

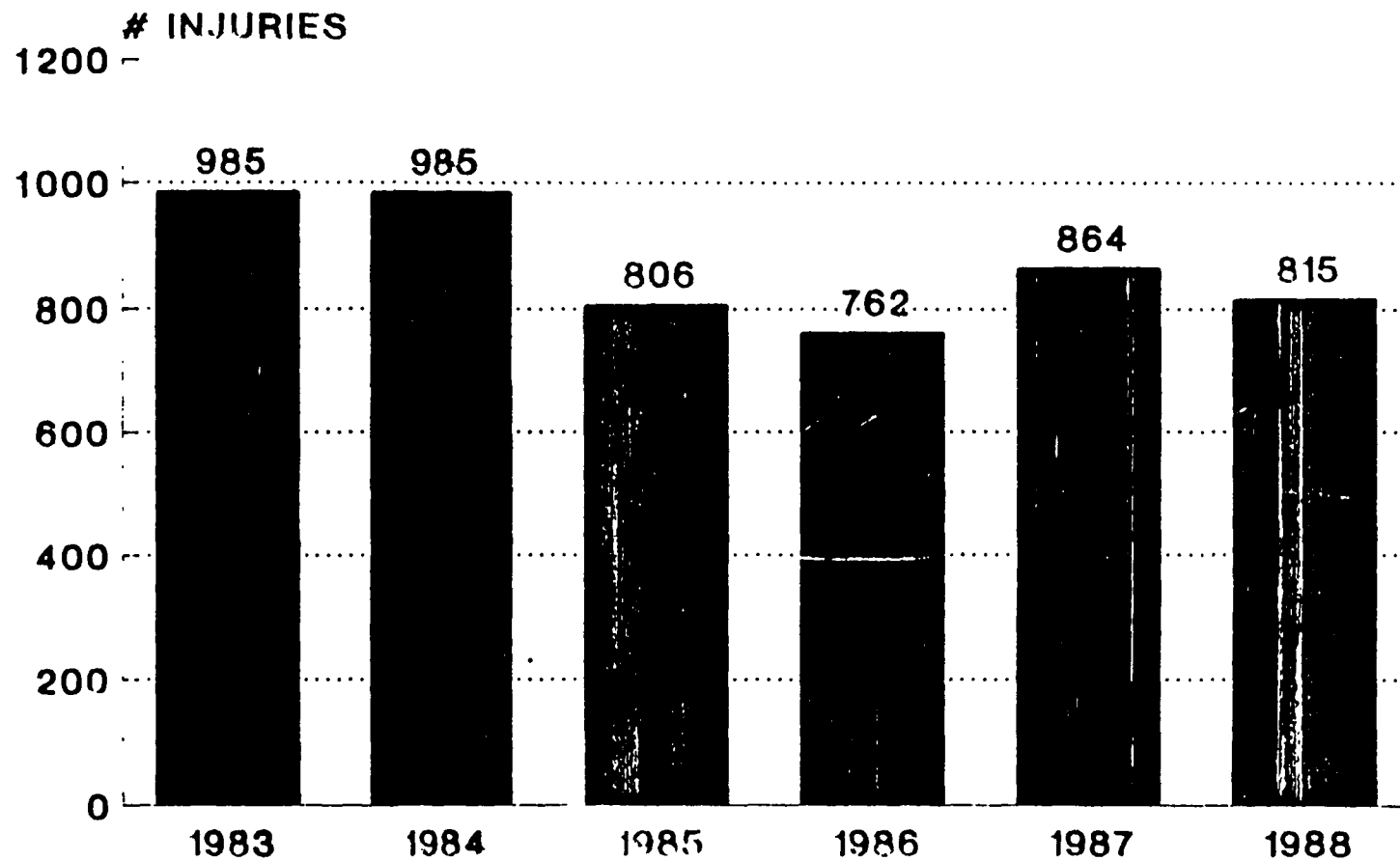
**"SAFE WORKING STYLE"**  
**DOW - TEXAS OPERATIONS**  
**NEW SAFETY PROCESS**

**SINCE 1983, DOW'S TEXAS OPERATIONS HAS NOT SHOWN AN IMPROVEMENT IN ITS TOTAL INJURIES PERFORMANCE. AN INTENSE SURVEY WAS MADE THROUGHOUT ITS FACILITIES (OVER 7,000 EMPLOYEES) LOOKING FOR A SYSTEM CHANGE. A CROSS-SECTIONAL GROUP WAS FORMED AND PRODUCED THE SAFE WORKING STYLE PROGRAM. THIS PROGRAM ADDRESSES THE HUMAN ERRORS THAT CAUSE OVER 70% OF THE SAFETY INCIDENTS. THE SAFE WORKING STYLE CONCEPT IS DOW'S TEXAS OPERATIONS VISION OF SAFETY OF THE NINETIES.**

