

The Lassing Mine disaster— a retrospective

Introduction

The mining disaster at Lassing, in which 10 miners died, has been the subject of extensive and detailed technical investigation. There are however many other issues that arose through the rescue and subsequent investigation period. These issues had some influence on the overall rehabilitation process and are concerned more with the sociological and psychological aspects including the interrelationships between company management, employees, politicians, government agencies, relatives and local community. Unfortunately tragedies such as occurred at Lassing, whether they be natural or man-made, will always occur. It is recognised that not everything went smoothly at Lassing and we should ensure that the lessons learnt from our experiences will help reduce any future impact and consequences to a minimum. The importance of crisis planning and management is emphasised. This paper reflects author's experiences in having spent almost three years at Lassing through the phases of post accident investigation, the court proceedings and final closure of the mine.

The incident

At about 10am on Friday 17 July 1998 a miner, Georg Hainzl, found himself trapped in a restroom on an upper level of the Lassing Talc Mine in Steiermark, Austria, following an inrush of water and mud. The Lassing operation which commenced mining in 1901 was taken over by Naintsch Mineralwerke GmbH (referred to as the Company and located 100km away in Graz) in 1974.

A significant subsidence appeared on the surface and houses located in close proximity to the subsidence began to tilt and move. The entire mining workforce returned to site to assist in the rescue. Company officials came from Graz, the headquarters of Naintsch, and officers from the Provincial and Federal Mining Authorities arrived from Vienna and Leoben. By mid afternoon the site was overwhelmed by the media, representatives of various authorities, fire brigade officers, local community members, police, friends and family of the trapped miner and the rescue miners, and

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general onlookers. In all, some 700 people were at, or around, the mine site. Local and Graz management, together with the officers of the mining authority and the rescue team, spent much of the afternoon and early evening underground developing and effecting one of the rescue plans.

Suddenly, at about 9:30pm, there was a large noise and houses on the surface began to slide into the crater which was rapidly increasing in diameter and depth. Those at the pit head felt a strong rush of air expelled from the shaft. At that point it was realised that a catastrophe had occurred and that the people who were underground, nine miners and one technical expert, were in terrible trouble.

After 9 days of intense activity, Georg Hainzl was rescued via a drill hole from the surface. This raised hopes that the others may also have survived so rescue attempts continued for a further 3 weeks. They were halted on 14th August 1998. An investigation program commenced to establish the cause of the accident and to investigate possible options for gaining access to the mine. This program continued until the end of 1999. A legal inquiry was also established culminating in a court case that commenced in January 2000 and concluded in July 2000. The Government agreed in April 2000 not to proceed with recovery of the missing miners, to permanently close the mine and to allow rehabilitation of the surface. This work is currently in progress.

To put this tragedy into perspective, the nine Lassing workers comprised almost the entire mining workforce. Most lived in and around the Lassing village and had relatives and family living within 5km of the site. Some relatives, including brothers, fathers and sisters also worked in the Lassing Talc works. Two houses were destroyed and two so badly damaged that they had to be demolished. Another house had to be abandoned. Some 12 families

had to be relocated. The main local road was cut and had to be diverted as well as the local stream. The impact of this accident therefore affected a very small, tightly knit community.

The aftermath

Lassing employees returned to operate the mill and manage the office in late August 1998. Some had had sons and brothers who had died in the accident. Others considered themselves almost as relatives of the dead miners as they had been colleagues for more than 10 years. The mine manager had been at Lassing since the mid 1970's and was considered to be a father figure to many of the employees. Returning to work for them would have added to the already high levels of stress and trauma. Photos of the deceased and their families hung in the office and there was also the constant reminder of the crater.

The Government and the company provided counselling and caring services. These included:

- *For the relatives (widows, children, parents of accident victims):* over approx. 1 year, group therapies and one on one discussions. The carers actually lived with the relatives. There were also trips together with the relatives (e.g. to meetings) and therapy weeks (e.g. Blumau). It is understood that the objectives of counselling were along the themes 'coming to terms with the pit misfortune' and 'life is worth living and continues, even without the deceased'.
- *For the employees:* over a period of approximately three weeks after the accident, counsellors were available for consultation in the works every day. Group discussions were held with the main theme 'coming to terms with the misfortune and relief of mental stress'. In addition there were further group therapies involving the entire staff with the themes 'living together with a hostile public environment (mayor, aggressive neighbours, green activists etc.)' and 'strengthening of the team spirit'.

