

TALKING FROG

A NEWSLETTER FOR THE PROFESSIONALS WHO ASSURE QUALITY FOR US ALL
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The Lessons of the Talking Frog to be published in Book



Excitement is in the air here at DTI. After years of delivering our message that Quality Assurance is essential for good, safe business practices, the powers that be have requested that Dennis and Sol put their thoughts on paper. Expected to be released this fall, the yet untitled book, will be the source for large and small organizations alike to understand what QA is.

The brothers will continue their controversial message that implementing the principles of QA is simple. Consultants and academics, have long been the primary proponents of the mystique behind QA. While DTI says that QA is simple, we also state that it is not easy.

Putting undo stress on an organization, by inundating them with complicated SPC or other difficult analysis tools, without learning the basics first, often results in the failure of the system.

This is the premise of the book. It is a simple explanation of what QA is and what it can do for you. It is written in the style the

brothers have become famous for.

At a meeting recently held at Kennedy Space Center, Sol was quoted as saying...

“Our goal with this book is to communicate to everyone, in terms that get to the point, that in QA you have to walk before you can run. There is no need to spend lots of money recreating the wheel, and nobody can do a better job of designing a QA system for your organization than you. Who knows more about your organization than you.”

Look for announcements detailing release date this fall

EVERY MONTH IN OUR NEWSLETTER

- ◆ Tips and new innovations in the Quality Assurance Field.
- ◆ What’s happening at DTI?
- ◆ Anecdotes and more
- ◆ Answers to your questions



Before & After!

We have been asked about our beginnings. Here we are in 1973, decked out in the height of fashion



Not Much Has Changed:)
We apologize for the gray tinge to the color of our hair. It must have been a defective camera

This month's QA tip—FMEA Failure Modes & Effects Analysis

FMEA is quite old, with the oldest form being trial and error. However, learning from each failure is both costly and time consuming. As such, it is considered better to first conduct some thought experiments.

FMEA was formally introduced in the late 1940s, with military purposes, by the US Armed Forces. Later it was used for aerospace/rocket development to avoid errors in small sample sizes of costly rocket technology. An example of this is the Apollo Space program. The primary push

came during the 1960s, while developing the means to put a man on the moon and safely get him back. In the late 1970s the [Ford Motor Company](#) introduced FMEA to the automotive industry for safety and regulatory consideration after the [Pinto](#) affair. They also used it to improve production and design.

In FMEA, Failures are prioritized according to how serious their consequences are, how frequently they occur and how easily they can be detected. An FMEA

also documents current knowledge and actions about the risks of failures, for use in continuous improvement.

The purpose of the FMEA is to take actions to eliminate or reduce failures, starting with the highest-priority ones. It may be used to evaluate [risk management](#) priorities for mitigating known threat-vulnerabilities.

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"97.25% of statistics are wrong."

"Only in the US will you find people who think the moon landing was fake and wrestling is real."

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FMEA (cont'd)

Potential Failure Modes and Effects Analysis															
System _____						FMEA Revision _____									
Subsystem _____						FMEA Prepared By _____									
Part Number _____						FMEA Date _____									
Designer _____						FMEA Revision Date _____									
Item/Function	Potential Failure Modes	Failure Mode Effects	SEV	Potential Failure Causes	PF	Current Controls	DET	RPN	Actions Req'd	Owner/Target Date	Actions Taken	SEV2	PF2	DET2	RPN2

The process for conducting an FMEA is straightforward. It is developed in 3 main phases, in which appropriate actions need to be defined. But before starting with an FMEA, it is important to do some pre-work to make sure the robustness and past history are included in the analysis.

Therefore a robustness analysis can be obtained from Interface Matrices, Boundary Diagrams and Parameter Diagrams. A lot of failures are due to noise factors and shared interfaces with other parts and/or systems, because engineers tend to focus on what they control directly.

To start it is necessary to describe the system and its function. A good understanding simplifies the further analysis. This way an engineer

can see which uses of the system are desirable and which are not. It is important to consider both intentional and unintentional uses! Unintentional uses are a form of hostile environment.

Uses of FMEA

- Development of system requirements that minimize the likelihood of failures.
- Development of methods to design and test systems to ensure that the failures have been eliminated.
- Evaluation of the requirements of the customer to ensure that those do not give rise to potential failures.
- Identification of certain design characteristics that

- contribute to failures, and minimize or eliminate those effects.
- Tracking and managing potential risks in the design. This helps avoid the same failures in future projects.
- Ensuring that any failure that could occur will not injure the customer or seriously impact a system.

FMEA is one of the more sophisticated tools in the QA workshop.

While its development is time consuming, it is typically less time consuming than having to deal with failures.

DTI will be happy to assist you with a complete explanation of FMEA, and all the other methods to improve our systems.

Contact us at web-mail@dtiatlanta.com or call 1-866-870-5490

