

The Bradley Curve

A New EH&S Culture Model



International Telecommunications
Safety Conference 2006

Today's Outline

- Journey to EH&S Excellence
 - BASF EH&S Continuous Improvement Process
- Bradley Curve Concept
 - Traditional EH&S Program Model
 - Bradley Curve EH&S Cultural Model
- Implementing EH&S Culture Change Using the Bradley Curve Concept
 - EH&S Culture Survey
 - Action Planning to Change EH&S Culture State



Journey to EH&S Excellence

Journey to EHS Excellence

Because we believe a 'Zero Incident Mindset' is fundamental to EHS excellence, we embrace these five fundamental beliefs:

- The health and safety of people are valued above all else. All incidents, injuries, and occupational illnesses can be prevented.
- EHS excellence is mainly the result of attitudes and beliefs of people. Most incidents occur because of the actions of people.
- Zero Incidents is our goal. We are committed to the protection of people, the environment, and community.
- EHS excellence is everyone's responsibility. Each individual is responsible and accountable for his or her own well-being, and for the well-being of others.
- EHS excellence is a fundamental component of business excellence, as are quality, productivity and profitability. They are mutually supportive and must be made an integral part of everything we do.

Helping Make Products Better™

BASF
The Chemical Company

- What It Is
 - Continuous Improvement Process for EH&S
 - No End Point
 - A “Living” Process
 - We Can Always Get Better
- What It Is Not
 - A Program or Procedure
 - A Fixed Design
 - “Finishable”

Journey to EH&S Excellence

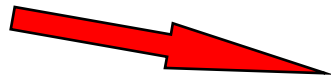
- Elements of the Journey
 - Introduction and Establishment of Commitment
 - Culture Assessment
 - Roadmap (Action Plan)
 - Implementation and Tracking
 - Follow-up Re-assessments of Culture and Roadmap Revisions
- EH&S Culture Change
 - To Achieve the “Next Level” of Performance
 - Focused on Actions and Outcomes
 - Measured in Part with Perceptions
 - Team Effort Required From All



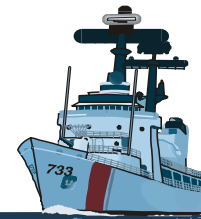
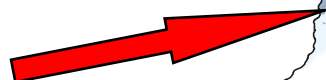
EH&S Culture

- Like an Iceberg
 - 10 % of actions and events are visible and approved
 - 90% of actions and events are invisible and guided by culture
- Can Sink Even the “Unsinkable” Safety Program

