

# The Inspector Writes

## Technical Writing for the Pressure Equipment Discipline

by Mark Smith



**Poor records result in poor conclusions ... causing  
poor performance !!!**

# Presenter – Mark Smith

## Prior Experience

- Worked at Shell Oil for 20 years – Projects, Inspection, Inspection Training

## Current job - MSTs

- Started MSTs 10 years ago
- Provide 5 Inspection Classes
  - ▶ API 510
  - ▶ API 570
  - ▶ API 653
  - ▶ Initial Inspection – Welcome to Inspection
  - ▶ The Inspector Writes

*“The wise man will hear and increase in knowledge”*



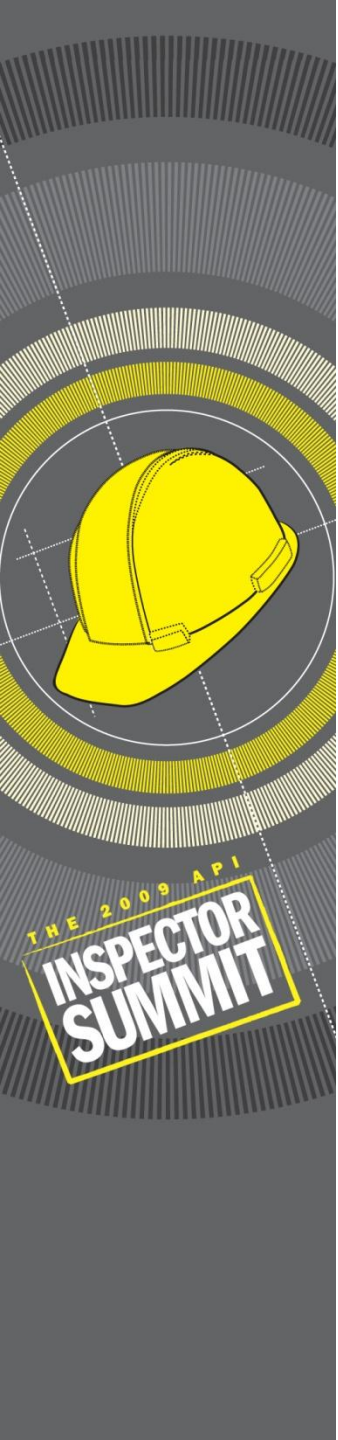
# Setting the Tone

- Purpose of Presentation

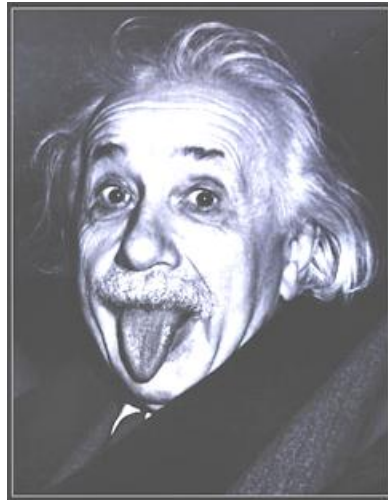
- ✓ Provide awareness of why our “writings” are important
- ✓ Provide some basic writing guidelines
- ✓ Confidence booster. If you can inspect, you can write!

- Sources

- ✓ Good “writings”, bad “writings”, and myriads of others who have inputted into my career!



# Why Writing Skills?



*Your appearance says a lot about you. People may think you're stupid ... even if you're not !!!*



*Your write-ups say a lot about you. People may think you're stupid ... even if you're not !!!*

***#1 Reason - Your Credibility***

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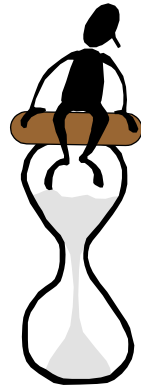


# Why Writing Skills?

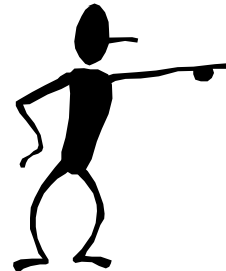
Your **CREDIBILITY** is needed when:



*BIG BUCKS ARE SPENT*



*Setting Inspection  
Intervals*



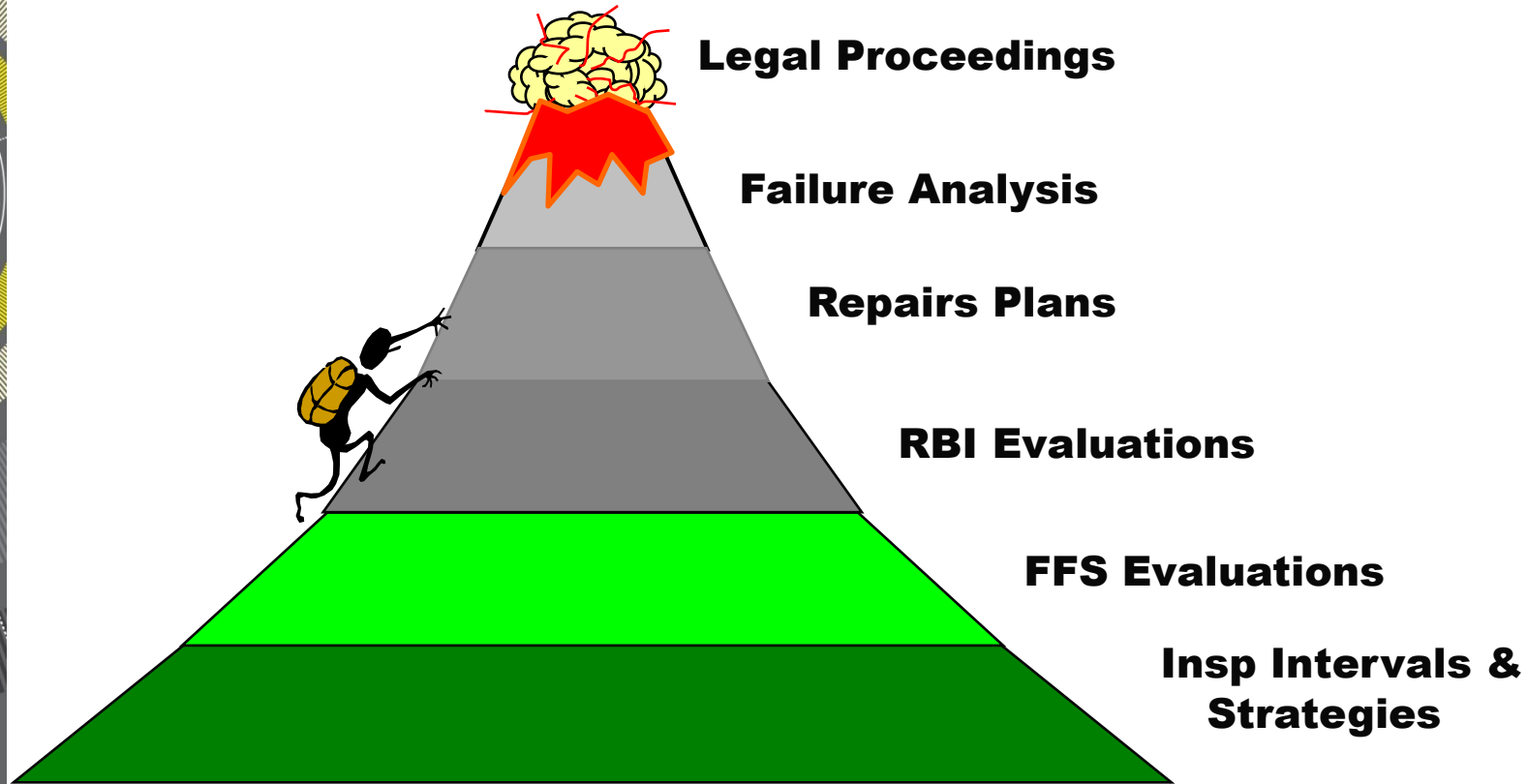
*Making Repair  
Recommendations*



*Troubleshooting  
& Problem-solving*



# Why Writing Skills?



***# 2 Reason - Your Writings are Important***

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# Reasons for Poor Writing

- ✓ I don't like to write. It's not fun.
- ✓ Ugh, I barely talk, let alone write!
- ✓ In school, I only took the minimum number of English classes. And I didn't do good then ... and that's been a long time ago!
- ✓ Real men don't write!
- ✓ Who cares? My poor writing skills haven't affected me!