Psychiatric counselling was provided for the mine manager and is ongoing.

Technical investigation of the accident



Figure 1: View of Lassing.

Figure 2: Lassing Mine after the accident.

began almost immediately after the rescue of the miner. The legal investigation commenced in September, some two months later. The legal inquiry was led by the Provincial court prosecutor who took depositions and sworn statements. Comments from employees and colleagues indicated that the process was aggressive and upsetting. It also appeared to provide anyone involved an avenue for making accusations against the Company and authorities, some relating to incidents over 10 years prior to the accident.

These statements played an important role in the court process which followed almost 18 months later. It was noticeable how significant an impact the time-lapse had on the views of the witnesses. The legal process should be able to provide a process which distinguishes between objective and subjective views expressed by the witnesses, given the vulnerable psychological condition of many of the witnesses at the time. It appeared not to do so.

The participants

A tragedy of the scale as occurred at Lassing was a significant event for such a small country as Austria. Apart from the relatives, families, employees and the company management who were directly affected, there were other participants or groups which became involved and which played an influential part. These participants have been identified under the categories of parent company representative; families and relatives; media; politicians; local community; and technical experts. Each group, and the roles played by the participants, is discussed in the following section.

Parent company representative

The parent company, Rio Tinto, sent the author as a representative to the Lassing

site as soon as possible after the accident, initially to provide technical expertise, to assist the site management with the investigation and to generally provide support and assistance wherever it was warranted and useful. This move was in recognition of the pressures that would be placed on local management in dealing with the trauma, whilst at the same time having to plan for, and undertake, a full technical investigation.

The author arrived at site at the beginning of September 1998 and remained, on and off, until the end of the court case in July 2000.

One of the important and difficult aspects of sending a representative to Lassing was the need to send someone who had some understanding of the language and culture to ensure minimal disruption and concessions for acceptance and integration. The initial reaction to the author's presence was mixed. There was a high degree of suspicion that this move suggested monitoring and control from the parent company and that it reflected a vote of no confidence in the local management. Fortunately, as time passed these fears were allayed and the author was ultimately accepted. The role of the representative also changed once a degree of trust had been established. Nevertheless it did allow the author to observe at first hand the interaction between the participants and to make a useful contribution, not only in the technical areas where dealing with the local technical experts was occasionally difficult, but also on a personal level.

Families and relatives

Recognising the trauma of the events on 17 July, psychologists and psychiatrists were quickly appointed to provide

assistance to the families and relatives of the missing, as indicated above. Counselling ensured that people could continue with their lives in as normal a manner as possible. The Church also played a substantial role in providing pastoral care. This assistance was intense for the first few months as families felt the full impact of the tragedy. Scars remained nevertheless, and the relatives appeared to want two things; recovery of the bodies and an explanation for the event (including someone to blame).

As indicated earlier, those relatives of the deceased still working in the Lassing plant and office had returned to work within a few weeks of the accident. The author observed the effects of the accident on the relatives (and other employees) as well as the continuing attention of the press, senior company management and other investigating bodies. Whether returning to work was therapeutic or more stressful is a question for the psychologists but it certainly was not a happy place and very emotional.

There was little or no demand for compensation as the Government and company ensured that the families received immediate and long-term financial support. It is worth commenting that most compensation was paid very quickly to families and affected landowners where the impact was clearly shown. This defused compensation as a major issue. There were to be further claims made much later by other disaffected property owners mainly supported by ambitious lawyers.

Media

As with most incidents of newsworthy significance, the media (press, radio and television) tends to play a prominent part

in, and have a substantial influence on, how things subsequently develop. Lassing has been no different. The situation at Lassing has possibly suffered greater exposure because of the large crater that formed (100m diameter and 40m deep) and which remained exposed to the public and community for more than 2 years after the incident. This constant reminder ensured that Lassing would never be far from public attention. It was noticeable that, until and throughout the trial, pictures of the crater usually accompanied news reports. Compare the Lassing disaster with the recent Austrian ski rail disaster of Kaprun in November 2000 in which far more people died (156) than at Lassing. Media attention has almost ceased only 3 months after the incident.

