# Behavioural based Safety – Challenges in Asia

Ricky Yu

BST Asia

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# Introduction

- Established in 1979 → One of the early pioneers in Behavioural based Safety (BBS)
- Evolution of our client base
  - Early clients → mostly Oil & Gas
  - Recent ones → Healthcare Industry (patient safety)
- Offices in Australia, Brazil, Singapore, South Africa, Switzerland, UK, US (HQ in California)
- >180 BST employees located around the world
- Close to 1 million+ BAPP®-engaged employees
- Projects at over 2,300 locations in more than 50 countries

# Our Early Journey in BBS (BAPP®)

- Started off very much as an employee-driven process
  - Peer-to-peer observation
  - Voluntary observers from “worker” level
  - Not much “management” participation
  - Good results in general but…….






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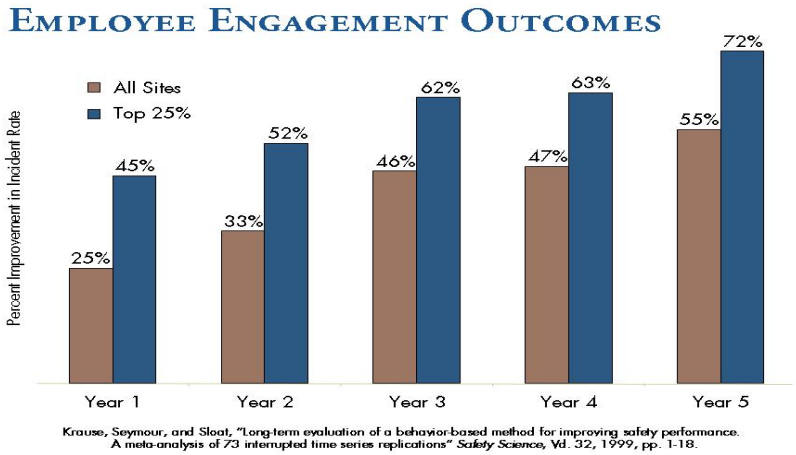
  - Good results in general but…….over time, variations emerge




Krause, Seymour, and Sloat, “Long-term evaluation of a behavior-based method for improving safety performance. A meta-analysis of 73 interrupted time series replications” *Safety Science*, Vol. 32, 1999, pp. 1-18.

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# Our BBS (BAPP®) Work in Asia

- Limited client base but have been implemented in China, Hong Kong, Indonesia, Malaysia, Singapore, Taiwan, Thailand

- The issues of Asian culture
  - "We are not used to giving feedback to our peers" (各家自掃門前雪)
  - "I can't be giving feedback to my boss"
  - "You should take care of your own safety" (無事獻欣勤，非奸即盜)
  - "I don't have the expertise to determine whether his/her behaviour is safe or not"
  - "Management does not believe in no name-no blame"
  - Policy versus implementation (上有政策，下有對策)





# The Real Problems lie in….

- Identification of **critical** behaviours
  - Communication , education or buy-in
  - "We want it all…" → you can't see them all!
  - Use of local language
  - Behaviours versus conditions
  - It's a live document!

- Observation / feedback
  - Only part of the whole process (it's not just observation training)
  - The importance of (positive) feedback → it's a "safety discussion" and not giving instructions
  - "We are not good at asking questions"
  - Quality before quantity
  - Skills calibration

Identify Critical Exposures

Gather Data

Provide Feedback and Coaching

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# The Real Problems lie in…. (cont)

- Dealing with resistance
  - Coaching / pairing
  - Process induction for non-departmental observers
  - Engage the skeptical
  - Engage the experienced
  - Observe the leaders! (以身作則)

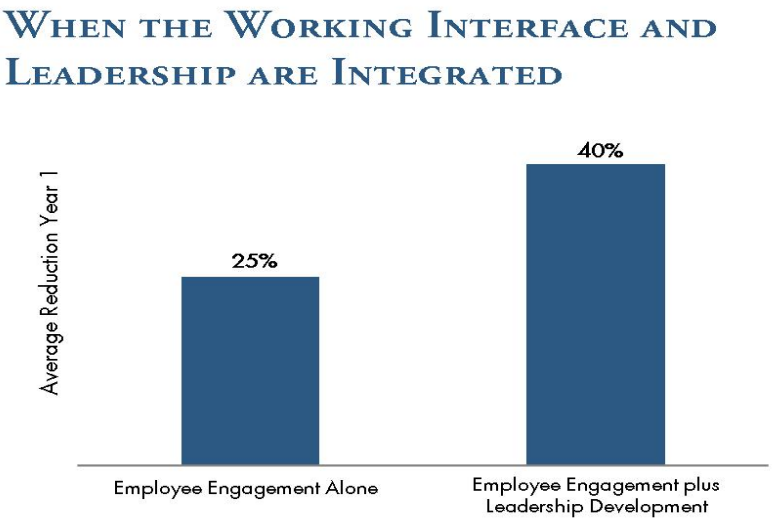
- Action planning (removing the barriers)
  - Management participation → credibility reduces resistance
  - Communication is the key → tell them what have been done!
  - Intelligent data management → "garbage in, garbage out"






# BBS – Our Latest Thinking

- From BBS to behavioural alignment → It turned out that leadership did play a role in many successful BAPP® implementation…..



