PHOTOGRAPH: *The official report, published February 24, into the 1997 Southall Rail disaster has found, that the "unexplained inattention" of the Great Western express train driver was responsible for the crash. Driver Larry Harrison took his Great Western train through two warning signals at 60-80mph before crashing into an empty freight train in an accident that claimed seven lives. The report said that Harrison had been unable to offer "any proper explanation" for failing to respond to the two signals before being unable to stop in time at a third signal which was red. © REUTERS 2000.*

Motivated Inattention and Safety Management

Last month safety AT WORK interviewed Peter Sandman. In this interview Peter talks about how well-intentioned managers may be encouraging hazardous behaviour. He discusses the motivations for both workers and managers and how entrenched perspectives are really assumptions.

SAW: There's always been a problem where workers and managers are trained in safe operation, but when it comes down to practice, the practice is different from the training. What is your understanding about the motivations for this?

PS: The conventional understanding has always been the two things that are most important in order to get employees to work safe are:

1)You need good policies. You need the right policies and

2)You need good training.

And then off in the corner, everybody acknowledged that the equipment had to work right. If you can eliminate the risky situation entirely with a technical change that has long been acknowledged to be the best way to go. But if you've got a risk that you can't get out of the environment, then therefore people have to learn to cope with it wisely out of the environment, so people have to learn to cope with it, then wise policy and good training were the name of the game. And then 20 years ago or so, DuPont and others began to say, 'Wait a minute. Lots of people who are trained, and trained in polices that are wise, are nonetheless having accidents. The issue is attention. And you got the DuPont STOP programme and lots of derivative programmes that were focussed on the very real issue that an employee who knows what to do and has been told the right thing to do is still likely to have an accident if she isn't thinking about it. If she is daydreaming or thinking about sex or thinking about promotion or thinking about a movie that she saw last night,

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then that employee is likely to get hurt. It's not a training problem and it's not a policy problem. It's an attention problem.

I think there is a very substantial improvement in a company's ability to reduce accidents when companies started paying attention to attention. And then it plateaued again. Where most companies are today, or at least most good companies are today, is they have pretty good policies and they have pretty good training, and they have some kind of program to remind people and focus people's attention. They've gotten most of what they can get out of those three and they're still having accidents. The question I think you and I want to focus on in this conversation is what causes those remaining accidents. What's left when you've done a good job with policy and a good job with training and a good job with attention?.

I think the answer to that is a whole bunch of attitude issues that are, in fact, very closely related to the traditional outrage ideas that I've worked on for years. What I wind up saying to clients is not to focus on attitude to the exclusion of policy and training and attention. Those three still come first. But if you've got those three under control, and you still don't have an accident rate that you're happy with, then begin to look at attitude.

If attention has to do with unmotivated inattention, then attitude has to do with motivated inattention. It has to do with people who are intentionally not paying attention. I have spent a fair amount of time in recent years trying to help my clients tease apart the reasons why an employee might intentionally not work safe. I want to come back to that. But before I come back to that, let me describe the other half of the problem.

The other half of the problem is newer for me. And my thinking on it is more preliminary. But I think it is enormously important. We know that there are companies that are an order of magnitude, even two orders of magnitude, safer than most companies in their industry. All the other companies lag way behind. You look at that and you ask the company that's way ahead, "Well, is it costing you a fortune to be way ahead?" And the company say, "No, actually, it's saving us money. We are able to reduce accidents in a way that saves us training costs, saves us medical costs, saves us recruiting costs, saves us morale costs, saves us insurance costs and more than pays for what we're doing in order to reduce the accident rates. We're actually getting a return on investment for safety that is highly competitive with other things that we're investing money in."

So you go you go to other companies and you say, "Well, here's a company in your industry that is making a profit out of safety. Why don't you do that?" And they're not interested. This raises a question that's absolutely parallel to the question that I raised about employees. The question about employees is why, even if they know the policy and they're properly trained in the policy and their paying attention, they might consciously choose to take risks. Here's the parallel question: Why, even if there's good evidence that it's cost effective and profitable to reduce the accident rate, might a manager, a managing director, a CEO or a plant manager, consciously decide to permit risky situations.

