



Collaborative Bachelor's Degree Program of Fire Protection and Safety  
Engineering Technology between Southwest Jiaotong University and  
Oklahoma State University, U.S.A.



## FPST 3013 Safety Management

Behavior Based Safety

1

---

---

---

---

---

---

---



How do we motivate people to work  
safely?



2

---

---

---

---

---

---

---



Traditional Approach to Safety



Top-down  
control

Design safest  
equipment and  
processes

Educate and  
train People

Use discipline  
to enforce  
compliance

Regulations  
and Rules

Measuring  
Accidents

Failure  
Oriented

Reactive

3

---

---

---

---

---

---

---



## Incentive Programs



- Controversy
  - Underreporting
  - Incorrect OSHA recordkeeping information
- What do you reward? lagging or leading indicators???
- No OSHA recordable accidents
- Lower incident rate
- Reporting near misses
- On-time corrective action closure
- Reward behaviors...not outcomes
- Strategies for Success
  - Be very careful that the award is designed to encourage the behavior desired and discourage the behavior not wanted

4

---

---

---

---

---

---

---



## OSHA Does Not Like Incentive Programs



- |  |  |
|--|--|
| <ul style="list-style-type: none"><li>• Advantages<ul style="list-style-type: none"><li>• Add interest to an established safety program</li><li>• Increase safe behavior</li><li>• Improve safety culture</li><li>• Encourage peer pressure in the right way</li></ul></li></ul> | <ul style="list-style-type: none"><li>• Disadvantages<ul style="list-style-type: none"><li>• Ripe with controversy</li><li>• May encourage underreporting</li><li>• Reward is insufficient so employees lose interest</li><li>• Reward is not tied to behavior</li></ul></li></ul> |
|--|--|

5

---

---

---

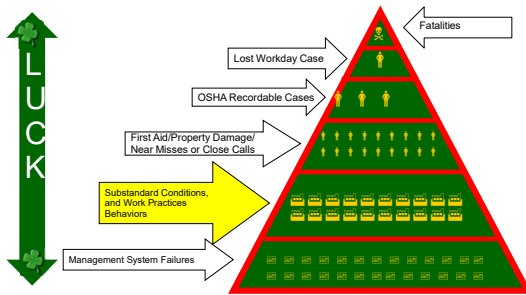
---

---

---

---

## The Incident Pyramid



6

---

---

---

---

---

---

---



## HOW DO WE MOTIVATE PEOPLE TO WORK SAFELY?

7

---

---

---

---

---

---

---



## New Approach



- Safety Culture
- Proactive
- Achievement focused
- Personal Responsibility and Accountability
- Employee Empowerment
- Behavior Based

8

---

---

---

---

---

---

---



## BEHAVIOR



Heinrich

- Up to 98% of all work-related accidents are **BEHAVIOR RELATED (Heinrich 1908)**.
  - 88% Unsafe Behaviors
  - 10% Unsafe Conditions
  - 2% uncontrollable factors



9

---

---

---

---

---

---

---



## BEHAVIOR



- The **ROOT CAUSE** of most **UNSAFE CONDITIONS** is someone's **UNSAFE BEHAVIOR**
- **UNSAFE BEHAVIOR IS THE MOST COMMON ROOT CAUSE.**

10

---

---

---

---

---

---

---



## Attitude



- A **STATE OF MIND**; our **PERCEPTION** of something or someone.
- An **INTERNAL WAY OF THINKING** or,
- A **BELIEF** that **INFLUENCES** our **BEHAVIOR**.
- Can you change someone else's attitude?



11

---

---

---

---

---

---

---



## BEHAVIOR



- An **OBSERVABLE ACT** or **ACTIVITY**.
- An **INSTANTANEOUS EVENT**
- **BEHAVIOR** can also be a series of **ACTS** over a period of **TIME**.
- A **REFLECTION** of our **ATTITUDES** and **BELIEFS**.
- **ACTIVITY** without **UNDERTONES** or **IMPLICATIONS**.