# But What Exactly Should They Do?

- We are talking about managers and supervisors
- Let's think about how they can ruin safety efforts →
    - "Why are these people so stupid?"
    - "If our people would just follow the rules…."
    - "You don't have time for another useless observation"
    - "I need to take care of production at the other bay first.."
    - …….





# But What Exactly Should They Do?

- We are talking about managers and supervisors
- Applying the same concepts of BAPP®, we aim to identify a set of "critical behaviours" for managers and supervisors

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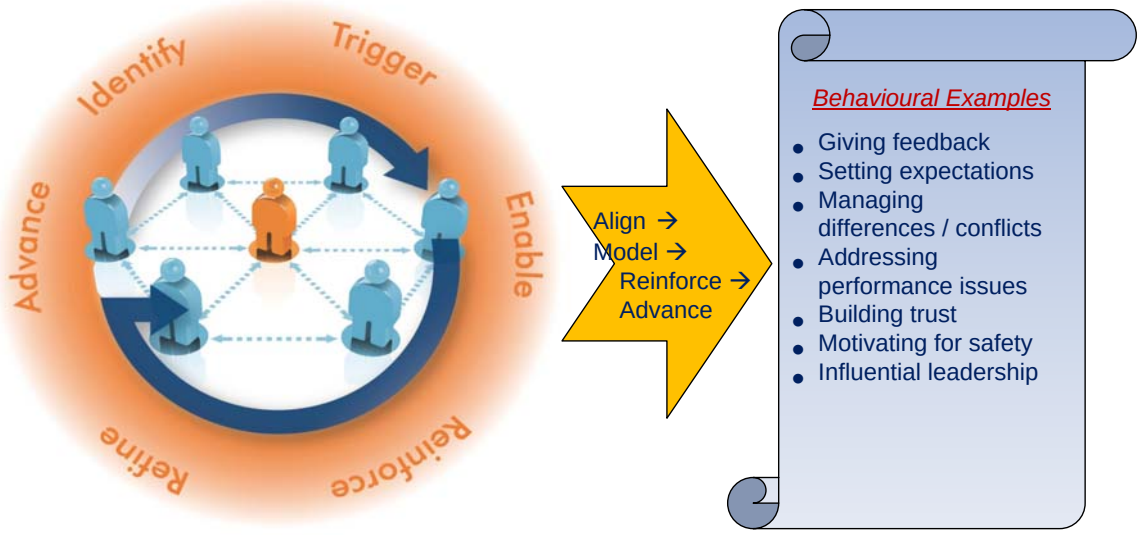






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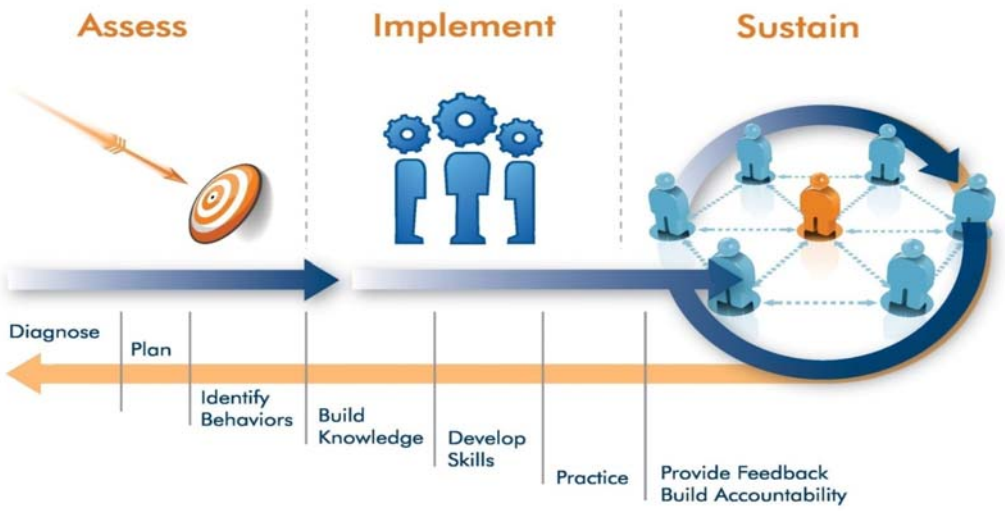


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# Is That All? What About the TOP?

