



Contents of Basic Behavioural Based Safety

Table of Contents

- ✚ What is Behavior-Based Safety (BBS)
- ✚ Aims and Benefits of BBSO
- ✚ Behavior Laws
- ✚ ABC behavior model
- ✚ Behavior Rules
- ✚ Observable & Underlying Behavior
- ✚ Intervention Strategy
- ✚ BBS Observation Check lists
- ✚ Behavior- Based Safety Process
- ✚ Case Study 1 and 2
- ✚ Video Exercise

WHAT EXACTLY IS BEHAVIOR-BASED SAFETY (BBS)?

Basically, BBS is an established method of using positive reinforcement to change unsafe individual behaviors and reinforce safe behaviors

Why do we take risk?

- ✦ The chances of getting hurt are too low to prevent us from taking risk
- ✦ This low probability of injury allows behavior to drift towards behavior that
 - Gets the job done more quickly
 - Requires less effort
 - Provides greater comfortable

It's human nature!!!

What is a Behaviour Based Safety Observation?

A behaviour based safety observation (BBSO) is a safety observation related to the behaviour of an Infineum colleague or contractor where the observation:-

- is related to safe or unsafe behaviour (not unsafe conditions or facilities)
- provides immediate feedback to the colleague or contractor
- is documented

What are the aims and benefits of BBSO?

The aims of BBSOs are:-

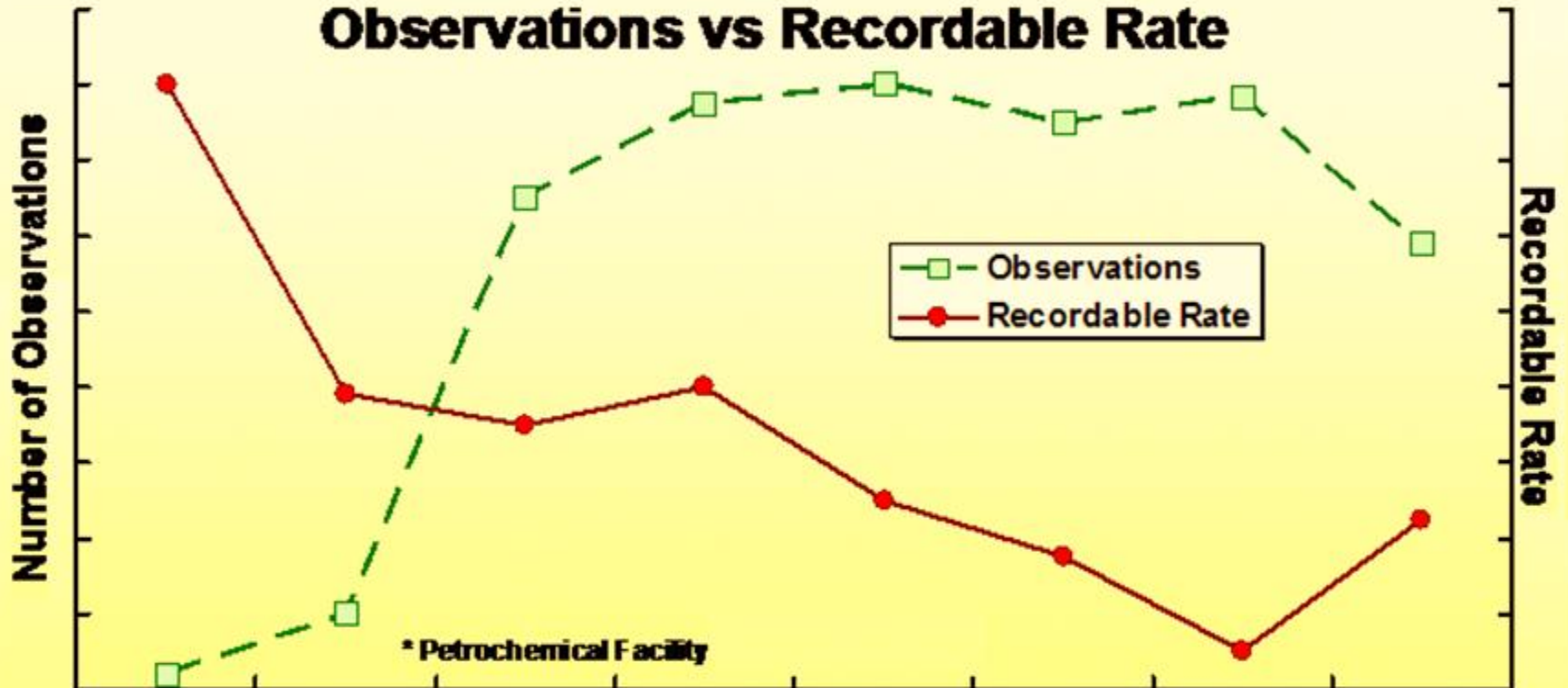
- ✚ to Intervene to reinforce safe behaviour or change unsafe behaviour or conditions
- ✚ to **Modify** behaviours such that safe behaviours are re-enforced, and at-risk behaviours are eliminated
- ✚ to recognizing both safe and at-risk behaviour
- ✚ not fault finding – it is a way to take care of others