If attention has to do with unmotivated inattention, then attitude has to do with motivated inattention. It has to do with people who are intentionally not paying attention.

SAW: At the moment there's a lot of stuff happening around the world on reasonable hours of work, or people are working a lot longer and that's causing risks. In terms of what you're saying, in terms of motivated inattention, is it to the extent where there's actually an unsafe culture being created in the companies that's contributing to this?

PS: I think that's clearly sometimes true and maybe always partly true. It's certainly clear that there are companies where if you asked employees why are you ignoring safety rules, they will tell you, pretty readily, "Oh, well I'm meant to ignore those rules. Management wants me to ignore those rules. I'm only supposed to pay attention to them when the regulator's in the room, or perhaps when the company's safety manager is in the room. But when it's just me and my mates and my boss, we all understand that that rule is for external consumption and we're supposed to ignore it in order to be more productive."

I worked with an Australian mining company where management were saying to me and to each other, 'Our accident rate is intolerable. Our accident rate is costing us a fortune. It's a major reason why regulators don't want to let us open up new mines. It's a major reason why our reputation stinks. We really need to do something. We're killing far too many people." And they meant it. This was not for external consumption. The company was absolutely convinced, and rightly convinced on good data that they needed to reduce their accident rate for fundamental reasons of profitability.

But when I went to employees and asked why they were ignoring the safety rules the employees would say management wants us to ignore the safety rules. Employees were loyally doing the wrong thing, because the company was sending mixed messages and the employees trying to tease apart the mixed messages were judging the wrong half of the message to be accurate.

Every complex organisation gives more orders than it means anybody to obey. So

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we all become very skilled at distinguishing the marching orders we are supposed to follow from the marching orders we're supposed to pay lip service to. Even though management are saying do this and do this and do this, the employees know some of the things management are saying they ought to do, and some of the things management are saying they ought to pretend to do. Management really meant it about safety, but the employees were assuming it didn't, were concluding that it didn't and were indeed perpetuating a culture that was unsafe and that they thought was the culture management wanted from them.

SAW: **But health and safety is based on consultation. What you're saying is that it's not just a matter of talking to one another because even when this upwards and downwards consultation and information, the messages still get mixed and scrambled, even though they might be heavily documented?**

PS: Yes, for precisely the reason we're talking about. You don't assume that all messages are taken seriously. People are actively listening to each other and deciding which messages they're supposed to take on board, and which messages they're supposed to shrug off.

PHOTOGRAPH: *Firemen at the site where a powerful blast ripped through a petrochemicals factory in the southern French city of Toulouse, September 21, 2001 Ministry of Interior sourced ruled out a criminal attack and said that the huge explosion was due to human error. © REUTERS 2001.*

I'll give you an example. With the company I was talking about earlier, one of the reasons why management was unable to convince employees that they meant it about safety, is what management was saying about safety, that safety is our most important priority. "Safety is job one. Safety is more important to us than anything else." And employees knew that was crap. Employees knew that the number one priority for management was clearly profitability, and even short term profitability and what that meant for quarterly returns on the stock market. Employees had no trouble judging that the claim that safety is our number one priority was nonsense.

I argued to my client that if you want employees to believe you when you tell them you care deeply about safety, explain why. I tried to persuade the company to say to employees something like the following: "Look reason we are so preoccupied with safety is that we have a terrible safety record. And our terrible safety record is not only hurting people and killing people and destroying lives, it's also very seriously damaging our profitability and our share price. Our company may someday get to a point where our safety record is good enough that there is a conflict between further improvements in safety and further improvements in profitability. We would love to get to the point where safety and profitability are competitors. At the moment we're not there. Our safety record isn't good enough to compete with profitability. Our safety record is our principal disadvantage in the marketplace." Now that's a very different message from we care more about safety than anything else.

SAW: Some companies I visit are putting in a safety improvement program for the purposes of accreditation as if external auditing and certification will automatically improve the safety of the workplace. You're saying that if you're doing it for the certificate, that's the wrong motivation.

