

IN THE NEWS

Where have all the flowers gone?



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As I write this article registration is in progress for the 2020 IFEAT [virtual] conference. The biggest story in the World is COVID-19: some counties are going into lock-down, some are coming out of lock-down and some are re-entering lock-down. It will be a few years before a dispassionate forensic analysis of the present situation will emerge. I will comment with only two generalisations here: it is not unprecedented and it was not unpredictable. The airwaves and TV on-demand channels have been replete with documentaries on The Black Death, Spanish Flu [which originated from the USA], SARS etc. The scientific press was awash with warnings; largely unheeded by politicians around the world [does global warming also come to mind?].

It was my Birthday in May and I was planning a party at my favourite Italian restaurant. This of course did not happen! However, I used the money to buy a new hi-fi system and used lockdown time to sort out some of my CDs. As I was listening to the latest news reports on the ammonium nitrate explosion I came across an old Springfield CD [the folk group that was part of Dusty Springfield's early career] with a 1950s legionary protest song.

Where have all the flowers gone, long time passing

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*Oh, when will they ever learn,
oh when will they ever learn*
Pete Seeger [1955]



Top: Spanish Flu 1918-19. US school gymnasium converted into a flu ward

Left: White mineral fertiliser, ammonium nitrate

There have been numerous ammonium nitrate explosions in this century alone, let alone in the 20th Century.

- Toulouse, France, 2001
- Ryongchon, North Korea, 2004
- Tianjin, China, 2015
- Beirut, Lebanon, 2020
- Next one – *Oh when will they ever learn?*

I return to a past theme in this column about the excellent work done by the whole industry to ensure people may enjoy our industries' products with confidence. ICATS is deeply grateful to Penny Williams who has rewritten the ICATS module *Regulation*. Academic authors will be suitably impressed by the great skill with which she has made a dense and impenetrable topic comprehensible

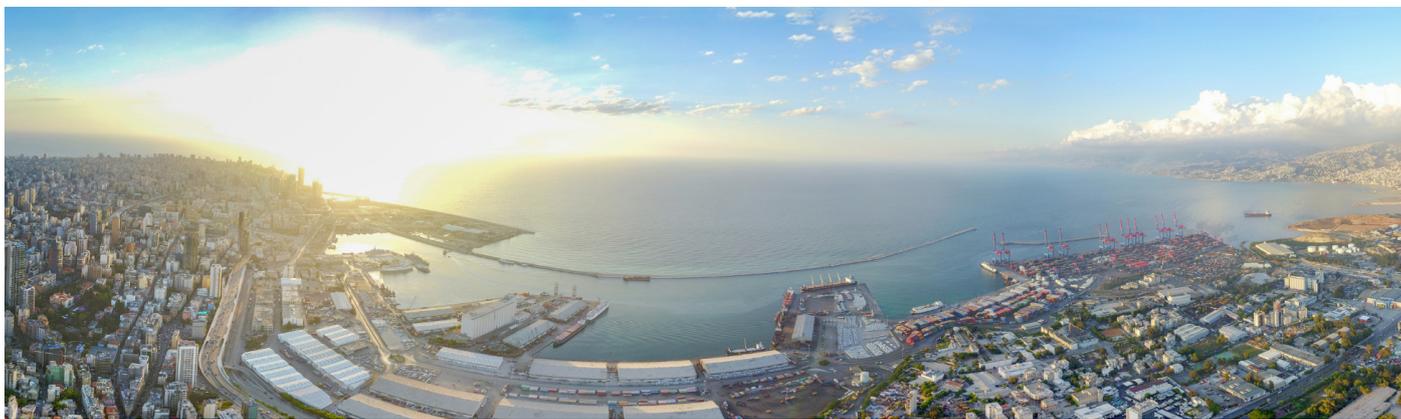
to non-specialists. The current IFRA Guidelines are evidence of the proactive and transparent approach of the industry.

