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An Integrated Approach to Behavioral Based Safety

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BST

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Behavior-Based Safety

Presentation

Human Factors Conference

Houston, TX

April 8th - 11th

2002





3 Types of At risk

- **Enabled** = within persons control - conditions and systems support
- **Difficult** = can be done but takes extra effort
- **Non-enabled** = not within persons control

Behavioral Science Technology, Inc.

The behavior-based performance improvement engine

Production
quality

Customer
service

Behavior-based
Performance
Improvement

Error
reduction

Spill
prevention

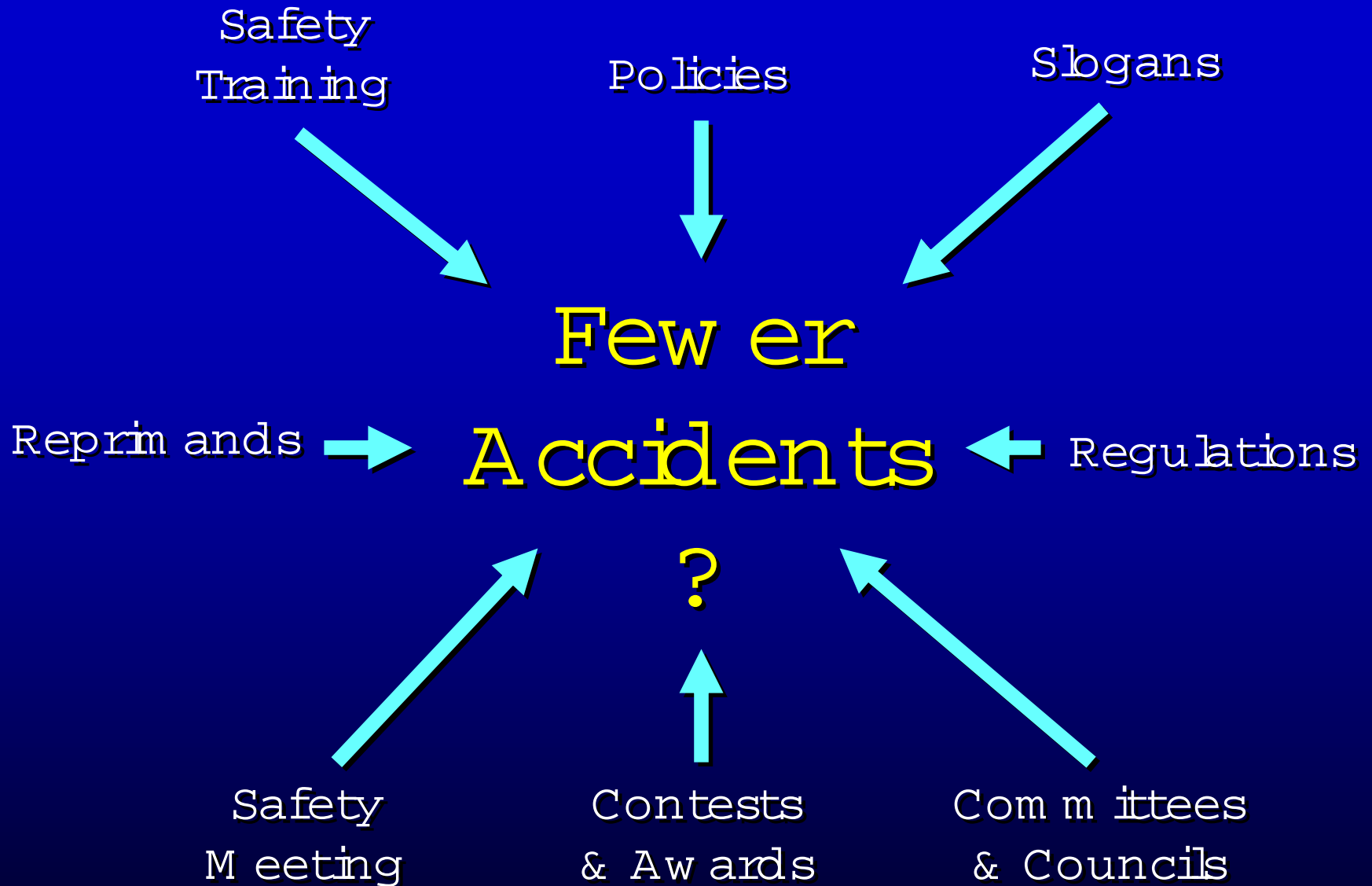
Safety

Primary Concepts

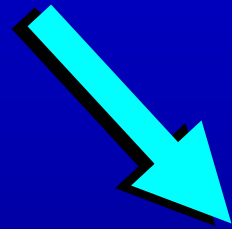
- Process not Program
- Adaptation vs adoption
- Employee Involvement
- Don't blame employees
- Parallels with quality
- Develop internal resources for implementation
- Objective: Continuous Improvement
- Mgmt & workforce must understand and buy-in