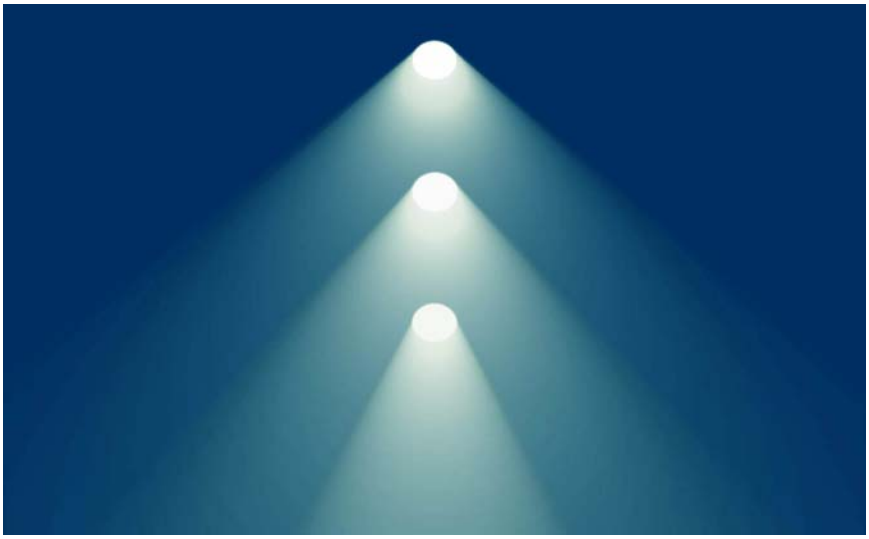
- Traditional thinking about “senior” management support is about speech and $.....but there are more…






# We See the TOP as Guiding Light

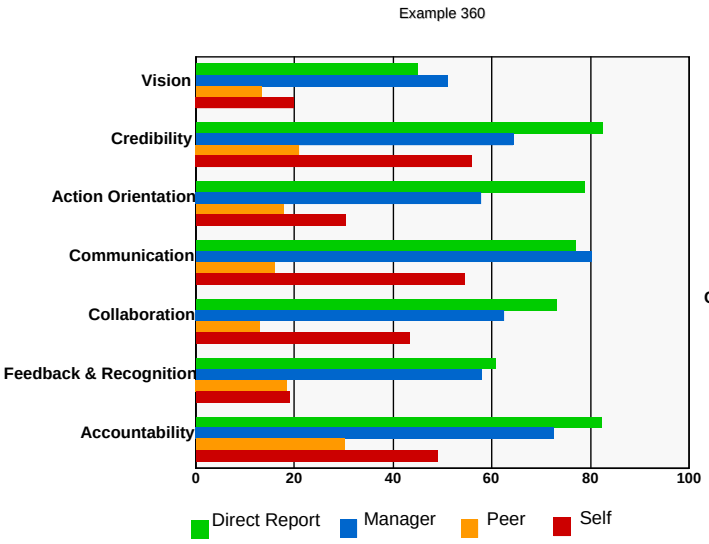
- What they do and say really shape the entire safety / organisation culture……