The benefits of BBSOs include:

- ✚ the focus of attention and recognition on both safe and at-risk behaviours
- ✚ the “permission” to provide feedback and learn from one another
- ✚ the opportunity to enable all colleagues to make a contribution toward safety
- ✚ fostering of open communication about safety issues
- ✚ a constant reminder of workplace safety
- ✚ lower incident rates at Infineum locations where BBSO participation is high

What are the aims and benefits of BBSO? - Continued

**Sample* Results Comparing
Observations vs Recordable Rate**



Typical Bird's Safety Triangle

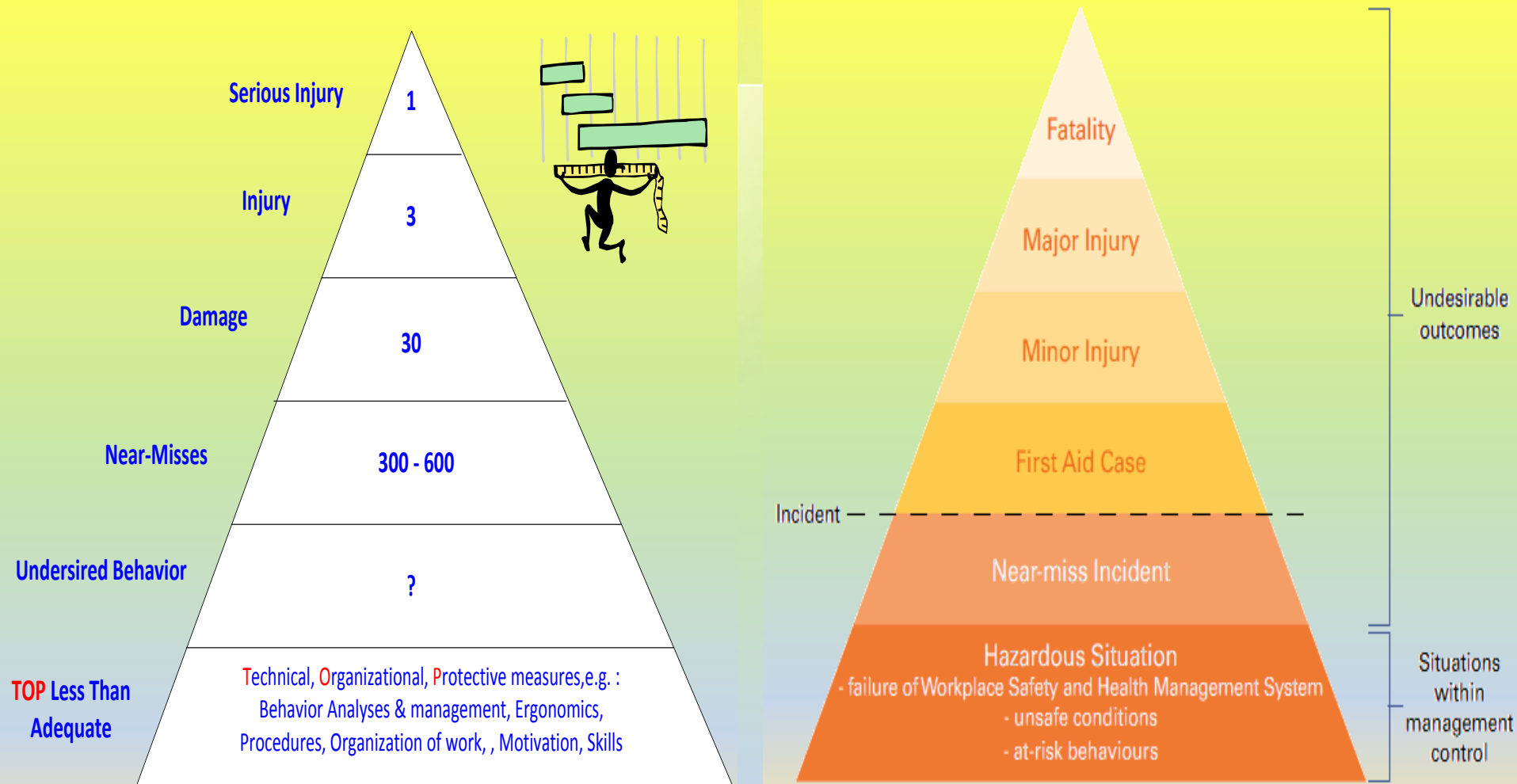
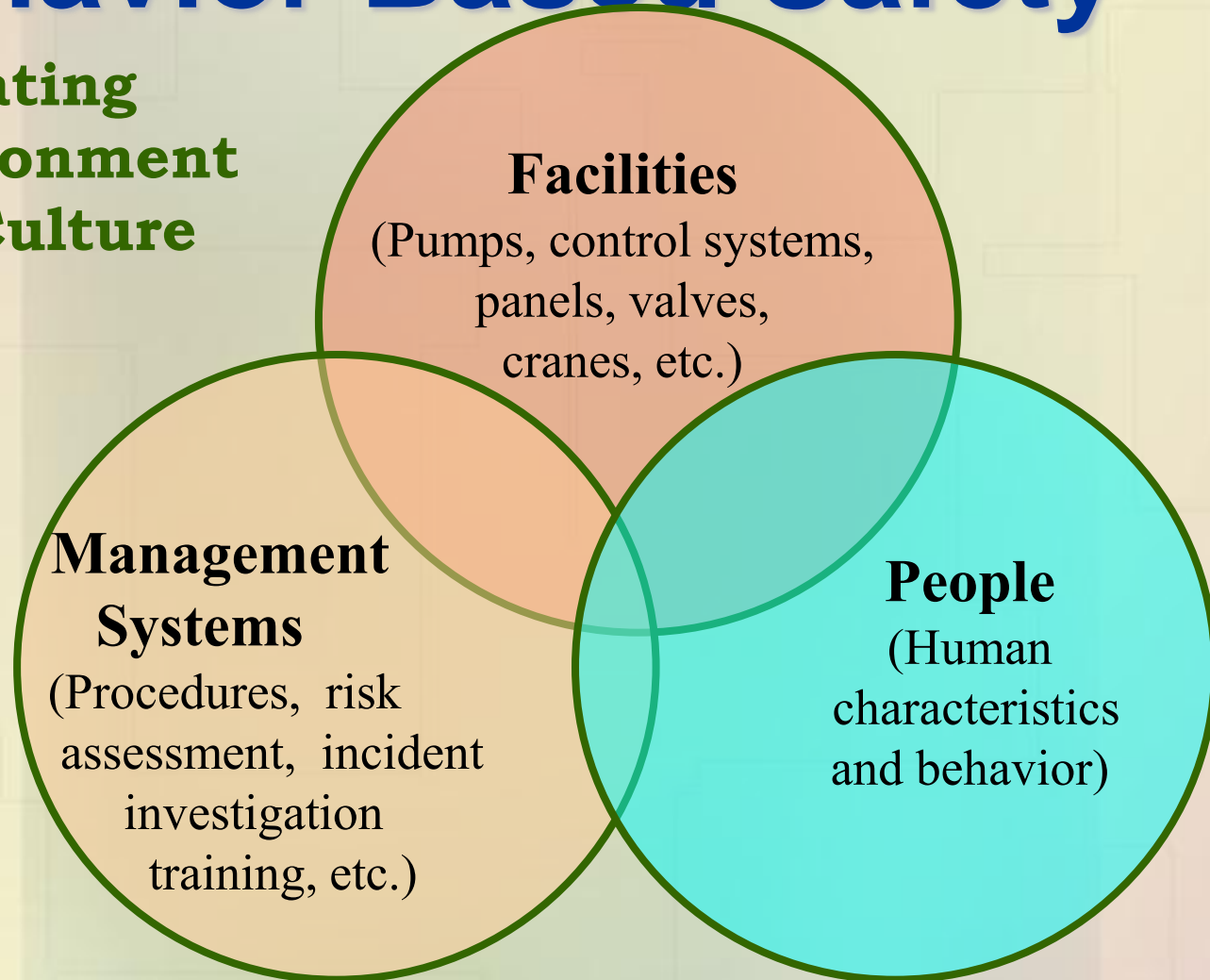


Figure 1: Modified injury pyramid based on Heinrich's Accident Triangle¹.

Behavior Based Safety

**Operating
Environment
and Culture**



INCIDENT CAUSATION MODEL



HAZARD



B
A
R
R
I
E
R



VULNERABLE
OBJECT

ENERGY

- PEOPLE
- THINGS
- HEALTH EFFECTS

CONTROLS

- MANAGEMENT SYSTEMS (WHAT ?)
- PRACTICES / PROCEDURES (HOW ?)
- FACILITIES & TOOLS (HMI)
- PEOPLE & THINGS (ACTORS !)

