

CTL Workshop 2009

Today:

- Discussion about the imminent GTC and protocol for corrective and preventive actions
- Coffee – (we'll need it!) – and then (in no particular order.....)
- Actions resulting from voltage decay test (plug discharge)
- Equipment influences on Ball pressure test
- Equipment influences on Tracking test
- Glow wire test
- Needle flame test
- Cables

People always ask....

- ! 2 questions:
 - ! 1. What does IFM stand for?
 - ! 2. What should I do for my corrective actions?

What does “IFM” stand for?

- ⓘ Our “standard reply”: it is the initials of the directors of the company
- ⓘ True -
- ⓘ But – actually, only one director:
- ⓘ Ingrid Flemming (Ingrid Margaret Flemming)

Ingrid Margaret Flemming

- ! IMF

- ! ??

- ! International Monetary Fund?

- ! IFM and IMF are not the same!

People always ask....

i 2 questions:

i 1. What does IFM stand for?

i 2. What should I do for my corrective actions?

- There are 650 CBTL and SMT laboratories in the CB scheme. IFM dealt with 703 PTP related corrective actions since the last CTL meeting.



What should I do for my corrective actions?

- ⓘ Generally the approach to performing corrective actions has not been consistent. (It does not become consistent until the procedure within IECEE is followed with formal GNCR.)
- ⓘ Important to promote consistent approach. Guidance and procedure are key to this.

What is a corrective action?
What is a preventive action?