Barriers To Continuous Safety Improvement

- **Hazard recognition and response**
- **Business systems**
- **Rewards/recognition**
- **Facility and equipment**
- **Disagreement on safe practices**
- **Personal factors**
- **Culture**
- **Personal choice**



Safety Activities



Fewer
At-Risk Behaviors



Fewer Accidents



Behavior

An
Observable
Act



ABC Analysis

Antecedents

Anything which precedes and sets the stage for Behavior

Behavior

An observable act

Consequences

Anything which directly follows from the Behavior

Understanding System Influences

ABC Analysis

Antecedents

Goggles don't fit

Goggles are in poor condition

Behavior

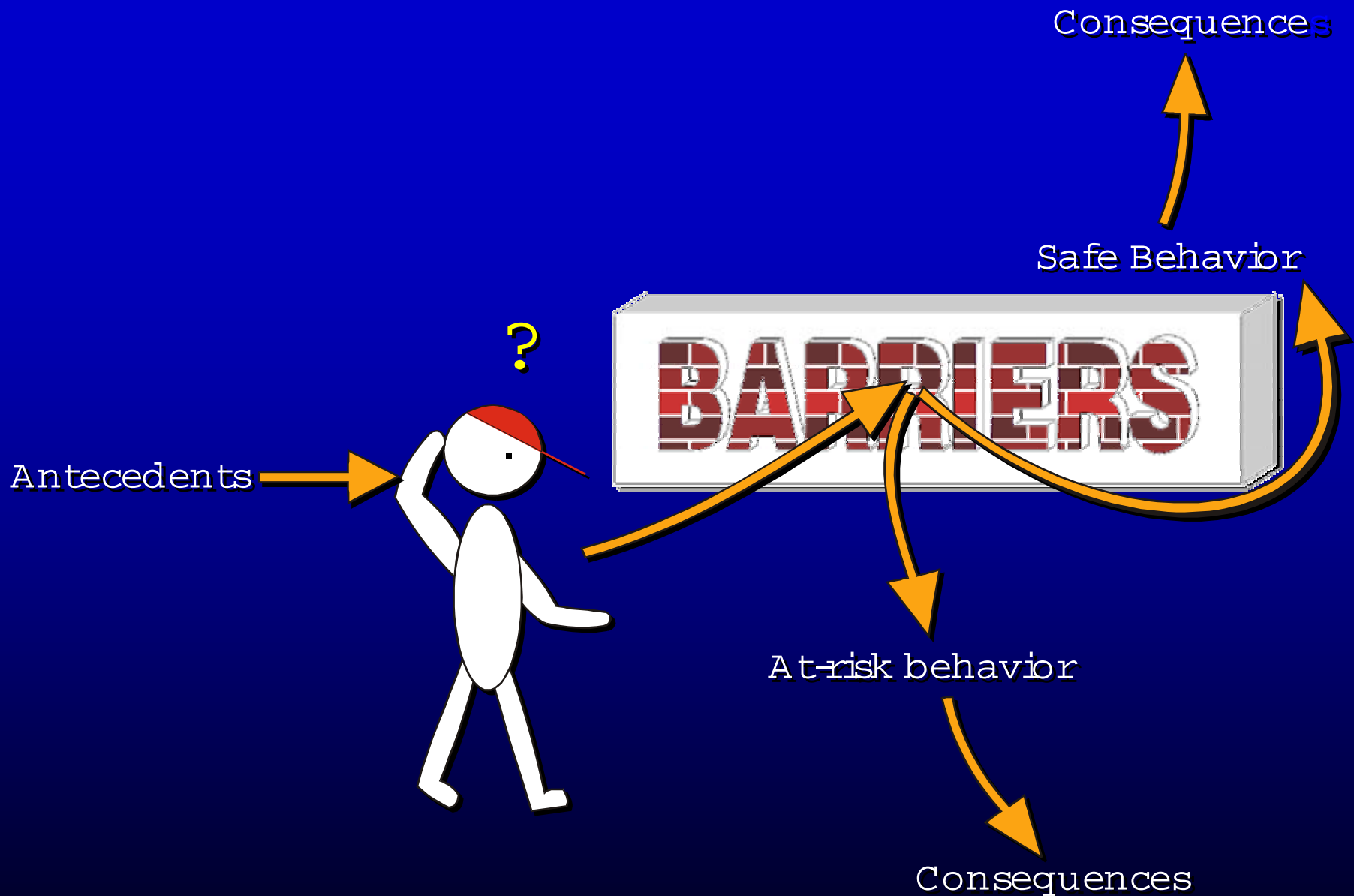
Worker fails to wear goggles when grinding