TO PROTECT

- PEOPLE
- PROPERTY
- ENVIRONMENT

WHAT IS BEHAVIOR

- + There are numerous definitions for “behavior”
- + For use in Behavioral Based Safety, we define behavior as:

“The Way People Act”

- + Observable, surfacing in the work place
- + Underlying, recognizable from prior work processes, (e.g. work planning, preparation, design)

Natural Laws of Behavior

- # If the SAFE way is the EASY way, then we will behave SAFELY - behavior has advantages and becomes habit
- # If the SAFE way is DIFFICULT or uncomfortable, then we will be tempted to behave UNSAFELY - behavior has disadvantages - unsafe becomes habit
- # If we really understand the consequence of our actions it will lead to SAFE behavior

YOU CAN SEE BEHAVIOR !

**Our values, attitudes towards safety results
in:**

BEHAVIOR

**Behavior is what people actually:
DO**

**What people actually do is what we:
OBSERVE**

Three Natural Behavior Laws

- ✚ Behaviors with advantages will be naturally reinforced and become a habit
 - Behavior has positive consequences
- ✚ Behaviors with disadvantages will be given up
 - Behavior has negative consequences
- ✚ Behaviors are influenced by expected outcomes
 - Behavior consequences need to be clear and important

Behavior Laws

- ✦ If a certain work method is the easiest way of doing the work, then it will become a habit
 - The behavior results in positive consequences for the individual. If the easiest way is the safest way we are likely to see safe habits !
 - If it is difficult to achieve something with a certain behavior the behavior will be given up
 - The behavior has negative consequences for the individual
- ✦ The potential/expected consequences will direct behavior
 - The effect depends on certainty, timing and severity

Observable & Underlying Behavior

- Observable Behavior is associated with people doing physical activities in the plant, control rooms and offices etc.
- Underlying Behavior is related to conditions and work processes that may be “root Causes” of observable behavior e.g.
 - how well facilities or systems are designed for people’s use
 - clarity of management’s expectations to follow procedures
 - the effectiveness of the risk assessments in understanding and managing hazards/risks

Observable & Underlying Behavior

Issue

Lines plug regularly leading to incidents while the lines are being unplugged →

Observable Behavior

Undesired: Operators are not flushing the lines thoroughly to remove material which cause plugging →

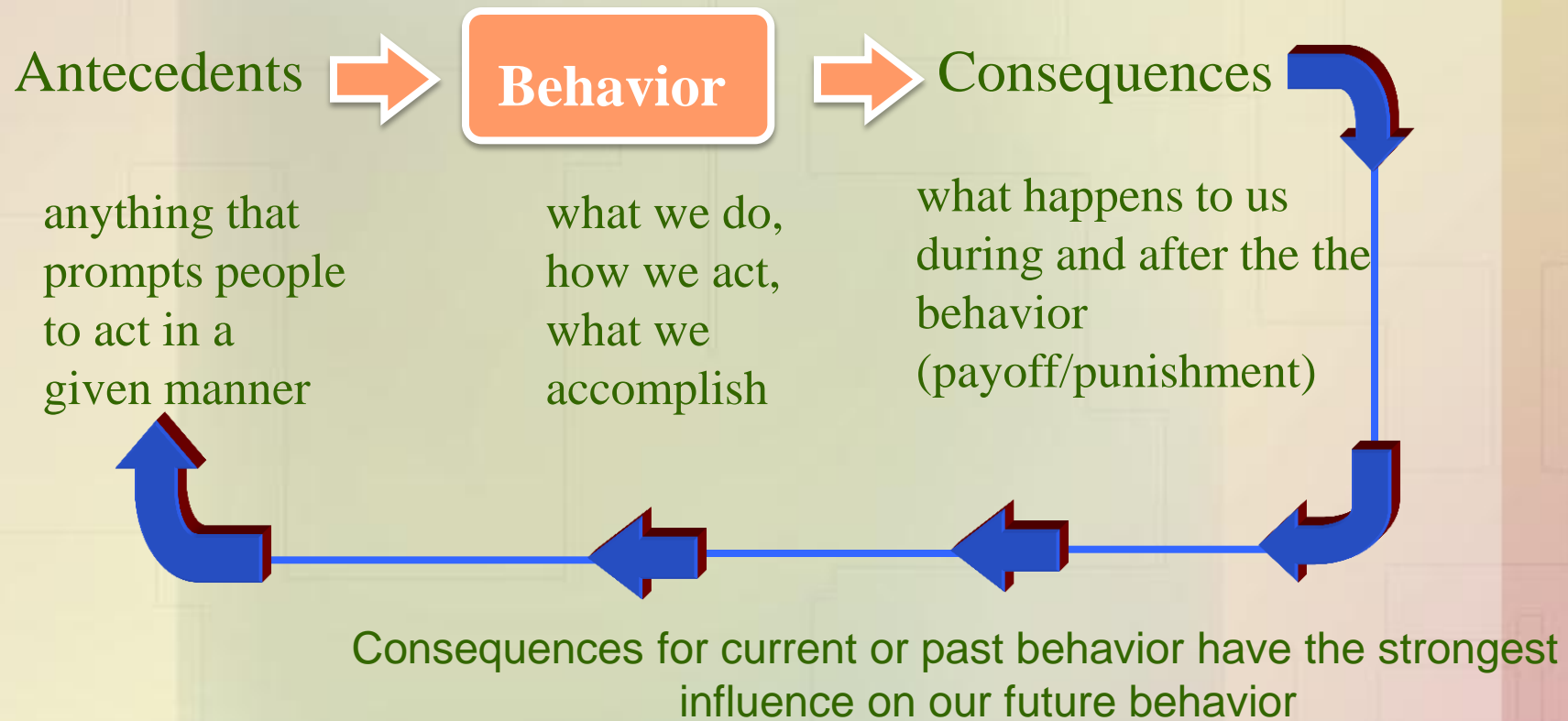
Desired: Operators flush lines thoroughly to remove materials which cause plugging