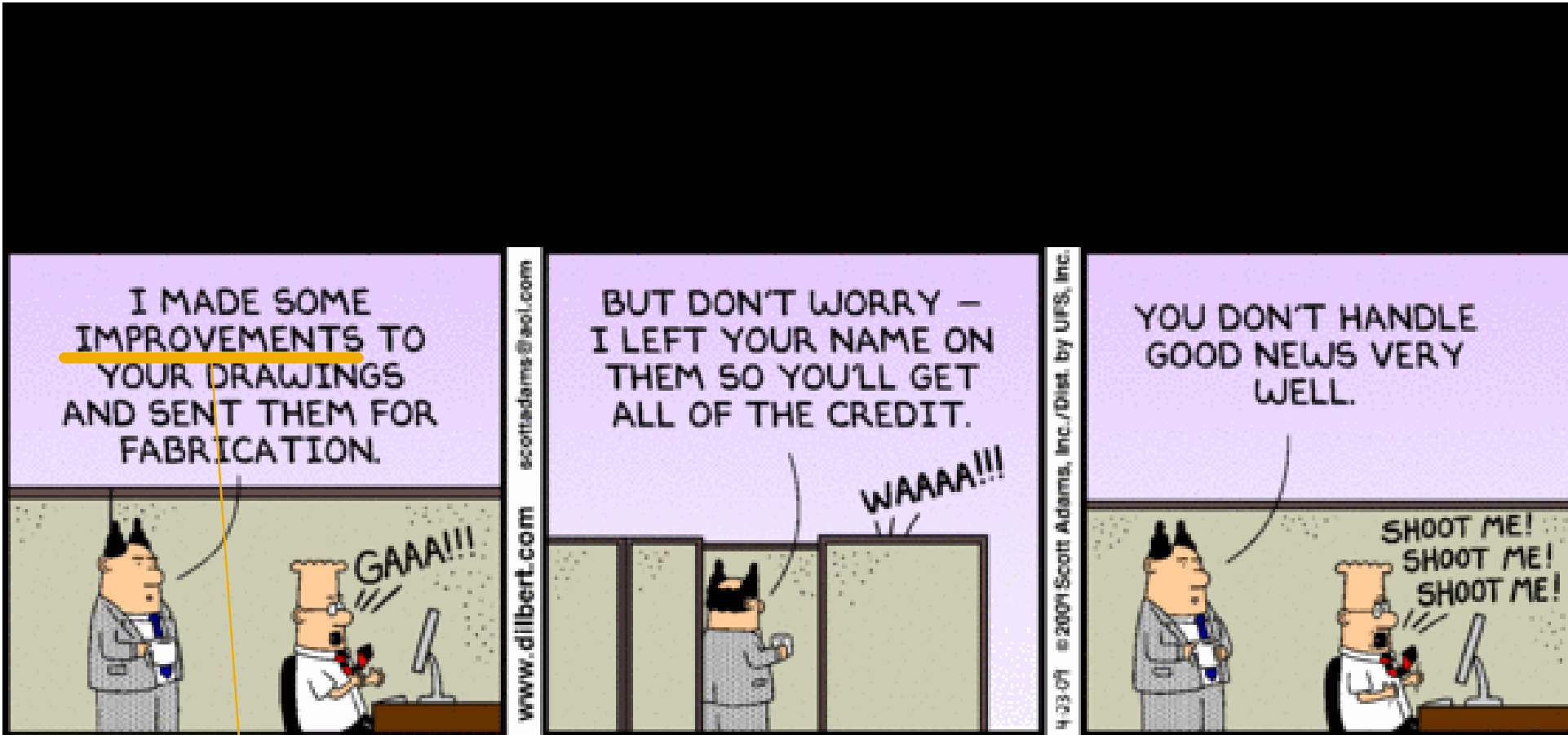
Corrective action

- ! Action put into place to correct a deficiency
- ! Requires analysis before action

! Think before you act!

Quick question?

- ⓘ What happens when actions are not considered properly before implementation?



Corrections

MY BOSS JUST TOLD ME THAT HE CHANGED MY DRAWINGS FOR THE SMART PHONE BEFORE HE SENT THEM TO YOU FOR PROTOTYPING.



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I WAS WONDERING IF YOU'RE HAVING ANY PROBLEMS WITH IT?



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THE CAMERA'S FLASH IS A BIT AGGRESSIVE.



Preventive action

- i Implemented procedures that minimise the need for corrective actions
 - § Arise from analysis of risk of failure
 - § Ensure priority is given to meeting requirements rather than correcting non-compliances

Priorities?

- i Corrective?
- i Or Preventive?
- i Discussion.....

Performing corrective and preventive actions

Corrective Actions (Which one)

- i **W**hat is the problem
- i **H**ow big is the problem
- i **I**nterim fix
- i **C**ause analysis
- i **H**ustle - Investigate and implement solutions

- i **O**ther effects
- i **N**otify (Reconnaissance)
- i **E**valuation

What is the problem?

- ⚠ For example, if a reported result was incorrect, it could be:
- ⚠ The right result wrongly reported
 - Transcription error or reading error
- ⚠ The wrong result “correctly” reported
 - Result arising from incorrect procedure or equipment
- ⚠ The wrong result incorrectly reported
 - Combination of the two above....

How big is the problem? (Scope)

- ⓘ What has been affected?
- ⓘ Flag potential activities/reports that could be affected by the problem
- ⓘ The activity of “flagging” assists in prioritising the urgency of action, especially where more than one issue exists concurrently

Quick (Interim) Fix

- Apologise to customer, rectification of immediate situation.



"AS WE ALL KNOW, [REDACTED]
[REDACTED] HONESTY IS THE BEST POLICY...."

Cause analysis

- ⓘ Identify the problem (as an example, we assume the incorrect result was obtained, but the actual result was “correctly” reported – meaning no transcription error)
- ⓘ List possible causes of the problem (equipment malfunction, test set up, calibration issues, stability issues (equipment, sample, reagent), incoming supply issues...)

Hustle - Investigate and Implement

- ⓘ Hone in on the most likely cause
- ⓘ Confirm by consultation, discussion, investigation, testing, to confirm the choice of most likely cause
- ⓘ How can the problem be fixed?
- ⓘ How can recurrence be prevented?

Other effects

- ⓘ For example, equipment (let's say ohm-meter) is identified to be faulty...
- ⓘ When was the last time you knew WITH CERTAINTY that the equipment functioned properly? (Date of last calibration or performance check?)
- ⓘ How much test activity is affected? (Which?)
 - § Supplementary question: How is it possible that malfunctioning equipment was not detected before use?

Notification and Reconnaissance

- ⚠ Review data from possibly affected certificates to determine whether withdrawal and re-test is necessary
- ⚠ Notify customers as applicable!
- ⚠ Analyse how this could be prevented from happening again
- ⚠ Analyse whether the same cause could affect other activities
- ⚠ Implement preventive actions

Evaluation

- ⓘ Review, at audit or other suitable time, the success of the whole process.
- ⓘ What have you learned?
- ⓘ How to proceed in future?

Preventive Action

What is the difference between corrective and preventive action?

i ?