***WRONG!!!***

***Poor writing skills will LIMIT your CAREER !!!***



# The Five Laws of the Writer

Thou Shalt ...

1. Know thy **Purpose** and thy **Audience**
2. Report only the **Facts**
3. Provide the needed **Facts**
4. Organize the **Facts**
5. Double-check the **Facts**

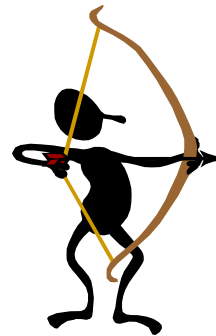
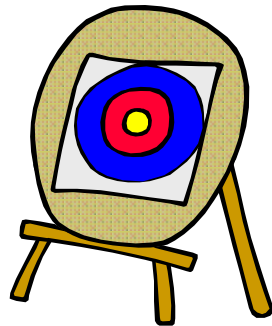


*See the pattern? It's  
all about the facts!*



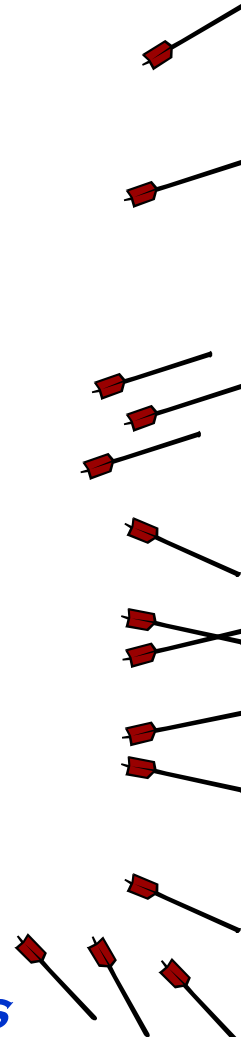
# Law 1 - Know thy Purpose

- Why are you writing? You must know the reason !!!
- Who will or might read your report?



*Where's the Target?*

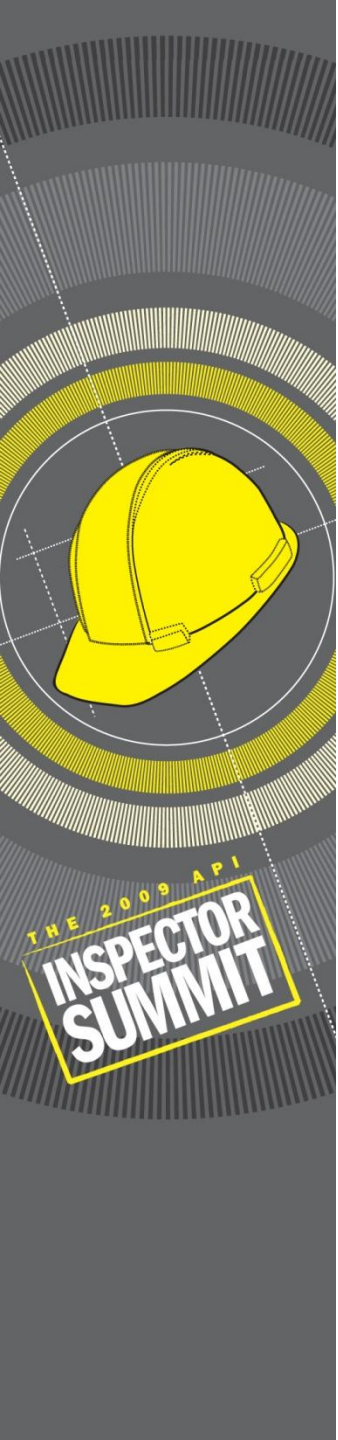
***WITHOUT KNOWING THE TARGET, YOU WILL MISS***



# Narrative - Purpose

Primary purposes for Inspection Narratives:

- Provides a **“picture”** of the historical condition of the equipment
- Provides data to support the **Inspection Intervals**
- Provides data for development of **Inspection Strategies**
- Provides data for **Turnaround Work-scope Reviews**
- Provides data for **RBI** (Risk Based Inspection) evaluations
- Provides data for **FFS** (Fitness for Service) evaluations
- **Legal Evidence** showing whether the **Owner/User is responsible for meeting Code requirements**



# Narrative - Audience

The potential Narrative audience includes:

## The Family

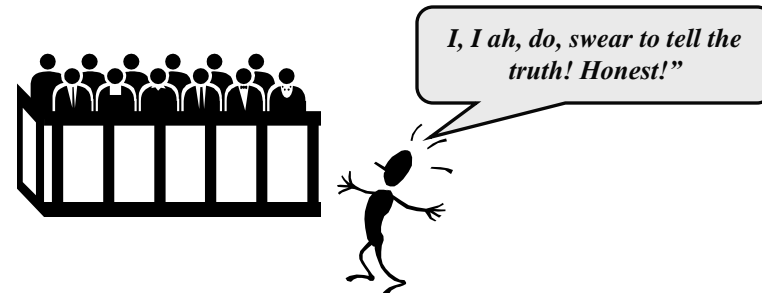
- The Unit Inspector
- Turnaround Inspectors
- Inspection Supervisors
- Inspection Engineers
- Corrosion & Metallurgical Engineers

## The In-Laws

- Oper. & Maint. Supervision
- Maintenance Supervision
- Turn-Around Planners
- Location Upper Management
- Head-Office Personnel
- The Owner's Lawyers

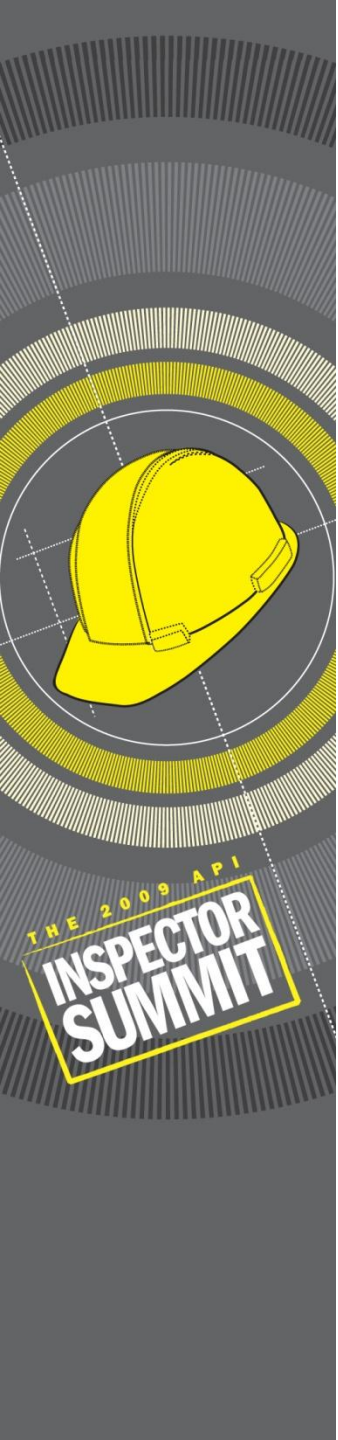
## The Out-Laws

- The Opposing Lawyers
- The Judge & Jury



# Law 2 - Only the Facts

- Various Writing Styles
  - **Novels** - Emotion, Suspense, Personalities, Colorful
  - **Poetry** - Rhythm & Emotion
  - **Technical** - **Dull & Boring, Accuracy is Important**
- Tell the truth !!!
- Avoid speculative statements & generalization
- Use appropriate technical language
- If opinions are included, clearly identify these as opinions