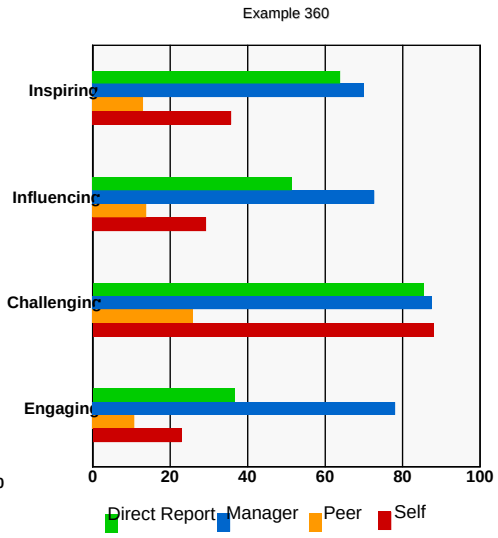
# We See the TOP as Guiding Light

- ……and these behaviours can be assessed, modeled and improved

**Safety Leadership Best Practices**




**Transformational Leadership**

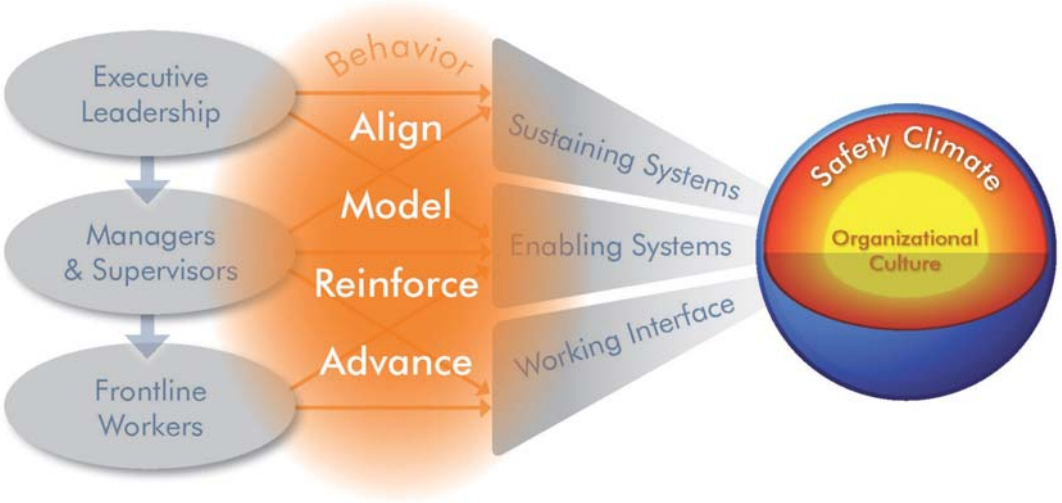







# So, What is World Class Safety?

- It requires behavioural alignment at ALL levels of the organisation



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- A strong organisational culture has a much high probability of sustaining excellent safety performance






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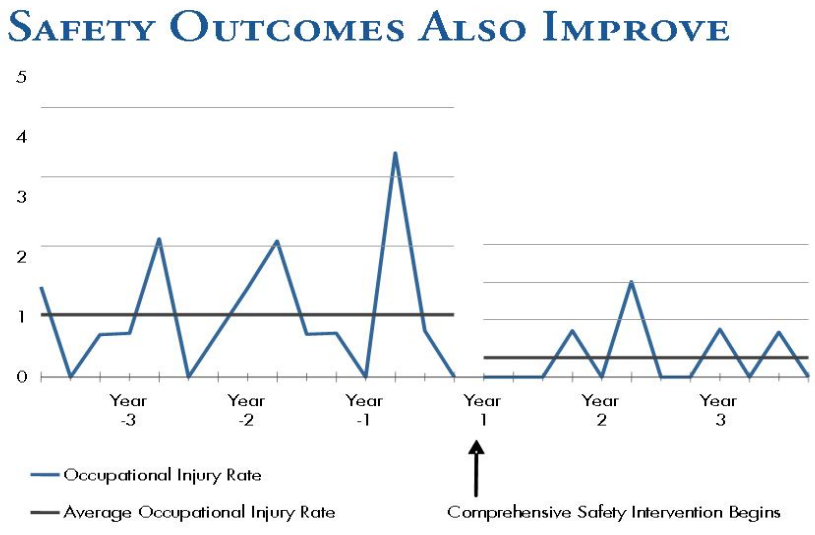

# Center for Chemical Process Safety

An AIChE Industry Technology Alliance

## Lessons From the Columbia Disaster

**"Safety & Organizational Culture"**



"Presentation Rev_newv4_final" as of 11_15_05

# FEB 1, 2003 8:59 EST

Space shuttle Columbia, re-entering Earth's atmosphere at 10,000 mph, disintegrates

- All 7 astronauts were killed
- $4 billion spacecraft was destroyed
- Debris scattered over 2000 sq-miles of Texas
- NASA grounded shuttle fleet for 2-1/2 years



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# Columbia - The Physical Cause

- Insulating foam separates from external tank 81 seconds after lift-off
- Foam strikes underside of left wing, breaches thermal protection system (TPS) tiles
- Superheated air enters wing during re-entry, melting aluminum struts
- Aerodynamic stresses destroy weakened wing

