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This paper contributes to a growing body of research that acknowledges different occupational groups’ interpretations of accidents and issues concerning communication and workplace participation. In the ideal democratic workplace situation different actors apprehend, understand and respect one another’s perspectives and frames of reference, and together they come to an agreement. The empirical case in this paper will draw from interviews at a pyrotechnical company that throughout the years have had several instances of near-accidents and accidents. From the case we will see that there may often be a wide distance between parties; gaps regarding knowledge, beforehand information, perspectives, interpretations and power. A strategic, policy-driven logic can guide management decisions, while the logic on production level is situational, guided by everyday experience in production. A point of departure is that communication, and not the least risk communication, is based on a certain amount of shared experience and meanings. If this prerequisite is poorly fulfilled, risk communication will fail.

KEYWORDS: risk communication, accident prevention, organizational communication, communities of practice, critical management studies

INTRODUCTION

Previous research on risk communication often view transmission of information as the primary goal. Facts about accidents and loss prevention shall be transmitted between experts and practicians, internally and between companies, between authorities and companies, and so on. Facts about risks and accident are considered objective, and the social construction and definition of what is considered factual, and the custodians of such construction and definition, has not been a serious concern. Risk communication research has, however, turned more and more toward interpretive, dialogue perspectives (Renn 1998). Research in this field has shown that different stakeholders interpret and view risks and accidents in different ways, and demand is expressed for further research that analyses different interpretations of accidents and how some perspectives obtain dominance, while others are overlooked or bluntly disregarded (Gephart, 1993, 2004; Summerton and Berner, 2003; Perrow, 1999).

In order to see what these perspectives include and exclude, and what is communicated, it is important to study occupational groups and their meaning making. Regarding risk and accidents, this research is thus more concerned with underlying social conflicts, and complex causality (George and Bennett, 2004) rather than empirical, technical causes. Here, the production of information is regarded equally as problematic as lack of information. Likewise, the production of knowledge and the definition of who is knowledgeable are regarded as problematic as lack of knowledge (c.f. Foucault, 2002). As Summerton and Berner (2003) explain practicians in production have experience and knowledge that is important to acknowledge for accurate measures to be taken. However, preventive and strategic work is often lead by higher quarters, leaving practicians who confront risks in their daily work routines outside negotiations and decision-making. If recollection of experience is important in preventive work, there are accumulated experiences in the minds and bodies of workers that have to be articulated, acknowledged and made good use of. As Sanne (2001) describe practicians’ knowledge is more complex and thick than programs of rules and routines inaugurated by executives. These programs and policies seldom cover or comprehend social reality among workers. A prerequisite for further investigations is thus to view those who work close to complex systems, and consequently risk falling victim to accidents, as experts.

For positive communicative practices to come about, the parties involved have to have a degree of shared frames of references and meanings (Deetz, 1995). If they don’t, people will talk at cross-purposes, misunderstand each other, communications will fail. Ideally, management and workers understand each others’ statements, views and spheres of experience, and together they come up with explanations and solutions to joint problems. Most of the times, however, this is not the case. We may have been persuaded by concepts like “the information age” and “information technology” to think that a whole lot of communication occurs when many in fact remain divided by breaches of an industrial society. Management hold perspectives remote from workers, and critical perspectives, voiced by workers, seldom reach higher quarters. Management perspectives are granted impact due to managers’ right of decision and resources at hand. Consequently, preventive safety work and decision processes draw from experience of a limited circle.
In this paper I will present a study that makes plain that different interpretations of accidents are apparent but often not communicated, or suppressed. The pressing demand for workplace communication, and in prolongation, workers’ involvement in decision processes is critical if good decisions concerning safety are to be made. The empirical case will draw from interviews at a pyrotechnical company that throughout the years have had several instances of near-accidents and accidents.

First off I will present some background on the particular company and on research proceedings. Then results from the interview study will be presented, firstly with focus on operators’ perspectives, then with focus on interviews with management. The conclusion will sum up results and point to consequences for safety work and communicative practices.

METHOD AND MATERIAL

The company in question is a pyrotechnical company that manufactures seaworthiness products for export, ammunition and demilitarization jobs mostly for Swedish Defence Material (FMV). During its 50-year history this company has had a quite large workforce, but due to economical strain and downsizing there are 115 employees today. Over the years they have handled ammunition of different calibre, and almost any kind of explosives – everything from anti-aircraft robots to civilian star shells. Quite a good half of the personnel works as operators, jobs which require no higher education. 30 of the operators work with seaworthiness products and 30 with armaments, though some rotation of personnel between product lines is going on. In the year 2000 a woman died during a demilitarization job. When a so called bomblet detonated and caused a secondary explosion in accumulated explosives in the ventilation system, splinter spread at 3000 meter per second. The female operator stood right under a ventilation pipe. Legal proceedings followed, and the current CEO, then local manager, and another manager with specific safety competence, were prosecuted but found not guilty.