The involvement of the media has been interesting but not unexpected. Journalists and reporters are, in the main, not technically trained and hence, like the public, are not able to adequately interpret information of a technical nature. What they did was reflect public sentiment.

Initially the press was quite antagonistic towards the company. Accusations of incompetence, arrogance and deception abounded. This was, to some extent, fuelled by the political rhetoric that followed the accident. Anyone who had any comment or theory was given media coverage. No attempt was made to test the validity of such comments or theories. Especially damaging were those opinions and comments made under emotional stress including those of politicians, relatives and management.

A further problem that added to the frenzy of the media (mainly the press), was the fact that no one actually knew what had caused the accident other than mud and water had rushed in from the surface. In such instances the media is likely to listen to anyone with a view – and even add a few ideas of their own.

It is also common behaviour that, when people believe that no one is listening to their points of view or grievances, they believe the only remaining avenue to be heard is through the media.

The media behaved in 3 different ways:

- initially, due to lack of quality information, as a vehicle to establish what happened and to promote the recovery of the bodies
- then, as a supporter of the relatives when it appeared that investigation/explanation and recovery progress were progressing slowly
- finally, as a voice for the defence at the trial where it appeared that justice was not being done.

Their change in attitude as time progressed appeared to be a result of better management of information flow. The company eventually developed a strategy to supply as much information and in as simple a manner as possible, whereas for some time after the accident, there was no concerted, planned effort to keep the media in the picture.

There are therefore some quite clear lessons to be learned from this. Information is best when it is managed and when it comes from the company. Not because of any manipulative reasons but because the company management actually has the best, most accurate and up-to-date information. The press will go anywhere to get information if it is not available – regardless of its accuracy. Press liaison after the accident and during the rescue was the responsibility of the Mining Authority which, as it happened, appointed a spokesperson who was ultimately charged over the accident. Clearly this was not a good move. When the motives of those involved are examined the danger is obvious. For example, the mayor and deputy mayor of Lassing, the affected landowners of Lassing, the politicians, mining authority representatives, university experts, all had broader agendas than establishing the truth (ie. self preservation, publicity, self protection etc.).

Politicians

A tragedy of the magnitude of that which took place at Lassing will, of necessity, involve numerous government departments at the local, provincial and federal levels. Each has a representative wishing to either express a view or promise some action. As with the media, the problems arising from political involvement at Lassing were basically of lack of understanding. The mechanism that led to the catastrophic inundation at Lassing was very complex and a complete explanation for the tragedy has yet to be found, even after 18-months of determined investigation and a six-month trial. Yet, politicians felt obliged to offer some kind of quick response. They understood that the families of the deceased miners wanted to recover their bodies and they promised that this would happen on the false assumption that this was only a cost issue.

The problem was further compounded when it was realised that recovery of the bodies was not possible, because it was considered to be politically unacceptable to back down from a promise soon after the accident. In this regard Austrian politicians are no different to any other politician. They rely heavily on advice

from others due to their lack of detailed and technical understanding and, in the Lassing case, lack of quality information. The number and diversity of people advising the focal politician at the time of the accident, the Minister for Economic Affairs, was incredible. People who had no connection with, or even knowledge of, the conditions at Lassing (particularly the underground conditions) were offering suggestions to the Minister (and the media) for the recovery of the bodies. There was even dispute among the politicians about the rescue of Hainzl, to the point that the Prime Minister felt obliged to comment.

Whether the lack of information was a driver for the numerous public offerings after the accident, encouraged by the eventual rescue of Hainzl, is not clear, however, the company technical experts and management should have moved quickly to manage the information being transmitted to the press and politicians. Perhaps the Mining Authority should have been the only conduit of information to the Minister however, it is also understood that the Minister was so incensed by the performance of the Authority that he took no notice of them. He subsequently made a number of statements expressing his dissatisfaction with the Mining Authority. A new set of Mining Regulations were issued and the organisation of the Authority was eventually dismantled.

One of the more interesting and concerning aspects of the behaviour of the politicians was their persistence with the commitment to recover the bodies. Although it is understandable that politicians do not like to go back on undertakings it was clear, probably from around November 1998, that recovery of the bodies was not practicable. It was not until April 2000 that a statement emerged from the Ministry that it would not be possible to safely recover the bodies. The pending October 1999 Federal elections no doubt had an influence on this.