Underlying Behavior/ root cause

There is no procedure or guidance issued on how to flush lines thoroughly, **or** there are no means provided to do flush lines thoroughly.

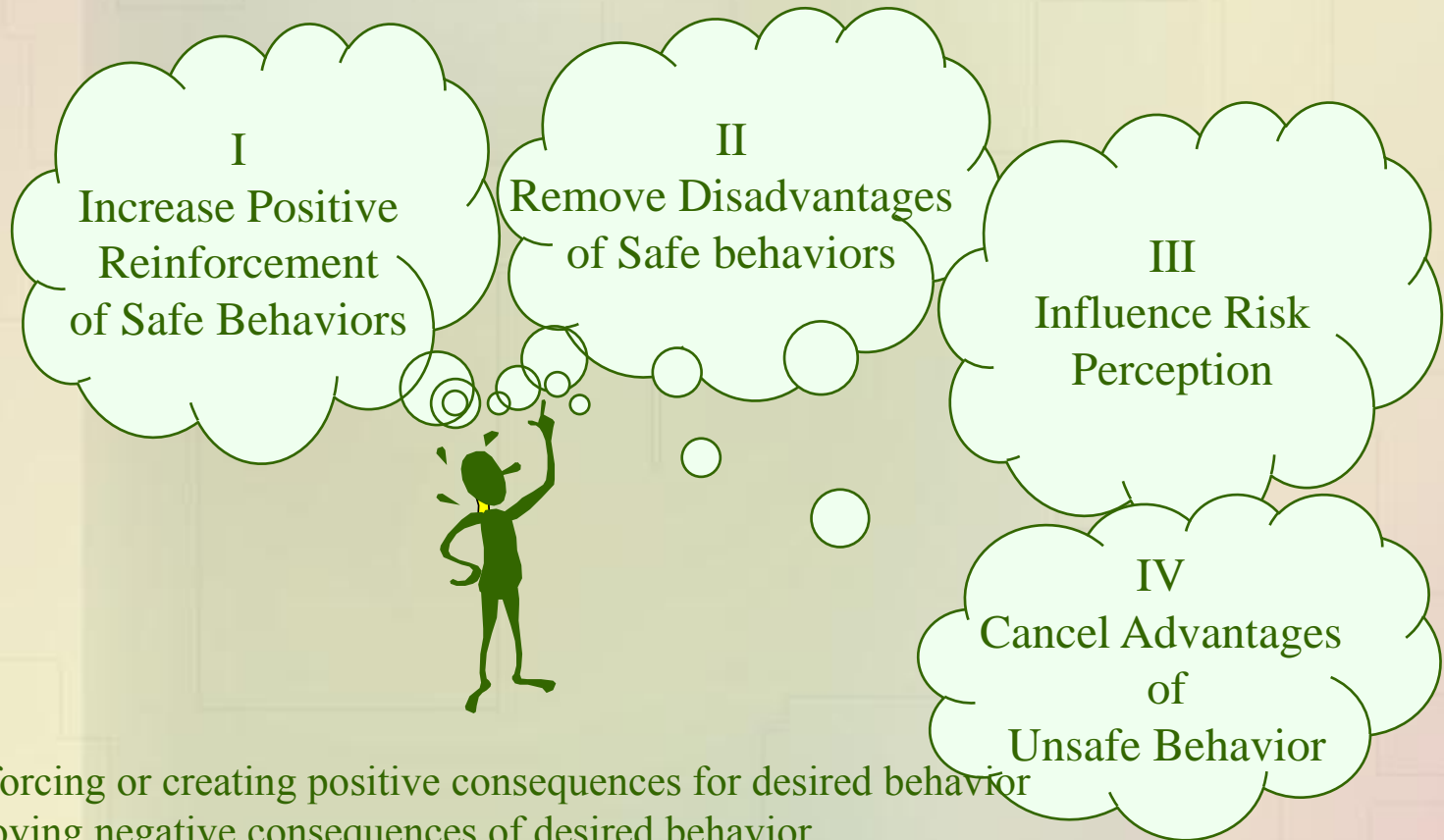
ABC Model

Why People Do What They Do



BEHAVIOR & ANALYSIS PROCESS

Fourth by understanding behavior strategies



- I Reinforcing or creating positive consequences for desired behavior
- II Removing negative consequences of desired behavior
- III Clarifying and influencing perception of potential consequences
- IV Creating negative consequences for undesired / unsafe behavior

• Behavior Strategies?

1

Make it rewarding

Create more Positive Consequences for people to behave safely

2

Make it easier
Remove the Negative Consequences for the
• desired Behavior

3

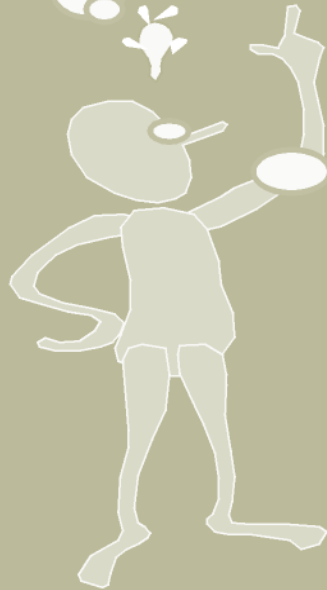
Make it clear

Make sure people understand the potential consequences of their behavior

4

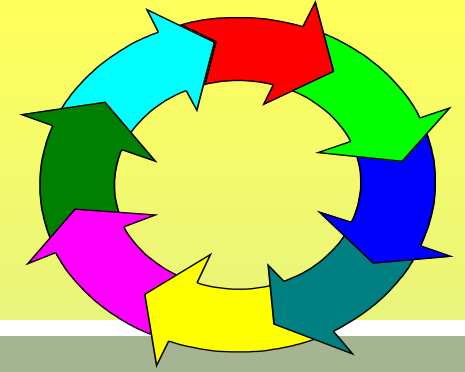
Rules / Barriers

Make Undesired Behavior difficult or unattractive



Workplace Observation Objectives

- ✚ Creating / Maintaining a safe Workplace through positive dialogue between observers & the observed
 - Positive dialogue will only be established if we communicate openly and at same level:
 - Recognition of safe behavior
 - Reciprocal openness and trust (confidence, candor, honesty)