Consequences

Comfort

Better Vision

Exposure to Injury



The CBI® Tools

- **List of behaviors that have caused accidents**
- **Extracted from accident data**
- **Steering committee adds others based on their knowledge of workplace behavior**

Part One — CBI® Data Sheet

Critical elements

- **No names / no discipline**
- **Behaviors grouped into categories**
- **Selected variables used for sorting data**
- **Comment section**

Part Two — CBI® Definitions

- **Establishes in observable terms a consistent measurement of workplace behavior**
- **Ensures consistency between observers and observations**
- **Definitions are not a rewrite of rules and regulations**

Example Definition

4.1 Line of Fire:

Is the person positioning self to avoid getting contacted, sprayed, overexposed, struck or hit by something if it lets go, gives way, releases or falls?

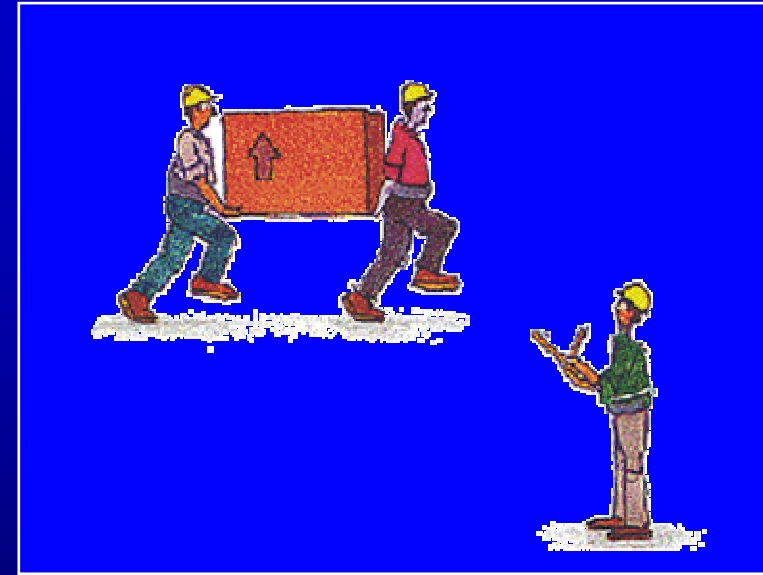
For Example —

1. Is person avoiding standing under suspended load?
2. Is person standing out of path of flying debris?
3. When breaking flange does the person break nuts farthest away first?
4. Does person avoid looking into pipe being rodded out?