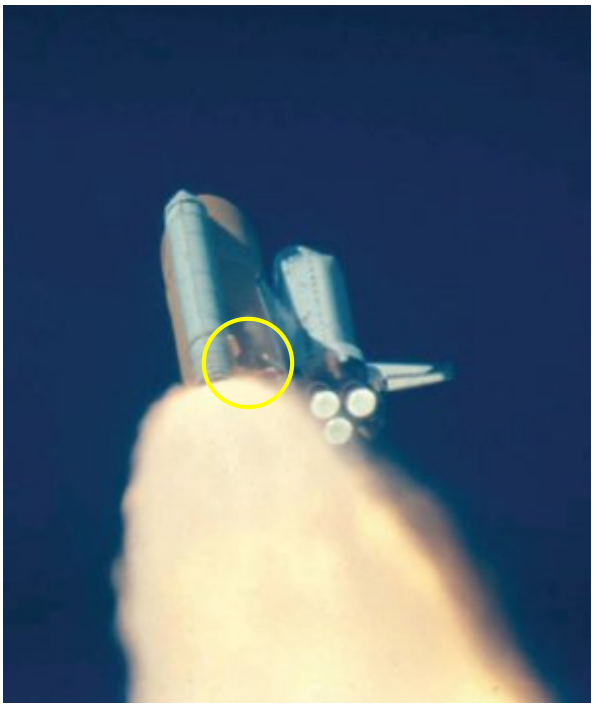






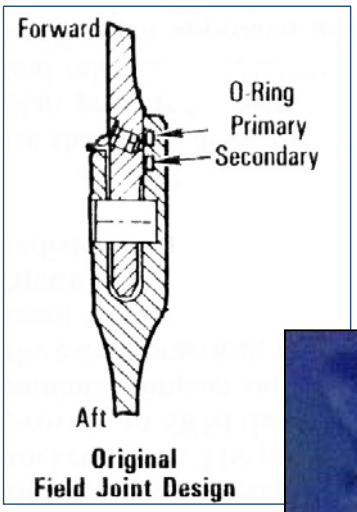
# A Flawed Decision Process

- Foam strike detected in launch videos on Day 2
- Engineers requested inspection by crew or remote photo imagery to check for damage
- Mission managers discounted foam strike significance
- No actions were taken to confirm shuttle integrity or prepare contingency plans



# Seventeen Years Earlier…

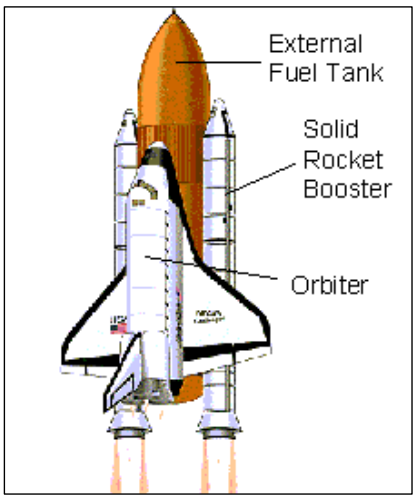
- January 28, 1986, the shuttle Challenger exploded 73 seconds into its launch, killing all seven crew members
- Investigation reveals that a solid rocket booster (SRB) joint failed, allowing flames to impinge on the external fuel tank






# Challenger…

- Liquid hydrogen tank explodes, ruptures liquid oxygen tank
- Resulting massive explosion destroys the shuttle




# The Legacy of Challenger

- The Rogers Commission, which investigated the incident, determined:
  - The SRB joint failed when jet flames burned through both o-rings in the joint
  - NASA had long known about recurrent damage to o-rings
  - Increasing levels of o-ring damage had been tolerated over time
    - Based upon the rationale that "nothing bad has happened yet"




# The Legacy… continued

- The Commission also determined that:
  - SRB experts had expressed concerns about the safety of the Challenger launch
  - NASA's culture prevented these concerns from reaching top decision-makers
  - Past successes had created an environment of over-confidence within NASA
  - Extreme pressures to maintain launch schedules may have prompted flawed decision-making
- The Commission's recommendations addressed an number of organizational, communications, and safety oversight issues

# Columbia Accident Investigation Board Findings:

- The cause of the accident was related to *cultural and organizational factors* as much as to technical factors
- NASA was characterized as having a *"broken safety culture"*





# BST was given the task of assessing the NASA's culture and developing an intervention plan to change the culture of the organization

## Project Goals:

- Assessment and Plan: 30 days
- Measurable progress: 6 months
- Transform culture: 36 months

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## Project Team:

- 16 person BST team
- 2 sub-contractors
- Top-level NASA Steering Team at HQ
- Site-level implementation teams





# Assessment:

- Administer BST Safety Climate and Culture Diagnostic Instrument and Leadership Diagnostic Instruments
- Conduct in-depth interviews and observations
- Analyze data
- Recommend plan

# Assessment Findings





## The Columbia Accident Investigation Board's view of organizational causes of the accident:

1. Barriers prevent effective communication of critical safety information and stifled professional differences of opinion.
2. Failure to recognize that decision making was inappropriately influenced by past success.
3. Acceptance of decision-making processes that operate outside the organization's rules.

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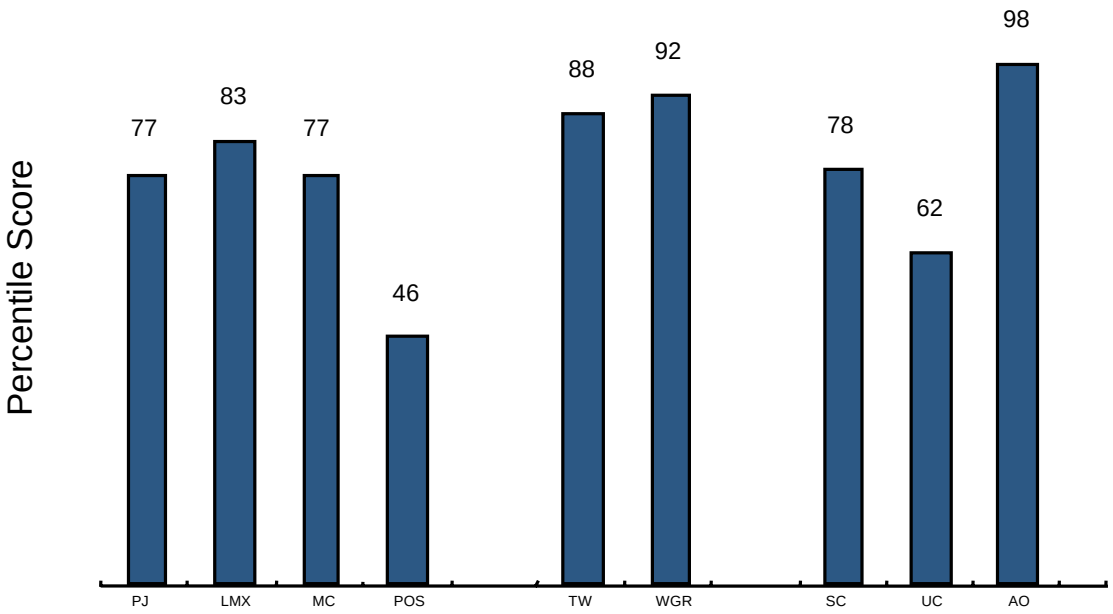
# BST Safety Climate & Culture Scales

