

“Comment on Mitigation Strategies”

PHILIPPA GANDER, PH.D.

Massey University, New Zealand



June 19, 2008: Discussion Groups Session

Good morning, and thank you for still being awake to those of you who are. One of the things about sitting up here is, you can see who had a good night last night.

I have been asked to look at the themes that have come out around mitigation strategies, mitigation strategies at the organizational and the individual level. And I guess I've been really impressed by the wealth of detailed ideas that have come forth in the presentations, and also in the working group that I was in.

It's certainly not possible in the five minutes, stretched a little bit, that I have been allowed, to reflect on all of those. So I'm just going to talk about the main recurrent themes I think that have come through in these mitigation strategies.

I think the first thing that is quite clear is that they have to be framed within the context of a just culture, that everybody is fully in agreement that this can only work where there is an acceptance of shared responsibility, and where there is a non-punitive culture around managing fatigue.

So a lot of the ideas that have been put forward are very valuable, but they can only work when there is an environment of trust by all parties, amongst all parties.

And I think there has been quite a lot of recognition implicit, not very explicit, that quite a few of the organizations represented do not have what people here would consider to be a sufficiently just culture, or a sufficient level of trust at this point in time.

And one of the things that some of us who have worked in the fatigue risk management implementation field have found is that, in fact, this can be a platform for improving or developing a just culture. Because it's one of those areas where the scientific issues are common to all human beings. There is a central neutral ground in this area, and that can be used to try to bring a rapprochement, to move this whole area out of industrial relations and into safety. There is a scientific middle ground, and I think we shouldn't lose track of the fact that everybody has a stake in this.

I think we need to also be aware, and that was very nicely illustrated in the different presentations today, that the mitigation strategies will have to be tailored to the particular issues in the organization, and the particular issues in the jobs that different people in the organization are doing, and that they are going to have to be tailored by and for individuals because of their different needs.

*AVIATION FATIGUE MANAGEMENT SYMPOSIUM:
PARTNERSHIPS FOR SOLUTIONS*

And I think we have also got to add the realism which Mary in particular talked about, that we have to find a balance between economical operational needs and good fatigue management practices, and we can't propose the impossible, so we do have to keep that balance in mind. And another dimension that was mentioned, which I think we also need to keep in mind, is that the mitigation strategies we want to talk about need to be operationally practical, but they also need to be socially acceptable, and that is again implying that there is going to have to be negotiation, and there is going to have to be multi-party discussion about the use and development of strategies.

So what are the common strategies that people have talked about here today? Well, the first one which I think should be first is education: education about the causes of fatigue, about the consequences, about assessing the risk of fatigue and your particular organizational part in it, from top level management right through the whole organization.

In fact, just as an anecdote we did a fatigue risk management implementation exercise with BP some years back, and it really took off when we started educating the senior managers about the risks of driving sleepy. That was when suddenly everybody realized that it was an issue, that it is an "everybody" issue. But there is a real need to get buy-in at top level.

We talked quite loosely about education, and there were some aspects I think that were brought up today that need to be kept in mind. One is the consistency of information that people are being given. And one suggestion was that this should be good advisory circular material.

Another possibility of course is to have some kind of accredited training, some kind of standards for training. Another issue that was raised today is that we are talking about behavior and cultural shifts, and you don't get that with

one-off training. You need to be thinking about recurrent training and creative ways of doing that.

One suggestion that was given was to debrief incidents and events that have happened within the organization as a way of doing recurrent training.

I think we could raise the question of whether this should be competency based training and possibly different levels of training or different types of training for people with different roles in the organization; those are all things to be considered.

There was talk about the need for a company fatigue management policy, and clearly this is a vital part of setting structures in place for fatigue risk management to work.

There has to be top level commitment; that was a theme that people came back to. And there have to be mechanisms for feedback of information for monitoring and feedback of information, about the fatigue status of the organization as it is going along. That involves, of course, a collection of data, and raises the issues about how the data are handled, how the issues of privacy and confidentiality are handled.

There were calls for policies that focused on restorative sleep scheduling, and I think that that is entirely consistent with the science that we have been talking about.

There were some specific policies that people raised repeatedly. One is about the consequences of calling in too fatigued to work. Those sorts of things I think need to be explicit in the fatigue risk management policy.

And the need for a steering group, presumably a tripartite steering group that would be overseeing the actual implementation of the policy.

*AVIATION FATIGUE MANAGEMENT SYMPOSIUM:
PARTNERSHIPS FOR SOLUTIONS*

And one suggestion which I thought was quite novel was to include in that a professional code of conduct. And I think I can see a lot of value of that particularly in an area like this where we are talking about a shared responsibility.

1. Just as a note, people have done other exercises on what should be in a fatigue risk management policy, and the document from the Flight Safety Foundation ULR workshops has a list of ideas, many of which were mentioned here today, and some others that were not (Flight Safety Digest 26, 2005).

The next common mitigation strategy that everyone has concerns about is scheduling. We are looking for fatigue friendly scheduling, we are looking for scheduling that focuses on providing restorative rest; and one of the specific suggestions was the idea of bolting on some of the fatigue models to your rostering software, so that you are actually assessing the likely fatigue associated with the particular schedules or bid lines that they are developing.