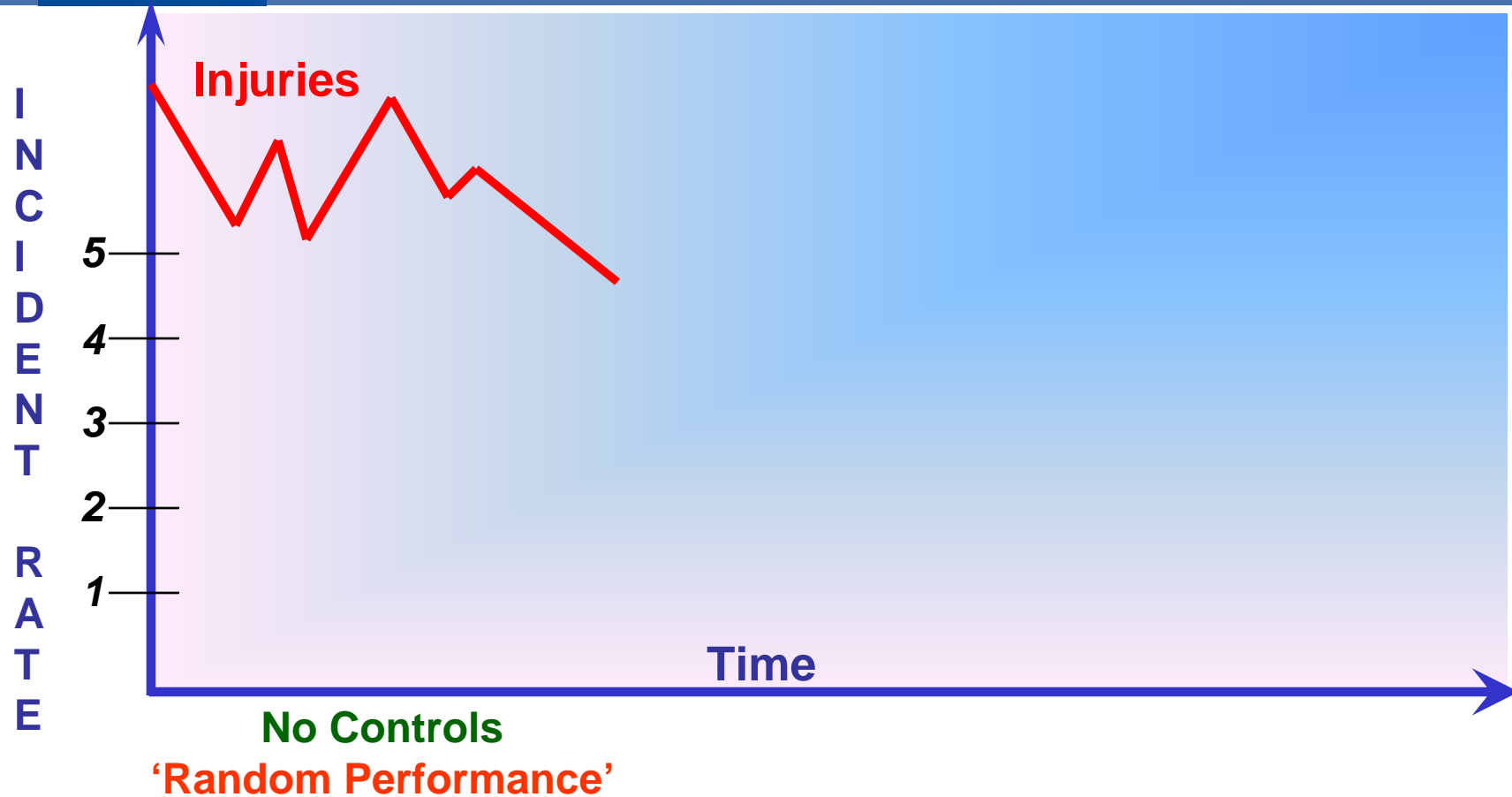
**Policies, Procedures,
Leadership**



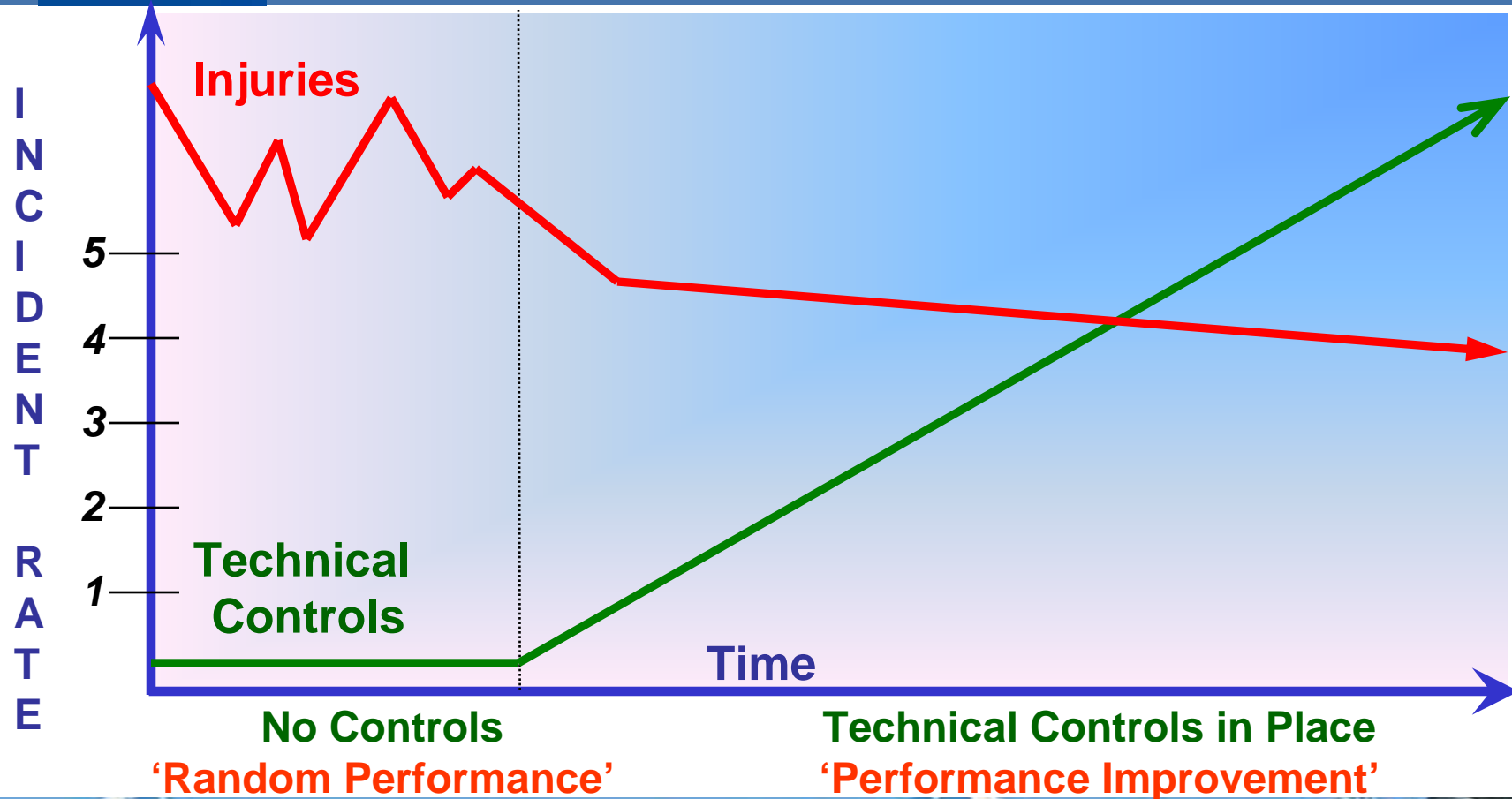
**Assumptions,
Norms, Beliefs**



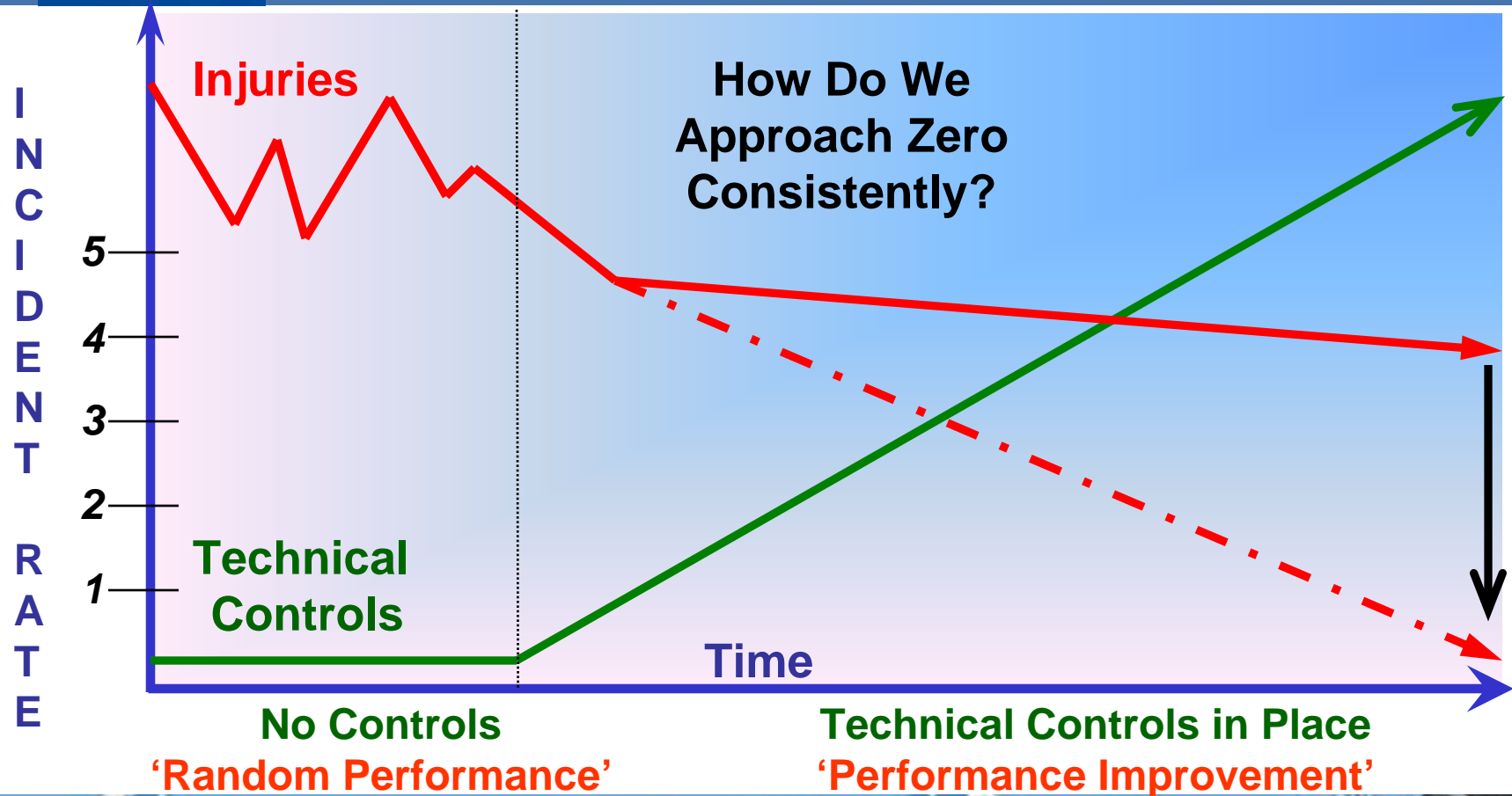
Bradley Curve Concept Traditional EH&S Program Model