# Words to Avoid

☹️ **ASAP**

☹️ **Bad**

☹️ **Best**

☹️ **Better**

☹️ **Dangerous**

☹️ **Fine**

☹️ **Good**

☹️ **Good**

☹️ **Great**

☹️ **Hazardous**

☹️ **Inadequate**

☹️ **Lousy**

☹️ **Marginal**

☹️ **Negligence**

☹️ **Pathetic**

☹️ **Poor**

☹️ **Poorly**

☹️ **Severe**

☹️ **Serious**

☹️ **Unsafe**

☹️ **Terrible**

***"SEVERE pitting in Bottom Head"***

***How would an **LAWYER** present this to the jury?***

# What if Narratives?

## *The Novel*

*It was 9:05 a.m. as I slid feet-first into the bottom of the darkened column, C-79 XHGO Stripper. As my eyes adjusted, I quietly sat, listening to the dull roar of the remote air mover and felt the whistling air move through the open manway.*

*Time to look; I wanted to complete this job long before the heat of the day gripped the column. Turning the flashlight on, I slowly turned, step by step observing the overall appearance of the column wall. It was relatively clean, just a light oily residue.*

*I silently crept toward the wall of the shell. Upon close examination, I could find no corrosion on the cladding. I checked other portions, and a few spots on the bottom head. No corrosion. I pulled out my trusty Panametric D-meter and checked the wall thickness. The wall was just like new. Dave will be happy since he had specified this cladding 8 years before.*

## *The Poem*

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*'Twas the day of inspection,  
To see all around;  
No significant corrosion,  
On cladding was found.*

*'Twas a light, oily residue,  
Covered vessel wall;  
Basic process and fouling,  
Nothing special at all.*

*The old weld seams were pitted,  
About 75 thousandths deep;  
We repaired the ones needed,  
The rest marked on a sheet.*

*The shell had no bulges,  
Distortions were none;  
UT measurements were taken,  
What fun in the sun.*

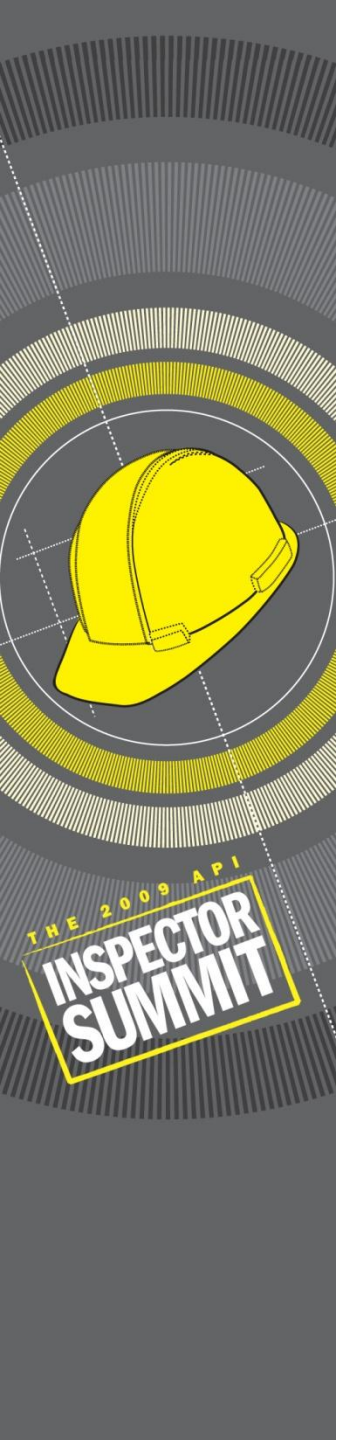
*A few nozzles were corroded,  
One even replaced;  
The repairs met acceptance criteria,  
Though done in much haste.*

*The inspection interval is set,  
72 months be not late;  
It's based on the corrosion  
Found on N-28*



# Law 3 - Provide Needed Facts

- ✓ Always remember the Basic Questions
  - Who?, What?, When?, Where?, Why?, How?
- ✓ Provide continuity with **previous narratives**
- ✓ Provide continuity with **suspected damage mechanisms**
- ✓ Provide continuity with **T/A Plan** and **Inspection Plan**
- ✓ Provide data to support **RBI assessments**
- ✓ Provide evidence to **support conclusions**



