No fire without smoke

Ian Hendra ponders ...

An email arrived in my inbox the other day from a safety guy denigrating at length the advice of the NZ Fire Service regarding ionisation-type smoke alarms and their willingness to issue them to people. The email included a report that an elderly lady had died in a house fire caused by an electrical fault in a 28-year-old fridge.

The author of the email was seeking support for his view that the poor soul died because the ionisation type smoke alarm failed to alert her, and therefore the NZ Fire Service was to blame because a photo-electric type smoke alarm would have worked better (and they darn well know it). Yet the email made no mention of the lack of maintenance that converted a benign item of white-ware into an incendiary bomb, nor did it mention the lady's capability to hear any kind of alarm, let alone the reputedly less sensitive ionisation type.

Clearly the email's author perceived that getting offside with the Fire Service was the way to go as a method of engaging them in meaningful discussions about improving their advice. It was crystal clear to me that this author's eye had lost sight of the ball – completely. Obviously, notwithstanding the tragedy here, and with the curse of hindsight, fixing the fridge would have been a better use of the fire prevention service's time.

Not uncommon, but there's a better way

This safety guy's approach to incidents is not uncommon, of course. The NZ Police resort to blame as their safety methodology in their approach to road traffic accident investigations (lock up the driver, ignore the local authority responsible for designing the road, do nothing about the stupid regulatory system that requires more attention to be paid to the speedometer than to collision avoidance). On the other hand, best practice in organisations that understand what enhancing operational and workplace safety is really about avoids the blame trap.

I've alluded to the work of Prof. James Reason and Just Culture before, but I reckon that the whole thing starts with how you go about investigating the incident in the first place. If you restrict yourself to "who caused this?" you deny yourself the opportunity to deal with what systemic shortcomings actually contributed to it. Examples of the better way are the Swedish government's Vision Zero campaign for road safety, and oil companies' zero accidents programmes (visit the links listed below).

Prof. Sydney Dekker

Sydney Dekker is Professor of Human Factors and Flight Safety and Director of Research at the School of Aviation, Lund University in Sweden. In his excellent book, 'The Field Guide to Understanding Human Error', he identifies three investigation models. There is the sequence-of-events model that has evolved into the epidemiological model, and which is currently evolving into the systemic model. In doing this he effectively identifies why flying is the safest form of travel.

The first model tends towards the 'they should have known better' method that blames individuals involved in the incident or their managers, of course. The second model, on the other hand, based on James Reason's work and much more valid, seeks 'pathogens', latent conditions that align to allow incidents to occur. He points out, however, that it's very difficult to find these pathogens in advance of an incident occurring, and it's hard too, to pinpoint them accurately in subsequent investigations.

At the point of flashover all the material in a room ignites.
Photo courtesy of New Zealand Fire Service.

A familiar tune ...

The third model, however, the systemic model, concludes that incidents arise from systemic factors that produce variation in outputs some of which are likely to be dangerous. This, of course, is more or less what we as QA professionals have been taught and have understood for a long time about the nature of variation and nonconformity in process control.

Dekker concludes that systems allow more accidents than people do, and systems are as frail as the people in them, from the most senior manager to the most junior operator. His contribution is that he applies this to safety management directly by observing that nobody comes to work deliberately to do their work badly according to what they believe was right at the time; and the operative word here, is 'believe'.

What's familiar to us as QA people is that this was Deming's message. So it's true; safety really is a subset of quality. Hence if you examine the variation in performance of a system or process with safety implications, you have the opportunity to measure the precursors that will enable you to predict and thereby avoid an accident – just as you can for a production process whose output varies between statistically valid control limits (of behaviour).

And Deming's seven quality control tools are how it's done.

Oh yes, I wouldn't question that the safety guy's evidence points to the superiority of photo-electric smoke detectors, or his view that ionisation types "ought not to be allowed" as Mr Grouser of Toytown fame would have said – it's just that it seems more prudent to dampen flashpoints rather than wait for the conflagration.

Just as with nonconformity in quality systems, accidents happen only when safety systems fail.

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Employer of Choice

How does being an employer of choice translate into action? *Malcolm Macpherson*, Mayor of Central Otago District, member of the Otago DHB and Council of the Polytechnic of Otago, and a principal of Brilliant New Zealand Ltd explains:

Malcolm 'on the roof' in York, UK!

A few months ago, I found myself advocating for a new approach to human resource management in an organisation where that subject has long frustrated me.

The discussion devolved to some thinking about what this oganisation would look like if it were an employer of choice. "If we were the sort of organisation that prospective employees lined up to work for, if people chose us first when looking for a job, how would we be different?" we asked ourselves.

Underlying this question was the knowledge that retention is by far the cheapest form of recruitment – it costs much less to hang on to who you have, than it does to find, re-locate, induct and train replacements.

Challenged to turn this idea into something concrete, or at least to put some words around what it might mean, I produced the following:

Employer of Choice is a great mission statement, because it doesn't need elaboration. It's an authentic mission, not a made-up one, and 'authenticity' is one of the new buzz words in the business excellence and strategy literature.

So if that's the mission, how does it translate into action?

First, understand the animal. Considering how much of a people business we are, we know remarkably little about our people. Effective organisational change always begins with data. So, if we're to begin from first principles, there's the first, first principle!

How we fill that gap deserves some thought. The obvious (a survey) may not be the best approach, but however we do it, that gap needs to be filled.

Second, nothing will happen by mistake: there has to be a process. Carrying on as we are while expecting a different outcome is a definition of …

Third, exemplars are important (who does this well, where else is being *Employer of Choice* mission-critical?). The principle here is 'think process, not business'. Often, the best are to be found in other sectors, other places, or other countries ... but not always. In the search for authenticity we might well begin close to home, and first resolve our own 'thousand unaligned projects'.

Fourth, this is not something else to add to an already full plate. If being *Employer of Choice* is key to business success then it's already on the plate. It may just be a new label for stuff that's already there, it may push other stuff off, or the plate may have to be made bigger. This is a topic worth exploring, because it's the first barrier that we always have to surmount: 'Don't give me more, I'm too busy already.'

First step? Consolidate the mission – "Is this something we need to do?". Second, populate the team; third, set out a strategy, and cascade that down to individual action points. Decide by when, and decide how we'll know.

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References: Dekker, Sydney, 2006, *The Field Guide to Human Error*, Ashgate (ISBN 978-0-7546-4826-0 PBK).

Walton, Mary, 1986, *The Deming Management Method*, Dodd, Mead & Co, (ISBN 0-396-08895-3 PBK).

Weblinks: **http://www.monash.edu.au/muarc/reports/papers/visionzero.html and http://www.cdc.gov/elcosh/docs/d0500/d000518/d000518.html**

A full scale house burn demonstrates the effect of home sprinklers. Two identically-furnished rooms were set up with a small fire in a wastepaper basket. This room pictured just before the sprinkler operated.

In the sprinklered room we end up with a wet room. The fire did not take hold, and the room was usable after mopping up with water.

In the unsprinklered room the fire progresses to flashover, and main structural timbers have been destroyed, and the building demolished. *Photographs courtesy of New Zealand Fire Service.*

iQ Answers

Rebus: ***Col 1:*** count dracula, low frequency, anyone for tennis, music to one's ears. ***Col 2:*** glance back, no u turn, laid back, long underwear, suspended animation.

Word game: genuflect

Short Quiz: Edsel, Andre Agassi, Kirk Douglas, Newspaper/Mirror, Omar Khayyam, Tunisia, Empty, Titanium, Hungary.

Mind Bending Puzzle: The message reads: Guns and bombs are useless. We're taking over.

Match stick