PS: Well, that's not quite what I'm saying. What I'm saying is if want your safety record to improve, and you've got cynical employees who understand what your fundamental goals are and are not , then you have to explain why you want the safety record to improve. It is exactly

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the same as what companies have to do externally. If a company says to its neighbours, we care deeply about your health, the neighbours are 'Come on, give me a break, you don't care about our health." The company would be a lot smarter to explain why it has to protect the neighbourhood's health for its own reasons: 'If we put dangerous emissions into the air, here's what's going to happen to us. Here's what the NGOs are going to do to us. Here's what the regulators are going to do to us. Here's what you're going to do to us. We can't live with that. For our own survival we have to protect your health.' If you say something like that to your neighbours, then they can believe you're actually protecting their health.

SAW: There is some work done by Lee Clarke at the University of Florida, where, as a sociologist, he's analysed policies of major corporations and he describes them as fantasy policies. Do you acknowledge that some companies have fantasy policies?

PS: What I think Lee Clarke means by fantasy policy is the straightforward fantasy policy where the company doesn't particularly care about safety but it has to pretend to. It has to pay lip service to it, but it actually wants employees to cut corners and increase productivity even at the expense of safety. Then you have a fantasy policy where the company is articulating safety goals that are false.

That happens but it's not nearly as interesting as what I'm talking about, which is when a company really does care about safety but it cares about safety not for its own sake, but because it's in trouble for an inadequate safety record. From my point of view, that's fine. I don't require companies to be altruistic, I only require them to notice where their bread is buttered and change to match.

The company genuinely cares about safety for instrumental reasons, but it's pretending to care about safety for intrinsic reasons. It's claiming that safety is a goal whereas actually safety is a means. It has no credibility and employees are blowing off the safety rules. Thus you get the paradox of an outcome that's bad for the employees and bad for the company that results from the company having a good policy and a dishonest rationale for the policy. I think that's much more common than the outright fraud.

SAW: From what base should a company develop a program that will genuinely improve the safety of the workers and the flow on safety of managers?

PS: Remember, we haven't talked at all yet about the other half of the problem, the reasons why managers ignore safety even when it's profitable. We have to get to that. But for now let's assume the problem is the employees. Let's assume you're a management that really cares about safety and your problem is how do I get my employees to take it seriously. What I would say to a client is, start analysing why your employees aren't taking it seriously. Take seriously the reality of motivated inattention to safety. And diagnose where it's coming from. There are mutually exclusive places it might be coming from.

Why, even if there's good evidence that it's cost effective and profitable to reduce the accident rate, might a manager, a managing director, a CEO or a plant manager, consciously decide to permit risky situations?

Let me give you a classic example. One really common reason for employees not taking safety seriously enough is they're not sufficiently scared. They don't think it's a serious problem. They haven't been hurt before, they've been doing this for 17 years and nothing's ever gone wrong. The idea of them as afraid of getting hurt is not compatible with their self image. They're into machismo and so forth so they're not scared enough to take the safety rules seriously.

Another very common reason why employees don't follow safety rules is because they're excessively alarmed. When you are very frightened you have a motive not to take precautions because the precautions remind you of the thing you are frightened about. The classic example everybody's familiar with is women who don't do breast self exams. That's not usually because they're not afraid of cancer. Women who are insufficiently afraid of cancer don't check their breasts for lumps. Women who are excessively afraid of cancer don't check their breasts for lumps. The first group aren't scared enough, but the second group are much more interesting. They are so terrified that in order not to find the lump, they don't look. Because finding a lump would be intolerable. Even looking is intolerable.

If you have employees who are excessively frightened, and I think that's much more common than it is thought to be, then a completely different set of strategies is appropriate. They need to reassured sufficiently that they can take the precaution. The most relevant application right now, of course, is the aftermath of September 11. Many people are panicky. Many others are in denial, a sort of repressed panic. Warning them is not the way to get them to take precautions. They need to be reassured.