**JACK LIPPMAN  
SAFETY DIRECTOR  
CHLORINATED ORGANIC PRODUCTS & PHENOL  
DOW CHEMICAL U.S.A.  
FREEPORT, TEXAS**

**CTL020571**

# TEXAS OPERATIONS TOTAL INJURIES HISTORY



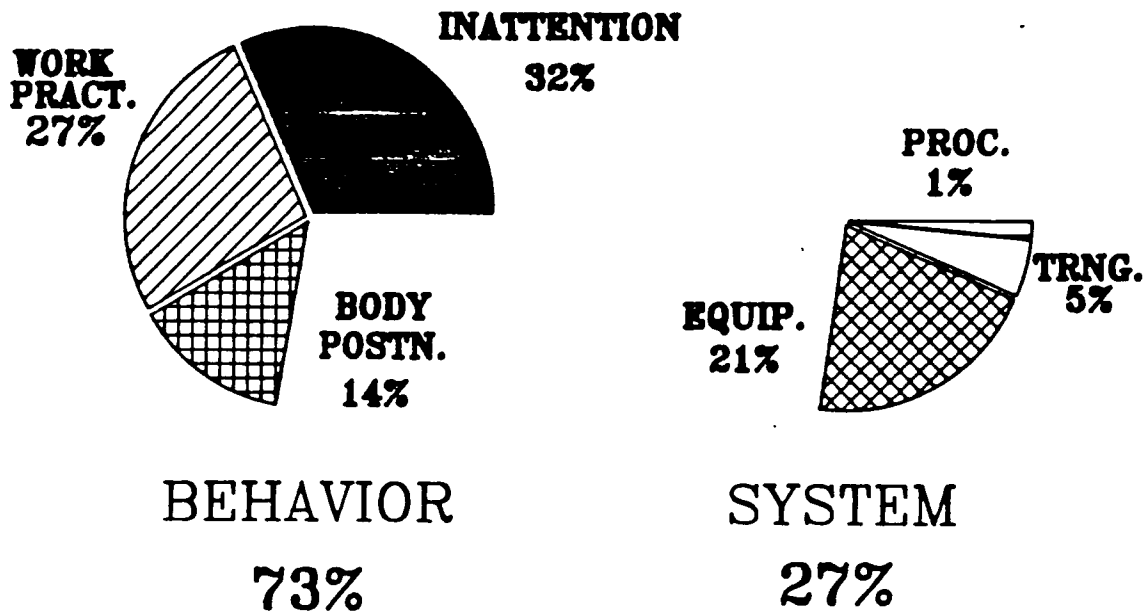
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# TEXAS OPERATIONS FACTORS INVOLVED IN OSHA RECORDABLE INJURIES

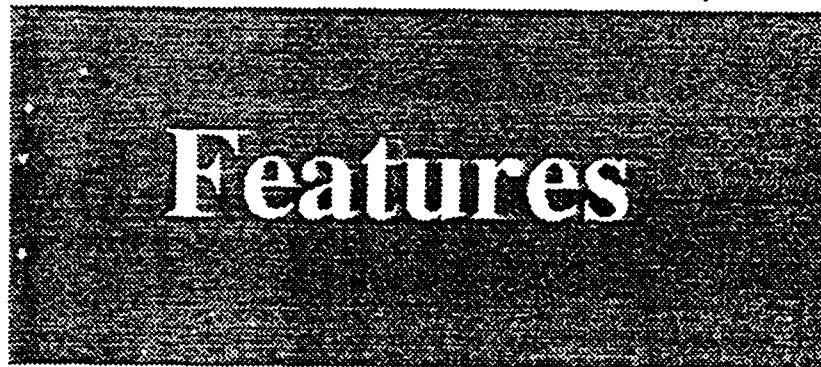
1988



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# *Safe Working Style*

... Your Individual Responsibility



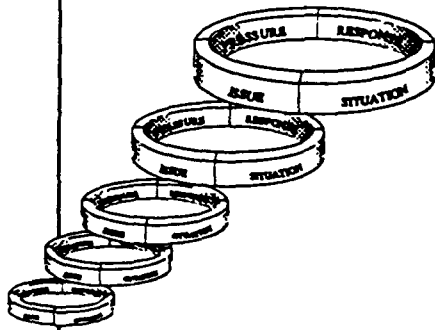
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## Our Goal

The goal of *Safe Working Style* is simple: to improve safety statistics. Our method is straightforward: improve safety statistics by reducing human error in the workplace. Accomplish this through a behaviorally based workshop and follow-up program.