12

---

---

---

---

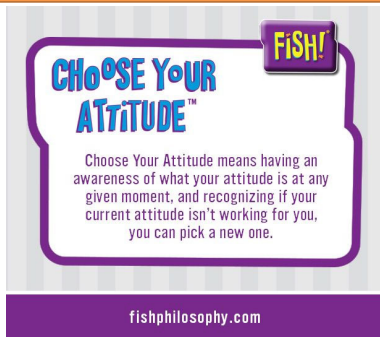
---

---

---



## We Choose Our Attitudes!



13

---

---

---

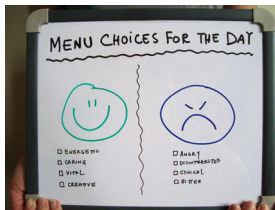
---

---

---



## Why Focus on Behavior?



- Behavior can be observed, therefore it can be changed.
- Is it instantaneous?
- Behavioral changes lead to changes in experiences, & beliefs which affect attitude.

14

---

---

---

---

---

---



## Focusing on Behavior



- Provides opportunities
  - to reinforcing safe behavior through recognition
  - To correct at risk behavior through coaching
- Before it even gets to “Near Miss” stage



15

---

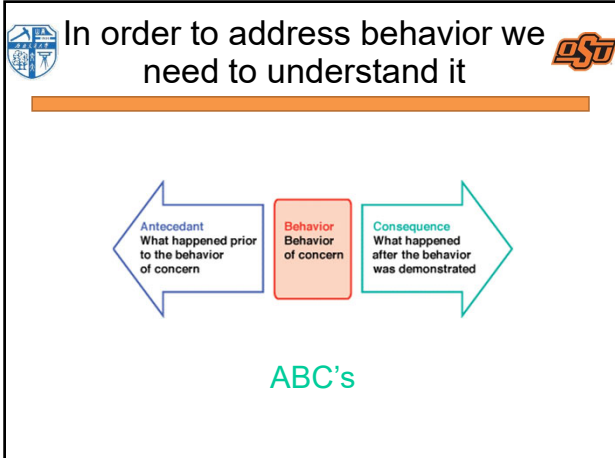
---

---

---

---

---



16

---

---

---

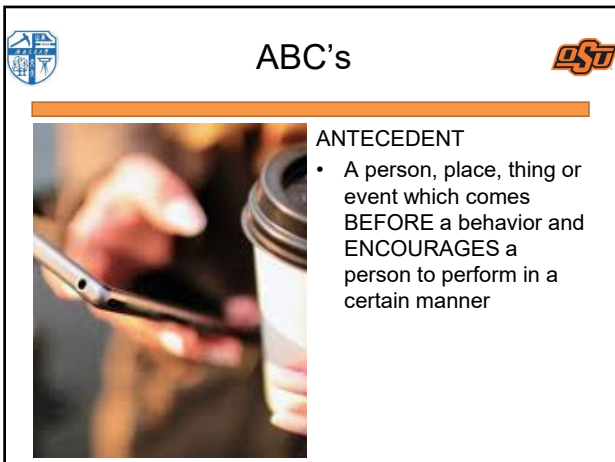
---

---

---

---

---



17

---

---

---

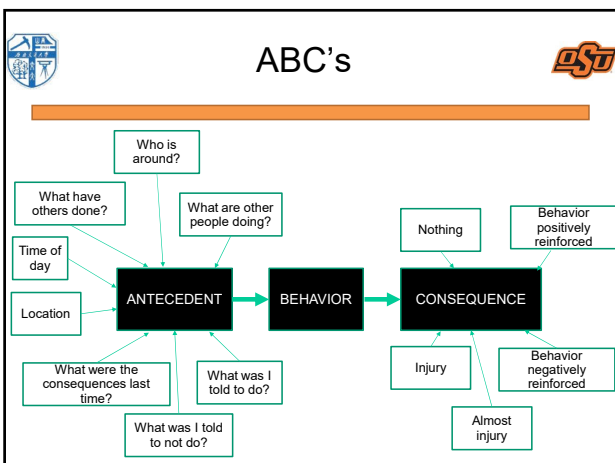
---

---

---

---

---



18

---

---

---

---

---

---

---

---



## INFLUENCING BEHAVIOR



### ANTECEDENT

- Cell phone beeps
- Ringing doorbell
- Ringing alarm clock
- Red stoplight
- Hot stove
- Dark room