Bradley Curve Concept Traditional EH&S Program Model



Bradley Curve Concept Achieving Step Change



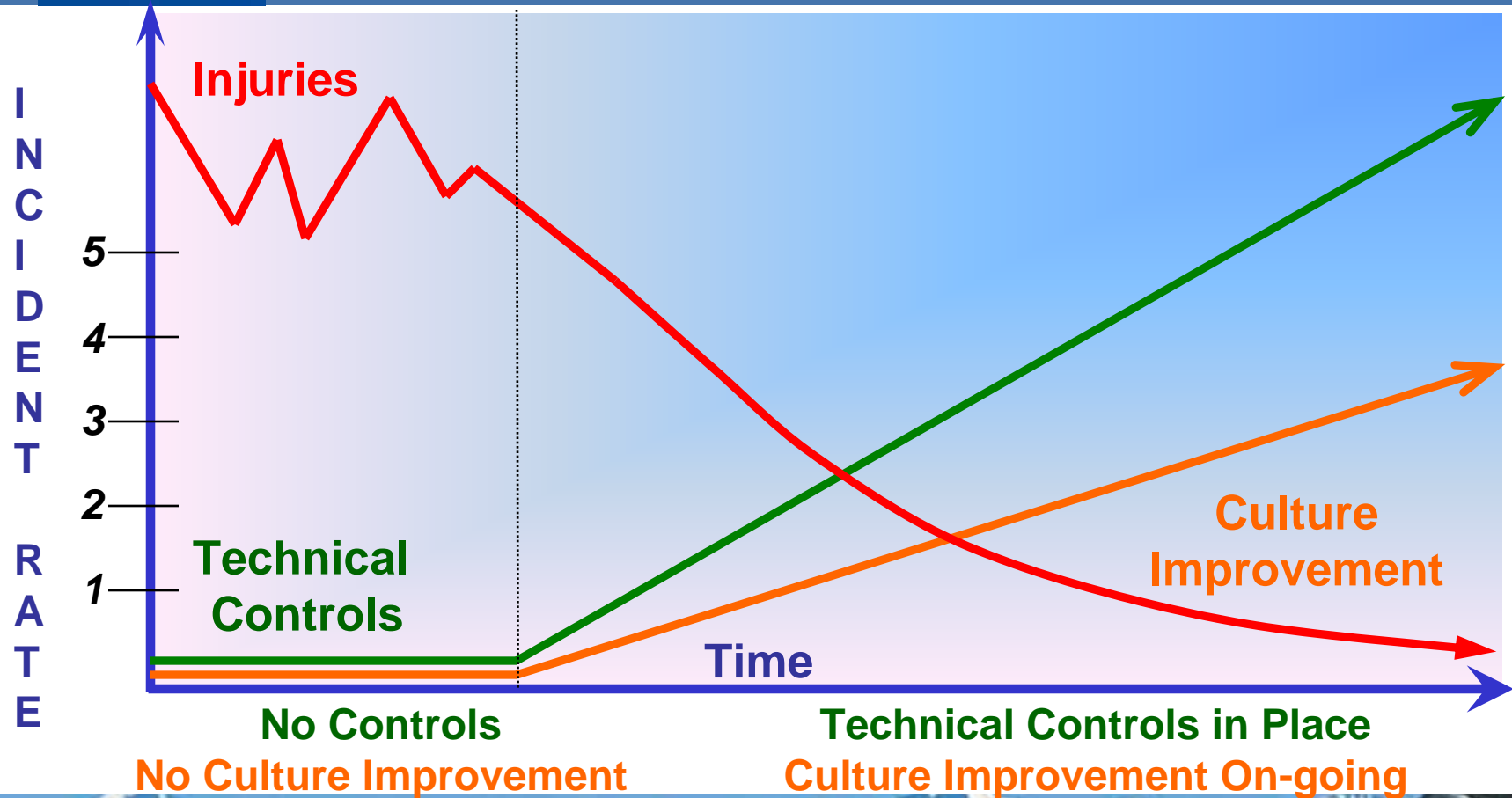
Bradley Curve Concept

How Do We Approach Zero?

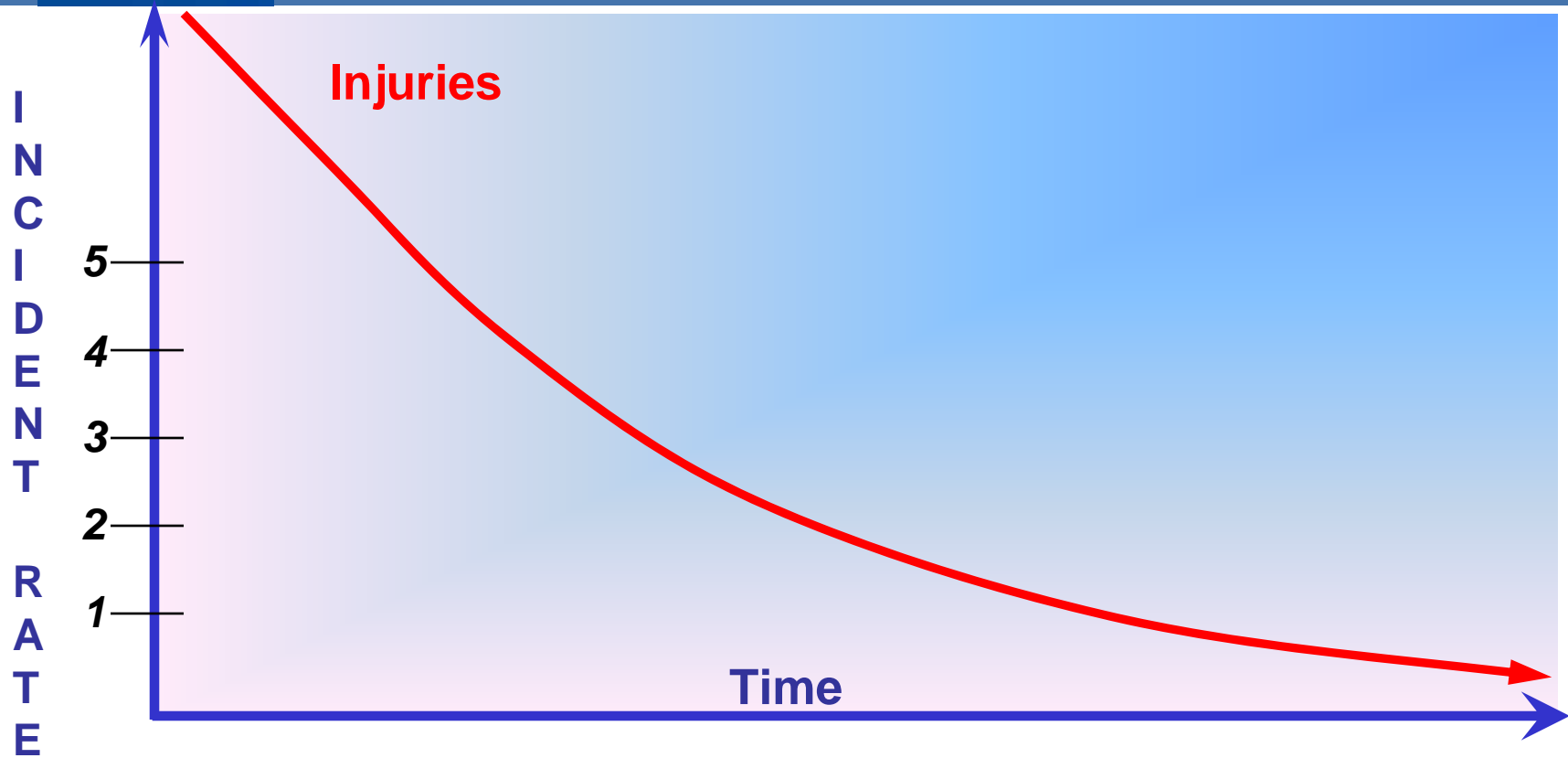
- How Do We Achieve the Step Change Required to Approach Zero Incidents Consistently?
 - Maintain Critical Technical Control Processes
 - Add an EH&S Culture Improvement Process
- A Culture of EH&S Values Must Become the Norm for Both Individual and Team Performance at All Times Without Sacrificing Critical Technical Control Processes



