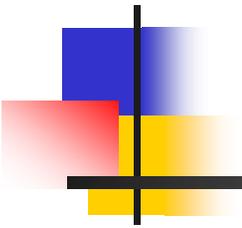


# BBS & HPI - Together Forever!



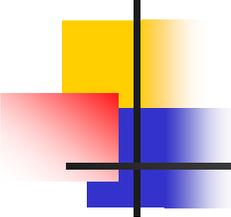
**Barbara Guenveur**

SRS VPP Core Team Chair



**SRS HUMAN  
PERFORMANCE  
IMPROVEMENT**

SRNS-RP-2009-01080-S



# Why Change Our Process?

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- **BBS has been evolving.**
- **Our process declined over the past year.**
- **Many observers were not truly volunteers.**
- **The quality of the observations and comments was lacking.**
- **More complete data is needed.**
- **At-risk data was probably inaccurate.**
- **Most long term BBS processes “redesign” between 6 and 8 years.**
- **Borderline observers wanted a simpler tool.**



# Changes

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- **The monthly expectation is being raised:**
  - **One standard/scheduled observation per week**
  - **Goal of three per month minimum**
  - **WIIFM:**
    - **Observer Recognition Program:**
      - Bronze – Quality + 12 = Bronze Award/Certificate
      - Silver – Quality + 24 = Silver Award/Framed Certificate
      - Gold – Quality + 36 = Gold Award/Framed Certificate/Gift
      - Top Gun – Quality + 60 = Top Gun Award/Plaque/Dinner



# Changes

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- **The Nature of the Observation:**
  - Focus on the type of worker
  - Focus on fewer critical behaviors specifically identified for the type of worker
  - Identify HPI components
  - Improve quality



# Changes

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- **Types of Observations:**
  - **Standard – composed of all the elements of a BBS Observation plus the HPI components:**
    - Observee participation is an expectation.
    - Interactive conversation.
    - Identification of Safe and At-Risk Behaviors.
    - Identification of Error Precursors and Error Reduction Tools.
    - Solution or commitment to change.
    - More required elements in header:
      - Provides more accurate information about the nature of at-risk behavior.
      - Allows better targeted reporting for LSIT analysis.



# What is Changing?

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- **Mini-Time-Outs (MTOs)** – Intervene when at-risk behavior is observed, COTS, minimal documentation, participation by Observee is required. Anyone may initiate and document.
- **Scheduled Observations** – Initiated by work packages, or other scheduled item:
  - At use in various industries
  - Provides a great opportunity for more co-workers to be observed and involved.
  - Requires the participation of workers in the scheduled activity.
- **Task Specific Observations** – Fork Lift Ops, Motor Vehicle Ops, Wellness, Glove Box, etc.



# Changes

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- **The Form:**

- **A “Pocket” form or card has been developed to meet the needs of observers who prefer not to interact with a computer database.**
- **The card will typically be a functional area or task specific card. Allowing for the collection of targeted information.**
- **LSITs may create LSIT specific checklist to target a general population.**



# Changes

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- **The Database:**
  - **Is accessed from our web browser.**
  - **Has a new look.**
  - **Has more tools to analyze the data.**
  - **Is faster.**
  - **Remains user friendly for basic computer skilled user.**
  - **Successfully piloted by over 50 Observers.**

# Opening Checklist Window

The selected checklist opens in a separate window. All information in light gray area is required. "HPI Tools Used" requires the observer to document the number of people using each tool. When an at-risk behavior is documented, a new window opens to document comments. (The dark grey area is to document "Mini-Timeout".)

## FA/Task Observation Card

### Checklist Type: Lab Worker

Observation | Comments

<b>Observer:</b> Staten, Roger	<b>LSIT:</b> SWAT	<b>Location:</b> <input checked="" type="radio"/> Field <input type="radio"/> Office <input type="radio"/> OTJ	<b>HPI Tools Used</b> <input type="checkbox"/> 1 Self Check <input type="checkbox"/> 1 Peer Check <input type="checkbox"/> 2 3 way Comm <input type="checkbox"/> Proc U & A <input type="checkbox"/> Timeout <input type="checkbox"/> 3 Q Attitude <input type="checkbox"/> Phonetic Alph <input type="checkbox"/> Pre-Job Brief <input type="checkbox"/> Place keeping
<b>Date of Observation:</b> February 6, 2009	<b>Time of Observation:</b> 8 : 00 AM	<b>Area:</b> Area stuff	
<b>Activity Observed / Comments</b> Maint. Mechanical Pump 2B disassembly		<b># People Observed</b> 4	
<b>Mini-TO:</b> <input checked="" type="radio"/> No <input type="radio"/> Yes	<b>Why:</b>	<b>Solution:</b>	

