TOLEDO | LUCAS COUNTY
PORT AUTHORITY

# Safety Management System Implementation Study

## Toledo Express Airport

RS&H
IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# SMS Implementation Study

## SMS Status at Study Start

- Original SMS Manual Completed June 2008
- Extensive Top Management Turnover 1Q 2009
- Reorganization of Departments
- Implementation Lagged

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY
PORT AUTHORITY

# SMS Implementation Study

## Implementation Study Objectives

- Redesign SMS to Reflect Airport Reorganization
- Work Within Existing Resource Levels
- Improve Communications Among Departments
- Develop Safety Culture

RS&H
IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY
PORT AUTHORITY

# Safety Management System

## Four Elements of SMS

- Safety Policy
- Safety Risk Management
- Safety Assurance
- Safety Promotion

RS&H
IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY
PORT AUTHORITY

# Safety Policy

## Safety Policy Objectives

- Determine Safety Responsibilities
- Identify Opportunities to Promote Safety
- Identify Ways to Determine Hazards
- Revise SMS Manual

RS&H
IMPROVING YOUR WORLD

## Safety Policy

- Restate Commitment to Safety
- Identify Accountable Executive
- Describe Safety Management Team (Safety Coordinator, Security Coordinator, Maintenance Manager, Port Authority Police Sergeant)
- Outline Safety Responsibilities for Every Employee

TOLEDO | LUCAS COUNTY
PORT AUTHORITY

# Safety Management System

## Four Elements of SMS

- Safety Policy
- Safety Risk Management
- Safety Assurance
- Safety Promotion

RS&H
IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Risk Management

## Safety Risk Management Objectives

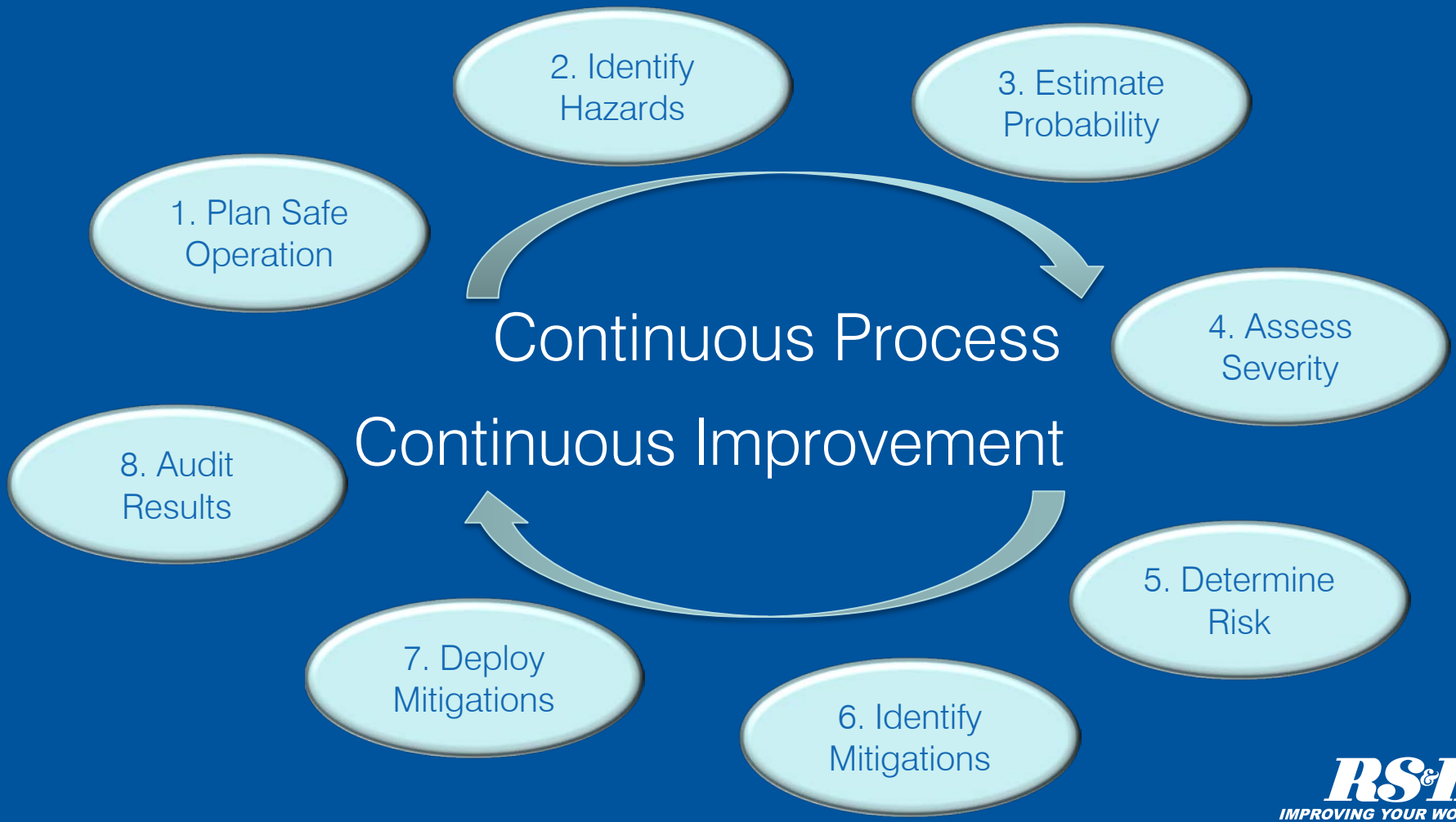
- Involve Workers to Greatest Extent Possible
- Identify Ways to Determine Hazards
- Make Existing Software More Capable
- Shift Worker Mindset to be Proactive
- Conduct Safety Risk Assessments
- Revise SMS Manual