Sadly it has to be said that the long-term interest of the families and relatives, appeared to take second place where politics were involved. The behaviour of the Minister in the Lassing tragedy should be of some concern to the people of Austria. It was not until April 2000 that a statement emerged from the Ministry that it would not be possible to recover the bodies. By then the families and relatives were well aware that the bodies would not be recovered.

Local community

The local community was led by the

Mayor and Deputy Mayor of Lassing. Lassing is a small community comprising about 500 families, which was thrust into the limelight by the disaster. People who, up until then, had had little exposure or experience in the public arena became celebrities. Due to lack of official information the press sought out anyone who could make some kind of statement. Naturally, spokespersons for the local community received full attention.

Because very little was known or understood by the community about the situation much misinformation circulated. Spurious accusations of waste material being dumped in the mine, illegal mining, management arrogance, major settlement of houses over the last 10 years, noise from blasting and so on, were all raised. Much of this was directed against the company. Personal grievances were aired and wild statements made which reflected the hysteria of the community and those around the site at the time. The underlying sentiment being suggested here was that the community had always told the company that something bad was going to happen – a premonition about which they believed the company had taken no notice.

As the months passed and the press lost interest in these accusations, anger turned towards the Mining Authority for the delay in recovering the bodies. Internal community issues also developed, particularly between those who received compensation (including the families of the dead miners) and those who had not. Lawyers also inflamed the situation by suggesting that more money could be extracted from the company.

As with the politicians, other agendas appeared to lie behind many of the actions of community representatives.

The author's observation was that, initially, it was felt by those involved in the investigation that the technical issues were too complicated for the community and general public to understand. Rather than trust in their ability to comprehend the problems they were excluded from the process. This was realised early in 1999 when the Mayor of Lassing was invited to join the weekly progress meetings held between the company, the Mining Authority and the relevant Government department representatives. The Mayor thus came to understand that recovery would be difficult and dangerous. It was also noticeable from that moment on, relatives of the deceased no longer directed their frustration at the company as they had done previously. It was also decided at that time that a representative of the

Minister meet regularly with the families to keep them informed of progress. This move was also effective until it became obvious that the Minister was still not making a public statement about recovery of the bodies. A great deal of cynicism set in and the meetings were eventually discontinued.

There is a clear message here. If up-to-date and correct information is to reach all of the affected people, foremost the relatives of the deceased and the community leaders, they must be included in the investigation process no matter how complex the issues may seem. The fact that the issues are technical and complex makes the ability to communicate them in clear, simple terms critical.

Technical experts

Austria has a typical, but seemingly more entrenched, European hierarchical cultural system. Social status is largely measured by academic qualifications. Academic positions in Universities are also highly regarded.

The situation in Austria is further exacerbated by its small mining community. The Montan University, Leoben, is the county's foremost mining school. Because of the limited mining opportunities in Austria, the University has become a 'community' which supports and promotes its graduates whose career opportunities within Austria are limited to positions at the few mines in operation, positions with the Mining Authorities and teaching positions at the University. The professors at the University are therefore in an extremely powerful position and play a significant role in the design and development of mining projects, particularly within the Leoben precinct. Such was the case at Lassing. The University had been involved in the geological studies and the development of the mining process. When the accident occurred the various professors of the University departments were called in to assist with the investigations.

There appeared to be a clear conflict of interest. The same professors who had been involved in the development of the mine were now making assessments of the cause of the accident. One professor also headed a private consulting company which was engaged to investigate the geotechnical aspects and development of rescue options, another professor was head of a research institute, while others were involved as heads of their university departments. All rely on private funding and private operations for training and teaching of undergraduates and for generation of research projects. The

Lassing accident therefore provided them with ample opportunities, regardless of who was paying the bill. Outside Europe this situation would be contained through strong and independent project management. In Austria, however, the status of the professors and their connections make control more complex. It is difficult for lower status managers and technocrats to criticise or exercise control over the higher status professors. Through the community network reputations are protected and information is passed on outside the prescribed channels.