There was a classic study done in the 1940's with children. They made a movie aimed at persuading children to brush their teeth. When they tested the movie, it turned out that kids who saw the movie with the whine of the dentist's drill and the close-ups of tooth decay brushed their teeth less than the kids who did not see the movie. When they asked the kids who saw the movie why they weren't brushing their teeth, the kids had no trouble explaining. They'd say, 'Every time I brush my teeth it reminds me of that disgusting movie. I don't brush my teeth in order not to be reminded of tooth decay." That's very common.

I think there are lots of employees out there who are afraid of their own jobs and who don't take precautions because

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not taking precautions helps them not notice that they're afraid. The point is, diagnostically, if you've got some people who are insufficiently alarmed and others who are excessively alarmed, you're not going to be able to do very good management until you tell them apart.

SAW: I have seen this with first aid training. After the training people thought first aid so important yet none of them ever wanted to use it. They knew that they'd have to blow into somebody who's grey or covered with blood. Or they'd have to stop arterial bleeds. It didn't necessarily mean that they operated safer when they came to their own workplaces. It meant that they had a bigger awareness for the possibility for disaster.

PS: Even if you decide in a particular case that your problem is the conventional problem, employees who are insufficiently frightened, that doesn't necessarily mean the best response is the conventional response, trying to frighten them more. There's another set of strategies that I think are very interesting. Start with the assumption that people try to achieve the optimum level of risk in their lives that works for them. We differ, I may want more risks than you want, or I may want more risks of a certain sort than you want. But how much risk each of us wants in our lives is relatively constant. It declines slightly with age but it's relatively constant and we organise our lives to optimise. We don't want too much risk and we don't want too little risk.

One of the nice examples of the law of conservation of risk is when you work on a highway to make it safer, people drive faster on it. And they drive faster on it until the number of accidents is almost exactly what it was before you repaired it. It's extremely difficult to make highways safer. You usually just make them faster. Because you get on that road and you're going to drive as fast as you think is safe. If it's a better road, you'll drive faster. You're not keeping your speed constant, you're keeping your risk constant.

Well, given that that's true, then lets look at people who work on offshore oil drilling platforms. They're pretty risk tolerant. They like a fair amount of risk in their lives. And you really can't have a roughneck who doesn't like a fair amount of risk in his life. Management may introduce various risk control measures or procedural changes that make the job safer. But if it feels safer then the people are going to do exactly what we as drivers. They're going to find some way to alter their behaviour on that drill rig to get the risk back up to where they like it.

[The company is]...claiming that safety is a goal whereas actually safety is a means. It has no credibility and employees are blowing off the safety rules.

One implication of this is you can recruit for the level of risk tolerance you want. That's fairly easy to measure. You can decide not to hire people who want more risk than you want them to want. But here's another, absolutely fascinating, implication. If you want to make the job safer in ways that work, you have to make it invisibly safer. It has to feel sufficiently dangerous that employees don't make it more dangerous in order to get the risk level back up where they like it. So you really can begin to look at safety improvements and assess them by whether they change the way the job feels or they don't. And the ones that don't work much better.

SAW: Earlier you mentioned Dupont Stop and other behavioural based systems. How does this fit with that dominant perception and a lot of activity being spent in that area? Is this a subset of that or is this something that can redefine the existing behavioural based systems?

PS: Most behaviour-based systems, like STOP, are grounded in issues of attention and unintended failure to adhere to the rules. And I'm focussing on intended failure to adhere to the rules. I'm focussing on motivated inattention. It would certainly be possible to have behaviour based programmes that address not only accidental but also intentional failure to adhere to the rules. Some of them do, at least in passing, but others don't.

I wanted to mop up one detail of this business of making the job safer in ways that don't make it feel safer. One of the corollaries of what I'm suggesting is if you want your employees to work safer and they're people with a fairly high level of optimum risk in their lives, one of the things you can do is expose them to off-the-job risks that feel riskier than they really are. I don't know of any company that has done this, but I would bet that if you take your people bungee jumping on the weekend they'll be a whole lot more willing to wear their hard hats during the week.

SAW: Well the companies that I've seen go for those extreme sport exercises usually do it for team building and there's no relation of the safety element of the extreme sport back into their work place. They don't do it for safety reasons, they don't do it for safety motivation. They do it for team building. Is that your experience?