### BEHAVIOR

- Look at phone
- Answer the door
- Get out of bed
- Stop the car
- Do not touch
- Turn on light

19

---

---

---

---

---

---

---



## COMMON ANTECEDENTS IN THE WORKPLACE



- Danger/Caution/Warning Signs
- SOP's, JSA's, Work Instructions
- Bells, whistles, sirens and horns
- Control panel lights/indicators
- Goals and objectives
- Behavior of co-workers
- Supervisor's instructions
- Company policy
- Culture

20

---

---

---

---

---

---

---



## Characteristics of Antecedents



To be effective in triggering the  
desired behavior, an antecedent  
must not only identify the specific  
behavior, it must specify the  
outcome in advance.

21

---

---

---

---

---

---

---



22

---

---

---

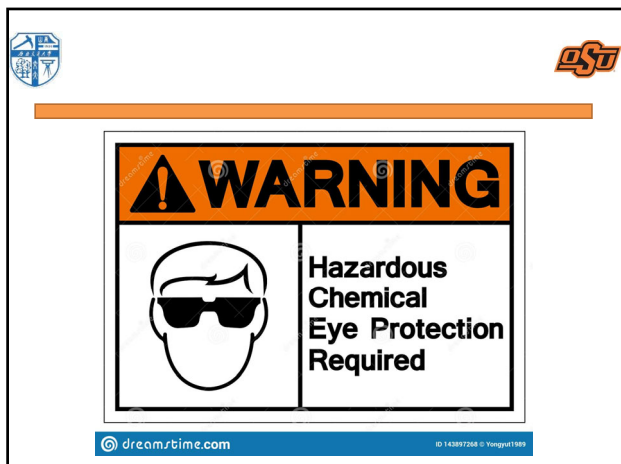
---

---

---

---

---



23

---

---

---

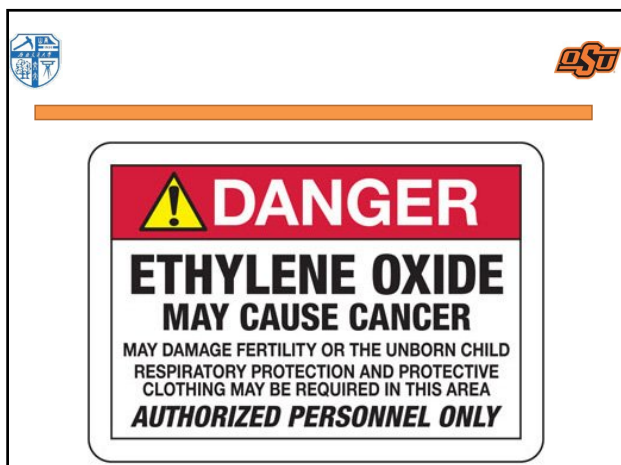
---

---

---

---

---



24

---

---

---

---

---


---

---


---





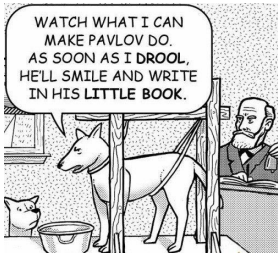


## Behaviors



---

- The **NATURAL RESPONSE** to a antecedent
- Quite **PREDICTABLE** under most circumstances



25

---

---


---

---


---

---

---



## CONSEQUENCES



---

- **Positive** consequences are viewed as a **reward**
- **Negative** consequences are viewed as **punishment**
- **Positive** consequences will **INCREASE** the frequency of a behavior
- **Negative** **DECREASE** the frequency of a behavior
- When **NEGATIVE** consequences are used alone, the undesired behavior **will decrease only to the extent that the negative consequences cease**

26

---

---


---

---


---

---


---




## POSITIVE & NEGATIVE CONSEQUENCES



---



Provide something we want or, take away something we don't want.



