

Chapter 1 Return to ISO9000:2000

A BRIEF HISTORY OF ISO 9000

WHERE DID WE GO WRONG?

During World War 2 we had a problem - bombs were going off in the factories. To solve the problem the UK's Ministry of Defence based inspectors in factories that supplied munitions. If you wanted to be a supplier, you had to write down the procedures for making your product, you had to ensure that your workers worked to these procedures by inspecting their work and finally you had to have this whole method of working inspected by a Government inspector. From this seed, a whole forest of control and inspection has grown in the name of quality.

This was a way of working which ensured that production met specifications. It was a method of control that was designed to ensure consistency of output. The inherent logic was quite straightforward and remains appealing – you control how you do the work and hence you make what you say you are going to make. These ideas solved a problem of the time – bombs stopped going off in factories (1). Whether they went off when they should, whether they were better quality bombs, was another matter. “Quality” became associated with “conformance” rather than “improvement” and “quality assurance” implied that “conformance had been assured” through inspection.

The development of quality standards reflected the desire to shift the burden of work from inspection by Government inspectors (second party inspection) to “quality assurance” guaranteed by the supplier through third party inspection. In 1959 the United States developed Mil-Q-9858a (“Quality Program Requirements”), their first quality standard for military procurement. It laid down what suppliers had to do to achieve conformance. By 1962 the NASA space programme had also developed its “quality system requirements” for suppliers.

All of this effort reflected a genuine and serious concern. Many of our new technologies were causing us unfortunate problems. In 1962, Vice Admiral Rickover of the US Navy summarised the situation (2). He spoke openly about what was happening in the nuclear industry. Things were going wrong; there had been a series of problems and as the US Naval Reactors Programme grew in scope, things were getting worse rather than better. To quote his opening remarks:

“Progress – like freedom – is desired by nearly all men, but not all understand that both come at a cost. Whenever society advances...there is a rise in the requirements man must meet to function successfully.”

In short, he was concerned that the new nuclear technology was insufficiently understood and thus there were associated risks. To quote two later passages of his speech:

“Unfortunately decisions affecting this field are sometimes made by people who have little knowledge of nuclear engineering and of science. There is a danger this will lead to errors highly damaging to the position of the United States or to the health and safety of the American people.”

“Too often management is satisfied to sit in plush offices, far removed physically and mentally from the design and manufacturing areas, relying on paper reports for information about the

status of design and production in the plant itself – the real centre of the enterprise. This lack of first-hand evaluation results in poorly designed and manufactured equipment, late delivery, or both. During the past few years, hundreds of major conventional components, such as pressure vessels and steam generators, have been procured for naval nuclear propulsion plants. Less than ten percent have been delivered on time. Thirty percent were delivered six months to a year or more later than promised. Even so, re-inspection of these components after delivery showed that over fifty percent of them had to be further re-worked in order to meet contractual specification requirements.”

These problems were not unique to the US military. In the UK, during the 1950s and 1960s, we were experiencing similar problems in all of the new industries. For example in the power industry we had failures of turbine blades and boilers. Our nuclear industry was experiencing similar problems to those in America. These were problems associated with progress. Something had to be done and quality assurance seemed, to many, to be the answer. In 1968 NATO adopted the AQAP (Allied Quality Assurance Procedures) specifications – standards for the procurement of NATO equipment. The UK Government was, naturally, a signatory.

By this time, the idea of quality assurance had spread beyond the military. In 1969 the UK's Central Electricity Generating Board and Ontario Hydro in Canada developed quality assurance standards for suppliers. Earlier, in 1966, the UK Government led the first national campaign for quality and reliability with the slogan “quality is everybody's business”. In the report of the year (3), the following observations were made:

“The vital role of large purchasers – and the beneficial ‘ripple effect’ they can stimulate among their suppliers; their influences, through vendor rating and supplier quality assurance schemes, can help greatly to raise the level of quality procedures throughout industry. Consideration, however, could well be given to a more co-ordinated system of vendor rating to avoid the multiplicity of assessments made by each customer.”

At this time, suppliers were being assessed by any and all of their customers. It was widely recognised that this was very wasteful, duplicating effort and consuming resources unnecessarily. In 1969 Colonel G W Raby chaired a committee whose task was to report on the inspection and assessment of the UK's military quality systems. His committee report reinforced the idea that suppliers should take responsibility for quality assurance and recommended that their methods should be assessed against generic standards of quality assurance. This was to open the door to third party inspection; it would lead to the establishment of assessing organisations. It would also lead to the wholesale redundancy of many Government (second party) assessors during the early 1970s. These people were to populate the new assessing and consulting organisations, which were to grow rapidly.

These first standards for quality assurance were thought of as contractually binding obligations. During the 1970s the debate moved to how best to inspect and assure. Some commentators favoured a