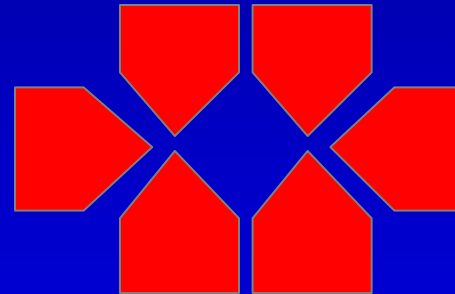


# ***What Happens with Good Requirements Practices***

**Ivy Hooks**

**RE'01**

**August 31**



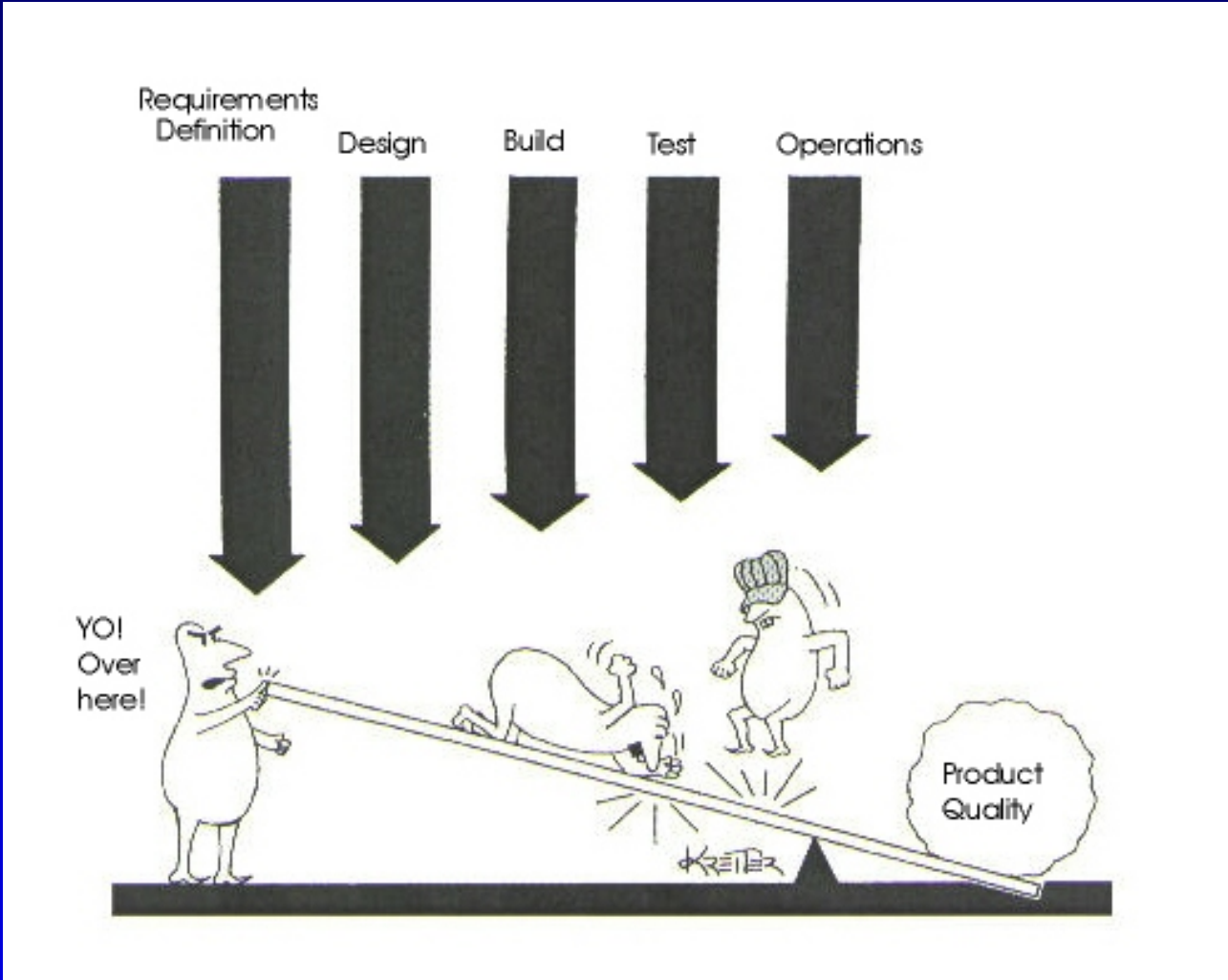
**Compliance  
Automation, Inc.**

# Why do we focus on failure?

- It's part of our culture
- Examples are easy to find
- Successes are less obvious

# What is success?

- **Finishing products on time and schedule**
- **Satisfied customer**
- **Happy developers**
- **A new way of doing business**



