PRH Consulting, Inc.

*leveraging know-how for performance!®*

# Test What Matters

Pete Hybert
principal consultant
PRH Consulting Inc.

**ASTD International Conference** **Session # W113**
**May 25, 2011**

PRH Consulting, Inc.
20 Danada Square West, #102
Wheaton, IL 60189
phone: 630.682.1649
web: www.prhconsulting.com

# Table of Contents

# Presentation Purpose and Objectives

Purpose: Discuss common testing situations and strategies for creating tests (especially online tests) that more effectively test performance

Objectives:

- Describe the importance of testing performance as opposed to supporting knowledge and skills
- Summarize common test question choices and their limitations
- For a given performance situation, develop a test strategy that effectively measures capability
- Generate strategies for using common CBT/WBT development tools to test (approximate) performance

# Testing Applications and Concepts

"Frequently, crashes are followed with a message like 'ID 02'. 'ID' is an abbreviation for idiosyncrasy and the number that follows indicates how many more months of testing the product should have had."

Guy Kawasaki

"Program testing can be used to show the presence of bugs, but never to show their absence!."

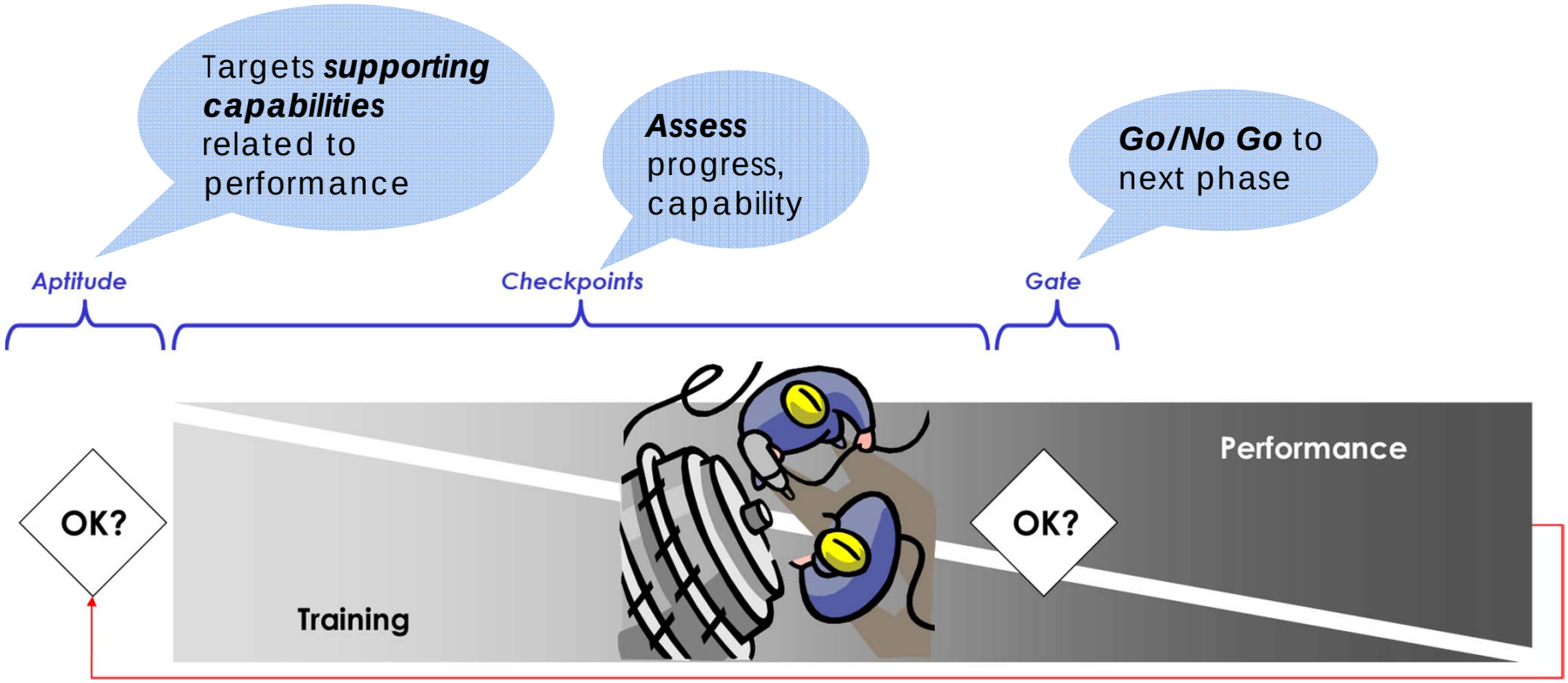
Edsger Dijkstra

"Trust but verify."