Index	Category	Critical Behavior	Description	Safe	At Risk	Comments/Good Practice
12.4	Laboratory Safety	Focused on Task at Hand		<input type="checkbox"/> 1	<input type="checkbox"/>	<input type="button" value="Edit/Add"/>
12.12	Laboratory Safety	Handling Chemical Properly		<input type="checkbox"/>	<input type="checkbox"/> 1	<input type="button" value="Edit/Add"/>
12.13	Laboratory Safety	Using Flammables / Combustibles		<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="Edit/Add"/>
12.16	Laboratory Safety	Work in Radiological Hoods and Benches		<input type="checkbox"/> 1	<input type="checkbox"/>	<input type="button" value="Edit/Add"/>

# Comments Tab

Comments are submitted and can be viewed on the Comments Tab. Once Save and Exit is clicked, the at-risk behavior and associated comments are automatically transferred to STAR HPI Reporting.

**FA/Task Observation Card**  
**Checklist Type: Lab Worker**

Observation Comments

**Safe Behaviors**

Index	Critical Behavior	# Safe	Good Practice	Comments	Edit
12.4	Laboratory Safety Focused on Task at Hand	1	N		<input type="button" value="Edit"/>
12.16	Laboratory Safety Work in Radiological Hoods and Benches	1	N		<input type="button" value="Edit"/>

**Risk Behaviors**

Index	Critical Behavior	# Risk	Error Precursor	What	Why	Resolution	Edit
12.12	Laboratory Safety Handling Chemical Properly	1	9-Distractions / Interruptions 32-Limited short-term memory	The individual assigned to mix chemical for the procedure was not wearing an acid apron. Acid burn could have occurred	The individual had laid the apron on the other side of the room while prepping and did not put it on due to distraction	Work was stopped safely and the apron was donned.	<input type="button" value="Edit"/>

# At-Risk Details

The At-Risk Details window requires the observer to document:

what was at-risk;

why it was at-risk; and

what was done to correct the behavior (the resolution).

Also, the observer documents the Error Precursors identified for the at-risk behavior.

The screenshot shows a software window titled "Behavior Details" with a blue header bar. The window is divided into two main sections: "At Risk Details" and "Error Precursors".

**At Risk Details**

<b>Behavior:</b>	12.12 - Handling Chemical Properly (Laboratory Safety)
<b>What:</b>	The individual assigned to mix chemical for the procedure was not wearing an acid apron. Acid burn could have occurred
<b>Why:</b>	The individual had laid the apron on the other side of the room while prepping and did not put it on due to distraction
<b>Resolution:</b>	Work was stopped safely and the apron was donned.

**Error Precursors**

Task Demands	Work Environment
<input type="checkbox"/> 1. Time Pressure	<input checked="" type="checkbox"/> 9. Distractions / Interruptions
<input type="checkbox"/> 2. High Workload	<input type="checkbox"/> 10. Changes in routine
<input type="checkbox"/> 3. Multi-tasks	<input type="checkbox"/> 11. Confusing displays / control
<input type="checkbox"/> 4. Repetitive	<input type="checkbox"/> 12. Work-arounds / OOS inst.
<input type="checkbox"/> 5. Irrecoverable Act	<input type="checkbox"/> 13. Hidden system response
<input type="checkbox"/> 6. Interpretation	<input type="checkbox"/> 14. Unexpected equip. condition
<input type="checkbox"/> 7. Unclear goals, roles, & resp.	<input type="checkbox"/> 15. Lack of alternative indication
<input type="checkbox"/> 8. Lack of or unclear standards	<input type="checkbox"/> 16. Personality conflict

Individual Capabilities	Human Nature
<input type="checkbox"/> 17. Unfamiliar task / First time	<input type="checkbox"/> 25. Stress
<input type="checkbox"/> 18. Lack of knowledge	<input type="checkbox"/> 26. Habit patterns
<input type="checkbox"/> 19. New technique	<input type="checkbox"/> 27. Assumptions
<input type="checkbox"/> 20. Imprecise communication	<input type="checkbox"/> 28. Complacency / Overconfidence
<input type="checkbox"/> 21. Lacks proficiency / Inexp.	<input type="checkbox"/> 29. Mind-set
<input type="checkbox"/> 22. Poor problem-solving skills	<input type="checkbox"/> 30. Inaccurate risk perception
<input type="checkbox"/> 23. Unsafe attitude	<input type="checkbox"/> 31. Mental shortcuts (biases)
<input type="checkbox"/> 24. Illness / Fatigue	<input checked="" type="checkbox"/> 32. Limited short-term memory