## Human Error

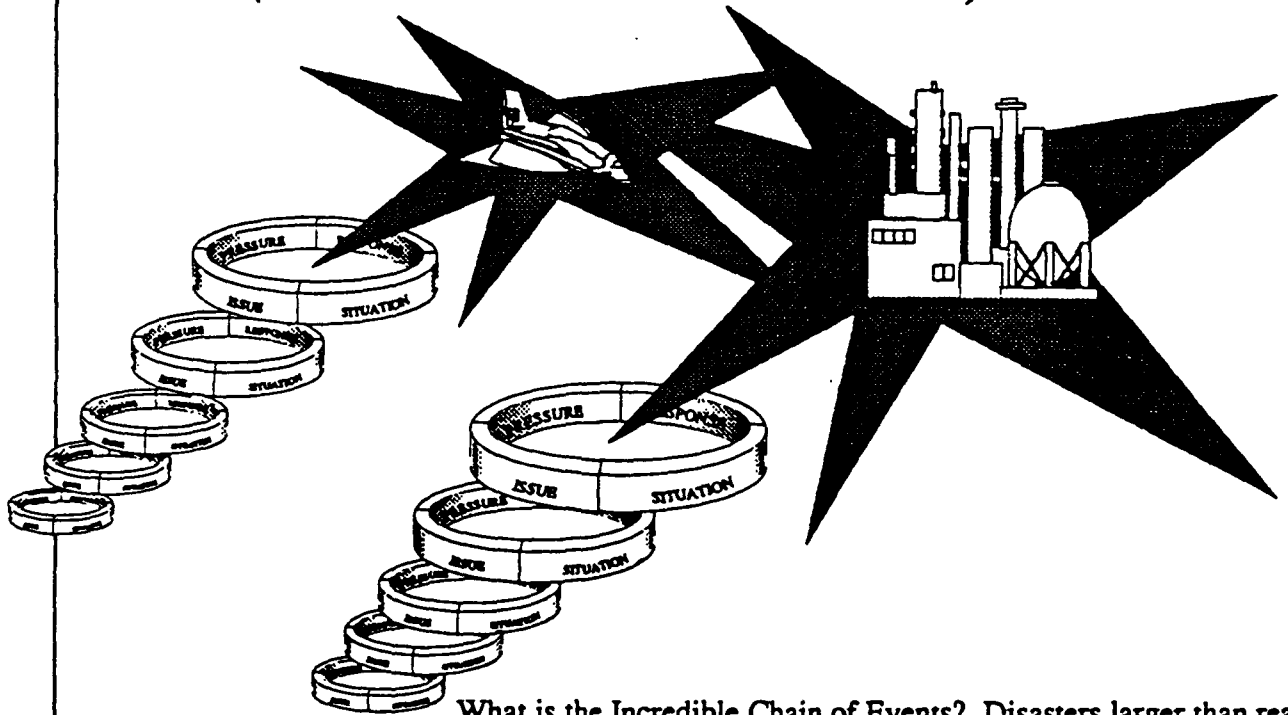
*Safe Working Style* concentrates on our most formidable problem in safety today, human error. Human error has become the greatest cause of accidents in a world where our engineering technology has made our plants safer ... more and more reliable and "hazard free."



## The Best Thinking

A program with a goal like this must contain the best thinking and experience in the country ... no more, no less. Through brainstorming, surveys, interviews and short cycle empirical tests, our *Safe Working Style Committee* has pulled together the best from our safety experts and plant experts on the front line of industry. In addition, we have pulled in the knowledge and support of the best researchers in the country, folks like Ken Blanchard in management and organizational research, John Lauber in human error and aviation safety research, and Linda Perloff in psychological research. In the workshop, you will see safety applied through the related expertise within our global community. Tom J. Peters, Robert Watermann, Robert Mackie, Charles Hughes, the late Eric Berne and H. S. Sullivan have given us the vision to see the "*Safety of the Nineties*" and how to work on it. Your employees will experience this vision in a high speed workshop, packaged as a rapid learning device. The following pages list important features of this program.

## The Incredible Chain of Events *(The ICE Machine!!!)*

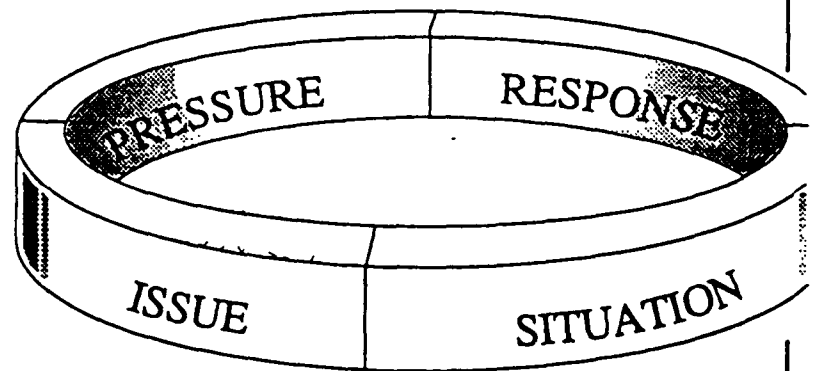


What is the Incredible Chain of Events? Disasters larger than real life, events that we really don't like to think about: the Challenger explosion, Three Mile Island, the crash at Detroit airport, a gas release from a chemical plant.