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Risk Management

## Initial SMS Training Material

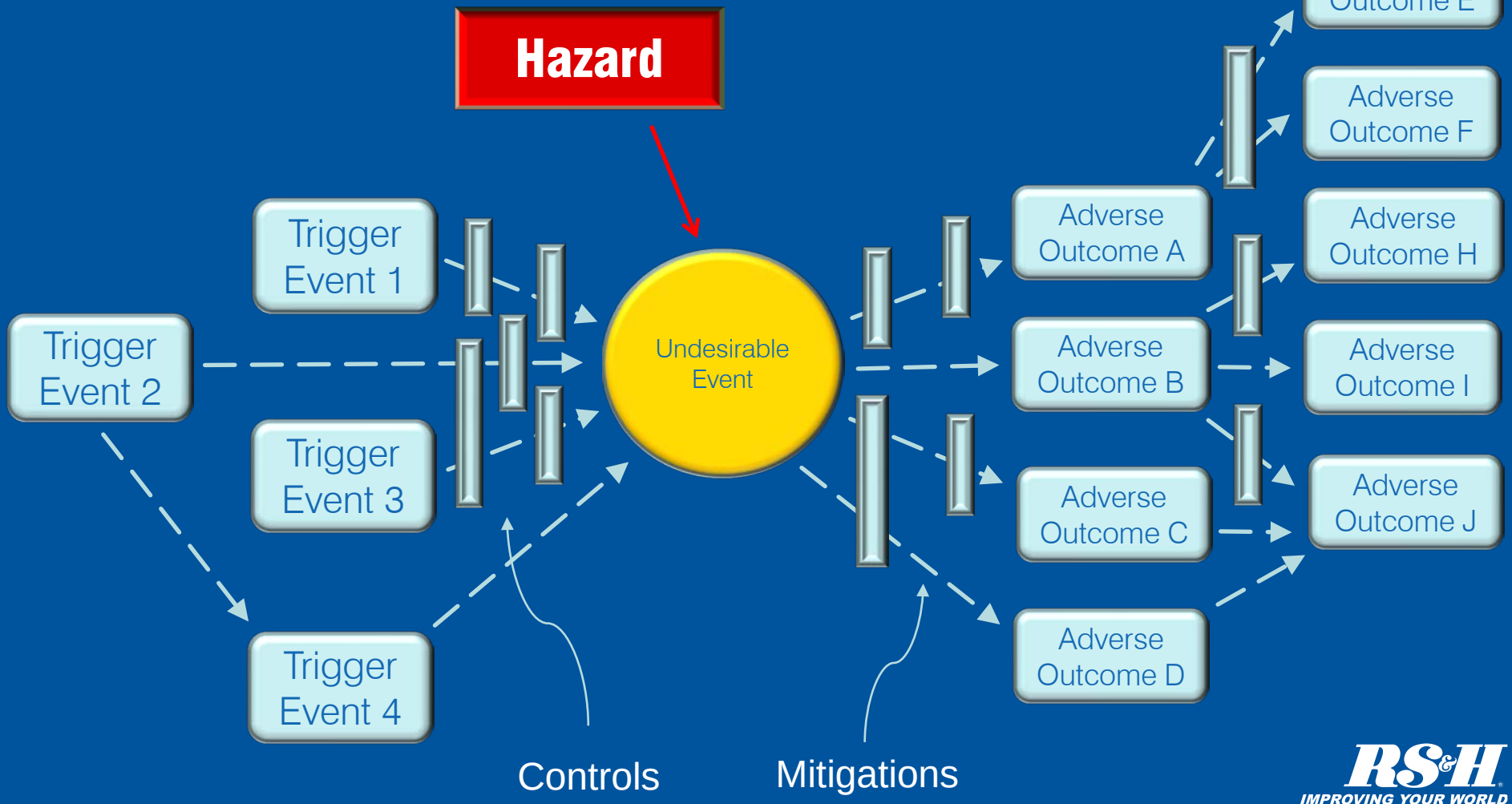



RS&H
IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Risk Management

## Initial SMS Training Material




RS&H IMPROVING YOUR WORLD

# Initial Risk Matrix

| Hazard and Risk Assessment Matrix | | | | |
|---|---|---|---|---|
| | **Frequent** – Highly likely to occur in the immediate future (80%-100%). May occur often. | **Occasional** – Probably will occur within the next year. (50%-80%) | **Remote** – Probably will occur within the next three years (10%-50%). Should be expected. | **Improbable** – Remote probability will occur within the next 5 years (0%-10%). Unlikely to occur. |
| **Significant** – May cause death, disability, or critical damage to facility or property. | | | | |
| **Very Serious** – May cause major injury, disability, severe occupational illness, or major damage to facility or property. | | | | |
| **Serious** – May cause minor injury or occupational illness, or minor damage to facility or property. | | | | |
| **Not Serious** – Superficial injury or cosmetic damage to facility of property. | | | | |
| **Minor** – May affect or compromise the safety of employees, operation or property. | | | | |

| High Risk (Unacceptable) | Medium Risk (OK with Adequate Defenses) | Low Risk (Acceptable) |
|---|---|---|

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Risk Assessments

## SRA #1: Sports Car Events

- 16 Participants from All Stakeholders
- Required Two Sessions Totaling 6 hours
- 5 “Yellow” Hazards Required Mitigation
- 1 Hazard Mitigated to “Green”
- 4 Remained Yellow, But Accepted

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Risk Assessments

