior management finds itself literally in the media spotlight.

1. Some significant cases

History provides many concrete examples of companies which have suffered crises and their economic repercussions:

- AIRLINE

After a terrorist attack, the company spent more than 8.000 million pesetas (US \$80 million) in extra security measures.

- PHARMACEUTICAL COMPANY

Before the crisis, world leader.
After the crisis, number 16 in turnover ranking.

- BABY-FOOD MANUFACTURER

For sale at 16,000 million pesetas (US \$160 million).

After crisis, disposed of at nil value.

- BHOPAL (INDIA)
- SEVESO (ITALY)

2. The cost of an image crisis

When calculating the cost of a crisis, we should take the following into account: withdrawal and/or collection of products, replacement of stock, research, new packaging/labelling, changes/revision of processes, loss of production, loss of sales, changes in advertising, advice from communication experts, legal advice, compensation payments, safety inspections, bad relationships with investors.

The final cost of a crisis may well be the very survival of the company, which is why it is so important to handle the crisis responsibly, while bearing the company's interests in mind. This needs planning well in advance, and the use of experts who are not normally to be found within the organisation, such as: assistance in sophisticated risk management, contingency plans in the training of the crisis-control team, communication training, and legal counsel to those who give advice in case of crisis.

3. Plans of action

Every organisation has to ready itself for the incident which may not happen, but to assume that it is inevitable. Like an army, a company must train, organise and be ready to respond to threats as they are identified.

Its contingency plans must be tailored to the specific needs of the company, and should include four key points:

- 1) An operative, legal and communicative audit to identify the widest possible range of risks.
- 2) Pre-crisis planning. An analysis of the implications of risks, leading to plans to face any possible crisis.

3) Predict ways to limit the damage with **operational communication legal** and **financial** plans.

4) *Testing the Plan.* The acceptability of the plan involves periodic updating and revision after incidents.

The planning process should include an estimate of the costs of handling a potential crisis. Some of these can be recovered through normal insurance, but experience shows that this proportion may only be the tip of the iceberg. Other costs, like loss of reputation, sales, management time, safety checks, legal advice and others may not be adequately covered by the company's present policy towards insurance.

4. Managing the crisis

In some European countries there have already been initiatives from multidisciplinary teams of legal, financial and communication experts who have jointly formed «advisory committees» at times of crisis.

At the peak of the crisis the company will have to:

- Give honest answers to questions such as «What happened? Why? Who is to blame?».
- Deal with the effects and resolve the crisis as best they can.
- Bear in mind legal considerations in order to mitigate the effects of the crisis in the long term.
- Ensure that the immediate cost of handling the crisis does not endanger the long-term financial recovery of the company, nor make it more vulnerable to legal attack once the crisis is over.

5. When the crisis is over

Once the crucial moment of the crisis has passed a recovery plan must be put into effect in order to return company operations to normal.

— It will be necessary to communicate directly with audiences such as investors, employees, suppliers and clients.

— Substitutes will have to be found for damaged or destroyed materials and infrastructures.

— But the greatest burden will be the legal implications and repercussions: to analyse possible cases and causes of responsibility, and to prepare answers to the complaints of victims, buyers and suppliers arising from the crisis.

— Review what happened during the crisis, and the company's response.

6. Two cases with positive outcomes

In spite of what has been said, a crisis situation does not lead to insuperable difficulties. In fact, there are two cases of «product crisis» which have been satisfactorily resolved: Tylenol and Perrier.

An example of concerted action in a crisis was that provided by Tylenol in 1982, when six people died suddenly in Illinois after taking poisoned capsules. A few hours after the discovery of the disaster, Johnson & Johnson, the manufacturers, had already appointed a committee to take charge of the disaster. The team immediately sent 15,000 telex messages in order to withdraw 11 million bottles of Tylenol from shops all over the

world. The price of shares dropped so low on the New York Stock Exchange that their quote was suspended.

The following year, and poorer by 10,000 million pesetas (US \$100 million), Johnson & Johnson had Tylenol back on the shelves, packaged in new tamper-proof containers and selling better than ever.

The French company, Perrier, a leader in bottled water, suffered another type of product crisis. In February 1990 a laboratory in North Carolina detected traces of benzene in a bottle of Perrier water, a product considered to be «the purest».

In the first 24 hours the price of Perrier shares dropped 10 points, although three weeks later they recovered to their original level.

The withdrawal and destruction of 110 million bottles meant 18,000 million pesetas (US \$180 million). Communication, consultancy and publicity cost 4,400 million pesetas (US \$44 million) and financial expenses were about 1,600 million pesetas (US \$16 million) more. A total cost, not including the costs of relaunching the product, of 24,000 million pesetas (US \$240 million), which they had originally calculated at 8,000 million pesetas (US \$80 million) when they took the decision to withdraw the product.

The communication media changed negative articles for articles of support, and now they see Perrier as a «transparent company, which keeps the public responsibly informed».

In 1991 the product will recover its position in the North American market, and has recovered in almost all other world markets.