Damon Runyon

# How tests are used…

…within the training environment.



# Common Practices

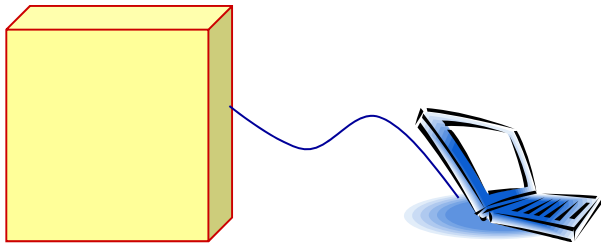
- Rely on SME judgment for thresholds and "cut-scores"
- Testing to accumulate records for compliance purposes
- Use of social norms for test difficulty, # items
- Rely on "objective tests" because they are relatively
  - Easy to create
  - Easy to administer
  - Easy to grade
  - Familiar

*All tests involve (at least some) judgment—no test is completely objective.*

# Technical[1] Example, *continued*

What type of on-line test might we expect to see for this task?

**Situation**: Starting up a "control cabinet"

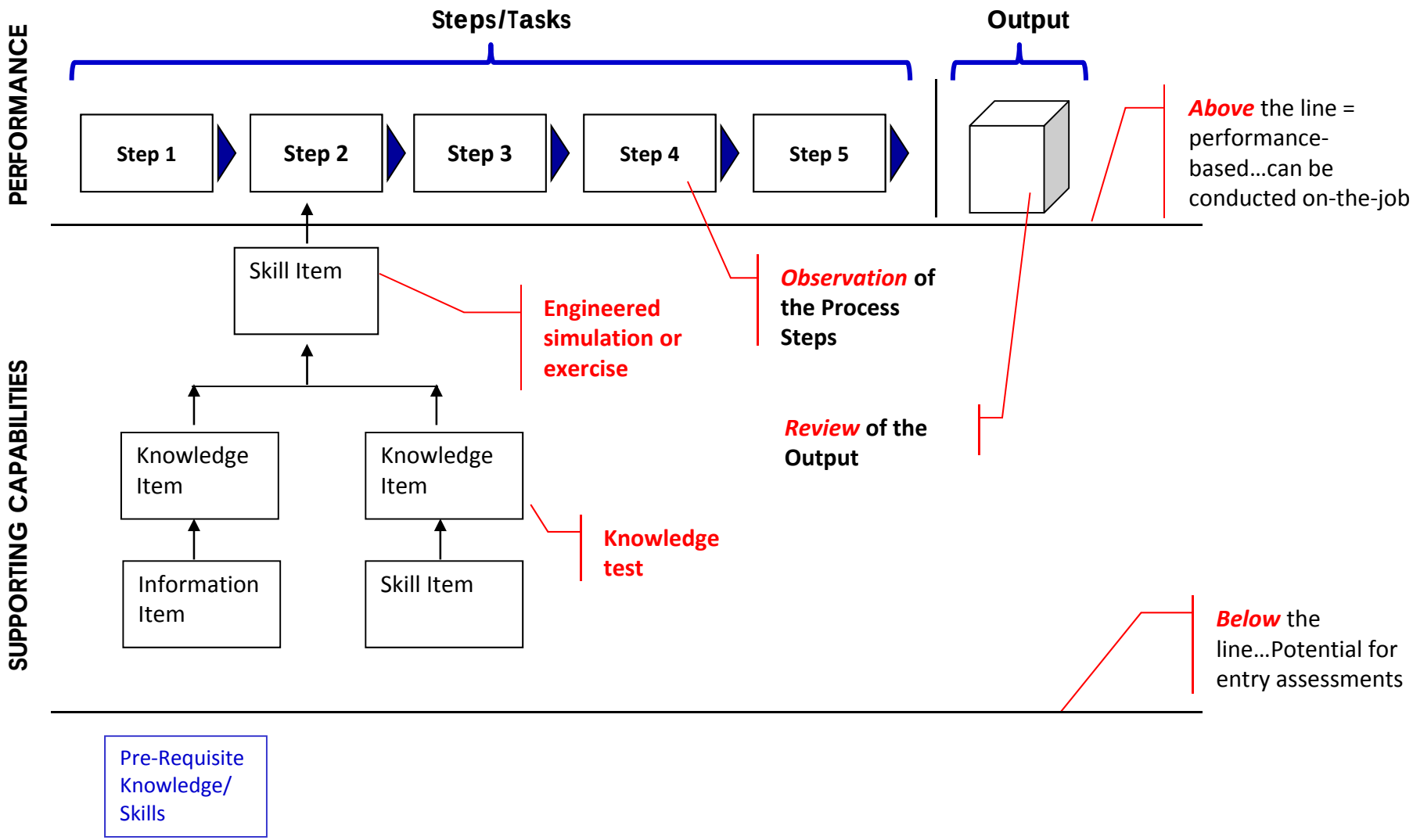


Tasks

1. Check wiring
2. Power on
3. Connect and establish communication
4. Upload the database
5. Check functionality

[1] *Other examples coming later.*

