

2015 Indiana Safety and Health Conference & Expo Indiana Convention Center March 16-18, 2015

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The Safety Leadership Process™ The Leading Edge to Total Business Excellence

**Partner-Centered Safety
Safety and Production Excellence
Richard N. Knowles, Ph.D.**

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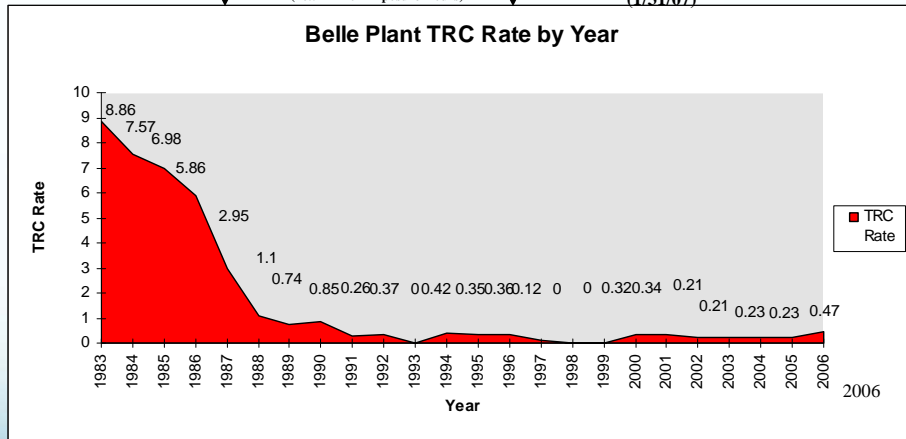
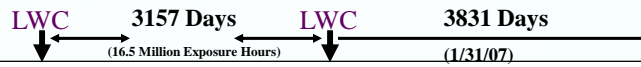
Richard N. Knowles, Ph.D.

- **The DuPont Company (36 years)**
 - **Research (40 US Patents)**
 - **Manufacturing (Manager of several large plants)**
- **World-Wide Safety & Leadership Consulting**
 - **Australia, New Zealand, Malaysia, Canada, US, UK, Italy (19 Years)**
- **Expert in applying chaos and complexity theory to the study of how organizations actually work (27 years).**
- **Creator of Partner-Centered Safety™**

Partner-Centered Safety

- **Working with people.**
- **Excellence in safety & production**
- **The gift of discretionary energy**
- **You are key leaders in this work.**

The Results are a Function of the Leadership Processes
Partnering



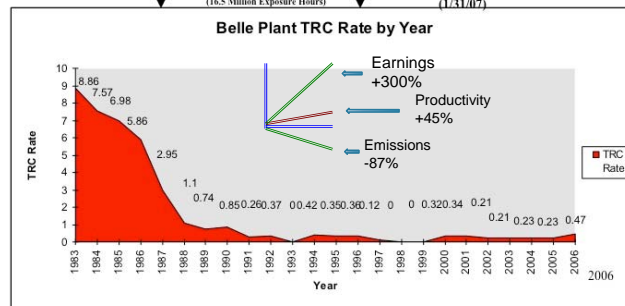
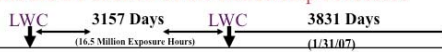
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Proven and Robust!

The Results are a Function of the Leadership Processes



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- **Hundreds of successful workshops in all sorts of businesses and functions.**
US, Australia, New Zealand, China, Canada, Italy, Malaysia, UK

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Other Examples

- **New Zealand Steel, Auckland**
- **CSR Invicta Sugar Mill, Ayr, Australia**
- **Weir Multiflo, Coulum Beach, Australia**
- **Weir SPM, Fort Worth, TX**
- **Through Partner-Centered Safety**

Sustainable Levels of Safety & Production Excellence

You Can Lead The Path to Excellence

- **You are knowledgeable.**
- **You are professionals.**
- **You have access to many people and parts of the organization.**
- **You understand what it takes for people to work safely.**
- **You have power and influence.**