## NASA Combined Overall Percentiles by Scale








# Themes from the Interviews and Observations:

1. "We are a unique organization in a unique industry". Reluctance to learn from other industries.
2. Motivation, goal alignment and job satisfaction were very high. Pride of accomplishment, sense of mission, were primary drivers of individual performance.
3. Individual competence does not reliably predict organizational competence. Highly-competent individuals were often dysfunctional in groups.

# Overall Culture Change Plan:

**Strategic alignment**

### Coordination

- Strategic alignment for senior leaders
- Coordinate with other culture change efforts
- Monthly meetings with Administrator

### Current Leaders

- One to one coaching with senior leaders
- Behavioral observation & feedback
- Team effectiveness training

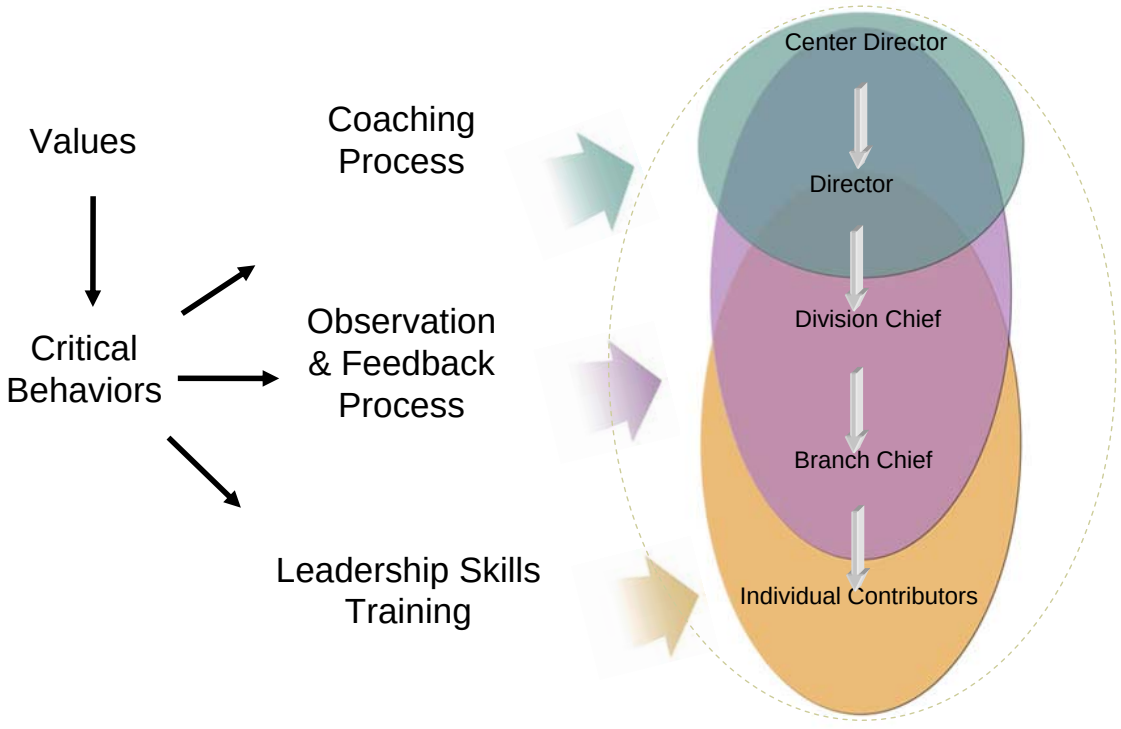
### Future Leaders

- Competency-based assessment for hiring, promotion, succession planning
- Competency based development plans