Observers

TO START: Train a Core Group
of Hourly Workforce

GOAL: 100% of Site
Population Trained



Typical Frequency of Observation

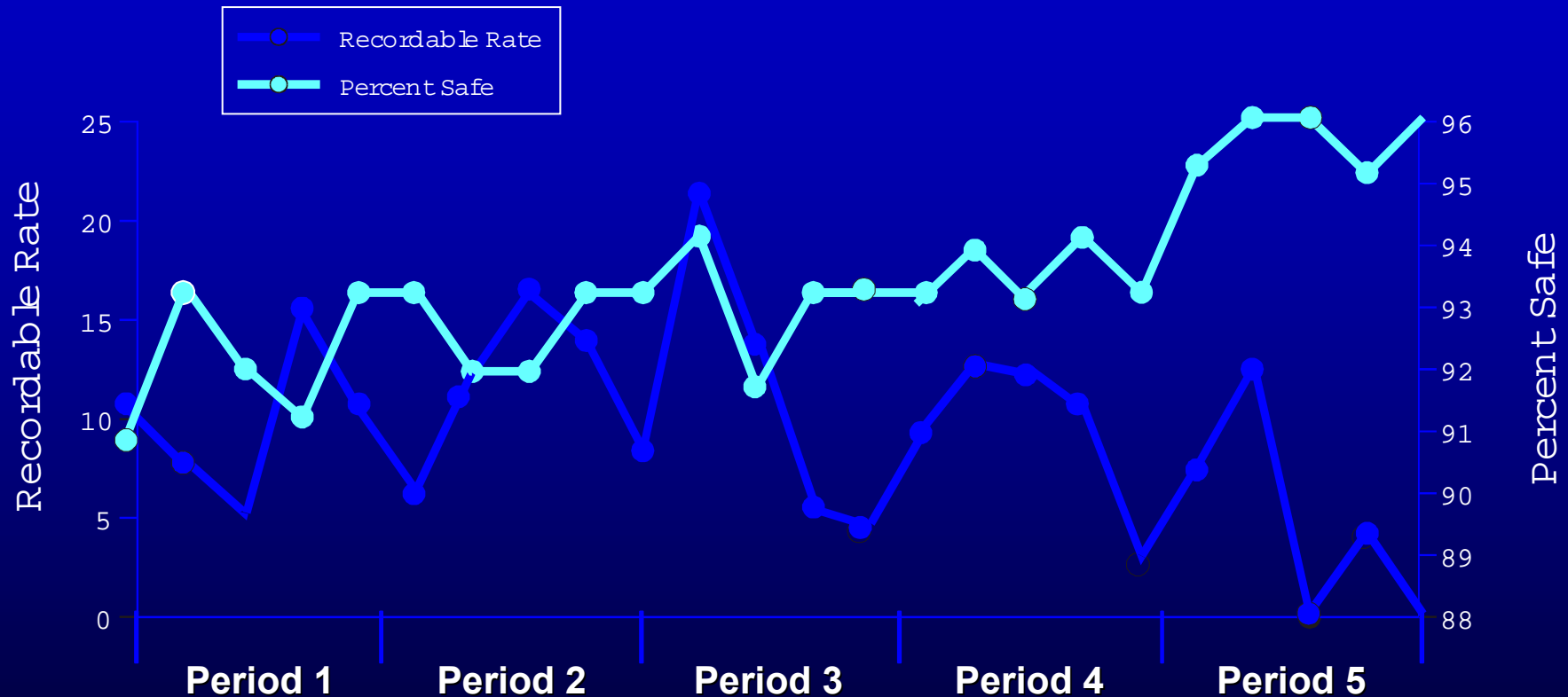
TO START: 2 per week Per Observer

DURATION: 5 – 30 Minutes



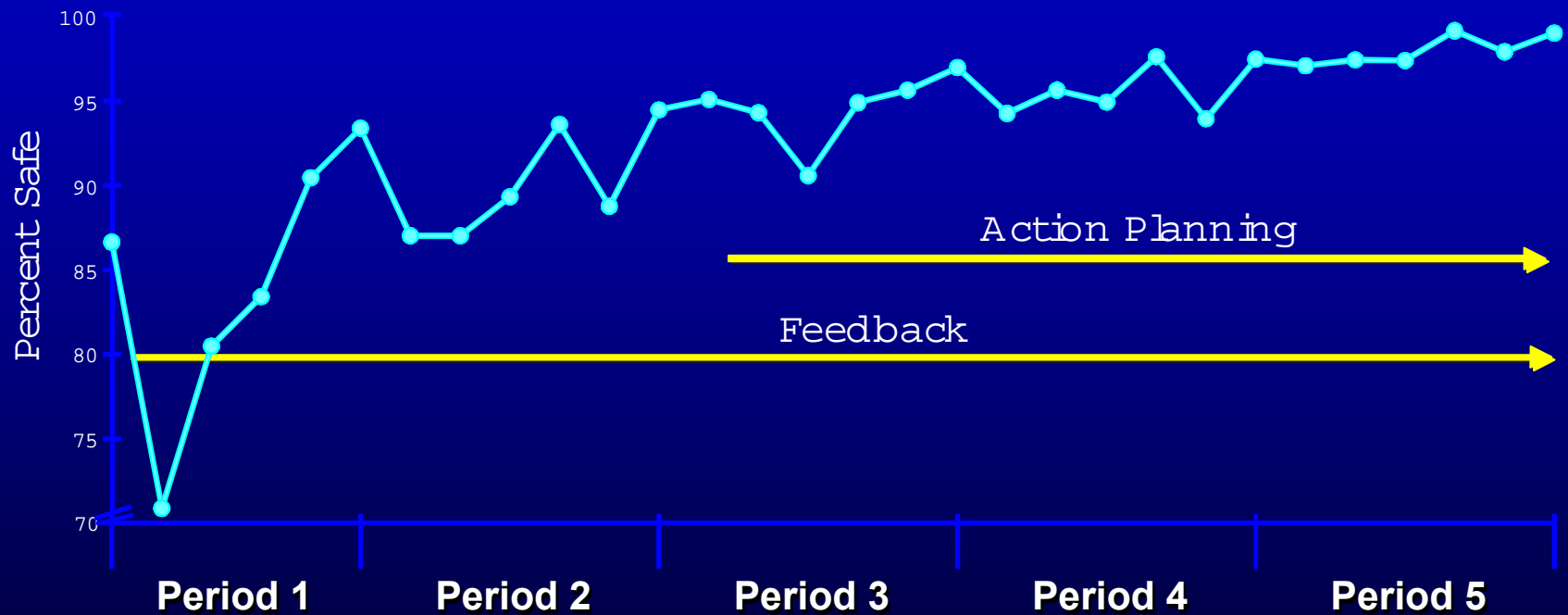
Analyze Data / Select Focus / Develop Action Plan