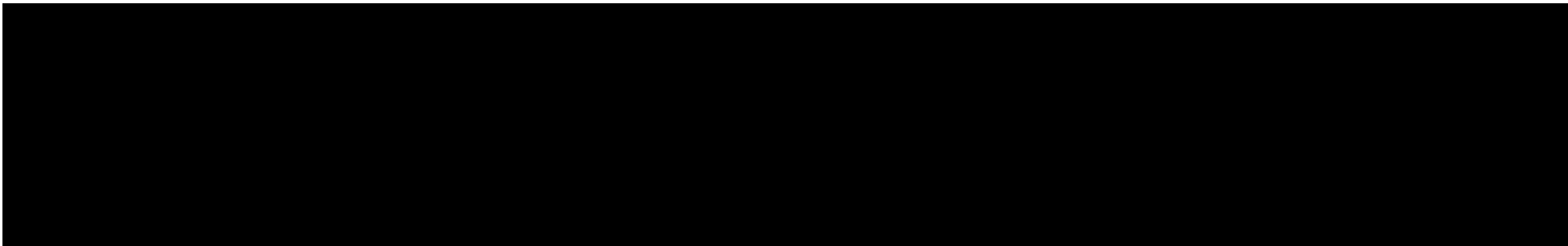
Why is there so much focus on corrective action?

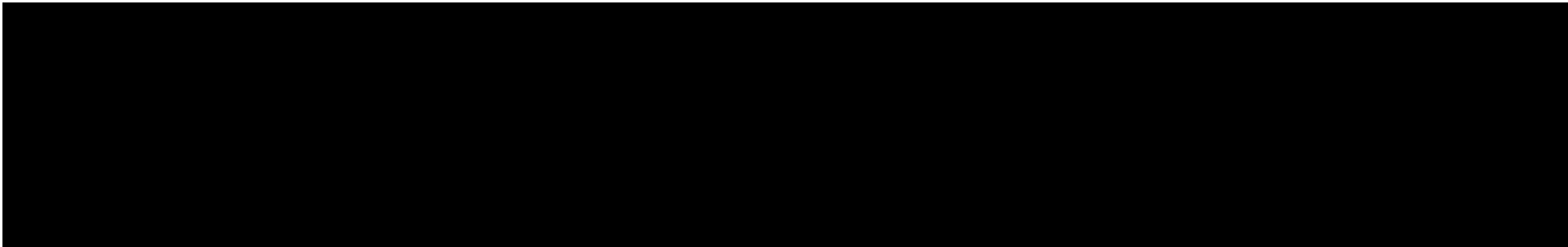
Implementation of preventive action

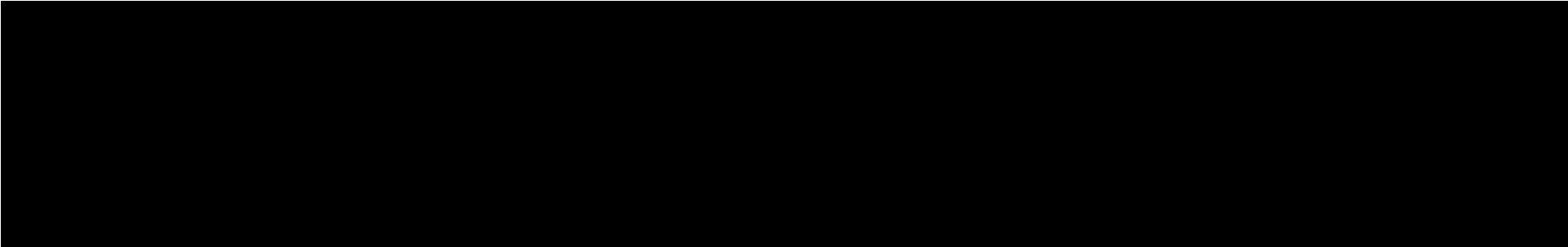
- i In the example, the ohmmeter was not functioning reliably, causing the incorrect result to be reported
- i Preventive actions could include:
 - § Regular formal calibration (most labs do this)
 - § “Spot checks” of function before and after each use using standard materials.

Example from IFM lab

- ⓘ Resistance measurements are carried out by the 1000's.
- ⓘ There is risk of equipment drift / malfunction (this "risk" is an identified part of the testing regime requiring preventive action)
- ⓘ Spot checks are done before, during and after testing using a home made, calibrated (but not certified) standard sample.
Measurements are made to confirm reproducibility and reliability of test results.





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- ! The measurement points are “flexible”.
 - ! Choose the measuring points most applicable to the range of the measurement being made.