Why must we look at events like this? In these very events, subjected to in-depth study, we can find subtle underlying human errors and learn how to prevent them. *The Incredible Chain of Events* is a chain of human error resulting in a disaster. In the *High Pressure Game*, we call it the "ICE Machine." If we break one link in the chain by eliminating one of the unsafe components, the *ICE Machine* will not freeze it's victims.

What's the real value of learning the about the *Incredible Chain of Events*? It will give your employees an idea of their importance in everyday on-the-job interactions. Our *One Minute Safety Operations*, taken from Ken Blanchard's *One Minute Manager* techniques, lay out definite methods of breaking the chain of human error!

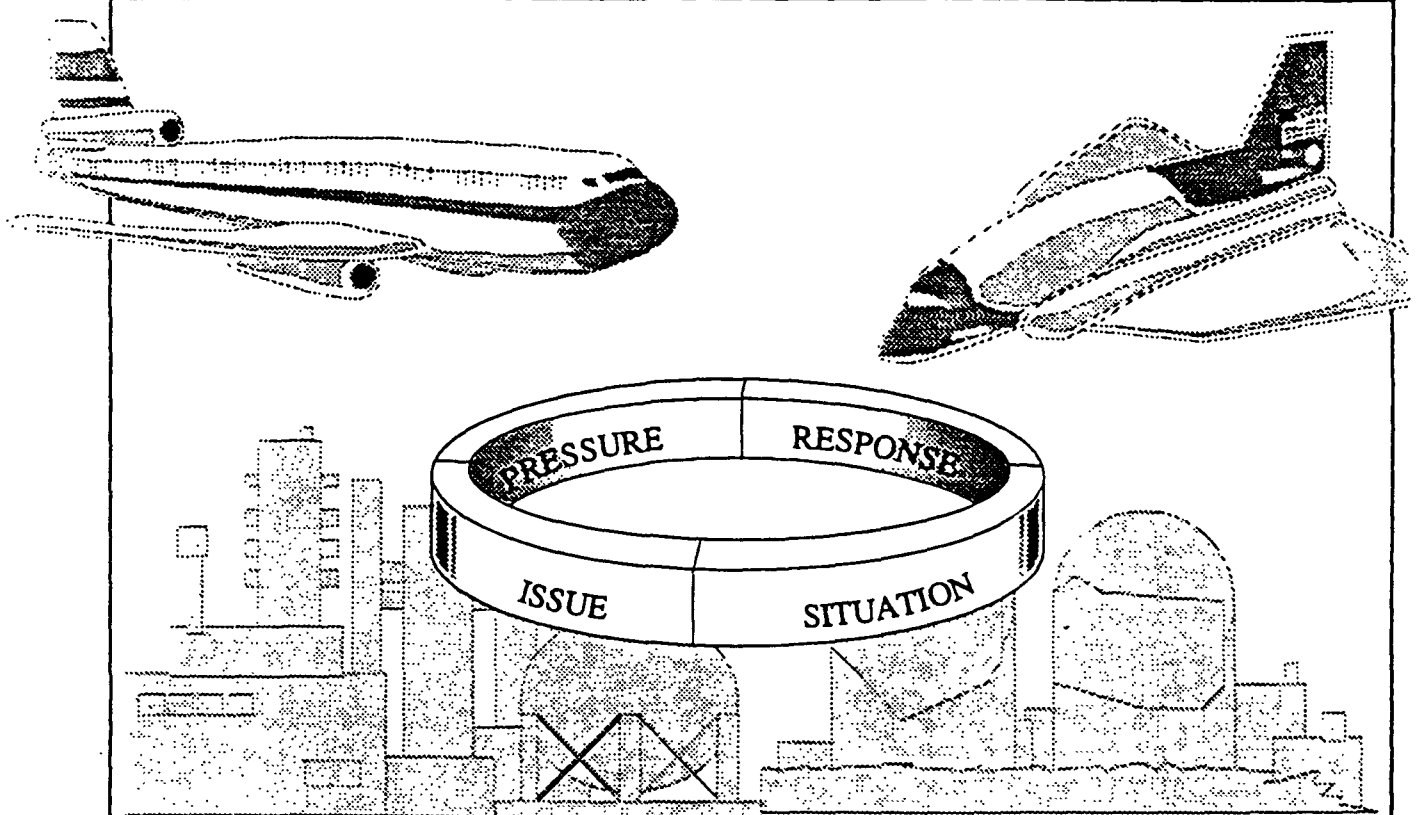
## The ICE Link



The *Incredible Chain of Events* consists of one or more *ICE Links*. Each link contains the following: a situation, a safety issue, some type of pressure, and when enough pressure is applied - a *High Pressure Response*. Closing a link with a *High Pressure Response* sets up the possibility of another link forming ... until an incredible event happens, something totally unexpected by most people. The Challenger Explosion, Three Mile Island, a crash at the Detroit Airport, a gas release from a chemical plant.