You are Leaders

- **Excellence in Safety and Production**
 - **Strong leadership/ support**
 - **Partnering with the people**
 - **Strong safety culture**
 - **People will give the gift of discretionary energy.**

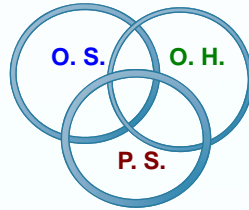
You Know

- **We need a strong systems approach**
 - **Oneness of purpose**
 - **Interdependence of many elements**
 - **Structure and organization**
 - **Best possible decisions**
 - **Do safety & production together**

You Know Safety Interacting Complex Systems

Occupational Safety

- Acute; Slips, Trips, Falls
- Deaths
- PPE, Training
- Ave. Cost of OSHA Recordable
- ~\$50,000/person
- Managed by people close to the work.
- Leading Indicator
- Safe Acts Index
- Near Misses



Occupational Health

- Long-term
- Low levels of exposure
- Ergonomics
- Chronic exposures to many people
- Asbestos
- Lead
- Carpel tunnel
- High Costs/many people; >\$ millions
- Managed by people close to the work + health experts & researchers
- Leading indicator-weak signals (inside & outside) & changes in laws, NIOSH, USW

Process Safety

Acute

- Spills
- Releases
- Explosions

Chronic

- Ground water-C-8s
- Air-Benzene

Very high costs

- Many injuries
- Deaths
- Much destruction
- \$ Millions to billions

Managed by people close to the work + engineers, chemists, researchers, AIChE

Leading indicators

- Near Misses
- Adherence to standards
- Timelines
- Schedules
- Backlogs
- Inspections



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Everything is Constantly Changing

- **Aspects of every job are complex & ambiguous.**
 - The training courses don't quite fit the situation.
 - The people around them have various views and ideas.
 - The environment keeps changing.
- **Every situation is dynamical.**
- **We depend on everyone making the best possible decisions so that the work is done safety and effectively.**

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Excellence in Safety & Production The Best Decision Making

- **People co-create their Strategic Safety Plan™ seeing & understanding...**
 - **The Whole Picture & their role in it,**
 - **The Parts,**
 - **The Interaction of the Parts, &**
 - **Have agreements of**
 - **Trust & Interdependence**
 - **Support, asking for help**
 - **Helping each other, listening, caring**
 - **Open flow of information**
 - **Free-up the flow of discretionary energy to achieve safety & production excellence!**

So Why Is It So Hard To Reach Safety Excellence?

- **Leadership Processes are often weak & counterproductive.**
 - **Driving, pushing, harsh behavioral processes, punishment, training, record keeping, most safety meetings, most audits, etc. do not get you beyond compliance.**
 - **Management lip service, lack of money, excessive record keeping, pencil-whipping, etc. are barriers.**
 - **Speaking up and sharing information can get you into trouble.**
- **Setting safety & production in opposition blocks the path to excellence.**

Weak Leadership Leads to Disengaged People

- **Cost the as much as ~\$ 350 Billion/yr.**
- **Low morale**
- **Bullying**
- **Interfere with information flows**
- **High Absenteeism & turnover**
- **Waste time and resources**

You Are the Leaders-Fill this Gap

- **You are often with the people, and they know and trust you.**
- **You are knowledgeable.**
- **You know the safety rules.**
- **You can listen to the people and learn together.**
- **You can talk with the people and help them to make the right safety & production decisions.**

The Three Big Safety Mistakes Many Managers Make

- Production First**
- Normalization of Drift**
- Structural & Cultural Blocks
to Communication**

**Challenger, Bhopal, Deepwater Horizon,
Chernobyl, First Chemical (WV)**



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The Production First Mindset

- **We have to get the product out now, but do it safely.**
- **Do it quicker, and cheaper.**
- **We have to meet the sales schedules.**
- **We can't miss a shipment**
- **We'll schedule the maintenance when it is convenient.**