And I know that Air New Zealand is working on doing this.

I think that there were several comments about the fact that the scheduling is actually designed by marketing, and maybe one of the recommendations is to have better communication between marketing and ops, and possibly to have somebody from marketing involved on the fatigue management committee, so that those issues are communicated to all parts of the organization.

I think one of the big challenges which came up today, and which I don't think any of us had solutions for, so it's not really a mitigation strategy that we have, but it's one that we would like, is how to deal with the issue of unpredictable events of different kinds of work, being on call, or weather delays for example. But the issue of unpredictability, I think, is a

major issue for all the different types of organizations that were discussed earlier.

One of the ways of visualizing this is that you have both strategic and tactical fatigue management. But I'm a little bit concerned that with the level of disruption to schedules and delays, the planning side of things sometimes becomes fairly irrelevant, and it's all left down to tactical fatigue management. And I think we need to think very hard about better ways of managing in each of the different environments, the challenges that come about from either unpredictable or unplanned things, and things like being on call and how long you are on call before you have to be stood down even if you haven't worked; and those kinds of issues.

There were a range of other types of mitigation strategies that were discussed, and I think we can't ever leave staffing levels out of the equation in fatigue risk management. The only specific strategy that was offered was the use, potentially, of part-time employees. But I think that that is an integral part, obviously, of fatigue risk management, and can't be overlooked.

There was some talk about new technologies that might be available, potentially in the cockpit environment, and in other environments, to help recognize fatigue, and to help people manage themselves when they are fatigued. My own view of this is that it is a valuable potential strategy, but it is the ambulance at the bottom of the cliff. I don't want to know that the pilot has just fallen asleep; I'd rather it hadn't gotten to that point. But there is a place for them in certain situations I think.

There was a lot of talk about the availability of napping as a strategy. There is plenty of evidence that it's an effective strategy. There seems to be sentiment that controlled cockpit rest be allowed. However, again, we must recognize that this is a coping strategy, not a planning strategy. It's not the idea that if people can sleep

*AVIATION FATIGUE MANAGEMENT SYMPOSIUM:
PARTNERSHIPS FOR SOLUTIONS*

at work, then they should be allowed to work longer. It's designed as a strategy for coping with a situation where you are fatigued. It's not a way of extending what you can get out of people.

Napping and ATC was mentioned. There is quite a lot of data on napping in ATC as well, and the availability of napping in ATC. So I think that there is a consensus here that napping is a valuable strategy that we should find ways of making accessible to people.

In addition, in situations where people nap, it is important to have suitable napping facilities or environments where people can have a sleep.

That brings us to another recurrent theme related to hotels, specifically, is the need within the fatigue management policy, a policy that specifies the standards required of layover hotels which facilitate people getting decent sleep.

There is quite a lot of talk, and I think quite a lot of difference of opinion, about the use of sleep aids and stimulants as mitigation strategies. My own view is that I would put it in the same category as napping, that this should be thought of as a coping strategy, not a planning strategy. We have seen examples in the trucking industry in Australia where when you get your pay package, you also get your uppers and your downers for the next week. And we have actually seen fatigue crashes where the driver attributed it to having taken a stimulant at the wrong point in the schedule.

So my own view is that that is not a way of running routine operations, but there probably is a place for the use of stimulants, and for sleep aids under specific and controlled situations.

I think there were a lot of calls for data and science in terms of providing mitigation strategies, and certainly some of these are there. There has been a call to improve the transfer of scientific information into operationally usable

information and into tools, and I think that is an ongoing challenge.

There is a general call to develop biomathematical models in the aviation environment if they are going to be used as mitigation strategies, and I would applaud that.

There is a call for standardizing and sharing data where that is possible between different organizations. And again I think that is a worthwhile thing to think about. But we have to sort out the issues of confidentiality, and be very clear about what we are using the data for.

There was a suggestion to run a pilot study to look at the interaction between workload and fatigue in traffic control. My own view is that this is one of the areas where our current modeling is deficient, that we do not adequately take account of the interaction between workload and the other factors, and the type of work, and the kinds of performance consequences and what the impact of that is likely to be.

The only study I know of that has done it systematically is actually some work that Mick Spencer did with QinetiQ in the validation of the SCRATCOH report, the validation of the UK ATC regulations. So if anybody is interested in looking at that, they did a very elegant job of parceling out the effects of workload, time on task, time of day, and sleep on fatigue in air traffic control.

But I guess as a scientist, and as a scientist who Charley Billings many years ago diverted from being a bench scientist to being somebody who tried to grapple with problems in the real world, I guess I have to be humble at this point and say, please don't expect that science will have all the answers. Because there will never be enough science to answer all the detailed questions that you will need to have answered in an operation. And we have to go about this fatigue risk

*AVIATION FATIGUE MANAGEMENT SYMPOSIUM:
PARTNERSHIPS FOR SOLUTIONS*

management exercise, in my view, as a collaboration.

Your operational knowledge, your business knowledge, is actually just as relevant, and must be taken into the picture, because science will never have all the answers.

And so with that I will pass over now to Martin who is going to talk about some of the regulatory mitigation strategies that have been raised that will enable implementation of the organizational and individual strategies that I have talked about.

A copy of Dr. Philippa Gander's biographical information is provided in Appendix C.