QUALITY FUNDAMENTALS
John Tooley
Advanced Energy
World War Two
Korean Conflict
Major in USMC
Four Ways to Do Work

1. Do the right thing right
2. Do the right thing wrong
3. Do the wrong thing right
4. Do the wrong thing wrong
What’s wrong with this picture?
“Never stand in line to get your ass kicked”

Major, John J. Tooley Sr.
USMC
What’s wrong with this picture?
Close is not good enough
There are some things we will never know!

Only the dog knows for sure
3 QUALITY GREATS

W. Edwards Deming  
Joseph Juran  
Philip Crosby
Common Language
Language is key to knowledge. Knowledge is key to understanding. Understanding is key to finding a common language.
COMMON LANGUAGE
We need a common language

What do you call this detail above these cabinets?
WHAT IS QUALITY

Quality is doing agreed upon requirements and standards... that produce what the customer wants

Either you did or you did not

Not high quality, not low quality, not good quality, not bad quality
“Without a standard there is no logical basis for making a decision or taking action”
- Joseph Juran
COMMON LANGUAGE

QUALITY CONTROL

Is processes, activities, and tools that prevent variation from agreed-upon requirements and standards.

It is contractor centric and is accomplished on 100% of work that brings value to our customers.

Least expensive because it is done at the point of work (while work is being done)
COMMON LANGUAGE

QUALITY ASSURANCE

Processes that measure, monitor and provides confidence that agreed upon requirements have been fulfilled to the extent that customers’ wants, and expectations are being met.

Accomplished after all tasks, products or services have been completed.

Quality assurance is performed by someone other than the person completing the task.
COMMON LANGUAGE

First do things right and then make them efficient

EFFECTIVE WORK

Work that is able to meet our desired results

EFFICIENT WORK

Resources invested versus return on investment
What the customer wants and is willing to pay for
COMMON LANGUAGE

WASTE

Anything that consumes resources and does not add direct value to the end product
ACTION PLAN

- Understand why there is a need for a common language
- Remember the definition of quality
- Understand the difference between Quality Control and Quality Assurance
QUESTIONS
Creating the High Performance Culture
Process fails more than people.
A Quality Culture Must Be Free of Blame
Fry Day
(out)
VER 1.2
“Creating a strategic plan that is customer-focused requires that leaders become coaches and teachers, personally involved, consistent, eliminate the atmosphere of blame, and make their decisions on the best available data.”

- Juran (1988)
We must drive fear out of the workplace.

“Quality is impossible if people are afraid to tell the truth.”

W. Edwards Deming

Fourteen Obligations of Management
“To blame another for a nonconformance problem is naive at best.”

Philip Crosby
Quality Without Tears
A WORKPLACE WITH BLAME

• Drives out honesty
• Drives out improvement
• Stifles learning
• Drives out innovation
• NASA needed world class employees, we were behind in the space race.
• Can we develop a test to measure who was a world class innovator?
• The test was given to 1,600 Kindergarteners
• What percentage were world class?
World Class Innovators

Source: Breakpoint and Beyond
World Class Innovators

Source: Breakpoint and Beyond
World Class Innovators

Source: Breakpoint and Beyond
Most of the time, to blame another is to bite yourself.
Accountability and Responsibility

A blame free workplace **NEVER** dismisses accountability and responsibility.

We need both at the table in order to solve the problem and improve the process.
Understanding Mistakes and Error

INTENTIONAL WRONG DOING: The issue of volition is fundamental to the notion of doing wrong; therefore, the term error can only be applied to intentional actions.

UNINTENTIONAL WRONG DOING: Failure of work to go as intended (slips or lapses of attention) or failure of work to achieve its desired objective (mistakes) are actions with no intent of doing wrong.
TIMES WHEN BLAME MUST FALL ON PEOPLE

- Stealing from customer(s) or company
- Constant lying
- Intentionally doing work wrong
- Insolence towards customers
- Drinking on the job
- Misrepresenting product or service
- Repeated bullying
How do most inefficiencies and defects happen?

1. PROCESS (Poor or missing)

2. MISTAKES

OOPS!
Mistakes

Workers aren’t out hi-fiving in front of your trucks, saying let’s go screw up this job!
Defects are caused by...

- Mistakes due to forgetfulness
- Mistakes due to surprise
- Mistakes due to misunderstandings
- Mistakes made by lack of skills
- Mistakes due to lack of training

- Mistakes due to slowness or speed
- Mistakes due to lack of standards and scopes
- Mistakes due to lack of concentration
MISTAKE PROOFING ATTITUDE

• People can and will make mistakes
• If one person makes a mistake then anyone can
• One mistake making it to the customer is one too many
• Mistakes must be prevented from becoming defects
ACTION PLAN

- Establish a blame free workplace
- Understand the difference between intentional and unintentional defects
- Remember the two major contributors to defects and inefficiencies are poor and missing processes and mistakes
QUESTIONS
Quality is a System
A system is a whole that derives its characteristics (good or bad) from the interactions of its essential parts.....and none taken separately.
Quality Is A System

- *A system is not the sum of its parts*
- It is the interactions of its essential parts
- Improving the interactions is essential to improving the whole
- Quality is a whole, not parts that are taken separately
The Essential Parts To Make An Oak Tree

Are Essential - None Are Sufficient

Separately None Will Produce A Healthy Oak Tree.
We are a system, are these essential parts?
ESSENTIAL PARTS

TAKE N A R E P A R S S E N T I A L B U T Y N O T S U F F I C I E N T
A Car Is A System

ESSENTIAL BUT NOT SUFFICIENT
A house is a system (whole) that derives its characteristics (good or bad) FROM THE INTERACTIONS of its essential parts…., and none taken separately. All are essential, none are sufficient. Taken separately none will produce a healthy home.
Quality is a System

Quality is system (whole) that derives its characteristics (good or bad) from the interactions of its essential parts…..and none taken separately.

Quality Management Plan (QMP)

1. Quality Control
2. Quality Assurance
3. Quality Improvement

All are essential, none are sufficient.
ACTION PLAN

- Train our company that quality is a system and define its essential parts
- Begin to manage interactions between people, departments and operations in our company
- Focus on QC, QA, and QI as a whole, considering their interactions rather than mastery of one