If we can break one link in the chain by eliminating one of the components, the incredible event will not occur. In Safe Working Style we concentrate mostly on contemporary pressure and the *High Pressure Response* components. These are the components least addressed by other safety programs.

## Safe Working Style Features...



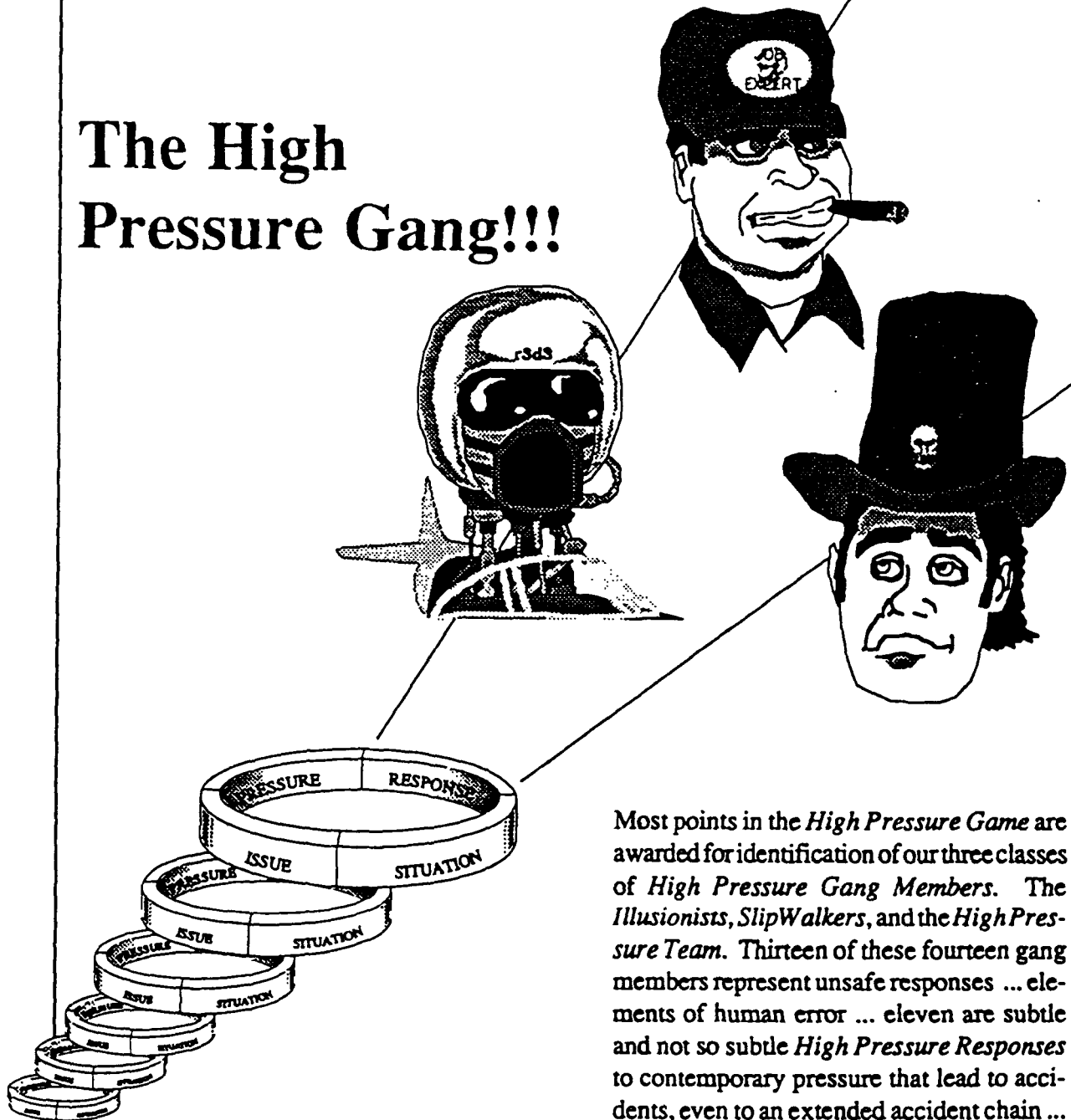
## The High Pressure Game

*The High Pressure Game* teaches how to deal with the elements of human error found in the *Incredible Chain of Events*. The *Game* consists of two phases: *Video Models* and the *High Pressure Board Game*. Individual points earned by correctly scoring the *Video Models* are then used in a team effort to play the board game.