PS: I think that's right. I don't know of any study that's looked at this relationship. But the general principle that people want the level of risk in their lives they want is real. The general principles that they're not titrating for actual risk, they're titrating for perceived risk is accurate. And it would follow from that that if you fill their risk budget with high-perceived-risk low-actual-risk experience then once the budget is filled they become cautious because they've got enough risk in their life. I haven't seen it done, but I would love to see that studied. My intuition is give people

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recreational activities that feel dangerous and they'll be much more tolerant of caution on the job.

SAW: There are many of our safety organisations that stress the lack of safety culture or the need for all companies to build a safety culture. The assumption, I think, is that the existing culture in the work place is void of a safety element. What you're saying though, is that they may actually be trying to build a safe culture from what is an actively unsafe culture.

PS: That's exactly right. I think every corporation and every organisation has a cultural norm about safety, in fact, a system of complex cultural norms about safety. They're there and they're real and they're only changed if you change them intentionally. You're starting in the wrong place if you start with the assumption that there's nothing there.

SAW: So what we've got is that the goal of many safety organisations and practitioners, to achieve a safety culture, is fundamentally flawed because it's operating from a wrong base. How does this link in with the glib phrases of best practice, zero tolerance, and all of that sort of stuff? Are all of those really based on fallacy or is there some germ of truth that we can actually build from?

PS: I think all of them have germs of truth. I don't think we have to throw out everything we've been doing to try to improve safety. I just think we have to build it into a more coherent system.

You take a notion like zero tolerance. I do a lot of my work in the environmental arena where, for years, clients have said to me, you can't have zero emissions, that's absurd. I'd answer, you're aiming for zero accidents, what's wrong for aiming for zero emissions?. And they'd pause and say oh, yeah, that's right. I think there really is an understanding on management's part that zero accidents is a goal. It isn't necessarily achievable, but you get closer when you articulate that goal than when you fail to articulate that goal.

SAW: But by articulating the goal and acknowledging at a management level that it's going to be an unachievable goal, doesn't that tie back to the workers with their bullshit detector?

PS: Only if you're pretending to the workers that it's achievable.

SAW: So everybody should accept that as the goal can never be attained the intention is to get as close to it as possible.

PS: Yeah, and that's not a technically ill-informed concept. The concept of the asymptote is one familiar to technical people. You can think of zero as an asymptote that by definition you never reach. I mean, even if you reach it in one year, that doesn't mean you've reached it forever. Shit happens. But less shit happens if you consider the shit intolerable than if you consider it inevitable.

I haven't by any means covered the whole first half of the equation. I have a list that I use with clients with 16 reasons why employees ignore safety. We've talked about 3 or 4 of them. We've talked about I'm not scared, we've talked about I'm terrified, we've talked about management sending a double message. Those are three of the 16. But I want to turn to the other half of the picture, which I think is absolutely fascinating. By and large safety consultants, whether they are in-house or on the outside, tend to make the assump–tion that management is entirely rational about safety. They don't usually make the mistake of imagining management will care very much about safety for own sake. Everybody understands that if you're going to go to the Board, or if you're going to go to the managing director to sell a safety innovation, you're going to need to sell it in financial terms, not just in accident outcome terms. But they think that, at least in financial terms, management is rational about safety. That's just as false as the parallel assumption that employees are rational about safety. A number of things are going

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PHOTOGRAPH: *A wounded woman wipes blood from her face near the site of a petrochemicals factory after an explosion in Toulouse, September 21, 2001 killed at least 12 people and injured over 180. Ministry of Interior sourced ruled out a criminal attack and said that the huge explosion was due to human error. © REUTERS 2001.*

on that, it seems to me, lead management systematically to reject safety innovations that pay for themselves. I want to identify some of those. There are at least 16 of those too, though I haven't reified them into a list yet. But some of them are very obvious.

One that I think is enormously important is guilt. If I can convince you that there's a cost-effective way of preventing a particular kind of accident, then you are accountable for not having done it in years past.

...managers need to be worried about outside terrorists but they need to be much more worried about disaffected employees.