- **But we can overcome the pressure with trust,
openness, lots of feedback and listening.**

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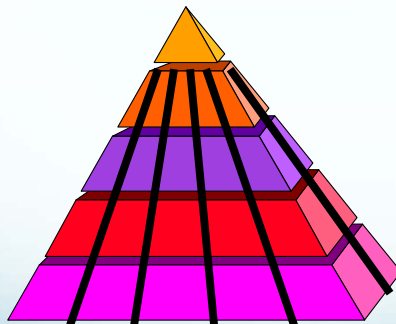
Normalization of Drift

Continuous Improvement and Drift

- **We want continuous improvement, that is carefully thought out, discussed and documented.**
- **But,**
 - People look for easier, quicker ways to do their work.
 - Unguided efforts to make improvements lead to drift; a little “improvement” here, another there.....disaster.
 - This can be quite subtle.

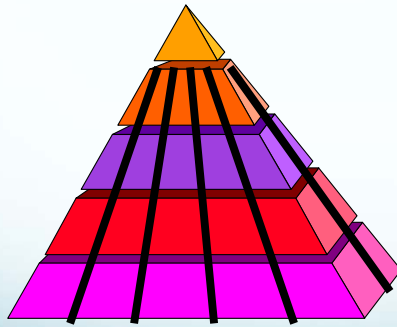
Structural Blocks to Communication

The Traditional Organizational Structure



- **The Fundamentals**
 - Specialization provides regulation.
 - Control and coordination are in the level above.
- **Results in horizontal & vertical barriers.**

The Traditional Organizational Structure



- Information

- Only up the silos
- Quality is lost
- Time is lost

- Decisions

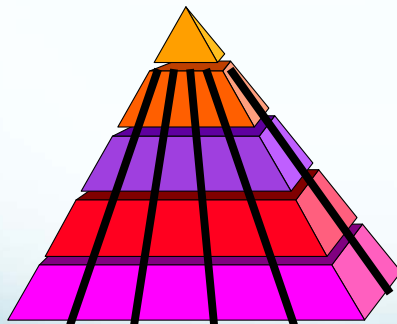
- Only down the silos
- Clarity is lost
- Untimely

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The Traditional Organizational Structure



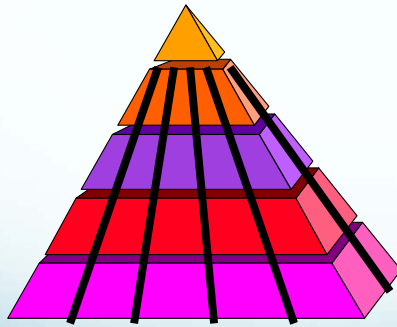
- People are disempowered from doing stuff and taking responsibility.
- They lose sight of the outside world.
- The customer is outside-not up.

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The Traditional Organizational Structure



- **Decision makers need:**
 - Technical competency
 - Social competency
 - Access to information
 - Freedom to act
- **It's rare for the bottom of the silos to have all this.**

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Cultural Barriers

- **People do not ask for your opinion.**
- **Messengers get "shot".**
- **Management does not want bad news; the boss doesn't listen.**
- **Mind your own business.**
- **Bullying**
- **Don't want to look like a suck.**
- **Keep your mouth shut.**

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Chemical Safety Board says DuPont at fault

Federal agency concludes company ignored problems that led to deaths

Insight:
Nov. 15, 2014
4:00 AM

By Mark Collette

November's lethal chemical release at a DuPont plant in La Porte would not have happened if the company had not ignored a series of problems or had developed stronger safeguards to deal with

them, according to findings the U.S. Chemical Safety Board released Thursday. "What we're seeing here ... is definitely a problem of safety culture in the corporation of DuPont," CSB Chairman Rafael Moure-Eraso said as he briefed reporters in Houston.