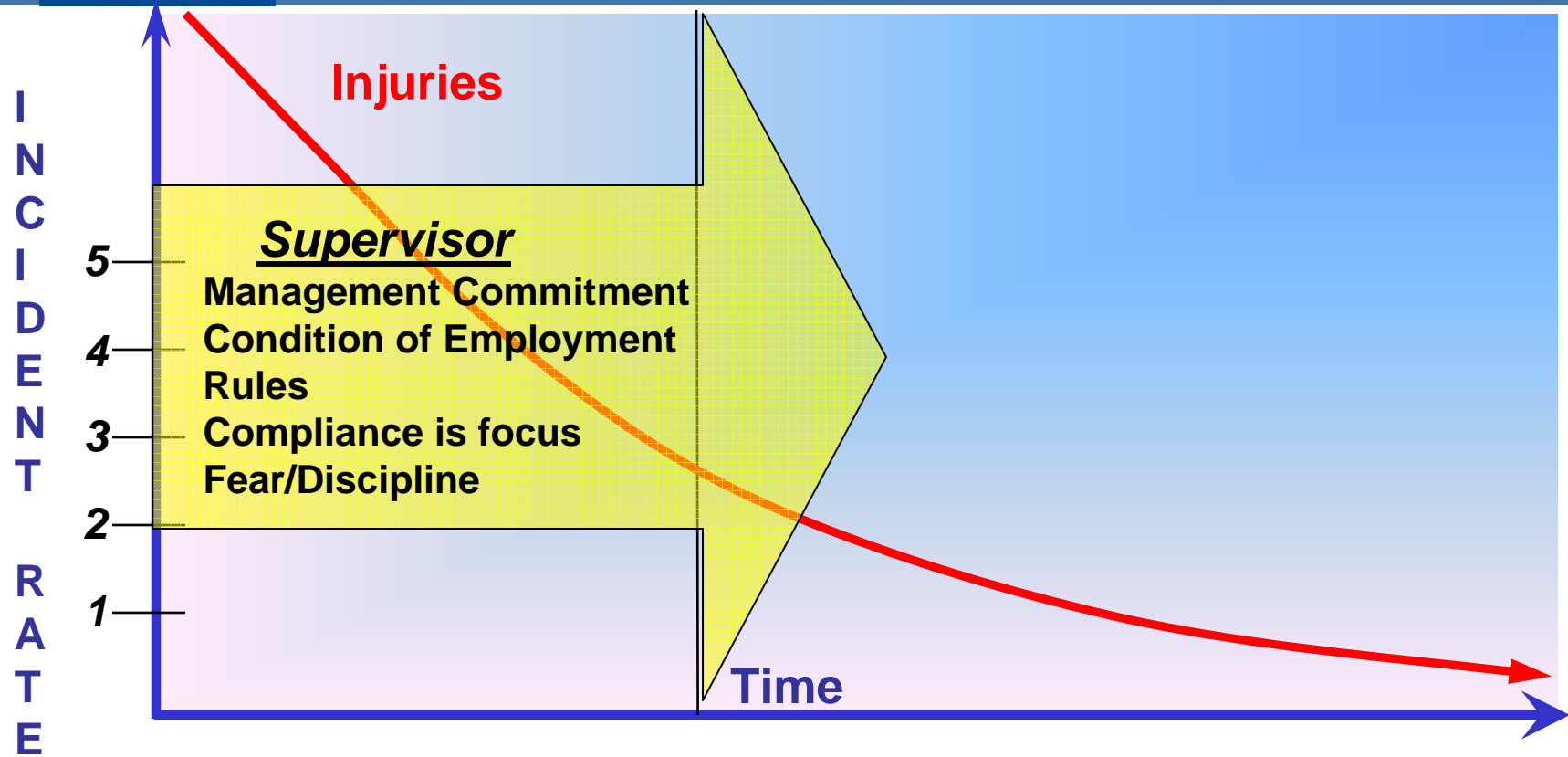
Bradley Curve Concept Using EH&S Culture Improvement



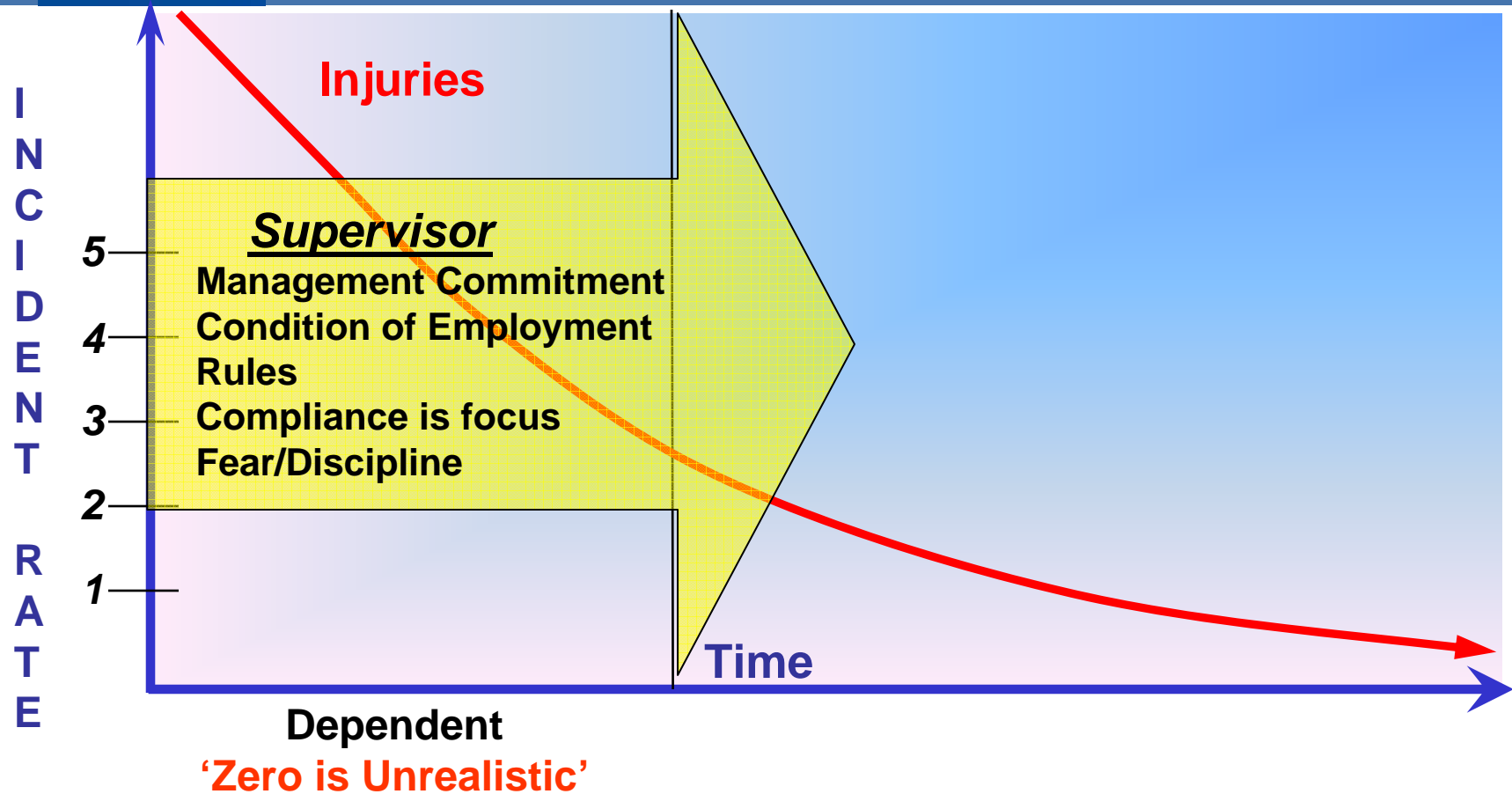
Bradley Curve EH&S Culture Model Driving Toward Zero Incidents