# Where Should You Verify Capability?



# Typical Test Question Menu Options

- Multiple choice (single and multiple response)
- T/F
- Fill in the blank
- Matching
- Word bank
- Diagram/picture “drag and drop”
- “Hot spot”
- Sequence

**Macro**

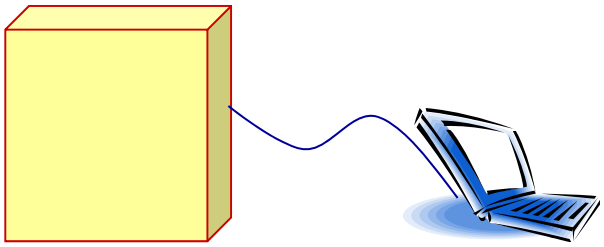
- Randomize questions/ answers
- Branching
- Timing
- Media

What is an example of an on-the-job performance situation that parallels one of these question types?

# Technical[1] Example, *continued*

What are the underlying, supporting capabilities we can test?

**Situation**: Starting up a "control cabinet"



Tasks

1. Check wiring
2. Power on
3. Connect and establish communication
4. Upload the database
5. Check functionality

[1] *Other examples coming later.*

# Scenario #2: Customer Service/Sales (Call Center)

What are the underlying, supporting capabilities we can test?