Although the CSB does not assign blame, the La Porte accident followed recommendations five years ago for the entire company to re-examine safety policies. A DuPont spokesman said safety has been a core value and constant priority for 200 years. "We first implemented safety rules in 1811, and we have been engaged in a con-

tinuous process to improve ever since," spokesman Aaron Woods said in an email. "We are responding to this tragedy in a way that reinforces our absolute focus on safety and enables us to learn from it so that we can find ways to be an even better company." The board asked DuPont to reform chemical process safety after a tube broke and exposed a West

Virginia plant worker to a deadly gas in 2010, and again after a welder at a New York plant died later that year working on a tank that filled with explosive gas. The turmoil at one of the world's most sophisticated and storied chemical companies is seen by the CSB as more reason to update federal chemical safety *DuPont continues on B3*

DuPont plant hazards 'had become normalized,' investigator says

uPont from page B1

standards that haven't changed since the 1990s. President Barack Obama called for such changes after the deadly explosion of a fertilizer plant in West. But the industry has resisted, arguing the worst safety lapses happen only at smaller, "outlier" companies. There is no sign new rules will be adopted or that federal agencies will be given enough resources to enforce them — a situation that frustrated lawmakers and labor department officials at a December Senate hearing.

Four La Porte employees were killed Nov. 15 after a release of methyl mercaptan in La Porte. Before that, work had continued at the plant's insecticide production unit despite alarms and a pipe blockage, investigator Dan Tillema said.

The blockage should have trig-

gered a formal process to review possible hazards, develop written procedures to address them and train employees, he said. Instead, a plan to clear the blockage was hatched and implemented in about a day, giving workers little or no time to think through the pitfalls.

Series of safety failures
U.S. Rep. Gene Green, whose district includes much of the Houston Ship Channel and has received briefings on the ongoing investigations, has said the company's line-clearing procedures likely violated federal standards for chemical process safety.

Although characterized by Tillema as preliminary, the Thursday briefing included the most detailed official explanation of the accident so far, highlighting a series of safety failures that converged on the day of the accident.

"I think most of things that had gone on here had become normalized and had become way of life at the DuPont facility," Tillema said.

An unforeseen intersection between two pipe systems led to the methyl mercaptan release.

One system captures a variety of hazardous gases and sends them to an incinerator. Gases in that system can gradually condense into liquids, which then must be drained.

It had become routine to drain the vent gas system inside the building, exposing workers to fumes. Those fumes were ignored because the concentrations of the gas in the vent system were always relatively low — although a Houston Chronicle investigation found that workers involved in maintenance at the pesticide unit since 2006 could have

been exposed to levels of methyl mercaptan far above those that OSHA has deemed unsafe. Tillema said DuPont policies called for protective equipment such as respirators, but they weren't used during the draining.

Hidden danger

A separate pipe system delivers liquid methyl mercaptan from a storage tank to the pesticide production line. In the week leading up to the accident, wastewater operation inadvertently entered the storage tank. It reacted with the chemical to form solids in the piping system, a situation that is not routine at the plant, Tillema said.

The plant forged ahead with a plan to clear the solid buildup and checked on the progress by opening a series of valves that weren't intended for that purpose. When those valves opened,

it provided a pathway between the liquid feed line and the waste gas line.

When workers saw high pressure in the gas line, they turned to the usual draining procedure, unaware of the hidden danger — the now open path between the methyl mercaptan tank and the gas draining area. Thousands of pounds of the chemical filled the building.

Killed were Wade Baker, 60, brothers Gilbert and Robert Tinsado, 48 and 39, and Crystle Wise, 53.

On Thursday, Chairman Moure-Eraso harkened back to guidance the board gave DuPont after West Virginia, "basically having a system that will not ignore known problems as they are identified."

*mark.collette@chron.com
Twitter.com/ChronMC*

The duck tape approach to safety is not the answer.

Updating the Federal Standards is not the ANSWER!

Your leadership is the answer! You can make the difference!