SAW: Doing something about an issue now is an acknowledgement of inactivity on that issue previously.

PS: That's right, and of culpability for that inactivity. For some managers that may actually take a legal tinge. People may be afraid that if they solve a problem the victims prior to it being solved will see a lawsuit feasible. Sometimes that probably happens, but I'm thinking much more psychogenically. Sometimes that probably happens, but the real problem is more psychological than legal. Suppose I'm an employer walking around thinking it's really too bad this is happening to my employees, but there's nothing to be done about it. And in walks a safety guy who says here's an innovation that will reduce that kind of accident by 80% and it will pay for itself in two years. If I believe him then all those prior accidents are my stupidity and my fault and my guilt. I think that's real.

A second piece of the puzzle is that safety has extremely low status. When you look at the comparison, for example, of safety with environment and health, safety is by far the lowest stature of the three. The safety people have less education, they have lower salaries, they are less likely to be promoted out of the safety niche. There's a sense that safety people are working class people who wrap duct tape around handles. They're very concrete. They don't have any real theories. They do very important, but very simple low-level stuff. I'm not asserting that that's true. I'm asserting that that is the image of the field.

SAW: I certainly see that myself, where people say, well safety is just common sense. If you've got common sense you can be a safety person. And that's not the case.

PS: Everybody realises that to figure out whether dimethylmeatloaf is going to cause global warming requires expertise; they don't figure you need expertise to keep the ladder from slipping. The result is when you go to a CEO or a managing director or a plant manager, or any manager other than the safety manager and talk about safety, you're threatening his stature. You're talking about something that that executive likes to think he or she is above. The reaction is, 'I went to business school, I do deals. I don't wrap duct tape around handles of things.' And That's part of what's going on when managers tell you to get lost when you're trying to sell a safety innovation.

SAW: There are big moves in the UK, Ireland and Australia on the issue of industrial manslaughter. Suddenly through legislation and legal moves occupational safety has become something that they're now held directly accountable for and they feel affronted by that.

PS: Yes. And part of that is, why wasn't I warned? How dare you hold me accountable for something I've never paid any attention to. But part of it is, I don't want to be that kind of person. That's low-stature work. I don't mind it happening in my company but I don't want it to take my time.

Another piece of this, and a piece that I think is, for very obvious reasons, ignored, is management hostility to employees. I can't tell you how often managers have said to me, 'Well, you know, they're from a different culture where life is cheaper'. Or 'We train them and train them and train them and they just don't pay attention'. One way or another managers will put out pretty straightforward cues that say employees deserve their accidents.

SAW: Earlier when you were talking about inattention, at first, I remembered that often inattention used to be termed carelessness. I think that's the point you're saying here is that the perception is those people operate unsafely. They're careless, its their problem.

PS: It's their problem and it's their fault. "There's nothing that can be done about it, it's just the type of people they are." Or, 'The turnover is so high, just when we get them trained safely they leave and we get some other jerk in.'

There's a well-established correlation between accident rate and morale. That could be a function of management hostility to employees because when management is hostile to employees, management takes safety less seriously. But also when management is hostile to employees, the workplace is therefore a stressful, unpleasant and angry place, so employees pay less attention to safety. On both halves of the continuum you get a reinforcing cycle where bad management/labour relations lead to bad safety practices.

SAW: It is clear that to achieve anything human resources needs to talk with safety. In your experience does the split between the disciplines remain?

PS: I think that the split is as much there as it ever was. I think that you have to get to a high level of management before you find someone responsible for both. And of course, the disciplines are both low stature. The ER person and the safety person both have a chip on their shoulders because they represent corners of the business that senior management doesn't much respect. When they are in conflict about something or not liaising properly neither is in a good position to go to senior management.

This conflict is very relevant to the sabotage/terrorism issue. I would bet anything that the vast majority of industrial sabotage continues to be employee sabotage. There's a netherworld that is halfway between terrorism and employee sabotage where you have an employee

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who may be sympathetic to a fundamentalist Muslim cause, or to any cause, but he's not part of a terrorist cell, he's on his own and he's really pissed off at his boss. If I were to prognosticate what kind of sabotage a chemical plant or refinery or nuclear power plant could, managers need to be worried about outside terrorists but they need to be much more worried about disaffected employees.