As Safe Behavior Increases, Recordable Rates Decrease



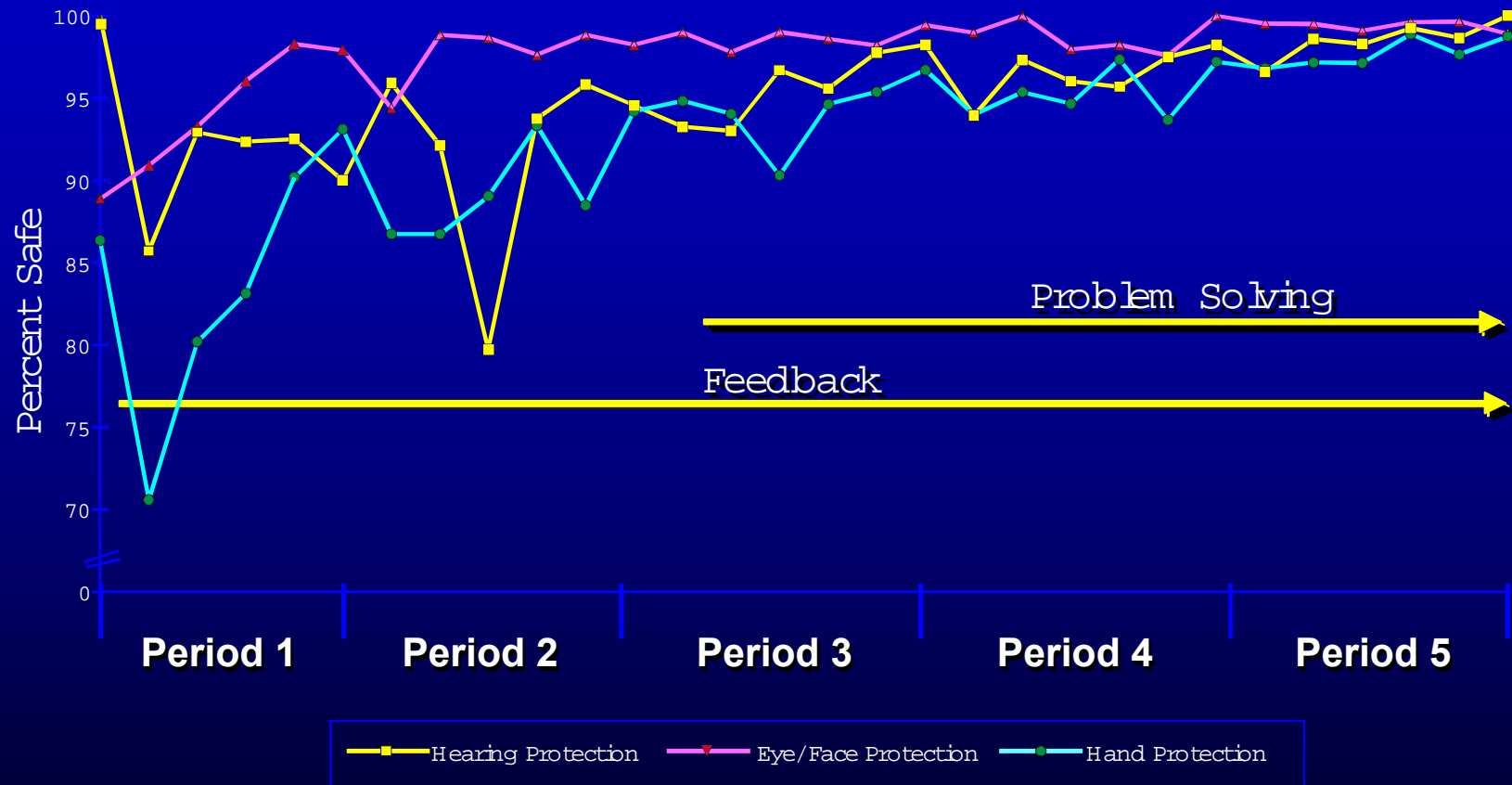
Hand Protection

Increased from 80% Safe to 98% Safe



