

QUALITY CONTROL (QC) & QUALITY ASSURANCE (QA)[©] *by Dan Pemble, McDonnell Douglas/Boeing Customer Support Rep. (retired September/2009)*

The definition of Quality Control as borrowed from a web site: Quality control, or QC, is the process that businesses use to ensure that a product or service adheres to a predefined set of quality standards or meets the requirements of customers or clients. It usually requires the business to create an environment where employees and management are always striving for perfection. This involves extensive training, creating benchmarks for measuring product or service quality and testing to check for any significant variations in quality.

The simplest definition of Quality Assurance (QA) is: a program for the systematic monitoring and evaluation of the various aspects of a project, service, or facility to ensure that standards of quality are being met.

A Quality Management System (QMS) comprises the implementation of both a QC and a QA program. When speaking of QMS's, one of the most widely recognized systems as adopted by many companies are the principles contained in ISO 9000. A Wikipedia site definition of ISO 9000 is: The ISO 9000 family is a set of five quality management systems (QMS) standards by the International Organization for Standardization (ISO) that help organizations ensure they meet customer and other stakeholder needs within statutory and regulatory requirements related to a product or service. For more details about the ISO 9000 approach, please see the following Wikipedia link: https://en.wikipedia.org/wiki/ISO_9000

In my opinion, no QMS is infallible; and why is that? Simply stated, the human element is not perfect and unfortunately may lead to errors, omissions, lack of foresight, and other occasionally-occurring shortcomings. Of course, QMS programs embody standards that to the extent possible are designed to address and overcome these vulnerabilities and eventualities.

Most recently, we have heard the CEO of Boeing refer to the Alaska Airlines door plug liberation event as being attributed to a "quality escape" wherein the bolts securing the door plug were not installed. Speaking of escapes, it totally escapes my way of thinking as to how these bolts could possibly be omitted! After all, isn't installation of the door plug an obvious 2-part procedure: 1/ Place the plug into the fuselage opening and 2/ Secure the plug in place by installing its retaining bolts. Although I am not privy to the official removal/installation procedures for the door plug, they were either non-existent, inadequate or were not followed to the letter! Since the investigation into the Alaska event has not yet been completed, further speculation related to the event is not appropriate.

As a now-retired-aviation professional, during my time in supporting airlines at various world locations, I have experienced many occasions of quality-related issues as seen on our Customers' airplanes. Some of these issues were design shortcomings and others were production issues. A small number of these issues, if gone uncorrected, could evolve into safety issues, but most issues did not necessarily have safety implications. Collectively, these issues were all classified as "quality escapes". In ALL cases that I experienced, I sent a report back to home base with a request that Service Related Discrepancy (SRD) action be initiated; this was an in-house investigation to determine the details of why, how and when the quality escape occurred and what in-house action needed to be implemented to avoid its re-occurrence in the future. My report also requested that I be advised of the investigation's outcome so I could share the details with my Customer. Many of these issues were "one-offs", but others had fleet implications that required corrective actions to be transmitted to all airline Customers via company Service Bulletins.

No matter exactly what specific QMS is embodied by Boeing or any other manufacturer, quality conscientious and the need for continuous and thorough oversight needs to be firmly imbedded into the human element; only then will "quality escapes" be minimized. A QMS can only be effective when it's guidelines are practiced religiously – without fail – every minute, every hour, every day, month, and year; unfortunately, sometimes this fact is only recognized following a serious aircraft incident or accident.

An effective QMS, QC, and QA program within a company and strict adherence to the guiding principles is indeed a key to a company's success, recognition, reputation, and surviveability!



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