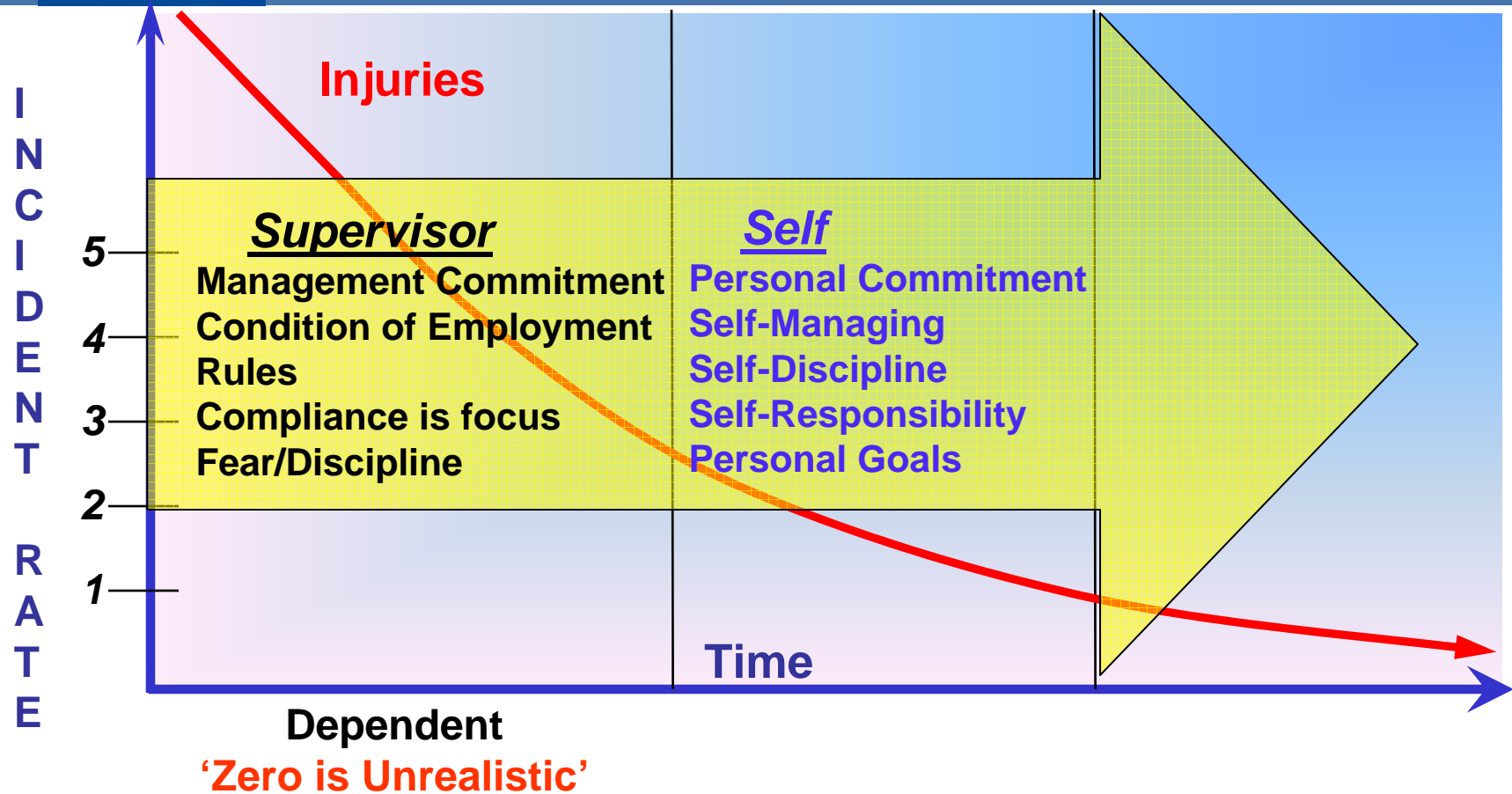
Bradley Curve EH&S Culture Model Stage One – Supervisor Driven



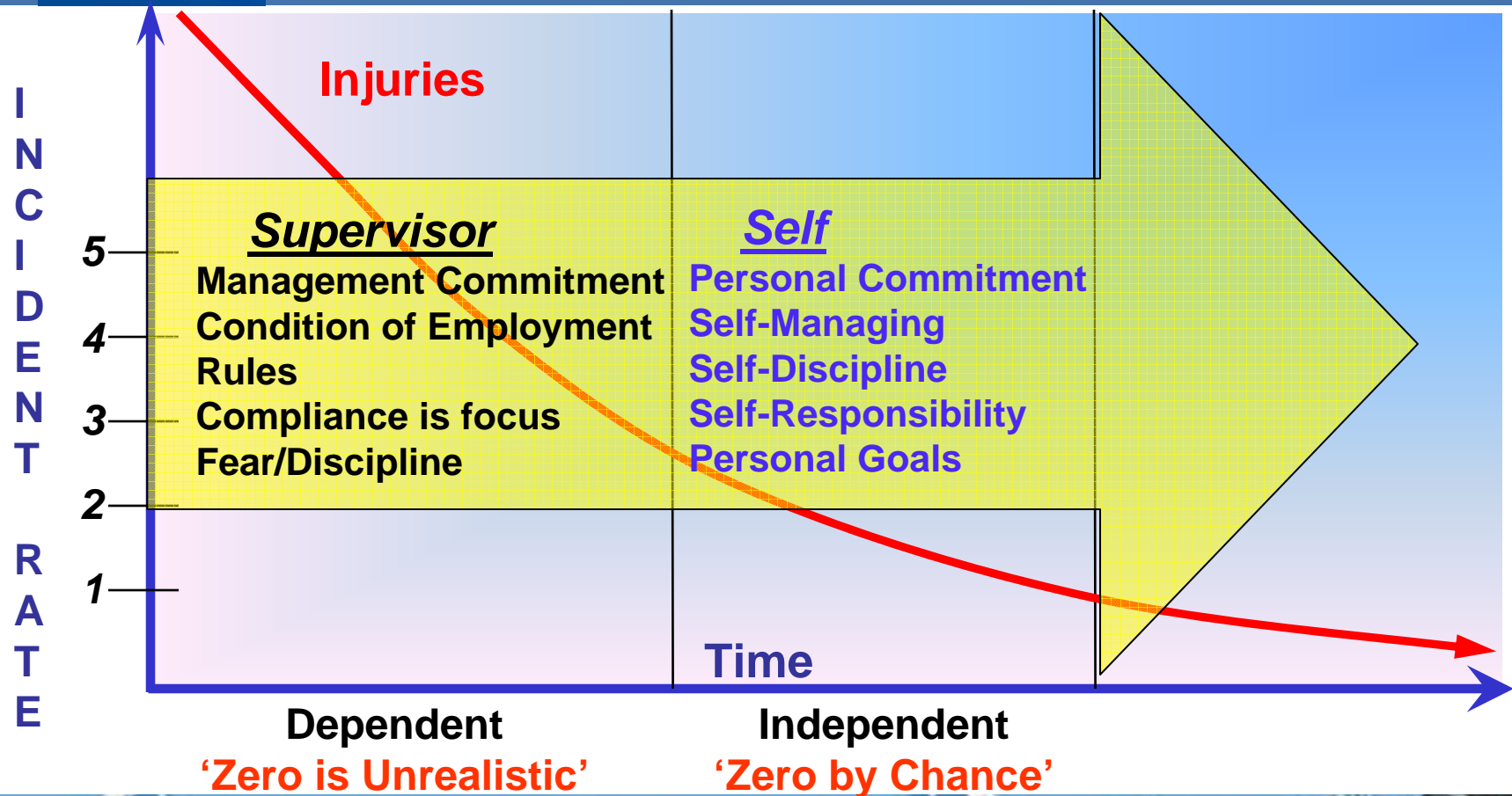
Bradley Curve EH&S Culture Model Stage One – Dependent Phase



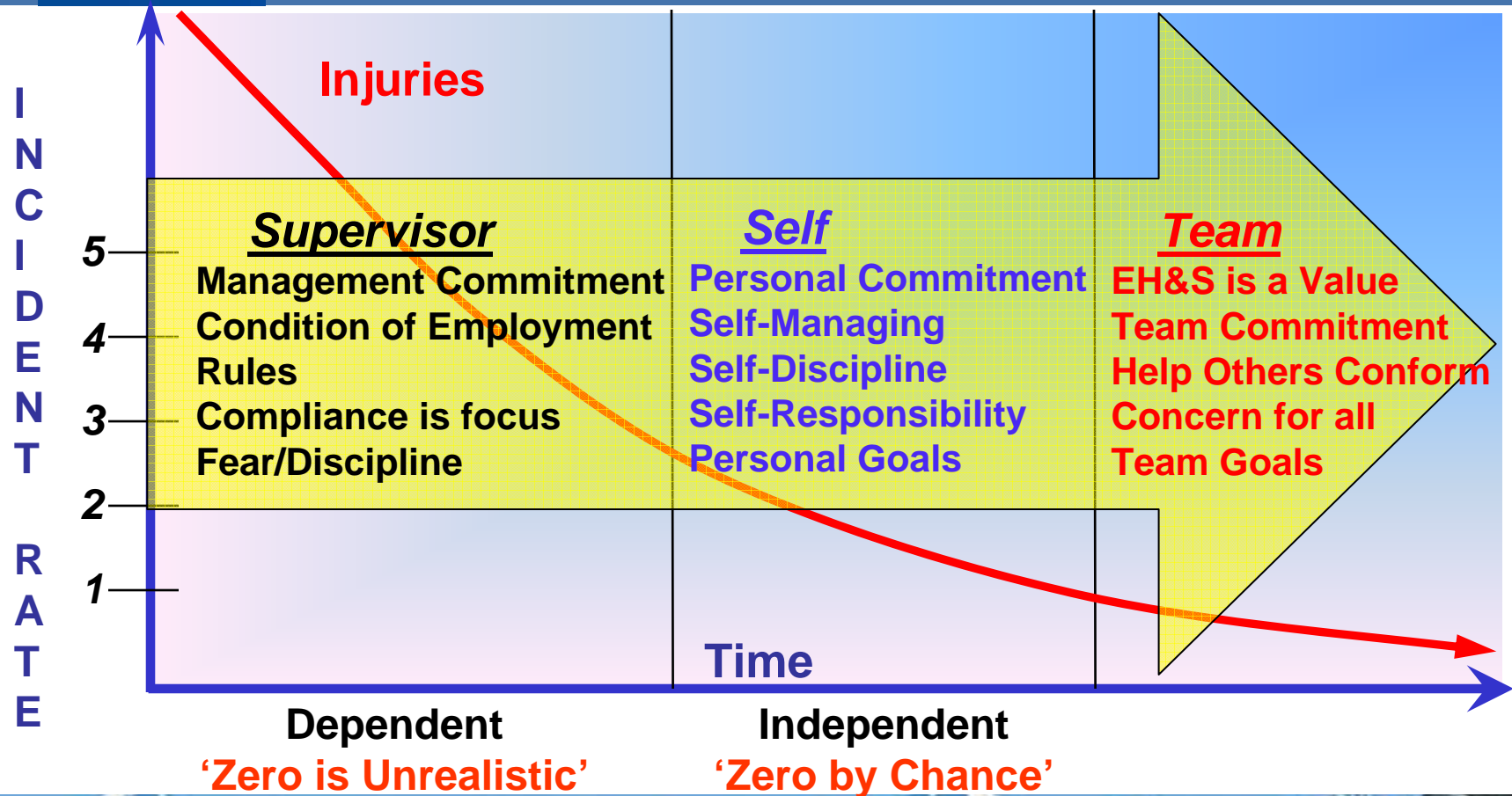
Bradley Curve EH&S Culture Model Stage Two – Self-Interest Driven