Provide something we don't want or take away something we do want

27

---

---

---


---

---


---


---





Which candy machine will be used most often?





MACHINE #1

- Routinely works
- Deposit correct change and candy bar drops out.

MACHINE #2

- Usually works
- Sometimes malfunctions & returns money with the candy bar
- Will always deliver the candy

MACHINE #3

- Unpredictable
- More often than not, will take the money but not deliver the candy bar

28

---

---

---

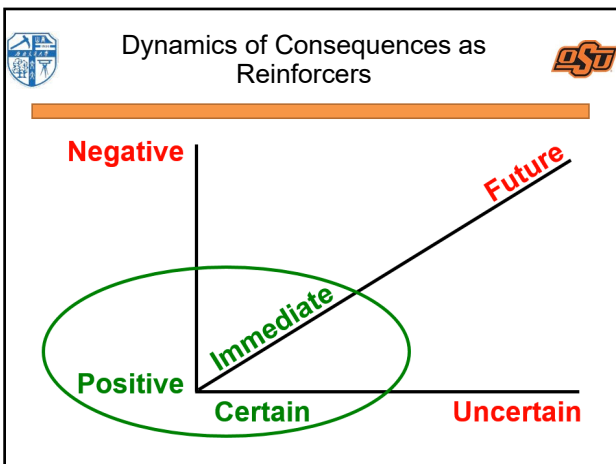
---

---

---

---

---



29

---

---

---

---

---

---

---

---






Figure 8.2 Compared to at-risk behavior, safe behavior is often uncomfortable, inconvenient, and less fun.

"Working Safe: How to help people actively care for health and safety" by E. Scott Geller, PhD

30

---

---

---

---

---

---

---

---



## ABC Analysis



Consequences	+/-	I/L	C/U
Saves time	+	I	c
Injury or death	-	I	u
Reprimand	-	I	u
Comfort	+	I	c
Convenience	+	I	c
Peer Approval	+	L	c
Boss Approval	-	L	U
total	4 pos 3 neg	5 I 3 L	4 C 3 U

- Behavior
  - Not Wearing PPE
- Antecedents
  - Availability
  - Peer Pressure
  - Rushing
  - Time of Day
  - Lack of Training
  - Anticipation of mild consequences

31

---

---

---

---

---

---

---

---



## ABC Analysis



Consequences	+/-	I/L	C/U
Takes Time	-	I	C
Injury or death	-	L	U
Uncomfortable	-	L	C
Inconvenient	-	I	C
Peer Approval	+	I	C
Boss Approval	+	L	U
Total	2 pos 4 neg	3 I 3 L	4 C 3 U

- Behavior
  - Wearing PPE
- Antecedents
  - Availability
  - Peer Pressure
  - Rushing
  - Time of Day
  - Lack of Training
  - Anticipation of Mild consequences

32

---

---

---

---

---

---

---

---



ISSUE	Flip it
Takes too much time to get PPE	Make it readily available at all worksites
Disciplinary actions for failure to wear	Coaching first, consistency always
Uncomfortable	Provide multiple options in styles & sizes
Peer Approval	Culture - Make wearing PPE "Cool"
Boss Approval	Coaching, consistency, and recognition
Fear of injury or death	Tell stories about what happens when you don't wear PPE – Make it personal