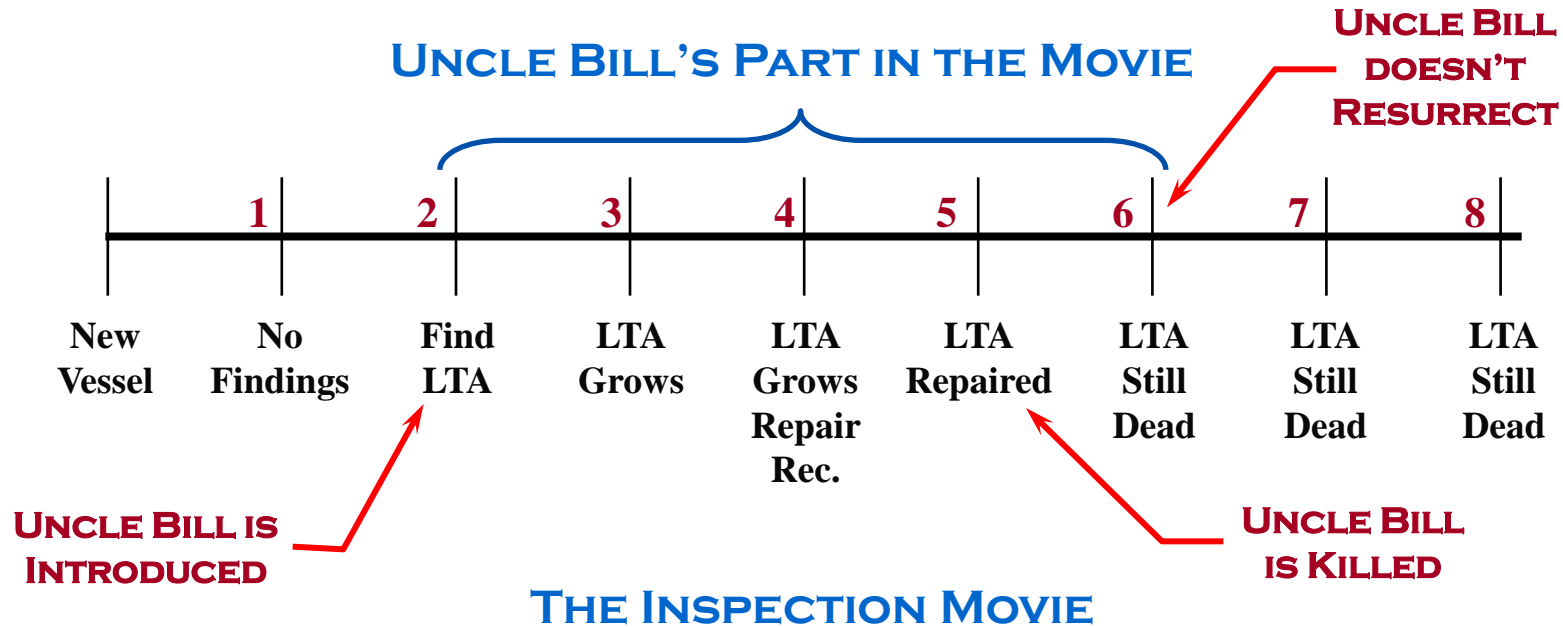
# Inspection Activity Info

- ✓ Note the type of **inspection** & **NDE** performed
- ✓ Note the **% of the equipment examined** by each of the NDE method
- ✓ Note the **locations** that were examined by each inspections & examinations
- ✓ Note the **findings**, both deterioration and no deterioration
- ✓ Provide **continuity** with previous narratives
- ✓ Provide thought process for establishing the **inspection interval**