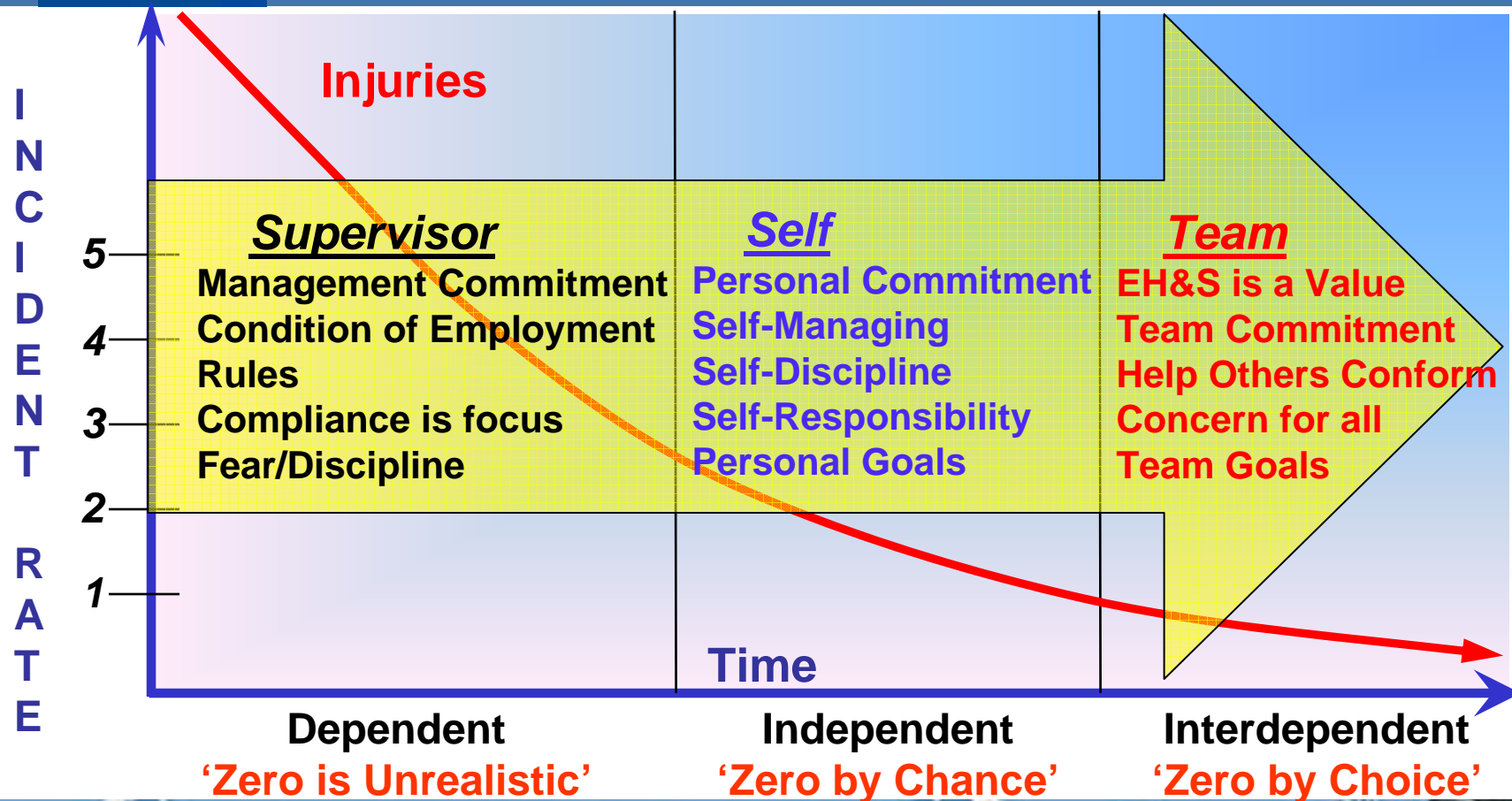
Bradley Curve EH&S Culture Model Stage Two – Independent Phase