Between April and May 2006, 19 semi-structured interviews were conducted with management, engineers, foremen and operators. The informants compose a selection of people that represent all organizational levels and both areas of production.1 They are in ages roughly between 40 and 60, reflecting the rather high middle age at the company. All management representatives, engineers and foremen are men. Most operators at the company are women, and so are 5 out of 9 operators that were interviewed.2

1Interviews were conducted with the CEO, marketing manager, production manager, HESS (supervising health, safety, and security issues), 9 operators (from both areas of production), 2 project leaders (from both areas of production), 2 constructors, 2 works managers (each responsible for one production area).

2It is interesting to note, however not topical in this paper, that women are occupied either at the bottom of production hierarchy or in the accounts and personnel department. Foremen, engineers, project leaders and the managerial body consist of men.

In the interviews informants are given an opportunity to tell their story, which is regarded a “significant way for individuals to give meaning to and express their understandings of their experiences” (Mishler, 1996: 75). The interviews cover such topics as accidents and near-accidents that have occurred, work routines, everyday communication in and between occupational groups, and near-accident reporting. It is however not uncomplicated to conduct interviews about accidents or near-accidents that have occurred. As noted by Alvesson and Deetz (2000) informants can make a situation look better than it is, leave out information, and forget things. On the other hand many interviewers experience that informants are open and honest if they perceive the aim of interviews important, if they are taken seriously, and listened to (Jacobsen, 1993). This is acknowledged in the interview method, as informants are encouraged to talk freely and at length, and get to expound their perspectives as the interviewer ask different descriptive and exemplifying questions (Spradley, 1979). Thus, the interviewer listens more than he talks, doesn’t define what is relevant to the case, however completes informants’ accounts with questions and remarks significant to his theoretical understanding of a complex of problems.

PERSPECTIVES ON A TRAGIC ACCIDENT

There are important issues that are not communicated beyond occupation and division boundaries, through organizational hierarchy. Circumstances around the fatal accident in 2000 compose one topic where views go different ways. The informants who know about the technical aspects of the accident agree on the technical course of events. An explosive component got stuck on a belt conveyor; it was heated up and detonated. In resulting effect a secondary explosion occurred in accumulated explosives in the ventilation system and one operator died from splinter. In connection to this, it is relevant to mention that many remember that information meetings were held by the management directly after the accident. According to the current CEO, he gave an account of what had happened and tried to deny false rumours and moderate speculation spread by the media.3 All of the middle-management and engineers have insight in the technical aspects of the accident. Six out of nine operators that were interviewed describe similar proceedings. One operator mentions that she had read the official investigation made by the Labour Inspectorate and SAI (the Explosives Inspectorate) although few other operators, she says, have read it. Three operators do not really know, or can’t recollect, what happened technically. Nevertheless, all operators can report on the work situation at the time of the accident.

When asked to reflect upon the accident, underlying causes and contributory factors appear to be more complex than technical proceedings. One circumstance that can be defined as a contributory factor is stress, which

3Interview April 20, 2006.
So it was unpleasant? – Yes, and many were terrified about that product so …

It was a new product and …

Yes, and many were terrified about that product so …

So it was unpleasant?

It was awful.

Do you remember anything, or would you like to describe what it was like?

Well there were explosives on the floors, and you had to go into the bunker back and forth because nothing worked, and on the floor there were explosives and metal flings (…) No it was awful, it really was. It was a terrible job, so it was probably not an issue whether it would blow but when.

What do you think made them continue instead of stopping it?

Well it was about money I guess, and their future existence depended on this job. I regret that we went (and didn’t strike), because when you talk to people you realize almost everyone were frightened (Operator).

Constructors and other technicians and engineers recount system- and construction problems at length. Tight coupling and complex interaction (Perrow, 1999) in its technical sense is unquestionably their premier interpretation frame, and in some cases the only one besides from “the human factor”, which is often referred to as mistakes made by operators. When this “engineer perspective” has been more or less exhausted, the interviewer vaguely suggests an importance of social forces and pressures. In turn, the informant can remain passive on the topic or go into detail about it. In contrast to many engineers, a constructor draws on experience from his work sphere, and presents both specific examples and generalizations on stress, and he brings up the topic in terms of pressure on an individual level as well as pressure on a system. First off, he describes the situation prior to the fatal accident, and as previously cited informants he mentions an underlying, economic rationale as part of a causal relation:

Can there be other causes such as stress or some other?

That big accident we had a couple of years ago, that was (caused by) stress. The machine had to get going at all costs and then trial run during holidays, and repairmen altered frequently at the same time as one didn’t fully report to the other what he did, and some guys did changes, well, on their own responsibility, and that is how it was handled, and as we know, there was an explosion. There were a lot of stress and it was the company that had to have it going (because of) money. In that case stress was really involved, and poor documentation (Constructor).

Evidently, stress is a critical issue in operators’ social reality, despite informants’ affirmation that they are not particularly sensitive to stress themselves. However, statements about the situation prior to the fatal accident in 2000 speak for themselves. Operators were frightened and made complaints to then CEO with little result. Today, many regard stress a major factor behind the accident.
MANAGERS’ CONFIDENCE IN A NEW POLICY

The manager supervising health, environment, safety, and security issues (HESS) relate to stress in a similar way as previously cited informants. An economic rationale and production capacity pressures were part of a causal relation preceding the accident. However, his colleagues in the executive group, and middle managers, hardly ever mention stress on their own initiative in interviews, or relate it as a real problem. A project leader does not regard stress a potential increaser of risks at all. Within his interpretive frame, stress cause defects in product quality. Interestingly it is his job to plan projects in consultation with marketers, purchasers, constructors and foremen, and making time tables for product lines and operators.