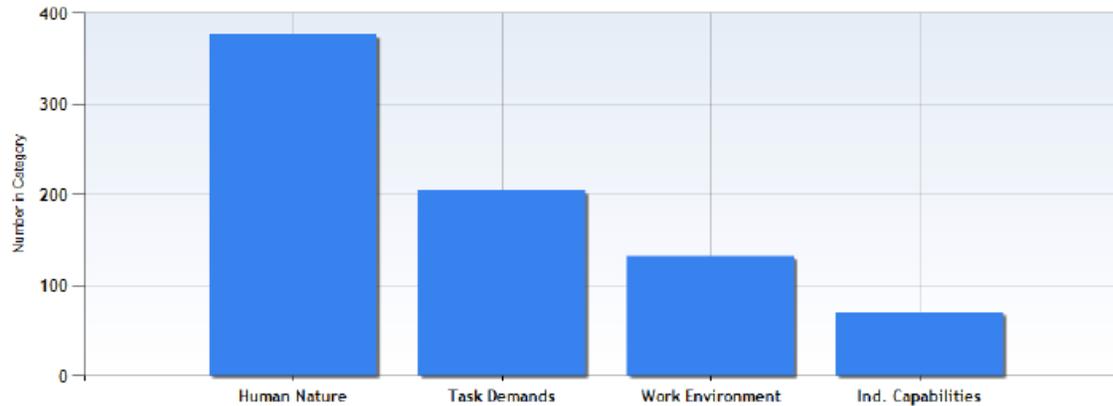
At the bottom of the window, there are three buttons: "Spell Check", "Submit", and "Cancel".

**BBS Error Precursors:**

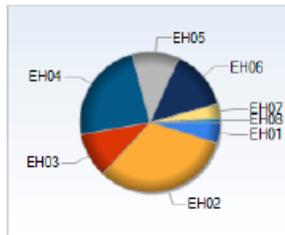
Reset

LSIT: All From: 5/1/2009 To: 7/31/2009 Apply Dates

**Error Precursors**

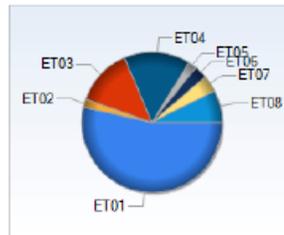


**Human Nature**



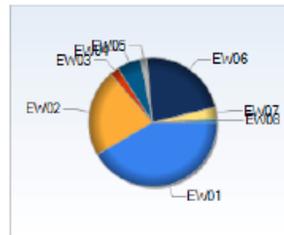
Error Code	Cnt
EH02-Habit patterns	121
EH04-Complacency/overconfidence	89
EH06-Inaccurate risk perception	53
EH05-Mind-set	41
EH03-Assumptions	39
EH01-Stress	18
EH07-Mental shortcuts (biases)	13
EH08-Limited short-term memory	2

**Task Demands**



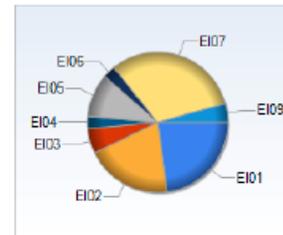
Error Code	Cnt
ET01-Time pressure (in a hurry)	109
ET04-Repetitive actions/monotony	31
ET03-Simultaneous, multiple tasks	27
ET08-Lack of or unclear standards	15
ET07-Unclear goals, roles, or responsibilities	8
ET06-Interpretation requirements	6
ET02-High workload (high memory requirements)	4
ET05-Irreversible acts	4

**Work Environment**



Error Code	Cnt
EW01-Distractions/interruptions	55
EW06-Unexpected equipment condition	30
EW02-Changes/departure from routine	29
EW04-Workarounds/out-of-service instrumentation	8
EW07-Lack of alternative indication	4
EW03-Confusing displays/controls	3
EW05-Hidden system response	2
EW08-Personality conflict	1

**Ind. Capabilities**



Error Code	Cnt
EI07-"Unsafe" attitude for critical tasks	22
EI01-Unfamiliarity with task/first time	16
EI02-Lack of knowledge (mental model)	14
EI05-Lack of proficiency/inexperience	7
EI03-New technique not used before	4
EI09-Illness/fatigue	3
EI04-Imprecise communication habits	2
EI06-Indistinct problem-solving skills	2