Break the Communications Barriers

- **Open, free-flow of information**
- **Build trust and interdependence**
- **Work with the people to co-create your shared future.**

Bring safety & production together!

You Can Lead The Path to Excellence

- **You are knowledgeable.**
- **You are professionals.**
- **You have access to many people and parts of the organization.**
- **You understand what it takes for people to work safely.**
- **You have power and influence.**

You Can Lead The Path to Excellence

- Use the Safety Leadership Process™.
- Shift the culture towards better decision-making.
- Building trust and opening up the flow of information are critical!
- Bring safety & production together!

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Safety Interacting Complex Systems

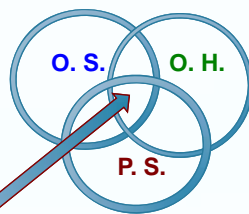
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- Near Misses

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Process Safety

- Acute
- Spills
- Releases
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- Chronic
- Ground water-C-8s
- Air-Benzene
- Very high costs
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- Deaths
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- Managed by people close to the work + engineers, chemists, researchers, AIChE
- Leading indicators
- Near Misses
- Adherence to standards
- Timelines
- Schedules
- Backlogs
- Inspections

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Partner-Centered Safety

- Traditionally we talk at the people.
 - There are lots of negative assumptions about:
 - Their interest in their work
 - Their motivation
 - How smart they are
 - Their attitudes
- Yet, none of us can see every part of the picture!
- So, building on your SHE foundations, partnering with the people changes everything by freeing up the flow of discretionary energy.
- Achieve excellence in safety and production together!