As far as the CEO is concerned, his job when employed as local manager in March 2000 was to “create an effective production site”. He describes that their new product in 2000 was part of a large order and a five-year contract that involved a number of Swedish companies. The demilitarization job in 2000 was the first order featured in the contract. However, to obtain orders for a second year they had to manage the first order successfully, and to obtain orders for a third year there were demands for performance during the second. In short, there was keen competition to obtain orders. Furthermore, he refers to delivery delays and trouble with machines, and admits, to some degree, that stress was a problem:

- The client was late delivering stuff to us, and we weren’t quite done with the production equipment, which meant that time passed on although the client’s deadline wasn’t postponed in proportion to all delays. As a result, there was stress in some sense of the word, yes (Current CEO, then local manager).

Yet, in contrast to previously cited operators in this article, the CEO has never heard of a stressed or pressured operator in connection to any accident, if ever. He assures that safety is the principal priority nowadays. As far as the production manager is concerned, his perspective is similarly reluctant to acknowledging stress as a critical issue. Somewhat pressured by the interviewer to comment on how pros and cons were balanced regarding production capacity and safety in 2000, he declare that they have changed many things since then, and now position security and safety as most important at all times. However, he maintains that they “were not particularly terrible concerning security at that time or before the accident” although the top-priority of safety “was perhaps not clear”. In contrast to previously cited operators, he question that social and economic pressure reached and affected workers:

- I doubt that any operators felt that they took a risk, that they simply worked with blinders on and just pushed on to deliver these things (Current production manager).

Similar to the current production manager, both foremen emphasize the new policy to top-prioritize safety. They say they would never tamper with safety, besides, no one would allow them to. “Safety is at the top of the list” both conclude. Yet, and despite a new policy on safety, some operators regard production pressure and stress a problem, not only at the time of the fatal accident in 2000 but also in the work of today. Experiential spheres obviously collide, interpretation frames differ. Even though management has communicated that safety shall be at the top of the list, some operators call into question whether it is true in real life. Safety is not at the top of the list, two operators reply, more accurately “it’s all about getting the parts done” and “getting products out the door”. As an instance of doubt in policy effectiveness, a safety representative recollects that a garnet was crushed in a machine two days prior to our interview. The principal safety representative had said to her that foremen tried to keep safety representatives from knowing what had happened.

CONCLUSIONS

Management and employees clearly make different interpretations and hold dissimilar perspectives on accidents. As for the case in point, a fatal accident that occurred at a pyrotechnical company in 2000, most operators regard stress a major causal factor, and still consider production pressures and stress problematical. It is reported by operators that many of their colleagues were worried during the demilitarization job in question, prior to the fatal accident, and furthermore that complaints were made to the then CEO, but with poor results. Management, project leaders and foremen deliver far more positive statements. They neither bring up stress themselves nor talk about it as a concrete, critical issue at the plant. The current CEO has never heard of a pressured or stressed operator prior to any accident, and neither has the current production manager. A principal interpretation frame among management and middle-management consists of what can be called an engineers’ perspective on tight coupling and complex interaction, besides from operators’ negligence, in other words the human factor. Another important issue concerns the economic rationale that informants considered an underlying cause behind the fatal accident. The current CEO report on the competition for orders and different product and production delays; operators, a constructor, and the HESS-manager account for consequences in production.

From these results my conclusion concern three matters. First, interpretation frames differ to such extent that communication has, obviously, not been a priority. These differences in perspectives and lack of communication imply that there is a distance between occupational groups and perhaps a widening gap between identity positions. Since communication depend on shared interpretation frames the distance has to decrease between these groups, otherwise operators will continue to be suppressed, and when attempting to communicate people will talk at cross-purposes, misunderstand each other, or bluntly disregard each other (c.f. Deetz, 1995).

Second, values and ideological perspectives have to be considered important in organizations and definitely concerning safety work (c.f. Anthony, 2005). If social
forces and pressures (such as stress) are ignored in favour of output figures and profits, the assembly of those with power have to be examined. Their ideological horizon and business vision, which exclude some interests and include others, have to be altered in order to incorporate a wider range of stakeholder interests.

This leads us to the third and final matter: forums for communication and decision-making. Deetz and Brown (2004) have outlined such forums and emphasize the importance of including different occupational representatives and consequently knowledge from different experiential spheres. Previously unknown measures can be explored and negotiated in such forums. Unfortunately, conflicts are often suppressed with expressive communication from the top downwards, and those who would be able to contribute with experience and long-term perspectives fall silent. Communication should thus be about sheer content and concrete experience, not performance or rhetoric (Deetz, 1995; Alvesson, 1996; Deetz and Brown, 2004). If conflicts rise to the surface, are acknowledged and become dealt with in dialogue and negotiation, creative results are probable.

REFERENCES