During both phases of *The High Pressure Game*, participants work with life-like *ICE Links*, just as in real life.

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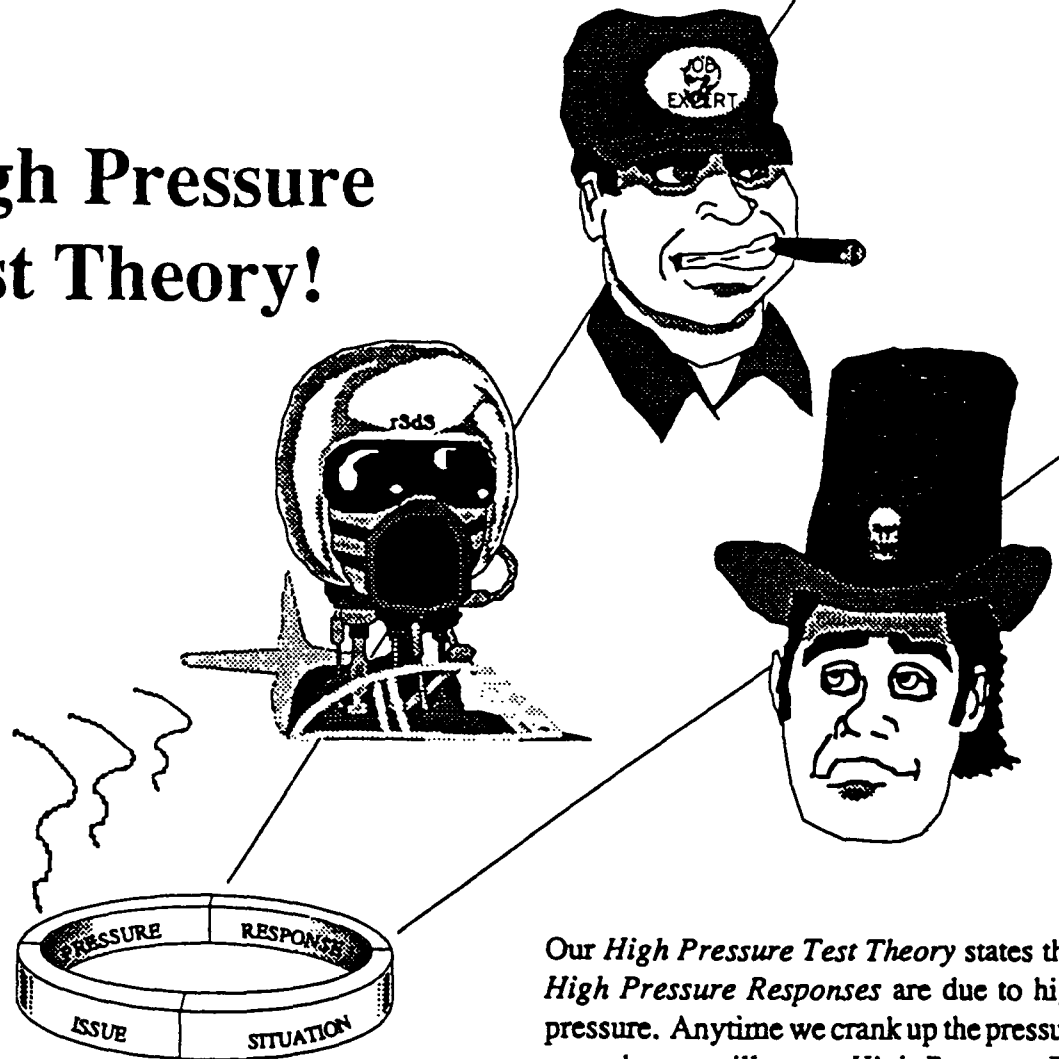
## The High Pressure Gang!!!



Most points in the *High Pressure Game* are awarded for identification of our three classes of *High Pressure Gang Members*. The *Illusionists*, *SlipWalkers*, and the *High Pressure Team*. Thirteen of these fourteen gang members represent unsafe responses ... elements of human error ... eleven are subtle and not so subtle *High Pressure Responses* to contemporary pressure that lead to accidents, even to an extended accident chain ... the building of the *Incredible Chain of Events* ... the building of an *ICE Machine*.

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## High Pressure Test Theory!



Our *High Pressure Test Theory* states that *High Pressure Responses* are due to high pressure. Anytime we crank up the pressure enough, we will get a *High Pressure Response* (contributing to "human error") at some point. Cranking up the pressure is exactly what we do in our video models.

When we apply enough pressure to situations, we get definite responses that we can categorize. Deep seated beliefs about personal safety come to the surface. Physical "*SlipWalking*" occurs at higher pressures and *High Pressure Team Responses*, such as *Job Expert* and the *Gamester* become crystal clear. *High Pressure Test Theory* explains the relationship of human error and high pressure in a contemporary world.