Bradley Curve EH&S Culture Model Stage Three – Team Driven



Bradley Curve EH&S Culture Model Stage Three – Interdependent Phase

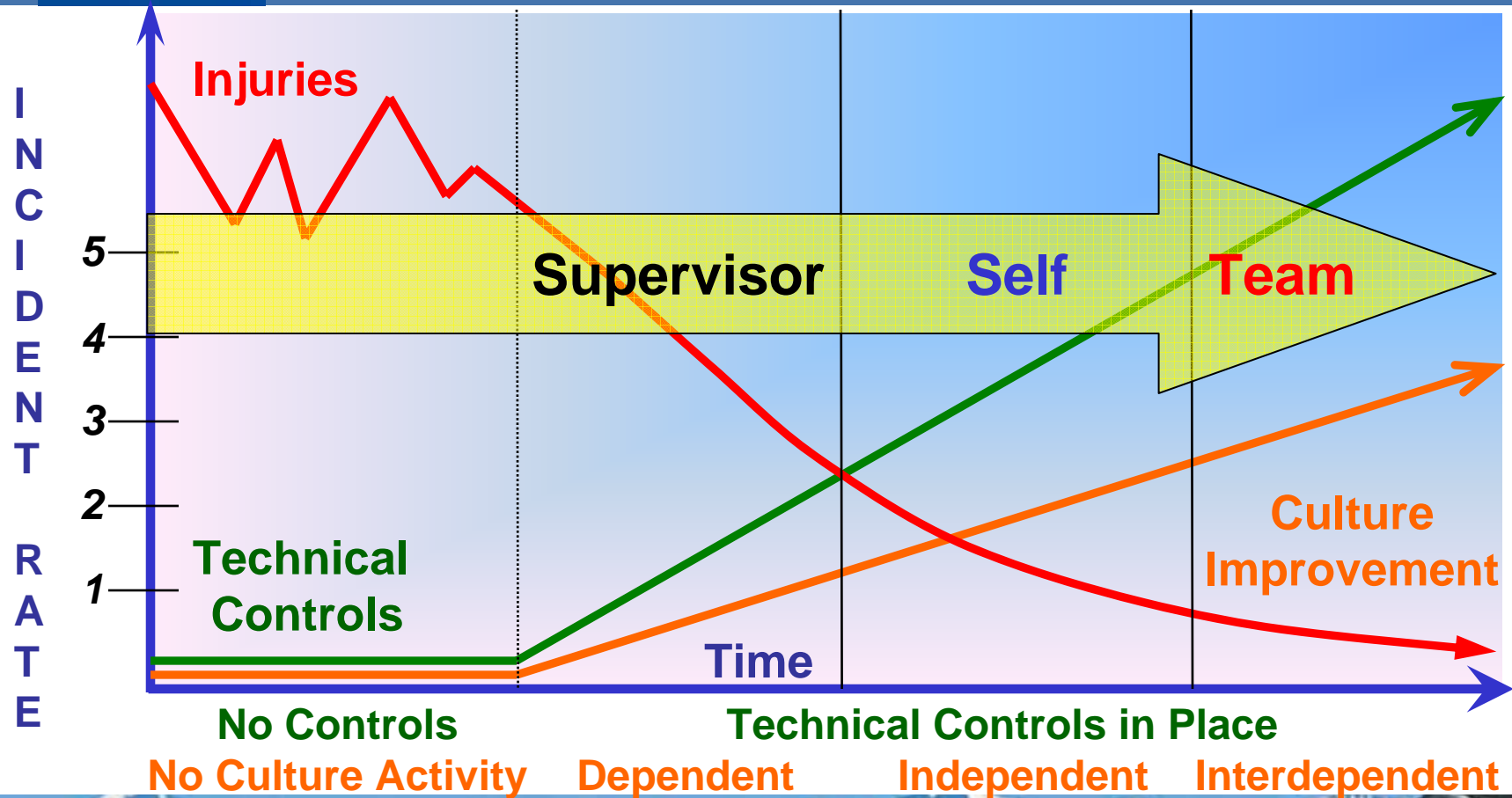


Bradley Curve EH&S Culture Model

Characteristics of Each Phase



Bradley Curve EH&S Culture Model A Tool in the Drive to Zero!



Implementing EH&S Culture Change Using the Bradley Curve

- Initial Culture Survey
 - Discover Bradley Curve Workplace Phase
 - Examine Individual EH&S Program Elements
- Develop an Action Plan for Culture Change
 - Cross-functional Input from Affected Stakeholders
- Follow-up
 - Re-survey in 1+ Years
 - Adjust Action Plan as Needed



EH&S Culture Survey Bradley Curve Style

- Customize the Survey Tool for Your Workplace
 - Language and Names of Processes or Programs should be Recognizable
 - Elements can be Added or Removed Based on Your Needs
 - Writing New Survey Questions is Fairly Easy if You Keep the Model in Mind
- Surveys can be Completed in Differing Ways
 - *Survey All Employees at a Site*
 - *Survey a Random Sample*
 - Facilitated Group(s) can Complete the Survey
 - Be Aware of any Group Bias
 - Make it Cross-functional – OR – Do Multiple Groups and Compare Differences in Responses

EH&S Culture Survey

BASF Bradley Curve Survey

- BASF Currently Uses Two Different Survey Tools
 - 10 Question Version is the Basic Survey
 - 17 Question Version 2 Adds Systems and Elements not Covered in the Basic Survey
 - You Can Create Your Own Version Easily
- Survey Format
 - Multiple Choice
- Respondents Choose the Statement that Best Fits their Viewpoint
- Each Question is Scored and Then the Scores are Totaled
- Be Sure to Adjust Your Score Key if You Modify the Survey!



EH&S Culture Survey

BASF Bradley Curve Survey

- Elements Addressed by the Survey

- EH&S Training
- Supervisor / Team Lead Training
- EH&S Meetings
- EH&S Committees / Team
- Incident Analysis
- Job Audits and Inspections
- Compliance Assessment
- Personal Protective Equipment

- Hazard / Risk Analysis and Management of Change
- Behavior Based Safety
- Extended Version Adds:
 - *Corrective Action Follow-up*
 - *EH&S Leadership*
 - *Awareness and Communication*
 - *Programs, Policies, and Procedures*
 - *Electronic EH&S Tools*
 - *KPIs – Key Process Indicators*
 - *Workplace Environmental Conditions*

EH&S Culture Survey

Example Questions

EH&S Training for Employees (includes compliance as well as knowledge/skill development)

- a) EH&S or Supervisor does most of the training. Training may be accomplished by “reading the procedure” and signing off or through completion of computer based systems.
- b) Employee input to training is regularly requested and accepted, employees volunteer to do some EH&S training and feedback is encouraged to improve quality and value of training.
- c) A cross-functional “training team” comprised of employees does needs analysis for EH&S training. Training team determines when someone is qualified. Volunteers regularly perform EH&S training.
- d) Training is often not completed on time or at all.



EH&S Culture Survey

Example Questions

EH&S Meetings (EH&S Participation)

- a) Meetings are controlled by management or EH&S – agenda topics, presentations, schedules, etc. Meetings are held only monthly; attendance is mandatory and participation is encouraged.
- b) Meetings are scheduled by management or EH&S, employees are polled for topics and issues, volunteers present relevant topics to fellow employees and are recognized for their efforts. Toolbox discussions are called periodically.
- c) Meetings are determined by employee teams based on issues and need. They can be led by anyone; tool box discussions can be called by anyone at anytime. Positive recognition for volunteers remains important.
- d) Meetings are not regularly held.



EH&S Culture Survey

Example Questions

Job Audits and Inspections (Hazard Recognition)

- a) Management schedules, selects participants and leads the inspection/audit which focuses on conditions. Management owns corrective actions. Training is provided to better identify hazards and non-compliance.
- b) Management schedules inspection/audit but there is extensive worker participation which focuses more on behaviors. Corrective actions can be assigned to workers or EH&S committees. Employees are expected to inspect their own work areas and the results are often used as a metric.
- c) Employee team determines schedule and rotates assignments among members. The team invites management to participate but they own the results and corrective action tracking.
- d) Audits and inspections are not regularly performed.

EH&S Culture Survey

Scoring the Results: 10 Questions

- This Page is Valid for a 10 Question Version of the Survey
- Convert Each Question Answer to Its Point Value
 - A = 1 Point
 - B = 5 Points
 - C = 10 Points
 - D = 0 Points
- Add Up the Points

Points	State
< 5	Reactive
6-15	Dependent
16-39	Dependent moving toward Independent
40-59	Independent
60-85	Independent moving toward Interdependent
86-100	Interdependent

EH&S Culture Survey

Scoring the Results: 17 Questions

- This Page is Valid for a 17 Question Version of the Survey
- Convert Each Question Answer to Its Point Value
 - A = 1 Point
 - B = 5 Points
 - C = 10 Points
 - D = 0 Points
- Add Up the Points

Points	State
< 9	Reactive
10-24	Dependent
25-69	Dependent moving toward Independent
70-99	Independent
100-139	Independent moving toward Interdependent
>140	Interdependent

Action Planning to Change EH&S Culture State

- Culture Survey Analysis
 - Examine Both Overall Result and Individual Question Results
 - Helps Identify Specific Areas for Targeted Improvement
 - If Distinct Employee Group Data is Available, Examine Differences Between Groups
 - The Largest Gaps (Differences in the Ratings) are the Most Interesting Areas
- Action Planning
 - Identify the Top Areas for Culture Improvement
 - Areas where Culture State is Lowest (Dependent)
 - Areas where Culture State can be Improved Quickly with Lower Effort
 - Areas where Efforts Integrate well with other Initiatives
 - Areas where Culture State is in Seen Differently by Management and Workforce (Gaps in Ratings)



Action Planning to Change EH&S Culture State

- Action Planning
 - Identify the Goal for the Affected Area
 - Example – Move Culture State from Dependent to Interdependent in Three Years
 - Identify the Major Action Steps Required for Success
 - Estimate How Each Step Will Affect Culture State Change
 - Example – Transfer Facilitation of Safety Meetings from Supervision to Workforce Team Members
 - Assign Timing and Responsibility to Each Action Step