# Components of the Change Process:



# A Final Word

- Don't forget that your Safety Enabling & Sustaining Systems are as important

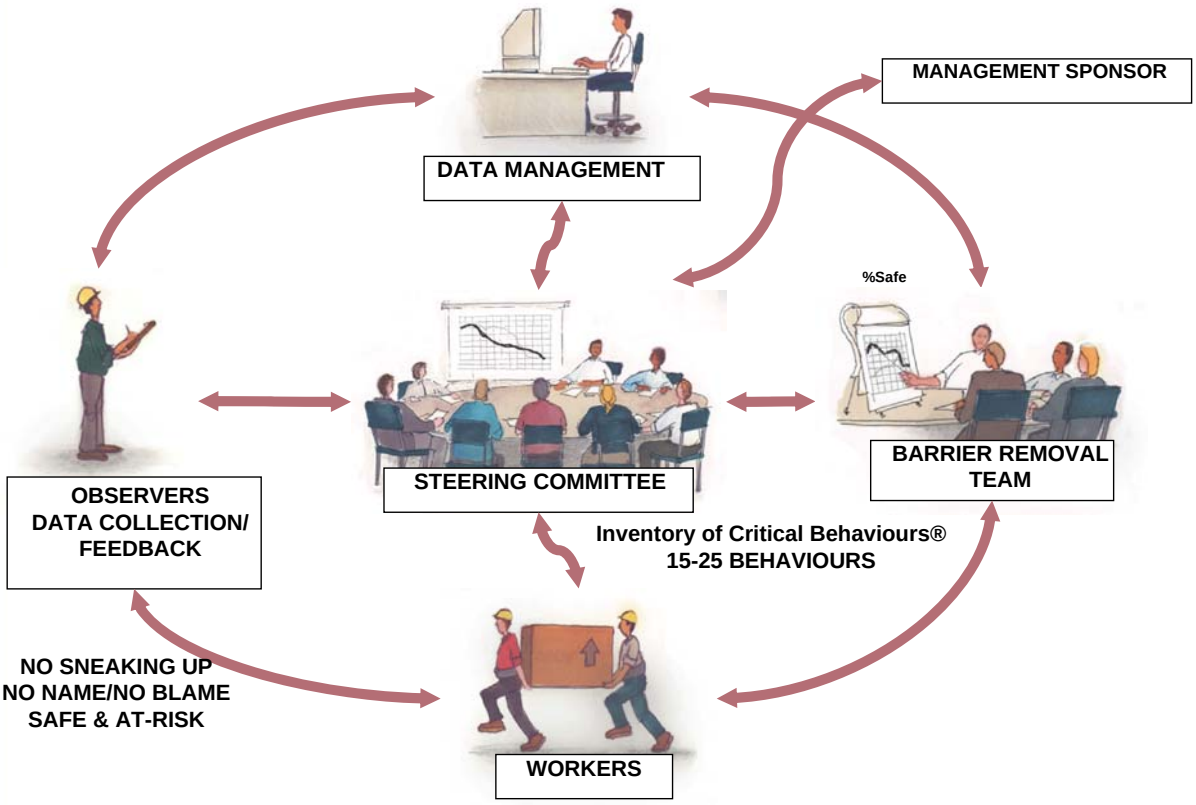
## Blueprint for Safety Transformation™






# *Thank You*

# BAPP® Technology Process Flow Chart

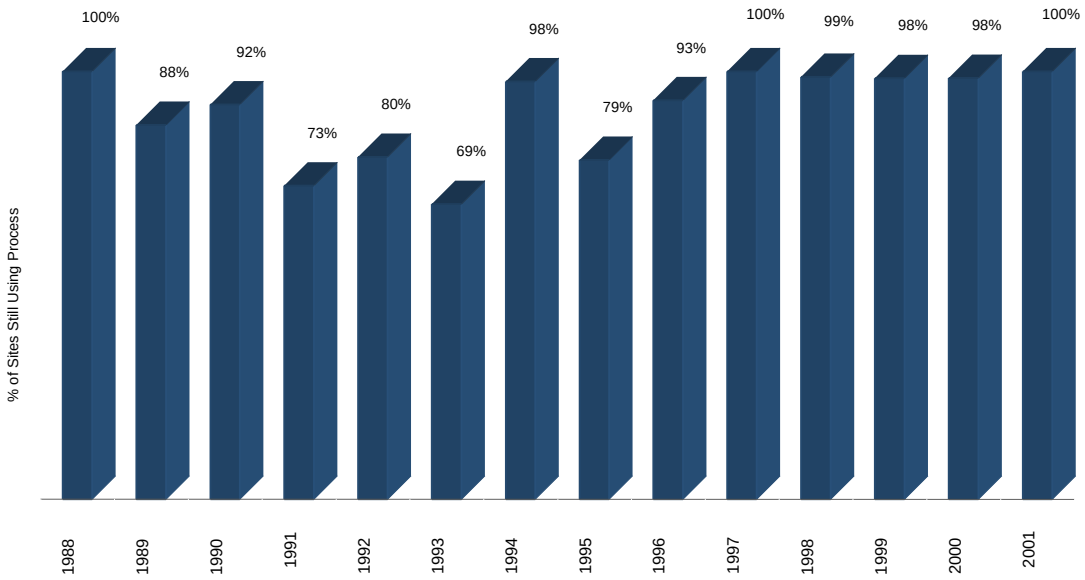




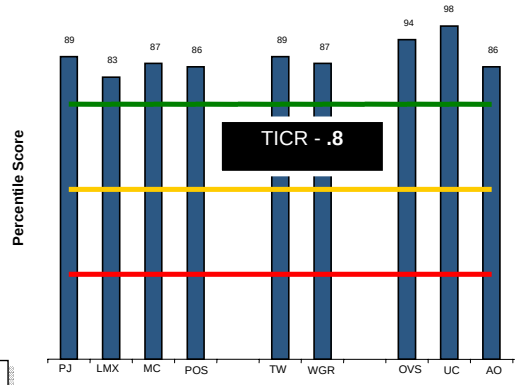



# BAPP System Sustainability

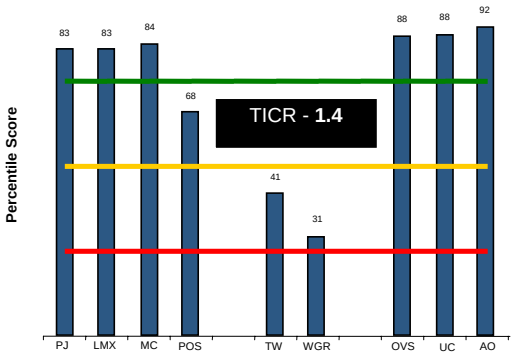
2001 Study

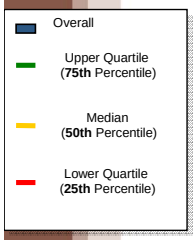


**Case Study – Site A**
**Overall Percentile by Scale**

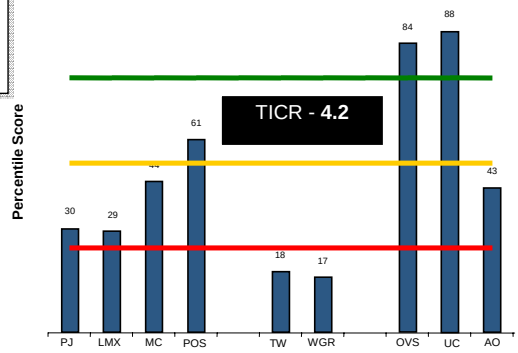



**Case Study – Site B**
**Overall Percentile by Scale**

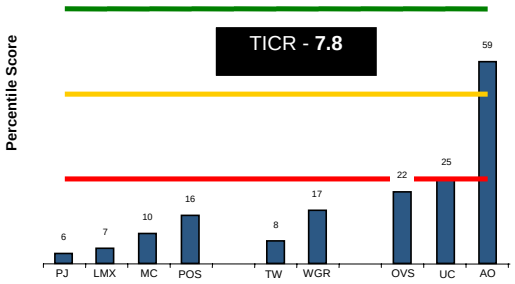



**Case Study – Site C**
**Overall Percentile by Scale**




**Case Study – Site D**
**Overall Percentile by Scale**








# Organisational Factors

| Scale | Description | Example |
|---|---|---|
| Management Credibility | Management is honest and trustworthy | ⇩ Most managers will keep their word<br>⇩ Managers treat workers with respect |
| Procedural Justice | Supervisor is fair and consistent | ⇩ Supervisor listens to concerns before making job decisions<br>⇩ Decisions are unbiased |
| Leader-Member Exchange | Relationship between leaders and their direct reports | ⇩ Supervisors understand workers' needs<br>⇩ Supervisors develop their people |
| Perceived Organizational Support | The company values its workers | ⇩ Company values my contribution<br>⇩ Company cares about workers' well being |

# Team Factors

| Scale | Description | Example |
|---|---|---|
| Teamwork | Team members get the job done | ⇩ Team members plan together and coordinate efforts<br>⇩ Team members make good decisions |
| Workgroup Relations | Team members get along | ⇩ Team members discuss difficulties with their co-workers<br>⇩ Team members listen to each other's ideas |





# Safety-Specific Factors

| Scales | Description | Example |
|---|---|---|
| Organizational Value for Safety | Management values safety | ⇩ Mgmt is acting to make the workplace safer<br>⇩ Mgmt is willing to invest money and effort to improve safety |
| Upward Communications | Employees can communicate easily with supervisors about safety issues | ⇩ Supervisor cares about employees' safety concerns<br>⇩ Workers are encouraged to report unsafe conditions |
| Approaching Others | Peers will talk to each other about safety issues | ⇩ Workers will let each other know if there is a safety concern<br>⇩ Workers would pass on safety information to others who have not heard it |