33

---

---

---

---

---

---

---

---



## THE SAFE-BEHAVIOR OBSERVATION PROCESS

34

---

---

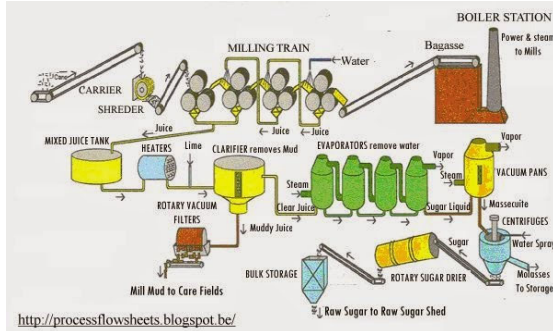
---

---

---

---

---



<http://processflowsheets.blogspot.be/>

35

---

---

---

---

---

---

---



## Behavioral Management



- In order to improve behavior, management must understand the “why” of behavior
  - Two reasons for doing something unsafe
  - Always approach the situation first seeking to identify which one...then the why
- Identification and control of safety-related behaviors
  - Evaluating critical behaviors

36

---

---

---

---

---

---

---



## Behavior Is An Observable Activity



- Observations are used to collect data on safe and unsafe behaviors
- Provide opportunities for immediate reinforcement or correction of behaviors as they occur

37

---

---

---

---

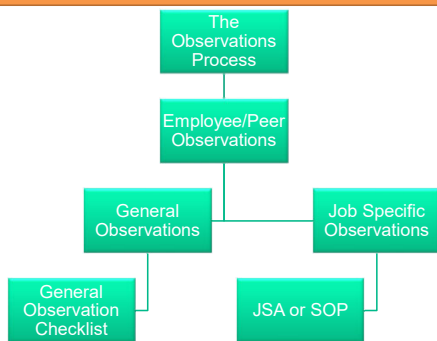
---

---

---



## Two Types of Observation Checklists



38

---

---

---

---

---

---

---



## Generic Behavior Observation Checklist



Critical Behaviors	Safe	At Risk
Body Positioning		
Visual Focusing		
Communicating		
Pacing of Work		
Moving Objects		
Complying with Lock/Tag/Try		
Complying with Permits		
PPE		
Total Safe Behaviors		
Total Behaviors Observed		
% Safe		

39

---

---

---

---

---

---

---



## Specific Behavior Observation

Behavior – Planting a Tree	Safe	At-Risk
Select a site. Call local authorities; plan for future growth.		
Collect and inspect tools. Check all equipment for damage and then repair and/or replace		
Dig the hole. Get help; dig hole with small shovels full of dirt; move smoothly & slowly; wear gloves, safety glasses & shoes.		
Transport tree to location. Get help; select & clear route.		
Place and position tree into hole. Get help or kneel; use mechanical devices; wear safety glasses		
Cut binding on root ball. Wear safety glasses; wear gloves; kneel while cutting binding.		
Back fill the hole. Back fill with small shovels full of dirt; wear gloves.		
Stabilize tree. Wear gloves; keep hands off stakes.		
Water and fertilize the tree. Wear non-skid shoes; wear dust filter mask.		
Clean up. Wear gloves & safety glasses.		

40

---

---

---

---

---

---

---

---



## Safety Observers

- The observer makes notes on the behaviors he/she observes
- The observer provides immediate feedback to the employee, reviewing the results of the process



41

---

---

---

---

---

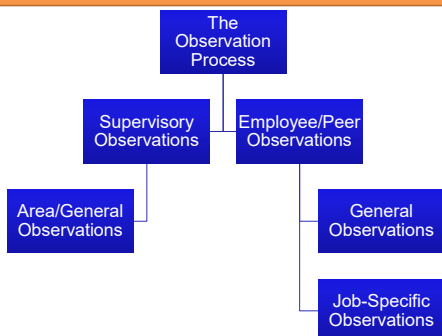
---

---

---



## Supervisors can get involved too



42

---

---

---

---

---

---

---

---



### How is an Observer Program supposed to work?



- Employees will be asked to help identify the root causes and offer suggestions on how to correct the problem
- **SAFETY OBSERVATION DATA IS NOT TO BE USED TO GENERATE DISCIPLINARY ACTION**

43

---

---

---

---

---

---

---



### How is an Observer Program supposed to work?



- Properly managed observation programs actually reduce the amount of discipline
- Employees work with each other to reinforce safe behavior and correct unsafe behavior