## Safe Working Style Features...



## Pressure and *SlipWalking*, an *Example*

### *Pressure*

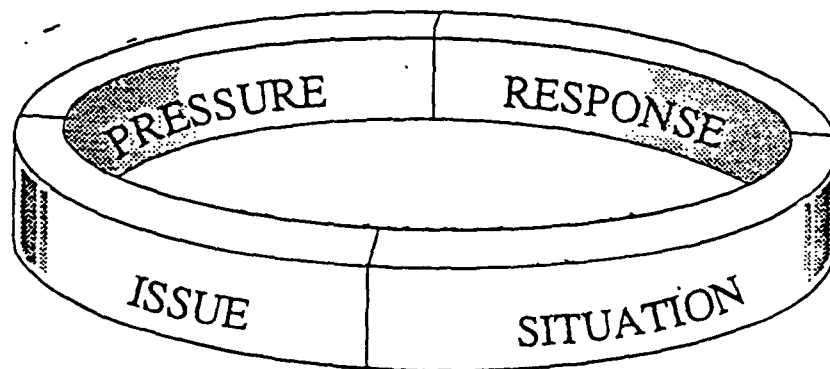
In the *High Pressure Game*, our *SlipWalkers* comprise one of three groups in our *High Pressure Gang*. The *Absent Minded Confessor* and *r3d3*, normally low pressure characters, become the *Switcher* and the *Juggler* under high pressure. This pressure can come from any number of sources.

*SlipWalkers*, as well as the *Illusionists* and the *High Pressure Team Members* show up consistently in our industrial accident investigations. Industrial accident research combined with aviation accident research by John Lauber and others have allowed us to reach a new level of insight into human error and the *Incredible Chain of Events*.

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# Safe Working Style

## Photo Album



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# Illusionists



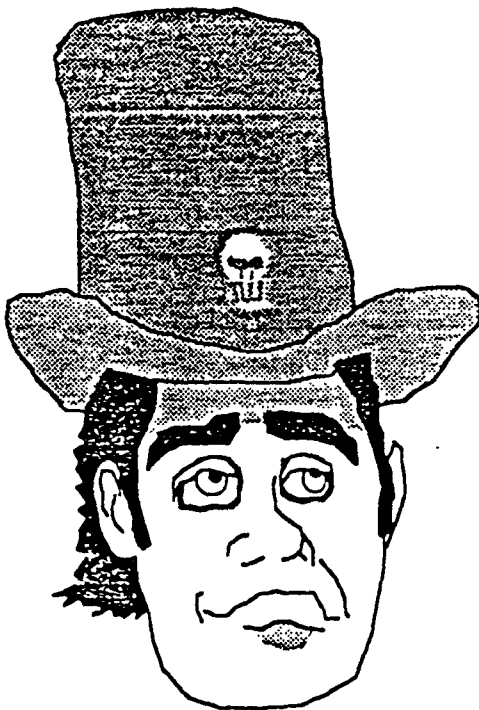
Feels vulnerable. Knows there is risk in everything. Takes precautions.

Typical Statements:

"Okay, let's look at the risk again."

"Listen to her/him, that may be a good idea!"

SWS Realist



Whodini

Has taken precautions in the past, now feels invulnerable.

Typical statements:  
"I fixed that problem a long time ago."  
"We studied this procedure many times in the beginning."



007.5

Has not taken safety precautions but feels invulnerable.

Typical statements:

"It can't happen to me!"  
"I'm not the average person!"

# SlipWalkers

Due to forgetfulness,  
concentrating on one  
item, not enough  
pressure or  
reminders:

- ... Forgetting for  
no reason.
- ... Forgetting a  
name.
- ... Forgetting your  
reminder!



Absent Minded  
Confessor

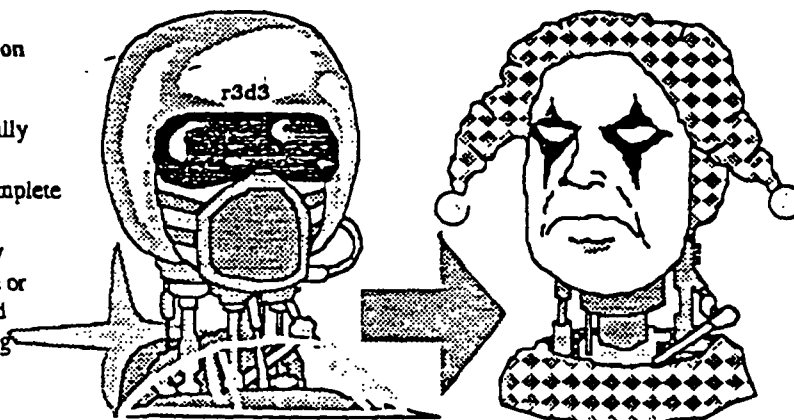
The Switcher

Due to an interruption:

- ...Failing to finish a job.
- ...Losing your place.
- ...Omitting a step.
- ...Switching attention to  
something not as  
important therefore  
missing a hazard.