 - Cooperative learning
 - Shared identification of hazards and safe(r) work methods
 - Application of the 4 intervention strategies
 - Dialogue makes it possible to direct behavior
 - Data gathering
 - Findings are input into BBS Analysis



Observation Principles

- ✚ How often should we do observations ?
Often, but aim for quality not for quantity
- ✚ When ?
Always, also during shift
- ✚ How long does a good quality observation take ?
Approximately 20 - 30minutes

What BSSO is NOT...

- ✚ Audit
- ✚ “To Do” list for Maintenance
- ✚ Check in the box exercise
- ✚ Disciplinary

Dealing with Unsafe Behavior

- # Explain behavior observed
- # Discuss why it is unsafe
- # Ask for suggestions
- # Share your ideas
- # Reach agreement on steps to be taken
- # Express confidence that the job can be performed safely
- # Ask for commitment to work safely
- # Follow-up and give positive feedback when behavior is corrected

Feedback what you saw and agree on actions from the Observation

- + Provide feedback immediately, and discuss follow-up at the workplace e.g.
 - Recognize / re-enforce safe behavior
 - Discuss how to make safe behavior easier
 - Influence risk perception if needed
 - Correct unsafe behavior
- + Summarize dialogue and agreed follow-ups that you will write on the form.
- + Feedback to the Shift Leader on how things looked in the field.