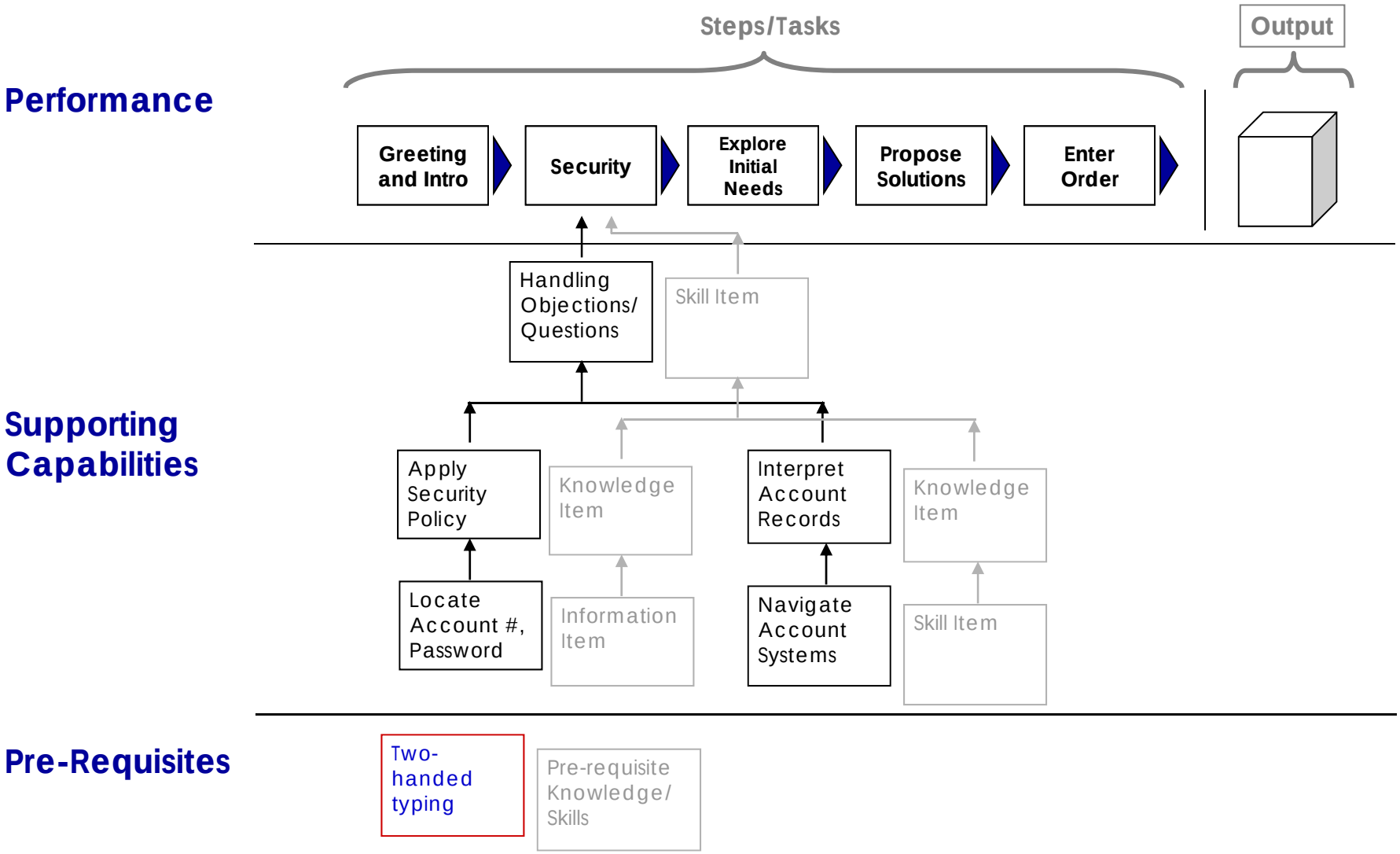
**Situation**: Customer Inquiry Call

Tasks

1. Greeting and Intro
2. Security
3. Explore initial needs
4. Propose solutions
5. Enter order

[1]*Other examples coming later.*

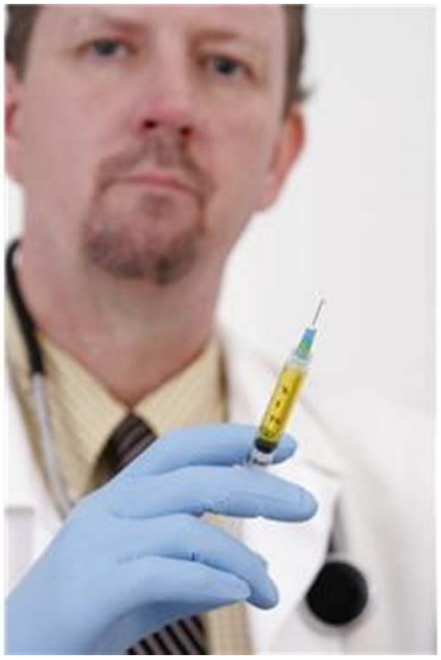
# Visualize Levels of Testing



# Scenario #3: Quality Control Inspector

What are the underlying, supporting capabilities we can test?