Due to learned  
actions placed on  
automatic:

- ... Automatically  
performing an  
unintended complete  
sequence.
- ... Robotically  
reading a gage or  
instrument and  
"seeing" wrong  
reading.
- ... Having no  
recollection of what  
you just did.
- ... Getting that  
"What am I doing  
here?" feeling.



r3d3

The Juggler

Due to speeding up:

- ... Hitting wrong  
switch or button.
- ... Reversing  
objects being  
worked on.
- ... Picking up  
wrong object.
- ... Reading wrong  
gage.

# The High Pressure Team



**macho job expert**

"Don't tell me! I know how to do this job best. I'm not open to ideas/suggestions."



**Groupee**

"I'm just going along with \_\_\_\_\_  
(Expert/Comfort/Gamester/  
Harried Time Manager).  
-or-  
Doesn't speak up."



**Gamester**

"Yes, but \_\_\_\_\_  
"I can't because \_\_\_\_\_  
"Look what you made me do!!!"



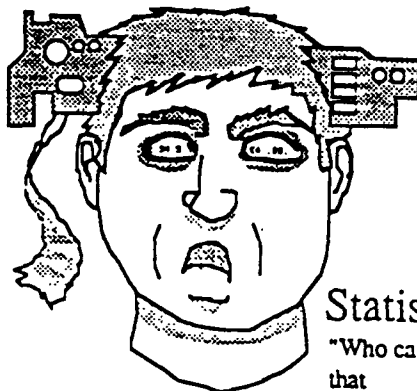
**Mr./Ms Comfort**

"That's uncomfortable."  
"That is too much trouble!."



**Smooth Student**

"I forgot!  
"Tell me again.  
"I didn't know!"

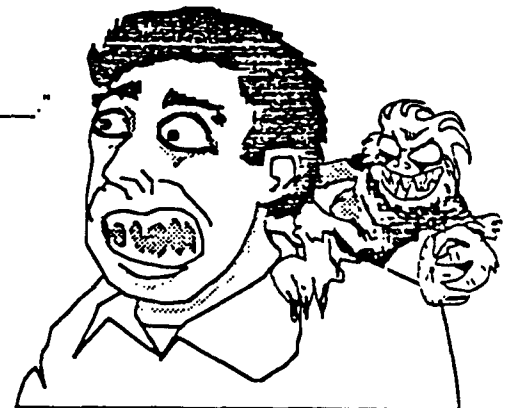


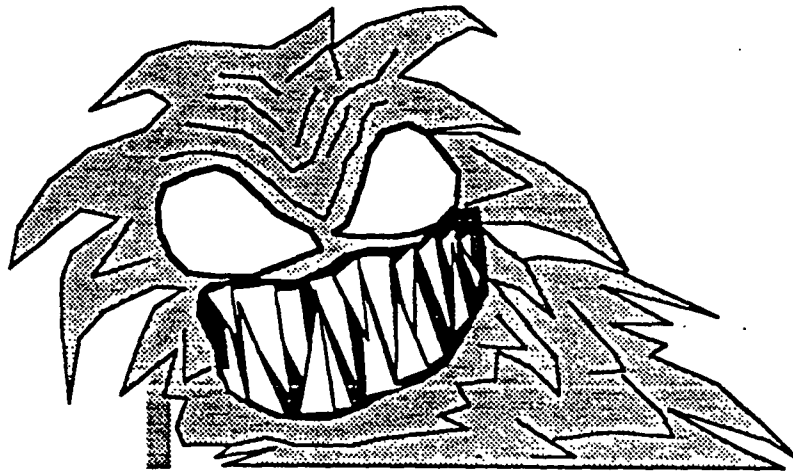
**Statistician**

"Who can really prove that \_\_\_\_\_ is safer???"

**Harried Time Manager**

"We've got to hurry due to \_\_\_\_\_."





## GlobeZilla

The monster of international competition and contemporary pressure. GlobeZilla adds pressure from 1000 angles. It's easy to find him increasing job pressure, team pressure, and personal pressure. GlobeZilla has become the "time management monkey" for the nineties and has begun driving the Harried Time Manager, which is an unsafe response to pressure showing up in our work teams. GlobeZilla is often the underlying force behind pressures which evoke the other unsafe responses such as Macho Job Expert and the Juggler. We cannot eliminate GlobeZilla. However, we must maintain high vigilance and realize that this is the driving force behind the pressure in many Incredible Chains of Events.

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