

## **Diatribes 182**

### **Management – a Science?**

In a recent edition of the ABC's weekly science program *Ockham's Razor* run by Robyn Williams, we had one Ron Harper holding forth on management. Now, if you have any practical experience in industry or commerce, you are likely to have views on managers which are similar to mine which means they aren't exactly complimentary.

On the other hand, it is difficult to ignore the numerous schools of management attached to all higher institutions of learning in the present day and age. Even old-style colleges which used to pride themselves on their ability to teach classics have long ago abandoned these subjects but have fervently embraced the new subject or indeed the new discipline of Management. Worse still, they want to convince us that this is not a new religion but a branch of science. And that is what Ron Harper tried to do in his ABC talk a couple of weeks ago.

I suppose that if you or I tried to convey the rudiments of a science to a novice, you would start off by explaining what this science is meant to do. If you thought that this was the purpose of the science of management, you would apparently be totally wrong. Ron Harper doesn't tell us, either. In fact, over the years there have been lots of explanations. For Victorians, the most explicit came during the time of the Kennett government. You may remember that during this time all the old and knowledgeable council staff members were sacked and replaced by right-wing timeservers and Kennett stooges whose overblown salaries were only matched by their total ignorance and inexperience. And, yes, they were all called managers. I remember vividly how there was even a theory of "content-free" management which had it that any of the municipal so-called managers could do any of the administrative council jobs. In one case our local branch librarian, now elevated to be the "Library Manager", was given the job of administering the municipal waste management scheme. In her case this resulted, amongst other stuff-ups, in a questionnaire regarding wheelie bins being distributed to householders one week after it should have been completed and returned.

Harper explains why being a manager is such a desirable situation. After all, he says, everybody likes ordering other people about. The notion that management is merely another name for administration doesn't enter his mind. And then he tells us that the trouble is that managers get blamed for everyone's mistakes, for which he offers some examples.

I want to go into one of them on which I can talk with some authority. It is the Challenger space shuttle disaster. Harper complains that it was claimed to have been caused by managerial incompetence when "everybody knows it was caused by a technical problem". The problem referred to is the failure of O-ring seals which were to seal sections of the cylindrical casings of the massive booster rockets forming the first stage. Yes, the O-rings were made from the wrong material, but that is only a fraction of the story. When they make fuel tanks for cars, they are welded together pressed steel sections. Why would anyone ever think of making such large tanks which are subject to extreme vibration, out of separate sections? Why would you seal them with O-rings? Even for non-engineers, there seem to be a lot of questions there.

As I understand it, these problems arose over a political problem. In order to distribute the NASA bonanza between the various states of the US, it was decided (by managers, not engineers), to split the contracts between the states of the US. This meant that the boosters were made a long way from the launch site and required assembly after delivery, because they could not be transported in one piece because of their size. That's why minor sections were welded into larger assemblies which were then assembled on site with the O-rings used. These O-rings had to be made of rubber which was not affected by fuel; this is why they chose Thiokol as the O-ring material. Thiokol is a very poor material from the point of view of mechanical strength, and gets brittle at around the freezing point of water, so you have to avoid such low temperatures in service. Therefore, the O-rings were not trusted. And a second lot were fitted as a back-up behind the first set. This, I can tell from experience, doesn't work. If a gap opens up where the liquid you are sealing can leak past the seal, it will also stop the second seal from working properly. There is no rocket science in this (pardon the pun). Nevertheless, the current shuttle has gone further by fitting a third set of O-rings. This is based on the experience that when the gaps open the O-ring extrudes into the gap and seals it. Instead of fixing this problem, it was decided to accept this totally unacceptable mode of operation and it was written into the specification.

All this was well known, and there were numerous conferences at the launch date where engineers advised strongly against a launch in the early morning when the weather was freezing. However, because the launch had been delayed several times, the managers decided that the risks should be taken and that they were no longer prepared to tolerate the accumulating egg on their face. Instead they sacrificed the entire crew to expediency. In my opinion they made things worse by