When you start to talk about terrorism on the part of an employee who's angry at management, added to economic recession and an increased round of layoffs, there is trouble. What have we done in the last 10 years? We have trained people to avoid accidents. But training people in how not to have accidents is necessarily training people in how to do sabotage. We tell them not to do x, y and z at the same time or the plant will blow up. X, y and z at the same time—okay. And then we lay them off or we lay off everybody else and they have twice as much work, or they worry about being laid off and the quality of the job is going down. The level of trust between management and employee is going down and there's a culture of terrorism in the air. You have an angry employee who's been taught how to blow up the plant: x, y and z. That's one of the areas where human relations and safety coincide.

If you were to look at an employee relations initiative and cost it out not just in the traditional morale sense but also in the safety sense, it might pay for itself a whole lot better.

SAW: We have to wrap this up. Is there something we have missed in the concepts that we have discussed today?

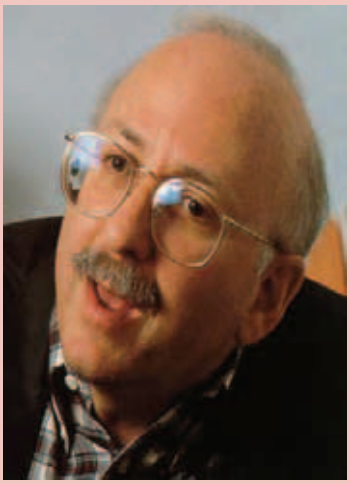
PS: Let me mention a key difference between safety and environmental protection. There is virtually no activism activism on safety, at least not in the U.S. There's no safety equivalent of Greenpeace. Other than unions, and not really much even there, no organisations in the society have the clout and the passion to go to the barricades over safety.

We've got dozens of international Green groups, hundreds of national Green groups but I don't know any safety groups.

SAW: There are some moves on safety communities from the grassroots.

PS: Yes but that's very little. Managers have a much easier time justifying innovation to themselves and to their Board if they are under pressure than if they're not. If you start listing reasons why even a cost-effective safety initiative might get shuffled to the bottom of the pile in the mind of a managing director, the absence of external pressure is one of the elements.

about the author



Creator of the "Hazard + Outrage" formula for risk communication, **Peter M. Sandman** is the preeminent risk communication speaker and consultant in the United States today, and has also worked extensively in Europe, Australia, and elsewhere. His unique and effective approach to managing risk controversies has made him much in demand for other sorts of reputation management as well.

Dr. Sandman has helped his clients through a wide range of public controversies that threatened corporate or government reputation—from oil spills to labor-management battles; from E. coli contamination to the siting of hazardous waste facilities. He also works on the "other side" of risk issues, helping activists arouse concern about serious hazards, for example, and helping companies persuade employees to take safety rules seriously. Whatever their perspective, his clients and seminar participants learn the dynamics of "outrage": how to reduce it, how to prevent it, how to provoke it.

A Rutgers University professor since 1977, Dr. Sandman founded the Environmental Communication Research Program (ECRP) at Rutgers in 1986, and was its Director until 1992. During that time, ECRP published over 80 articles and books on various aspects of risk communication. Now a full-time consultant, Dr. Sandman retains his academic affiliations as Professor of Human Ecology at Rutgers and as Professor of Environmental and Community Medicine at the Robert Wood Johnson Medical School. He received his Ph.D in Communication from Stanford University in 1971.

"The normal state of humankind vis-à-vis risk is apathy," Dr. Sandman argues. "Whenever people are overly concerned about a risk, there has to be a reason—and by far the most common reason is outrage. I spend some of my time helping activists mobilize outrage about serious risks ... and the rest of it helping industry and government reduce the outrage about not-so-serious risks." Dr. Sandman's sense of humor, his sense of realism, and his ability to help people understand all sides of risk controversies make him much in demand for both jobs.

More articles by Peter Sandman can be found at http://www.psandman.com