## SRA #2: Snow Removal Operations

- 21 Attendees from All Stakeholders
- Completed in One 4-hour Session Using Small Group Exercises
- 6 Hazards Identified, Including 4 “Red”
- Multiple Mitigations Identified for All

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Risk Assessments

## SRA #3: Pavement Marking Operations

- 12 Attendees from All Stakeholders
- Completed in One 4-hour Session
- Risk Matrix Simplified
- 13 Hazards Identified, Including 6 “Red”
- Multiple Mitigations Identified for All

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Risk Assessments

## SRA Documentation

| Hazard/ Functional Area | Hazard | Prob | Severity | Matrix |
|---|---|---|---|---|
| 1 Security | Dangerous materials brought on-site, whether intentional (explosives) or unintentional (excess fuel) | Remote | Minor | Yellow |
| | Mitigation | Resulting Matrix | Other Actions | Responsible Person |
| | Inform racers ahead of time through entry process that all vehicles are subject to search.<br>Add signage at site that all vehicles are subject to search. | Yellow | Accept Risk | Robert Chrismas, SCCA<br>Dan Spaugy, TLCPA |
| Hazard/ Functional Area | Hazard | Prob | Severity | Matrix |
| 2 Communications | Emergency response hindered<br>REMOVED AS HAZARD AFTER NEW COMMUNICATIONS PLAN ADOPTED | | | |
| Hazard/ Functional Area | Hazard | Prob | Severity | Matrix |
| 3 Site evacuations | Aircraft incident or weather event requires rapid evacuation of ramp. | Remote | Catastrophic | Red |
| | Mitigation | Resulting Matrix | Other Actions | Responsible Person |
| | Site evacuation plan developed before event<br>BAX to shelter participants if weather suddenly becomes inclement | Yellow | Accept Risk | Robert Chrismas, SCCA<br>Mike Vascik, BAX |
| Hazard/ | | | | |