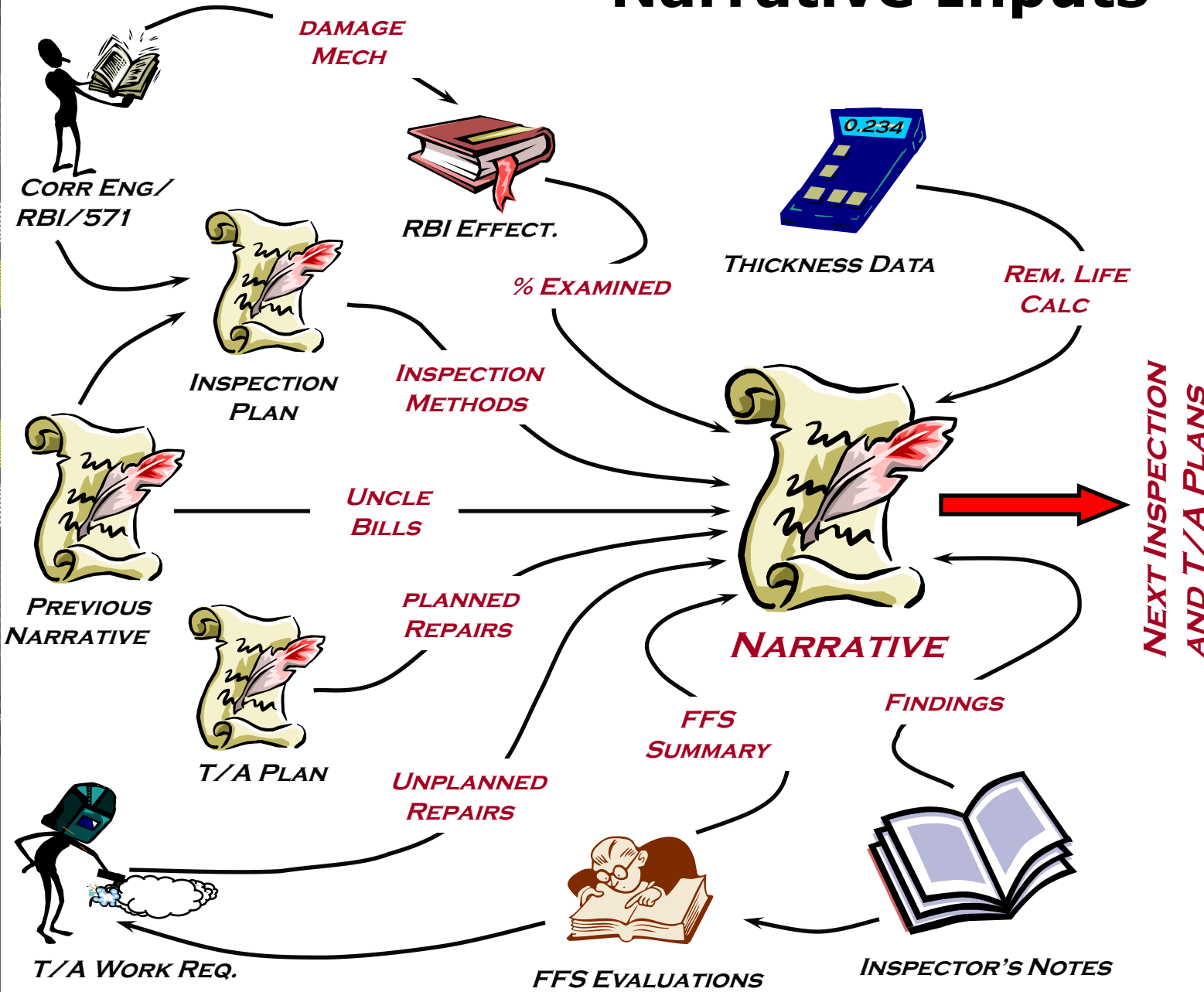


# Narrative Continuity

Equipment history is like a movie! Each narrative is a scene in a movie. Suppose during an inspection you discover a LTA on the vessel head. This is a new and important character that is introduced into **THE VESSEL MOVIE**. It's an **UNCLE BILL!**



# Narrative Inputs



# Law 4 - Organize the Facts

- 1<sup>st</sup> Paragraph - Summary Statement
  - **Major activities**
  - **Interval and reason for interval**
- Use standard formats
  - **Based on Equipment Type and Inspection Type**