I have spent 20 years teaching MBA. I was also asked to teach Management Studies to final year M.Eng students as I had a PhD in a Physical Science subject and might have better rapport with them than a Lecturer with no Science or Engineering background. The syllabus was rubbish, it was written as a dilution of a normal business course with lots of emphasis on balance sheets [accountants look after these] and nothing on the Management of Safety [a crucial aspect of the role of all professional Engineers]. I was fortunate that I had an understanding External Examiner and we adjusted

the syllabus a bit to make it more meaningful to an Engineering career. I was also very lucky that I could draw upon a superb short publication from the Engineering Council '*Guidelines on Risk Issues*'.

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Penny Williams, author of the revised ICATS module on regulatory matters, is featured on pages 8-9 of this edition.



Lebanon port before the August 2020 explosion

One of the interesting features of this publication is that the words 'safe' and 'safety' do not appear in the glossary and appear in the index as 'See Health & Safety'. Back to 'Oh when will they ever learn', there is no such thing as safe. The title of the publication gives the clue – not 'Management of Safety' but 'Guide Lines on Risk Issues' [i.e. the management of risk]. As soon as you hear a person (often a politician) 'We [some course of action]...ensure...totally safe', you know they are making a false statement [it is impolite to call them liars and we will ascribe this to simple ignorance]. As I am typing this there is a thunderstorm in Plymouth, I remember to lookup Table 3 'Levels of Fatal Risk in the UK (average, approximate figures':

1 in 10,000

General risk of death in a road traffic accident

1 in 10,000,000

Risk of death by lightning.

All the people concerned with regulatory issues in our industry know there is no such 'This is totally safe'. There is only acceptable level of risk. Often people within the population at large want simple answers to complex questions. Difficult as it is, it is incumbent on all professionals to engage with public education as appropriate behaviours [observance of social distancing!?] depend on individuals accepting their own responsibility and behaving in an accountable fashion. This is not just an issue of regulation but also of recognition by every individual of their social duty.

In 2018 the architecturally innovative and outstanding road bridge in Genoa failed. What was not fully understood, at the time of design and construction, was that the ground breaking approach was vulnerable to corrosion. When the unexpected corrosion was noticed remedial action was slow and incomplete.

In March 2019 the innovative Boeing 737 Max was taken out of service after two fatal crashes (it took not one but two fatal accidents). In the Genoa bridge disaster a single point of failure caused a total collapse. The 737 Max uses innovative software to counteract issues derived from the use of larger [more fuel efficient] engines in the new design. It is reported that the aircraft should return to service early next year. It will have taken some two years to resolve the fatal problems. It will take even longer for the full forensic reports to appear as to how such a failure could occur in such an advanced system. However, it is reported, that a single sensor provided information to the computer. Failure of this sensor, it is reported, could cause the computer to put the aircraft into a dive. It is reported that two such sensors were on board but only one provided information to the computer. If this is true, this is yet another design with a single point of failure. Moreover, it has been reported that the training manual for the new aircraft did not fully address actions in the event of the type of failure experienced.

The Kegworth M1 (UK) Air Disaster (1989): A problem developed in the no 1 engine. There was an indicator failure showing that no 2 engine was the problem. The crew mistakenly shut down the no 2 engine, not the faulty

no. 1 engine. Among the contributory causes of the accident was that fault was 'outside their [the crew] training and experience'. Does anything sound familiar?

Why all this discussion of regulatory failures from outside our industry? We do conduct potentially hazardous operations in the manufacture of aroma materials. Ammonium nitrate is a great nitrogen fertilizer [as well as an explosive!]. It is not only synthetic aroma chemicals manufacture that may involve hazard issues. Today our industry has a good record of proactive work in the development of regulation and promoting good practice throughout the industry on a global basis. Let the last line of the 1950s protest song:

*Oh when will they ever learn,
oh when will they ever learn*

apply to other industries. The utmost professional insight and competence is needed when innovation takes an industry beyond regulation (regulation by its nature is always playing catch-up). Regulation is not some inconvenience; it is there to protect individuals, society and the environment. Regulation without compliance, transparency and audit is worthless. Our industry has a good record, let us continue to learn, not only from the past, but from other industries. This is a prelude to my persistent plea to all to read widely. One of the values of the ICATS / IFEAT Diploma Programme is not simply the provision of knowledge but providing professional development to give people these wider perspectives that are vital to continued industry success.