

# Human Induced Failures

“Stop the Insanity NOW!”

## Tool Box Talk

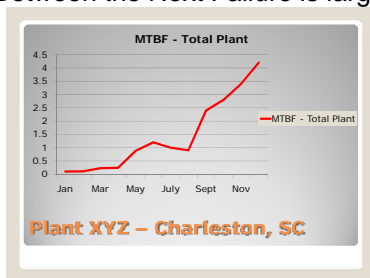


Human Induced Failures are equipment failures caused by the actions of people.

### 80% of Equipment Failures are Human Induced

Here are a few examples you may relate with:

- Repairs are made with a repeatable procedure so everyone does it a little or a lot differently creating uncontrolled deviation to the reliability of the equipment.
  - Mechanic #1: Follows a repeatable procedure and does the job the “right way” (Mean Time Between the Next Failure is large)



- Mechanic #2: Lubricates the same equipment without a procedure, does it like he/she always has not knowing proper contamination control method. (Mean Time Between Failure is out of control but no one knows it because it is not measured)

### Have you seen any of the following indicators which point to a serious problem with Human Induced Failures?

- Lubricating Electric Motors without removing the relief plug
- Welding on equipment without grounding close to the welded area (ground should be 6” from welded area)
- Equipment failure occurring all the time without a known root cause
- Operators not operating the equipment to specifications (people allowed to do their own thing costing the company millions)
- Zinc anodes not replaced on water cooled heat exchangers causing tube damage and water intrusion into oil.
- Maintenance personnel making quick repairs without making a permanent repairs
- No time standard on the work order

- No true maintenance planning with repeatable procedures, specifications, standards, time estimates, etc.

### “Variation is our Enemy” and it must be stopped now by:

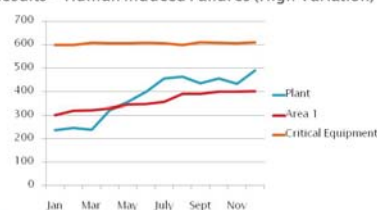
1. Following Repeatable, Effective PM, Corrective, and Lubrication Procedures  
<http://www.alliedreliability.com/gpalliedtraining/details.asp?eventid=47>
2. Performing all work right the first time, making sure enough time is allotted and work is not rushed.
3. Knowing and Following “Best Repair Practices”
4. Measuring Mean Time Between Failure by Plant, Area, and Critical Equipment (post these graphs for all to see)
5. Ask your crew to list all Human Induced Failures for one month and discuss these problems calmly.

These four steps listed above sound easy however studies have shown most maintenance managers will not insure variation is controlled by following the “Best Practices” listed above. The question is why?

### If you find any of these issues you have major variation in the Maintenance or your equipment.

- **No Repeatable Procedures** (everyone must perform work the same way, if not we have high variation resulting in equipment failures)
- **No one Following Procedures** (we call it, doing your own thing)
- **Mean Time Between Failure is not measured** because of Lack of Understand the metric or it shows nothing usable because variation in your maintenance process is too high. “**MTBF Users Guide**” can be found at:  
<http://www.box.net/shared/1i9v16aq8z>

### Mean Time Between Failure Results – Human Induced Failures (High Variation)



This Plant is “In Control” - This is Not Typical  
“World Class Companies” = Low Variation

Plant is in Control – Low Human Induced Failures  
“Where do you want to be? It is all up to you?”