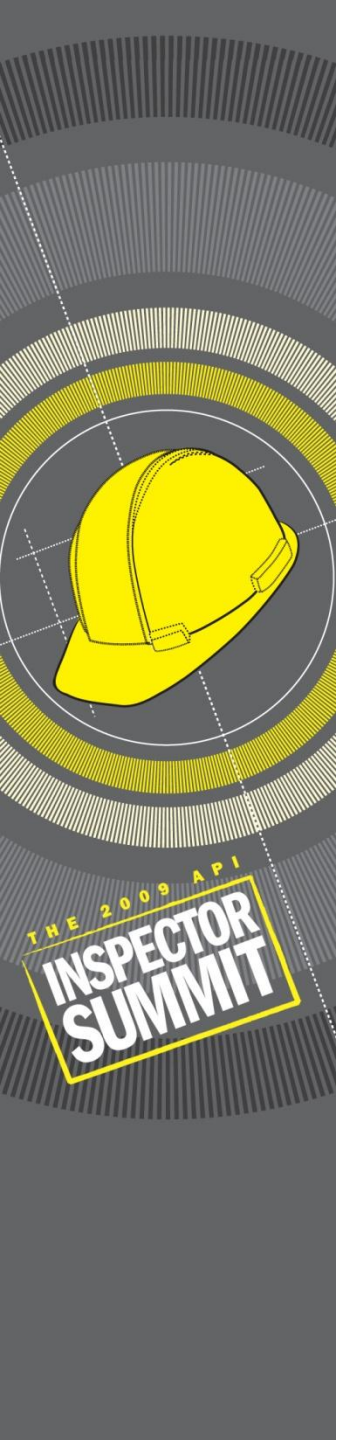
## VESSEL - INTERNAL STANDARD FORMAT

1. SUMMARY PARAGRAPH
2. RECOMMENDATIONS
3. FOULING / DEPOSITS
4. SHELL
5. TOP HEAD
6. BOTTOM HEAD
7. NOZZLE/MANWAYS
8. WELDS
9. INTERNALS, E.G. TRAYS, BAFFLES, DISTRIBUTION PIPING
10. OTHER, E.G. REFRACTORY, CYCLONES, ETC.



# Law 5 - Proof the Facts

- **Always proofread** your narratives !!!
- When possible, **proofread later**, next day
- Have **others proofread/review** when:
  - Potential controversial narrative
  - Inspector is inexperienced
  - Inspector is a marginal writer
- Watch out when using **"copy & paste"**
- Keep **sentences short**, grammar improves  
!!!!!!
- Watch out for **homonyms**, e.g. hear & here



# Eye Halve a Speller Chequer

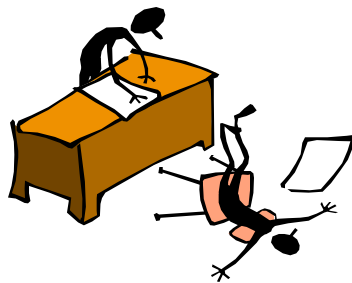
*Eye halve a spelling chequer  
It came with my pea sea  
It plainly marques four my revue  
Miss steaks eye kin knot sea.*

*Eye strike a key and type a word  
And weight four it two say  
Weather eye am wrong oar write  
It shows me strait a weigh.*

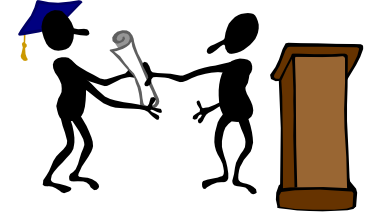
*As soon as a mist ache is maid  
It nose bee fore two long  
And eye can put the error rite  
Its rare lea ever wrong.*

*Eye have run this poem threw it  
I am shore your pleased two no  
Its letter perfect awl the weigh  
My chequer tolled me sew.*

**CONTRIBUTED BY WILL MCRAE**



**SO YOU USED YOUR SPELL CHECKER!  
YOU'RE FIERD, FARED, FIRIED,  
FYRIED,... JUST GET LOST!**



# How to Improve?

- ✓ Got to have the **"Want To"**
- ✓ Practice, practice, practice
- ✓ **Read!!!** Better readers are better writers
- ✓ Keep **Samples** of good reports
- ✓ **Organize** the report
- ✓ Have others **Proof** and review

*When I say **"I can't"**, it usually means  
**"I won't"**!* **Oswald Chambers**



# Questions ???

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