An Obituary

ICI’s CONTRIBUTION TO PROCESS SAFETY and why it came to an end.

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1874 Ludwig Mond and John Brunner formed Brunner Mond to make sodium carbonate and later ammonia & fertilizers in the UK.
1926 B/M joined 3 other companies to form ICI.

B/M was the lead company. Its safety and HR policies – well above the standards of the time – became ICI’s.
ICI’s 7 MAIN INNOVATIONS

1. HAZOP 1963/ 1st pub 1974

2. QRA, also known as Hazard Analysis or Hazan (copied from nuclear industry) 1968/ 1st pub 1971

1st pub 1978
BHOPAL 1984
5. Causes of Accidents. Don’t blame the last person who could have prevented the accident and look for management actions, eg, removing opportunities for accidents by better design. Practice started to change in late 1960s. 1st pub mid-1970s.
6. Improving the preparation of equipment for maintenance, 1967
1st pub 1977.

7. Systematic attempts to remember the lessons of the past, mid-1960s. 1st pub 1970.
We were not perfect. We had many accidents but we learned from them.

Why did ICI make so many more changes before other companies?
It wasn’t the greater ability of the staff.

It was the culture, including freedom from too many policy committees, the law on what is “reasonably practicable”, which made QRA possible, and ...
YES, YOU CAN DECIDE

GRAY AREA:
IF YOU ASK THE ANSWER MAY BE NO OR WAIT.

NO, YOU CAN’T DECIDE
There was a culture of querying beliefs rather than agreeing with them.
What would have happened if ICI had not existed?
All 7 changes would have happened but later as none is a complex one. In retrospect they seem almost obvious. Many people must have said, “Why didn’t we think of that?”
WHY DID ICI COME TO AN END?

The reasons are similar to those of many accidents.
1. ICI bred its own leaders. An outsider became md and then executive chairman in the 1950s. This was not considered a success. This was forgotten or considered no longer relevant and happened again.
2. Pharmaceuticals Division was spun off. ICI was then mainly bulk chemicals and its policy was to increase its production of speciality chemicals by purchase and growth. The new md/chairman had previously managed another company’s speciality chemicals division which was for sale. He borrowed the money and bought his former “toy”.

2 Contd. The plan was to sell ICI’s bulk chemical plants but they raised less money than expected and more plants had to be sold. Employees fell from 120,000 in the mid-70s to 10,000 when the remnant was sold to AkzoNobel.
It seems that no-one asked, “What will happen if we don’t get enough money from the sale of the bulk chemical plants?” or “What is the probability of this happening?”

There was no “Hazop” or “QRA”. 
ICI had published a book on commercial Risk Analysis
See quotes in paper.

After accidents HSE criticize companies who don’t follow their own standards and procedures.
What innovations would ICI be making now if it still existed?

We shall never know, but here is one suggestion.
Earlier, simpler Hazop-style studies when major changes in design are still possible.
Outside science and engineering few organisations ask “What can go wrong? and “What is the probability that it will?”
For years the UK gov. has been advising us to drive less and walk or cycle more to benefit our health and the environment. In 2008 we started to do so. You don’t have to be an Einstein to realize that if we drive less fewer cars will be sold.
Many activities would benefit by copying the methods developed in the process industries to prevent accidents.
“I finished the report on risk management and concluded that there was no risk of effective management”.
ANY QUESTIONS?
• For a copy of this PowerPoint file &/or the text file please email T.Kletz@Lboro.ac.uk.

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