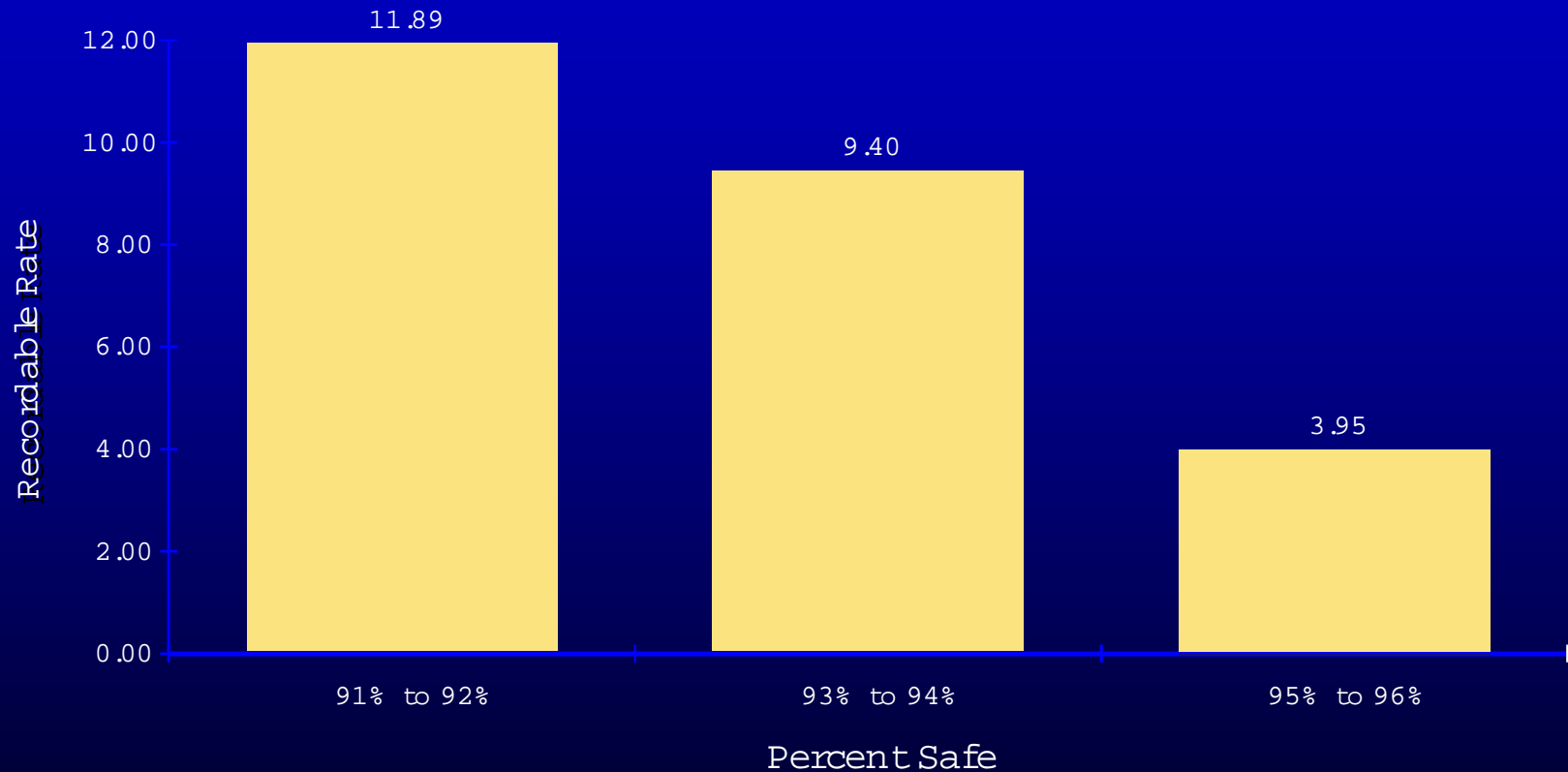
Industrial Hygiene Behaviors

Increases in Percent Safe over Time

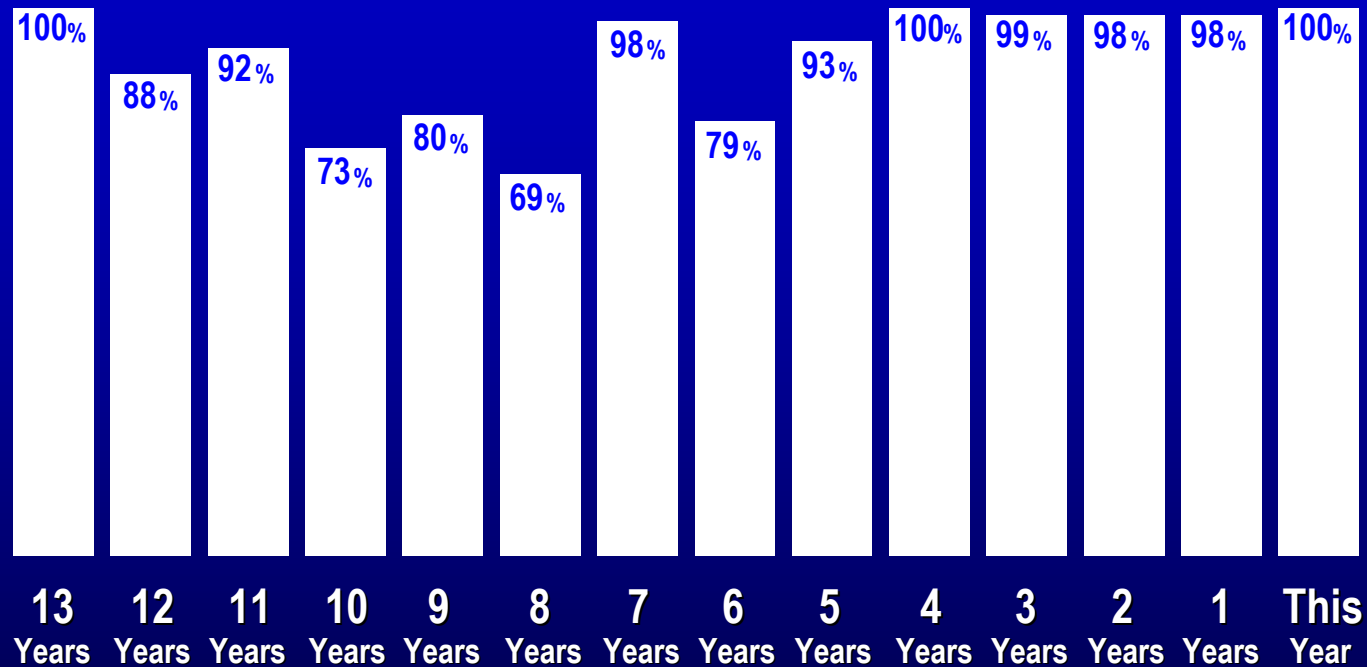


Lumber Mill

High Percent Safe Scores are Associated with Low Recordable Rates



Sustainability of Implementations



Percentage Still Using Their Processes

BAPP[®] Technology Process Flow Chart