Such was the case at Lassing, where it was very difficult for the local management and authorities to exert influence over the academics. An example of this was one professor's aim to enhance his reputation by developing an elaborate engineering solution to gain access to the mine even though his role was to examine all options. In this case, and in dealing with the other professors, the presence of non-Austrian experts and managers at Lassing greatly assisted in the way that such self-interest could be contained.

This same cultural characteristic delayed the use of state-of-the-art technology, particularly in the area geophysical investigation. The belief that 'Austrian is best' led to some inefficiency and wastage of both time and money.

Discussion

That such a tragedy occurred is unfortunate. However, tragedies keep occurring no matter how much care is taken, due either to human failing, or to some natural cause. It is therefore essential that organisations are prepared. Most developed countries have emergency management strategies with appropriate organisations ready to act with assigned responsibilities. Similar emergency plans have also been developed for businesses and relate mainly to assignment of responsibilities. What appears to be evident from the Lassing experience is that such plans stop short of dealing with some of the more obscure issues, most likely because they would differ between countries and cultures. This should however not prevent such plans being considered for all business units, even on an in-principle basis.

Research and literature regarding the impact of disasters on families, friends and communities is well documented. The phases of human reaction to disasters, including guilt, phobias, sleep disturbances, hostility and rage, anxiety, depression etc., are recognised (Laube & Murphy; Murphy & Cowan 1985; Dembert & Simmer 1999; Murphy 1986) and form

the basis for the trauma counselling process. There is also literature describing the difference in reaction between families of the deceased and friends and colleagues (Hartsough and Mileti 1985). Not surprisingly, stress levels in relatives remain higher and for a longer period than others.

There is also evidence which indicates that the older the person the greater the trauma effect (Faberow 1985) and that the effects of trauma can last up to 3 years after the tragedy (Livingston, Livingston & Fell 1994).

Specifically relevant to the company are references which demonstrate the clearly identifiable phases of anger and hostility, guilt, the need to find an explanation and the need to recover the bodies (Laube & Murphy; Murphy & Cowan 1985; Dembert & Simmer 1999; Murphy 1986).

It is noteworthy that the available research references into dealing with post disaster trauma and Post Traumatic Stress Disorder (PTSD) have focused almost entirely on the bereavement impact of the event. There are limited studies or assessments of the coping capacity of those affected as a result of harassment by the press and through manipulation by do-gooders and others with non-supportive agendas, although there are a number of publications dealing with the impact of the media. Laube and Shirley (1985) and Hobfall and de Vries (1994) acknowledge some lack of research and documentation on this issue. These authors have, to some extent, addressed the issues relating to the influence of the media and Hobfall and de Vries (1994) also address some of the issues related to interaction with the local community and the Government. They recommend ways of interacting with the Government, community and media to improve the counselling process.

A significant reference is the publication by Mathes, Gärtner & Czapliski 1991, which is a post mortem of the mine disaster in Borken, Germany, 1988 in which 51 miners died. Six miners were rescued in dramatic fashion.

The similarity to Lassing in the nature of the disaster, the rescue and the media reaction is disturbing. There were some clear lessons to be learned and the authors presented strategies to minimise the confusion and public relations difficulties which followed the accident. These strategies are just as relevant today.

The Lassing works attempted to address the problem of external pressures through its group counselling of the workers.

There was obvious concern among the

employees when, everytime something of interest at Lassing attracted the media. There was an immediate influx of press and media personnel who would aggressively chase information, with little regard to personal sensitivities. It was also noted that the court case added to the concerns of the employees and past workers as they felt a conflict between loyalty to the company and colleagues, and pressure by media, unions and families to allocate blame.

Crisis Management literature does recognise the need to have a good relationship with the media. Harrison, 1999, points out that the media are stakeholders and therefore should be included in any crisis management plan. Berge (1990) and Reid (2000) emphasise that action regarding dealings with the media needs to be taken within the first 24 hours. Berge (1990) also discusses the typical crisis after-effects such as the spread of rumours and speculation, the psychological reactions, the involvement of the media and the impact of local culture.

Although there are common consequences of disasters, Mitroff & Pearson (1993) also recognise that cultural differences are important and need to be taken into account when planning for disasters.

Bland (1998) discusses the important role lawyers can play in dealing with the media and the community. This is supported by the evidence at Lassing.