Doing the Observation

The Observation

- ✦ Explain what you are there for,
 - Findings and conclusions are to improve safety
 - Tell Observee(s) that they are the job specialists
 - Both parties are expected to learn from the observation
- ✦ Give positive feedback on any good things you saw as you approached
- ✦ Encourage and allow the observee(s) to talk



Observation “don’ts”



- ✦ not introduce yourself, or inform people on the purpose of your visit

- ✦ say nothing and just fill in your checklist
- ✦ involve only your partner in discussions about the observees
- ✦ just ask for observee’s name and Company name and leave
- ✦ try to prove you know everything better and tell people this
- ✦ not listen to what the observee has to say
- ✦ not bother about your own safety and PPE
- ✦ assume/assign blame, and create threatening atmosphere



Report Number 3990

Yeo Soo Hock

Click for Instructions

New BBSO

Save Record

Print Record

Close Form

Abort or Cancel this Input

STATUS
SAFE AT RISK NA

PERSONAL PROTECTIVE EQUIPMENT

State Observation and Your Intervention For UNSAFE ACT or CONDITION

Hard Hat / Gloves / Safety Shoe or Boots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safety Glasses / Goggles / Face Shield	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Protective Clothing / Suit / Apron	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fall Protection / Safety Harness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hearing Protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respirator Protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

BODY USE POSITIONING

State Observation and Your Intervention For UNSAFE ACT or CONDITION

Lifting / Pushing / Pulling Posture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ascending / Descending	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overexertion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

WORKING ENVIRONMENT

State Observation and Your Intervention For UNSAFE ACT or CONDITION

Housekeeping / Storage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Barricades / Warning Devices / Fire Extinguishers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Safe and Secure Work Area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ventilation and Overcrowding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PROCEDURES

State Observation and Your Intervention For UNSAFE ACT or CONDITION

LockOut / Tag Out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work Permit System	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gas Testing / Periodic Monitoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication (eg Tool Box Meeting)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interfaces with Other Functions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job Assessment / Hazards Identification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job Safety Analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

TOOLS / EQUIPMENT

State Observation and Your Intervention For UNSAFE ACT or CONDITION

Hand Tool Selection, Use and Condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Power Tool Selection , Use and Condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gas Cutting Tool Condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lifting Equipment / Machine Selection, Use , Condition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electrical Cables / Connections / Grounding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ENVIRONMENTAL PROCEDURES

State Observation and Your Intervention For UNSAFE ACT or CONDITION

Precautions Taken to Avoid Environmental Damage (eq. Spill Containment etc	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proper Storage / Disposal of Waste Materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

(OPTIONAL)

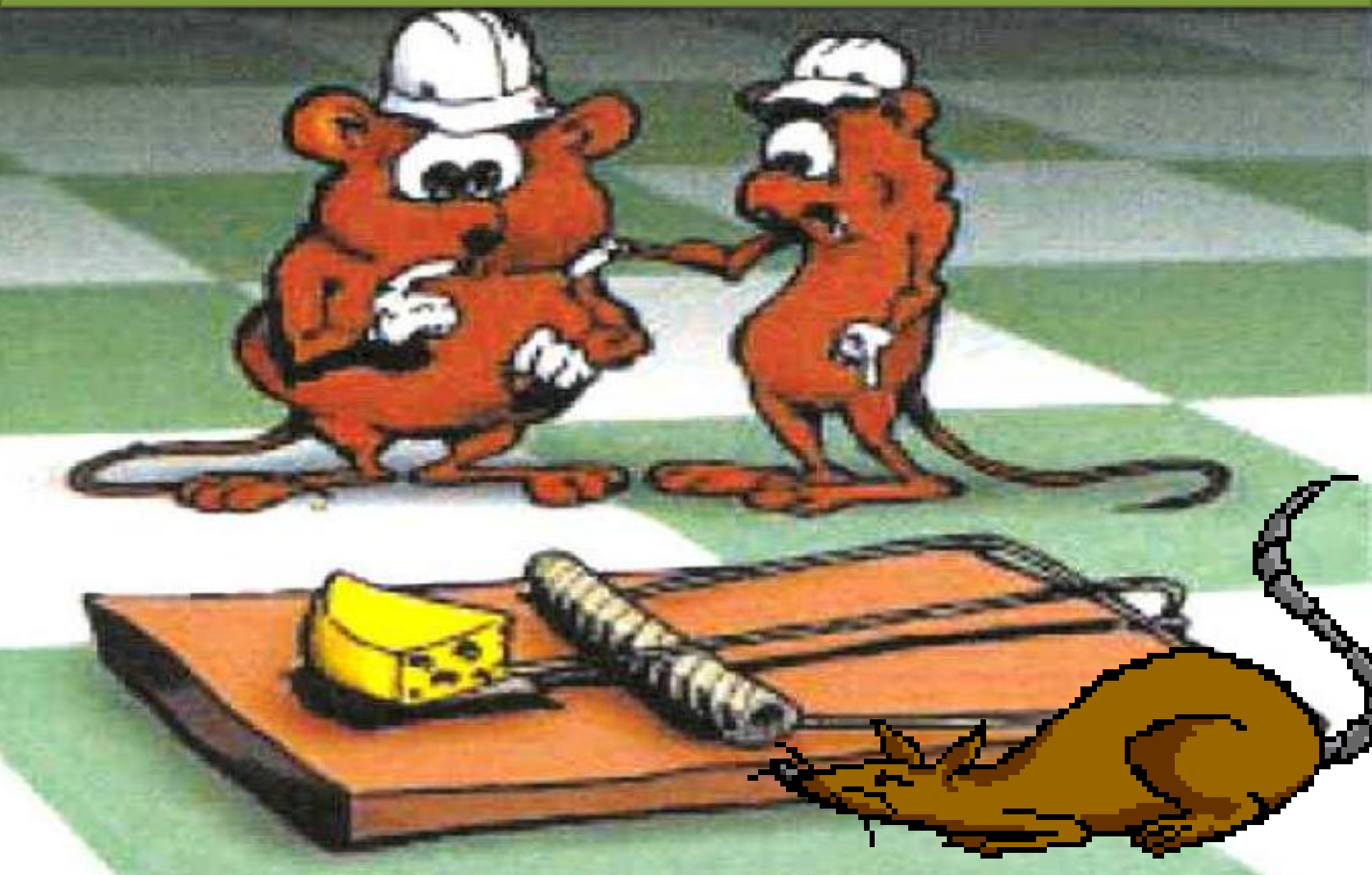
KEY IN HERE, IF YOU HAVE ANY LONG TERM ISSUES WHICH REQUIRE SAFETY DEPARTEMENT INTERVENTION