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Risk Assessments

## Simplified Hazard and Risk Assessment Matrix

| Hazard and Risk Assessment Matrix | | | | |
|---|---|---|---|---|
| | **Frequent** – Likely to Occur Repeatedly | **Occasional** – Likely to Occur Sometime | **Remote** – Unlikely, but Possible | **Improbable** – Very Unlikely to Occur |
| **Catastrophic** – Multiple Deaths, Critical Damage, Aircraft Destruction | | | | |
| **Serious** – Serious Injury or Death, Major Damage to Facility or Aircraft | | | | |
| **Minor** – Minor Injury, Minor Damage to Facility or Aircraft | | | | |
| **Negligible** – Superficial Injury, Cosmetic Damage or Inconvenience Only | | | | |

| High Risk (Unacceptable) | Medium Risk (OK with Adequate Defenses) | Low Risk (Acceptable) |
|---|---|---|

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY
PORT AUTHORITY

# SMS Implementation Study

## Four Elements of SMS

- Safety Policy
- Safety Risk Management
- Safety Assurance
- Safety Promotion

RS&H
IMPROVING YOUR WORLD

## Safety Assurance

- DRACONi AIRS Self-Inspection Software Modified To Enhance Hazard ID and Tracking
- Anonymous Hazard Reporting System Installed on Web Site
- Safety Committees Established for Management, Maintenance and Tenants/Public
- Daily Inspection Reports Review

## Safety Assurance (Continued)

- SMS Elements Added to Job Descriptions
  - Hazard Reporting
  - Documentation
  - Corrective Actions
- Re-analysis of Hazards Upon Internal or External Change of Process/Equipment
- Trend Analysis

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Assurance

## Training

- SMS Elements Added to Initial & Recurrent Training Programs for Most Workers
  - Safety Assurance
  - Hazard Identification
  - Reporting Systems
- Supervisors Trained on Hazard and Root Cause Analysis
- Safety Coordinator Measures Training Effectiveness

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY
PORT AUTHORITY

# Safety Assurance

## Audit Process

- Initial List of Safety Indicators From Gap Analysis
- Internal Self-Inspection by Managers
- Internal Evaluation by Safety Coordinator
- Annual Effectiveness Measurement
- Annual External Audits
- Maturity Assessment Annually for Next 3 Years

RS&H
IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY PORT AUTHORITY

# Safety Assurance

## Audit Elements

Inspector: Date of Audit:

| Elements to Audit | Findings* | | | Remarks |
|---|---|---|---|---|
| *Administration* | — | 0 | + | |
| Specific person is responsible for developing and monitoring safety program | | | | |
| Managers/supervisors carrying out safety supervision, training, and enforcement responsibilities | | | | |
| Employees carrying out safety compliance and reporting responsibilities | | | | |
| System exists that provides communication with affected employees on safety matters | | | | |
| Non-punitive reporting system in place | | | | |
| System in place for identifying and evaluating hazards upon condition change | | | | |
| Periodic safety inspections scheduled and carried out | | | | |
| Safety issues immediately, with the most hazardous exposures corrected first | | | | |
| Employees trained on safety hazards specific to their job assignments | | | | |
| Employee training needs evaluated upon condition change | | | | |
| Airport Safety Committee active | | | | |
| *General Airfield* | — | 0 | + | |
| Time spent inspecting the airfield | | | | |
| Number of inspection deviations/write-ups, categorized by subject | | | | |
| Number of incursions | | | | |
| Number of reported potential incursions | | | | |
| Number of ramp incidents | | | | |
| Number of reported near misses | | | | |
| | | | | |
| *Pavement* | — | 0 | + | |

RS&H IMPROVING YOUR WORLD

TOLEDO | LUCAS COUNTY
PORT AUTHORITY

# Safety Management System

## Four Elements of SMS

- Safety Policy
- Safety Risk Management
- Safety Assurance
- Safety Promotion

RS&H
IMPROVING YOUR WORLD

# Safety Promotion

## Safety Promotion

- Safety Briefings Added to Meetings
- Broad Involvement in SRAs Among Employees at All Levels
- Further Promotion Activities Outside Scope of This Study