The Safety Leadership Process™

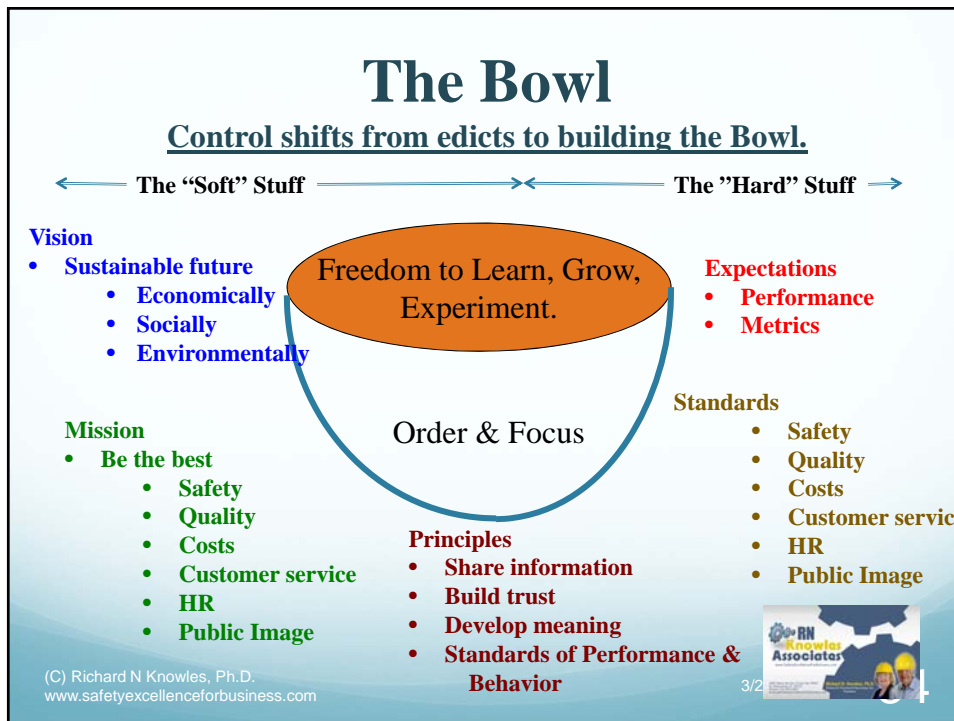
Co-Creating the Strategic Safety Plan

Sharing All
Information

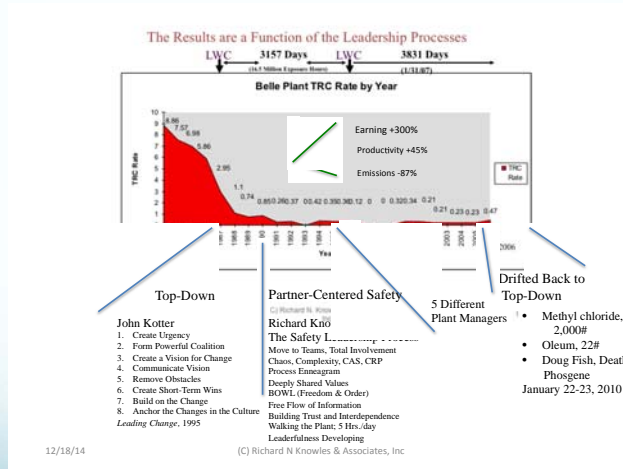


Building Trust &
Interdependence





Rapid, Effective, Sustainable Proven & Robust

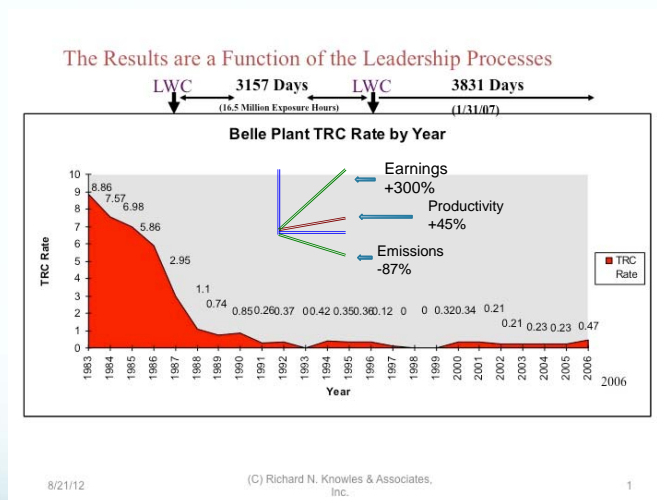


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Proven and Robust!



• Hundreds of successful workshops in all sorts of businesses and functions.

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You are the Leaders The Path to Excellence

- **You are knowledgeable.**
- **You are professionals.**
- **You have access to many people and parts of the organization.**
- **You understand what it takes for people to work safely.**
- **You have power and influence to bring safety & production together for excellence!**

You Can Do This

- **Go into your workplaces.**
- **Talk person-to-person with the people seeking the best safety and production information.**
- **Listen & answer their questions.**
- **Ask for their ideas and suggestions.**
- **Strengthen the decision-making process.**
- **Build trust & interdependence**
- **Encourage them to take the lead in developing and implementing (if appropriate) their ideas.**

Why This Works

- **The right approach...complex systems**
- **The right tools...tools of complexity**
- **The right process...partnering & involvement**
- **The right reasons...achieve safety and business excellence**
- **The right purpose...build sustainable safety & production excellence.**

The Payoff

- **Decision-Making gets much better.**
- **Leaderfulness and excellence develop.**
- **Safety & production performance improve quickly.**
- **Fewer people get hurt & earnings improve.**
- **You help to create a powerful, sustainable culture of safety & production.**
- **Celebrate the successes.**



Safety & Production Together

- **When safety is pushed as #1, it sets up the opposition to production blocking the path to excellence.**
- **When the goal is excellence in both safety & production, these powerful forces unify.**
- **You and the business are winners!**

You Are All Leaders & Winners

- **Take the lead; move away from the duck tape & safety is #1 approaches to Safety.**
- **Bring safety & production together.**
 - **Share information.**
 - **Build trust and interdependence.**
 - **Partner with the people.**
- **Free up discretionary energy and achieve safety & production excellence!**