The Myths of Rigor

James Bach, Satisfice, Inc.
james@satisfice.com
www.satisfice.com
Rigor

- Oxford English Dictionary
  - The strict terms, application, or enforcement of some law, rule, etc.
  - Strictness of discipline, etc.; austerity of life; an instance of this.
  - Strict accuracy, severe exactitude.

Key Idea:
There can be no rigor without a standard of correctness.
James Bach: perennial flying student, paragliders and small single engine planes. 45 hours logged airtime.

Richard Bach: grizzled barnstormer, flight instructor, biplanes, sailplanes, ultralights, paragliders, parachutes, helicopter, floatplane, multi-engine, jet fighter pilot, movie stunt pilot. 15,000 hours logged.
After flying with me a few days, Dad says “What are the checklists for flying the Husky?”

I researched and created the checklists. Dad reviewed them and offered corrections.
Some changes I understood.
Some changes I didn’t understand.
Some changes I thought I understood but didn’t.
One change he made was wrong. (I caught it!)

Key Idea:
A standard isn’t crystallized skill or action. It must be interpreted and may be incorrectly interpreted.
Flight Testing

- Using the landing checklist forced my thoughts into a fixed linear sequence.
- It took me out of my rhythm. *Timing and coordinated action are important in landings.*
- I tried to use the checklist in a non-sequential way, but that led me to forget things entirely.
“Dad, we should share these checklists on the Husky forum!”

“I suppose you could, James, but Husky pilots don’t use checklists.”
Value of the Lists

- Excellent for quick review prior to the flight.
- The engine start checklist works great as is.
- Good tool for discussing and analyzing flight procedures.
- Creating them helped me learn.
- Using them without “following” them helps me fly better... *The next step is to memorize them for random access, experiment with different procedures, and practice, practice, practice.*
Good Rigor

- Doing good things at a good time in a good way without too much trouble.
- It must not cost too much to adopt, employ, or maintain in the face of change.

Bad Rigor

*means corporate obsessive-compulsive disorder: following instructions without understanding them or being properly supervised, causing wrong or wasteful action.*
The Skill Simulation Problem

Skilled Person

Situations

Recipe

Described Behaviors

Undescribed Behaviors

S1

S2

S3

Sn

DB1

DBn

UB1

UBn
The Skill Simulation Problem

S1

Situational Blindness

Less Skilled Person

Instruction Following

Recipe

Simulated Skill

Possibly unnecessary

DB1

DBn

Possibly critical

UB1
Coaching Rigor

- James: “Woo hoo!”

- Richard: “Not enough left rudder. Steep turns at low altitude must be coordinated or we risk an unrecoverable asymmetric stall, especially since we’re flying heavy.”

- James: “I felt like I had enough rudder.”

- Richard: “You didn’t. Practice feeling it. Let’s head over to Suchia Island and you can do some Dutch rolls.”
Richard Bach’s Teaching Method

- How slow can you fly until it stalls? “Try it now and let’s find out!”
- If we’re at 1000ft. at the shoreline, can we make it to the airport if the engine quits? “Let’s do that!”
- How do we keep from accidentally stalling while in the landing pattern. “Keep the nose below the horizon. Try it now and see if you can stall with the nose below the horizon.”
- What if we accidentally overlean the engine? “The engine will stop. Lean it all the way right now! See? It stops pretty quick.”
- Now, how do we restart the engine in flight? “What do you think? Try something!”
Where to Apply Rigor?

**Outcome**
- Rigorous rejection of bad outcome. (testing, inspection, based on product standard)

**Action**
- Rigorous control of activity. (tools, supervision, procedures, preparations, based on craft standard)

**Skill & Knowledge**
- Rigorous rejection of bad practitioners (certification based on craft standard)

**Learning & Methodology**
- Rigorous development of practitioners and craft (culture of learning and self-criticism, eagerness for experimentation and debate.)
Where to Apply Rigor?

Rigor **here** optimizes solutions for a static and well-known world.

Rigor **here** helps us adapt to a changing and uncertain world.
Where to Apply Rigor?

Management desperately wants this. If you can fake this, you will be rewarded… until it fails and then you just need to find a way to avoid the blame… which turns out not to be hard… but…

…true self-respect as a technical professional demands this kind of rigor.
Here’s one kind of rigor I like:

Seek and accept playful challenges to explore and demonstrate skill.
### “Mojo Coffee” Test Script

<table>
<thead>
<tr>
<th>STEP</th>
<th>EXPECTED OUTCOME</th>
<th>ACTUAL OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order coffee</td>
<td>Delicious coffee</td>
<td></td>
</tr>
<tr>
<td>Enjoy coffee</td>
<td>Able to concentrate on conference</td>
<td></td>
</tr>
<tr>
<td>Thank Assurity</td>
<td>Google Assurity</td>
<td><a href="http://www.assurity.co.nz">www.assurity.co.nz</a></td>
</tr>
</tbody>
</table>

What do you think?
<table>
<thead>
<tr>
<th>STEP</th>
<th>EXPECTED OUTCOME</th>
<th>ACTUAL OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Coffee</td>
<td>Delicious Coffee</td>
<td>good (oracle: me)</td>
</tr>
<tr>
<td>Enjoy Coffee</td>
<td>Able to concentrate on conference</td>
<td>good</td>
</tr>
<tr>
<td>Thank Assurity</td>
<td>Google Assurity</td>
<td><a href="http://www.assurity.co.nz">www.assurity.co.nz</a></td>
</tr>
</tbody>
</table>

**Setup:**

Test goal?

Motivating question?

**Functional Testing | SAP Testing | Test Tools | Testing as a Service | Agile Testing | Non-functional**
Unless you know what is the right thing to do…

*Doing it rigorously will be reckless and irresponsible.*

*Doing it rigorously will retard your learning.*

*Premature standardization has harmed our craft.*
The Myths of Rigor

- Adding rigor makes a process better.
- Engineering processes should be rigorous.
- Rigor is all or nothing.
- Documentation, metrics, scripted procedure, etc. is rigorous.
- Exploratory testing, agile, etc. is not rigorous.
- Playfulness and loosely defined methodology is not a route to rigorous processes.
- The route to rigor is for people to stop resisting and follow instructions.
Myths Adjusted

- Adding rigor makes a process **less flexible**.
- Engineering processes should be **reasonable in context**.
- Rigor is all or nothing **or anything in between**.
- Documentation, metrics, scripted procedure, etc. **might be bad rigor**.
- Exploratory testing, agile, etc. **might be good rigor**.
- Playfulness and loosely defined methodology **may be essential to developing excellent rigor**.
- A necessary condition for **good rigor is for people to be passionate about learning their craft**.
In software development various communities have competing views of rigor.

I rigorously pursue what I believe is excellence in software testing.

Therefore,
I CANNOT accept “best practices,”
I CANNOT accept bad certification,
I MUST oppose bad standards,
I hope you will do these things, too.