**Situation**: Medical Device Inspection

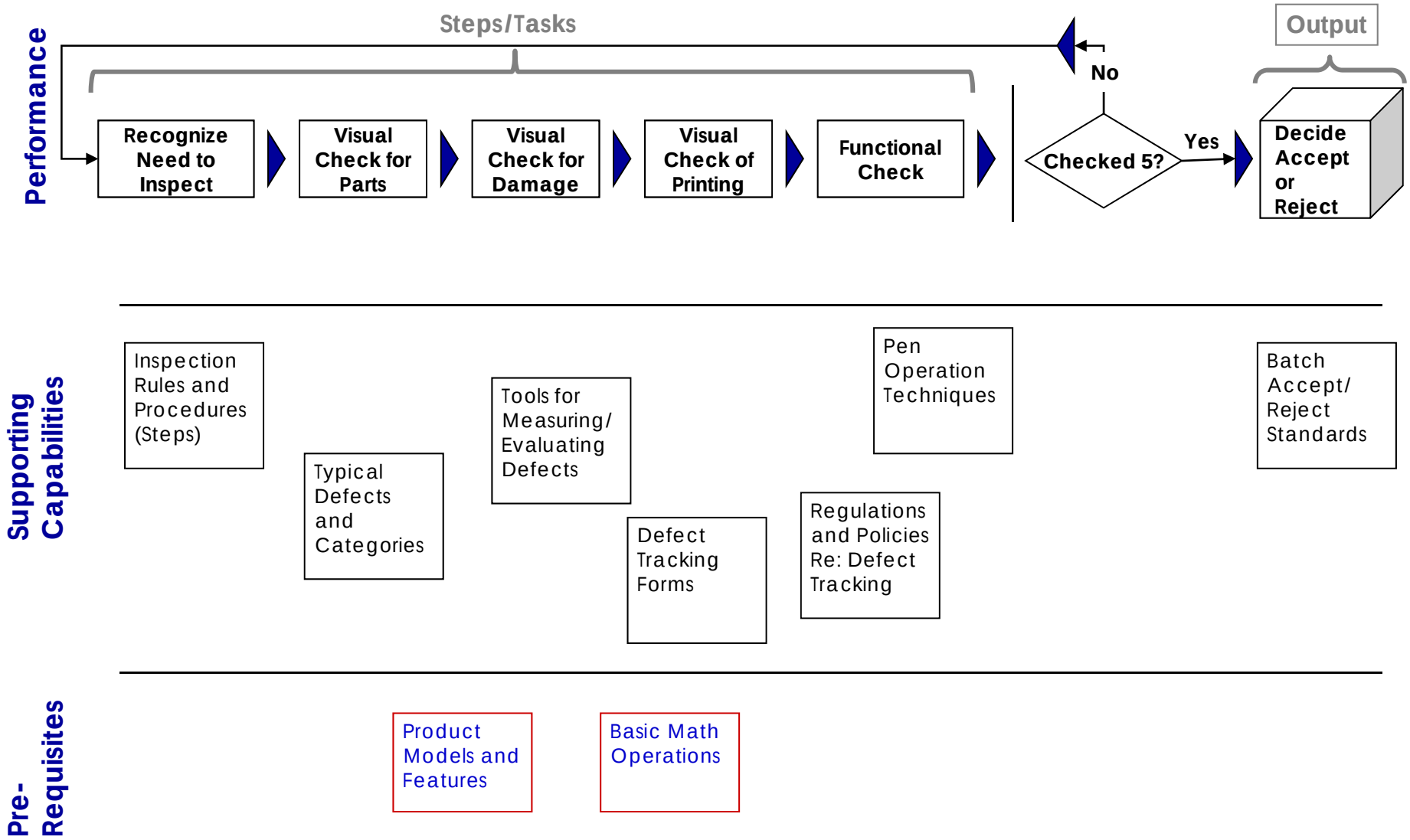


Tasks

1. Recognize Need to Inspect
2. Visual Check for Parts
3. Visual Check for Damage
4. Visual Check of Printing
5. Functional Check

[1]*Other examples coming later.*

# Example: Pen Inspection



# Testing the Limits

From FDA Guidelines on Process Validation:

> "The test conditions for these runs should encompass upper and lower processing limits and circumstances, including those within standard operating procedures, which pose the greatest chance of process or product failure compared to ideal conditions; such conditions have become widely known as ***'worst case'*** conditions." (emphasis added)

This means we need to

- Identify likely points of failure
- Test "worst case," non-standard situations, or boundary conditions

# Considerations for Performance Testing

The primary focus is criteria.