As research and experience have shown, one of the typical consequences of such a disaster is the transfer of anger towards the company. Knowing that this will occur should encourage the Company to put into place a strategy to deal with it. Such things as regular management meetings, informal discussions, plus the issue of providing factual, real information, should all contribute to minimising the anger. At Lassing the need to seek technical answers appeared to push these actions into the background.

One of the more interesting features was the reaction to the parent company sending a representative to Lassing. Initially this was considered to be an intrusion, an expression of lack of confidence and trust in local management and a potential takeover move. As time progressed it became clear that the assistance provided was an asset to the Company and the internal processes for the following reasons:

- the representative was not an Austrian and hence was not beholden to the cultural mores as indicated earlier in

the paper, particularly in technical discussions with the consultants, university professors and authorities

- he had an Austrian background and knowledge of the language and culture which assisted in the establishment of trust
- the representative was seen as someone who knew what was 'actually' happening (rightly or wrongly) and hence could dispel some of the rumours and false information
- through the establishment of trust he provided a sympathetic, independent and non-threatening conduit for the Lassing employees
- he provided independent technical advice and was able to facilitate access to international experience.

What is understood from the experience at Lassing and the available literature is that the interaction and behaviour of the participants at Lassing were not unusual and followed an expected pattern. Even the cultural idiosyncrasies were foreseeable. The authors cited above all make similar recommendations regarding appropriate strategies to deal with crises. Relevant recommendations are discussed in the following section.

Conclusions and recommendations

What has been described and discussed above indicates that, in general, the 'right' things were done at Lassing by the Company. What is also clear is that things could have been done better. It would also be a pity if the sad experience of Lassing could not provide some constructive avenue to improve the process in the event of another tragedy.

Provision of psychological and psychiatric assistance is now a regular feature in Western cultures but this tends to focus on dealing with individual and community trauma and bereavement. The Lassing experience shows that other external factors can also contribute to the stress and emotion of all involved. This is slowly being recognised by research institutions and, no doubt, more will be documented in the future.

The following outlines some suggestions for ways in which any company could assist, or at least provide some defence mechanism, in ameliorating the impact of these external influences in the event of such a disaster. Some are derived from the references and others are based on the Lassing experience.

- Management in similar circumstances would do well to select an articulate spokesperson (a credible senior offi-

cer) as soon as possible after the tragedy (within 24 hours), whose main function would be to liaise with the press and community to provide timely, quality information. This would:

- shield company representatives from the press
 - provide vital and up-to-date information to politicians and the press/media
 - ensure that families and relatives are kept informed at all times
 - combat the raft of do-gooders and people with vested interests from highjacking the process
- The role of spokesperson would probably be required for at least one, maybe even two years after the tragedy given the extent and duration of the trauma experienced by relatives. Reference to the book by Mathes, Gärtner & Czapllicki (1991) for guidelines in dealing with the media is recommended.
- Inclusion of affected stakeholders at an early stage will help dispel rumour and ill feeling toward the Company.
 - Research and literature on Crisis Planning and Management point to the need to have a plan in place to respond immediately to crises. Such a plan would avoid the chaos that existed on site during the hours as a crisis developed. It should include specific strategies and methods for dealing with the media, community groups and government bodies. Strategies need to take into account cultural idiosyncrasies as well as the specific nature of the operation. There is sufficient experience and knowledge, internally and externally, to enable every business to prepare a crisis plan
 - Employees should be given more support in dealing with return to the workplace, exposure to the media and the pressure from relatives and community. This support needs to be available early, readily and longer. This would also include provision of up-to-date information. Such actions as regular meetings, outings, provision of special clothing etc. to foster a work community spirit are also suggested.
 - Where it is acknowledged that a technical representative from outside the Company would be able to contribute by assisting with managerial responsibilities at a time of pressure, without this being seen as a threat, this should be done. Selection of an appropriate representative requires great care and would depend very much on the cultural and technical climate as well as the calibre of the person selected.

That is, the person would need to satisfy the technical, language, managerial criteria and also demonstrate empathy at all levels. A list of such persons could already be identified by the Company and updated on a regular basis.

As it takes some time to develop trust and rapport the introduction of such a person could be eased through preliminary meetings and discussions.

Such recommendations need to be incorporated into the Crisis Management Plan which has been carefully thought through before any crisis or disaster occurs.

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This article has been refereed