(OPTIONAL)

Your Input if Any!

Percentage Safe $[\text{Total Safe} / (\text{Total At Risk})] * 100$

**Observe the Behaviour and Intervene
Do Not Look the Other Way**



EXAMPLE OF BEHAVIOR



Write down and discuss:

What would be safe behavior :

.....

What would be unsafe behavior :

.....

What are the circumstances
behind

the behavior (underlying
behavior) :

.....

EXAMPLE OF BEHAVIOR

Write down and discuss:

What would be safe behavior :

.....

What would be unsafe behavior :

.....

What are the circumstances
behind
the behavior (underlying
behavior) :

.....



EXAMPLE OF BEHAVIOR

Write down and discuss:

What would be safe behavior :

.....

What would be unsafe behavior :

.....

What are the circumstances
behind

the behavior (underlying
behavior) :

.....



EXAMPLE OF BEHAVIOR



Write down and discuss:

What would be safe behavior :

.....
.....

What would be unsafe behavior :

.....
.....

What are the circumstances
behind

the behavior (underlying
behavior) :

EXAMPLE OF BEHAVIOR



Write down and discuss:

What would be safe behavior :

.....

What would be unsafe behavior :

.....

What are the circumstances
behind
the behavior (underlying
behavior) :

.....

WHAT IS THE SAFE BEHAVIOR



Identify the safe behavior :

.....

.....

.....

.....

.....

.....

.....

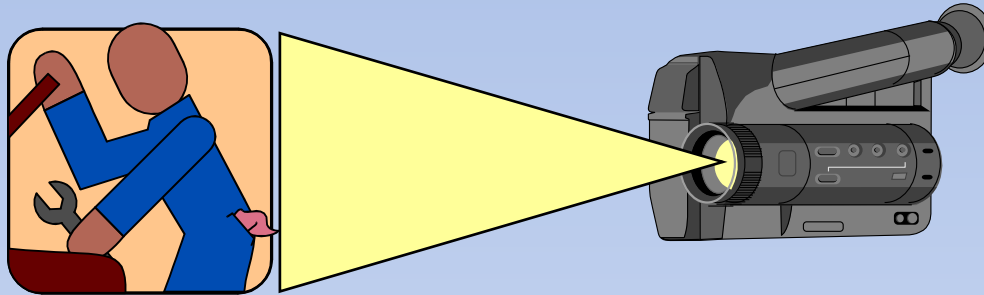
.....

.....

What are the circumstances behind the behavior (underlying behavior) :

.....

Video Exercise



+ Look at 2 Video Clips and write down the following:

- **The Safe Behavior,**
- **The Unsafe Behavior**
- **The possible Underlying Causes**

ACKNOWLEDGEMENT

- **EXXONMOBIL**
- **WSHC COUNCIL**

THANK YOU