Occasionally you may need to

- Include “what-if’s?” and “why’s?”
- Distinguish between critical and non-critical

List criteria as objectively as possible

| Action Item No. | Activity | Expected Response(s) and/or Comments | Met | Not Met | PA Facilitator Initials (If Action Item is Performed Correctly) |
|---|---|---|---|---|---|
| **PERFORM: SIMULATED FREQUENCY CHECKS AFTER MACHINE D, continued** | | | | | |
| 1. | OBSERVE check of Body A and B | • Identified any defects that were present | ❑ | ❑ | |
| 2. | OBSERVE check of the dial | • Identified any defects that were present | ❑ | ❑ | |
| 3. | ASK “Please describe three examples of dial defects for which you are inspecting.” | • Answer included the following:<br>o Arrow not centered<br>o Arrow not completely visible<br>o Damage or deformities to dial | ❑ | ❑ | |

Describe the steps the ***assessor*** should take

Include space for documentation

# 10 Reasons To Use Performance Tests

1. A performance test ***measures the right things***.
2. A performance test is a ***more comprehensive*** test of capability than a knowledge test.
3. A performance test specifically ***defines the work and the criteria*** for performance which often leads to simplification of the performance.
4. Performance tests ***connect training to performance***.
5. You do not have to ***hide the answers***.
6. You can ***get work done*** during the testing process.
7. You can ***manage learner expectations*** for "going solo."
8. Performance tests are inherently ***valid***.
9. Performance tests can be ***developed rapidly***.
10. Performance tests ***serve multiple purposes***.

*For additional information, see Performance Express, November 2007*

# Q & A

# Summary

- The goal of testing is to verify capability
- Test can be used as gates (no feedback) or checkpoints (feedback/remediation)
- Wherever possible, push all testing (especially computer-based/automated testing) to include or approach performance

# Speaker Background

**Pete Hybert**
**www.prhconsulting.com**

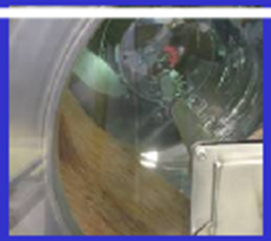
- Worked in the human performance improvement industry since 1984; external consultant since 1989
- Clients have included: Ameritech, AT&T, Chrysler Financial, Eli Lilly and Company, Exxon-Mobil, Fireman's Fund Insurance, General Motors, Hewitt, Huron Consulting Group, Siemens, SPX, Whirlpool, and others.
- Authored the chapter "Testing Strategies: Verifying Capability to Perform" in the "Handbook of Improving Workplace Performance (Volume 3: Measurement and Evaluation)
- Authored more than thirty articles on a variety of HPT-related topics along with the "Building Capability" e-newsletter and the PRH Consulting Blog
- Presented multiple times at ISPI, CISPI (Chicago Chapter of ISPI), ASQ, and ASTD
- Served as a volunteer with ISPI and CISPI (ISPI Chicago Chapter President, ISPI Awards Committee Chair, ISPI Nominations Committee Chair, ISD Conference Track Chair)
- CPT since 2003, ISPI Lifetime Member since 2007, ASTD member since 1990

To check out our blog or subscribe to our newsletter:

- Subscribe to our newsletter, email me or visit: http://www.prhconsulting.com/contact.htm , then, join our mailing list
- Visit our blog at www.prhconsulting.com/blog

# PRH Consulting Inc.

*leveraging know-how for performance!*



Curriculum,
Competency,
Capability
Architectures

We design and develop systems and information that build organizational and individual capability

*To Enter*

- About PRH Consulting
- Resources and Information
- Client Project Area
- Email, Newsletter, Blog