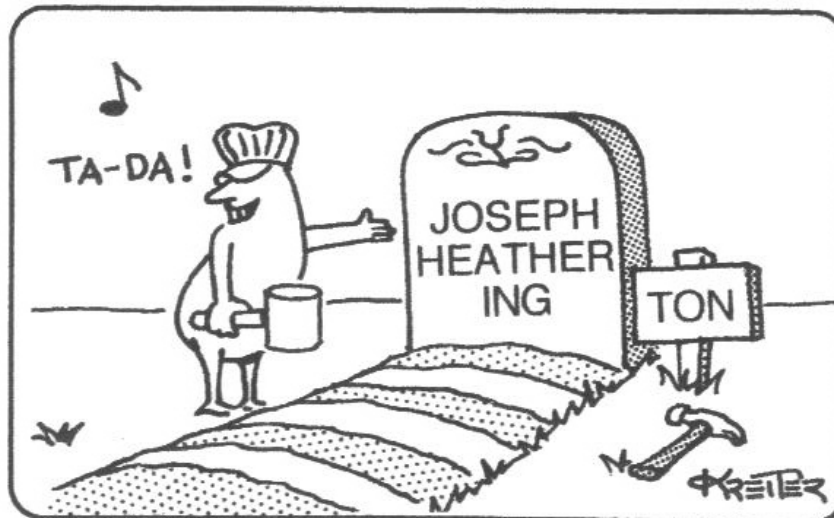
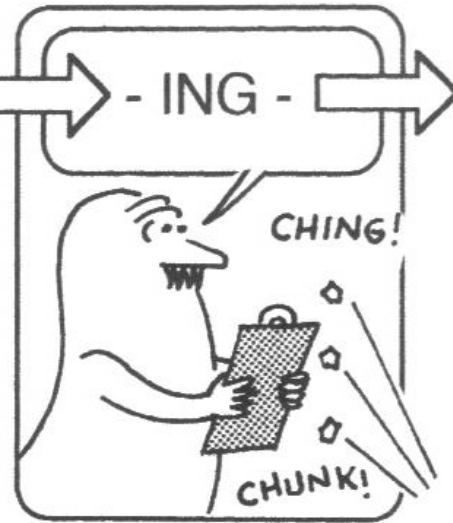
# Issues

**Too many projects --**

- **Take too long to complete**
- **Cost too much**
- **Are never released**
- **Are never used**
- **Fail**

# Why aren't we all doing it right?

- Fear of change
- Misconception that what I am doing is right -- I'm successful -- and I should keep doing the same thing
- We don't like to do things right, we like to fix things



# What We Must Change

- **How to write requirements**
  - Have a process
  - Follow that process
- **How to manage**
  - Ensure discipline
  - Provide the right resources at the right time
  - Hold people accountable
  - Use metrics



# Shuttle Orbiter Upgrade

- Trained the Crew Avionics Upgrade (CAU) team  
Could all speak the same language
- Took on those who normally resisted until CDR  
Would rather complain, now held accountable
- Got operational concepts from every one  
People who can't write requirements --  
can define their operational concepts
- Fought out issues before writing requirements  
Couldn't do it all, couldn't do all in first release  
Had to determine priorities

# Shuttle Orbiter Upgrade

- Got more review comments than expected -- 900 +  
Large team - because all felt responsible
- Tried electronic comments  
Everyone logged on at once - system failed
- Uncovered 15 important requirement changes  
Cheaper to identify now than later
- Set standards for others to follow  
Success leads others to want to follow  
Used template for data collection  
Used process for coordination and cooperation

# Caterpillar Paving Products

- Trained the entire product team  
Everyone could speak the same language
- Insisted on sticking to the process  
Insisted on right resources + strict discipline,
- Interviewed manufacturing -- a first  
Found lots of important information to build a less expensive product and new ways to “document”
- Interviewed customers and users  
Got lots of surprises  
Identified process problems

# Caterpillar Paving Products

- For the first time started tooling before the first prototype

Gained manufacturing's trust

- Used process to control change

Maintained priorities

Kept management from changing the rules

- Preliminary design mock-ups shown to customers

Found some problems they needed to know about

Can't find all requirements by sitting around thinking

- Everyone knows what everyone knows

Emphasized the power of shared vision

# Unidentified Aerospace Company

- Did it wrong three times in a row  
No good product, lots of money and time wasted
- Truly started from scratch  
Created a Requirements White Paper
- Created Use Cases  
Drove architecture and top level design  
Used to write software requirements
- Made the IPT responsible for their requirements  
No one to blame but themselves

# Unidentified Aerospace Company

- Success
  - On budget, within one week of schedule
  - Contained ALL the functionality
- Compressed IPT activity
  - Faster development / late start/too thin resources
- Testers as requirements authors
  - Great for knowledge exchange / Poor writers
- White paper to capture work
  - Helpful / Too unstructured
- Requirements review and top level design review
  - Signatures worked / Different formats



# What You Need to Know

- You don't have to do everything at once
- Model projects are a great way to lead into change
- Everyone won't love you but they will love the results
- It doesn't matter if it is hardware or software or both
- It doesn't matter if it a six months or six year project
- It doesn't matter if it is complex or simple project
- It does take effort, commitment, and discipline to change



# In Conclusion

- **If you don't have a process -- put one in place**
- **If you can't get your organization to change -- change your approach**
  - **Get management commitment at the highest level possible**
  - **Show success on a project and parlay that success to other projects**
- **Measure where you are -- and set goals for where you want to be**

# In Conclusion

- Too many people are spending too much time and money looking for magic
- Good requirements take hard work and discipline
- Work on better communication
- Keep an open mind

Think

# Recommended Reading

- ***Corporate Lifecycles***, Ichak Adizes, Prentice Hall, 1990
  - How and why corporations grow and die and what to do about it
- ***Leading Change***, John P. Kotter, Harvard Business School Press, 1996
- ***The Stuff Americans Are Made Of***, Josh Hammond & James Morrison, Macmillan, 1996
  - The seven cultural forces that define Americans
- ***Customer Centered Products***, Ivy F. Hooks & Kristin A. Farry, Amacom, 2001
  - Creating successful products through smart requirements management

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