44

---

---

---

---

---

---

---



### How to Give Feedback



- SBI+R
  - Situation
  - Behavior
  - Impact
  - Results
- State the Situation
- Describe the Behavior Observed
- Discuss the Impact of the Behavior
- Agree on a positive result for the future



45

---

---

---

---

---

---

---



## How to Receive Feedback



"Thank you for the Feedback"

- Own your own behavior
- Ask clarify questions
- Listen and respond with empathy
- Seek to understand, then to be understood
- Ask for help in solving problems

46

---

---

---

---

---

---

---

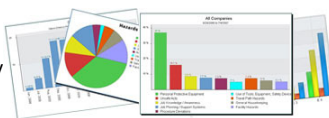
---



## What to do with the information?



- Store and organize information
- Develop progress reports
- Monitor the quality of the observations
- Identify the behaviors occurring most frequently
  - TO IDENTIFY TARGET BEHAVIORS
  - To allow a proactive approach
  - To reduce the base of the accident pyramid



47

---

---

---

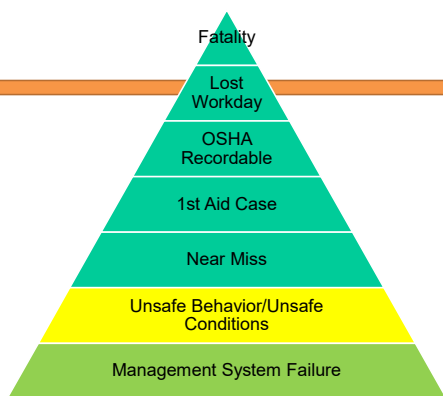
---

---

---

---

---



48

---

---

---

---

---

---

---

---





## Signs of something going wrong!



- Too much focus on "unsafe" behaviors
- "Audit" mentality
- Failure to recognize need for reinforcing safe behaviors
- Lack of Trust
- Use of behavior data for disciplinary actions

49

---

---

---

---

---

---

---



## Criticisms of Behavior Based Safety



Labor unions have not typically favored



"Blame the worker" mentality



Poor training on observations and feedback lead to miscommunication and problems.



Lack of management support



Takes too much time/doesn't work



Its not a "magic pill" for safety



"Human Performance Improvement" is the new buzzword

50

---

---

---

---

---

---

---



## How do you address unsafe behavior?

**Work Safe!**



**OR I'LL TELL  
YOUR MOTHER**

51

---

---

---

---

---

---

---



It's about influence



52

---

---

---

---

---

---

---



It's about influence



shutterstock.com • 633158855

53

---

---

---

---

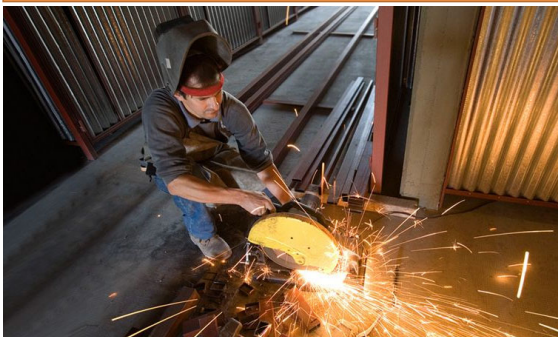
---

---

---



It's about influence



54

---

---

---

---

---

---

---



## Addressing unsafe behavior



- Ask the person if they want to hear what you have to say
- Share your concerns with them
  - Discuss the risk of their action to them
  - Discuss the potential outcomes
- Get them to **agree** to the risk
  - Must happen in order to proceed
- Have them determine how to mitigate or eliminate the risk and wait until they give you something that you agree with
  - Do not tell them what to do
- Actively listen and reflect what they have said...that they agree to the risk and that they agree to do something different to mitigate or eliminate the risk
- Part ways
- What if they do it again in the future?

55

---

---

---

---

---

---

---



## Addressing Unsafe Behavior

I CHOSE TO LOOK THE OTHER  
WAY

Don Merrell

56

---

---

---

---

---

---

---