Action Planning to Change EH&S Culture State – Example Plan

<p>The purpose of this element is to reduce unsafe actions through peer to peer workplace safety observations and immediate feedback.</p> <p>A standard A>B>C model of behavior modification shall be utilized. Data from the observations will be collected and analyzed to identify trends and patterns requiring a greater level of management system interventions.</p> <p>All site employees will be observers. Training shall emphasize the skills needed to both provide and receive effective feedback. KPIs will be assigned and tracked for frequency of observations.</p> <p>This program shall be implemented in two phases to facilitate site progress along the Bradley Curve. Phase I implementation will be one standardized checklist of critical skill observations for the entire site with data analysis by EH&S (Bradley Curve Independent State). During this phase, the focus will be on establishing effective peer to peer interaction without the burden of development and analysis on the workgroups. Phase II implementation shall re-focus the program on workgroup specific checklists with workgroup data analysis (Bradley Curve Interdependent State). This implementation will transition the development of the critical skill inventories, the analysis of data, and the implementation of corrective actions to each individual workgroup (with continued consulting and coaching support from EH&S).</p> <p>This element is an upgrade to an existing Job Task self-observation system currently in use at the site (Bradley Curve Independent State).</p>	Design the Phase I BBS program elements	===					
	Educate the site workforce on the program and implement by unit	====					
	Follow-up: data analysis and new activator implementation by EHS		=====				
	Design the Phase II BBS program elements			==			
	Pilot Phase II in one unit				===		
	Extend Phase II implementation to all site units				===	===	
	Follow-up with workgroups: coach, consult, and counsel					===	==
	Bradley Curve State	1111112	222222	222223	333333	3	

Program Element

Summary

Major Components

Timing

Target Culture State

- 1 = Dependent
- 2 = Independent
- 3 = Interdependent



Action Planning to Change EH&S Culture State – Example Plan

<p>Summary and Objectives</p> <p>The purpose of this element is to ensure routine communication of safety and health related information to employees.</p> <p>This element consists of two major meeting sub-types: safety meetings and toolbox meetings. Toolbox meetings occur weekly (10 minutes long). Safety meetings occur monthly (1 hour long).</p> <p>To facilitate further improvement of the site safety culture, this program will be implemented in two phases. Phase I will focus on shifting meeting facilitation to workgroup employees (from the supervisor). This will be done with the toolbox meetings because they are shorter and can be more focused with less preparation time. Phase II will move the monthly safety meeting facilitation from the supervisor to the workgroup employees. In both these phases, the meeting facilitator role should be divided among the workgroup members fairly.</p> <p>Throughout this process, EH&S will continue to provide resources to the workgroups to enable the meeting facilitators to achieve a successful meeting without consuming unreasonable amounts of preparation time. The focus for culture progress shall be to first create an atmosphere where workgroup members share facilitation of pre-packaged materials (Bradley Curve Independent State) moving toward workgroup members creating their own materials and topics based upon workgroup needs (Bradley Curve Interdependent State).</p> <p>This element is an upgrade to an existing Safety and Toolbox meeting system currently in use at the site</p>	Transition toolbox meeting facilitation from supervisor to workgroup members		====				
	Transition toolbox meeting content development from EHS only to EHS input plus workgroup topics		==	=			
	Transition safety meeting facilitation from supervisor to workgroup members				===		
	Transitions safety meeting content development from supervisors to workgroup members				==	===	
	EHS and supervisors develop toolbox and safety meeting content	=====	====				
	EHS provide supporting inputs and information for toolbox and safety meetings			==	=====	=====	==
	Bradley Curve State	1111111	112222	222223	333333	3	

1 = Dependent
2 = Independent
3 = Interdependent

Program Element

Summary

Major Components

Timing

Target Culture State

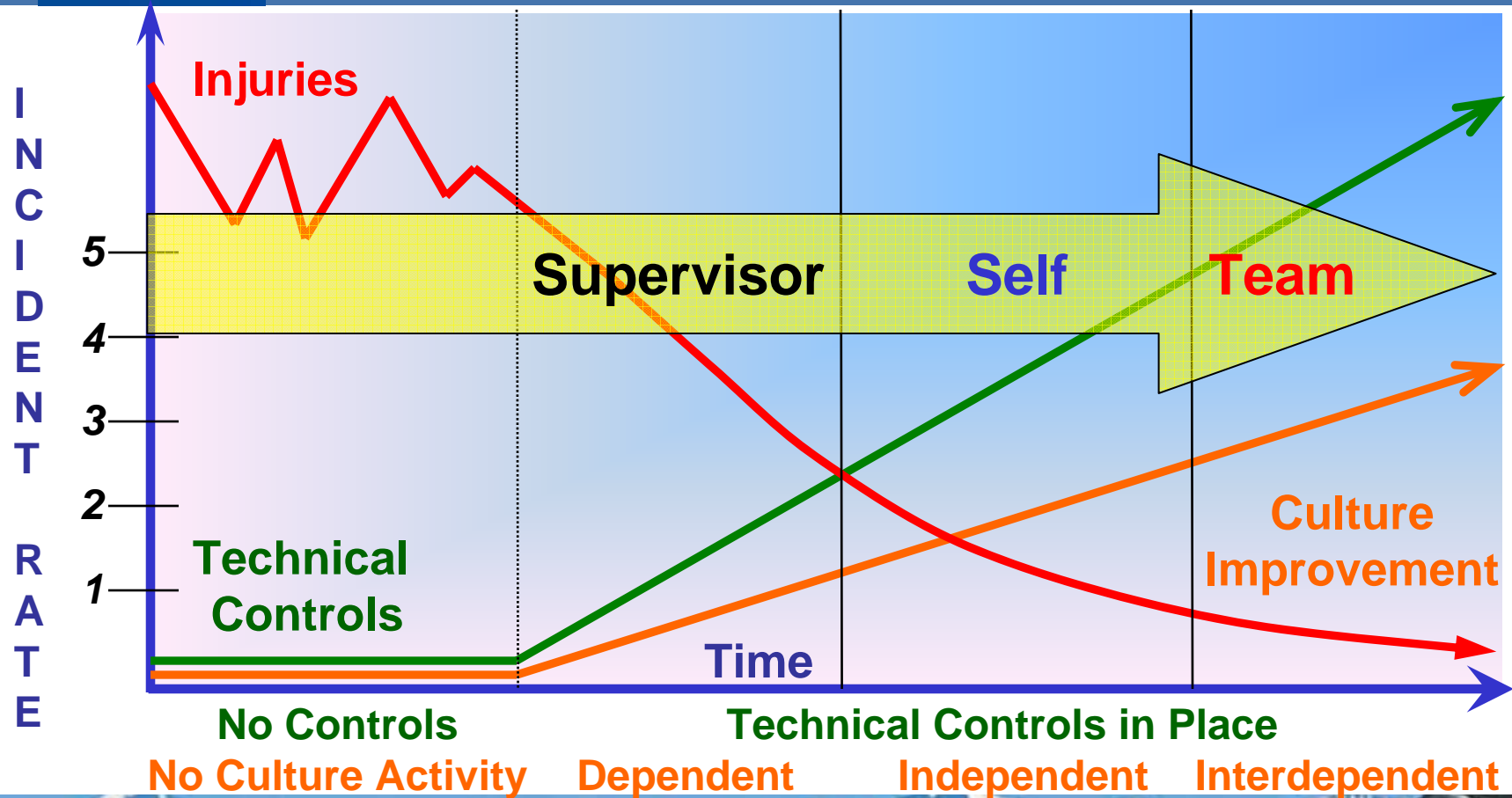


Action Planning to Change EH&S Culture State

- Points to Remember in Action Planning
 - Leave Enough Time for Workgroup and Team Members to Assimilate to a Culture State Before Attempting the Next Transition
 - Limit the Action Plan to Four or Five Areas to Concentrate On
 - Define Key Performance Indicators (KPIs) for Tracking of Progress Ahead of Time
 - Get Buy-In from Key Stakeholders



Bradley Curve EH&S Culture Model A Tool in the Drive to Zero!



Questions?



Thanks!