National Transportation Safety Board

SMS:
What the heck is it, anyway?

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- **721 Million** U.S. Scheduled Airline passengers enplanements in past 12 months *
- **1.9 Million** passenger enplanements each day
- **6 Billion** passenger enplanements since Colgan Air crash

* US Bureau of Transportation Statistics

Word of Advice from an Old Pilot

- Forget SMS!
- Don’t make safety your top priority.

Point One

Forget SMS!

FTA's Safety Management Systems (SMS) Framework

5/13/2013

Dear Colleague:

The Federal Transit Administration's (FTA) new safety authority marks a significant change in how FTA does business to keep transit safe. Building on legislation first proposed by the Administration in 2009, the FTA now has long-sought authority under the new surface transportation authorization, MAP-21, to establish common-sense safety performance criteria for all modes of public transportation.

The FTA is working diligently to put initial policies and procedures in place as we begin to implement this important expansion of our mission. Every transit provider or State Safety Oversight Agency (SSOA) should know, first and foremost, that FTA understands that a one-size-fits-all approach will not work for public transit. The safety risks for a large urban rail system in the Northeast are not the same as for a bus-only transit provider in the Midwest, so our approach to implementing safety oversight will reflect that understanding. **(See our Federal Register Notice providing $21.9 million to SSOAs to improve oversight of transit safety.)**

CN derailment

Cherry Valley, IL

June 2009

NTSB Finding

"Had an effective safety management system been implemented at the CN, the inadequacies and risks that led to the accident would have been identified and corrected and, as a result, the accident may have been prevented."

NTSB Recommendation to FRA

"Require that safety management systems and the associated key principles (including top-down ownership and policies, analysis of operational incidents and accidents, hazard identification and risk management, prevention and mitigation programs, and continuous evaluation and improvement programs) be incorporated into railroads' risk reduction programs …"

– (NTSB Recommendation R-12-3)

What is a Safety Management System?

"An effective safety management system program can help companies reduce and prevent accidents and accident-related loss of lives, time, and resources."

"A SMS is an organized approach to managing safety, including the necessary organizational structures, accountabilities, policies, and procedures."

- From NTSB report of CN derailment, page 83

SMS…

Is a business approach to managing safety.

When you have SMS, the company …

- **Systematically** attends to those things it believes are important.
- Manages and values safety, just as they manage and value other vital business functions.
  - **Finance:** CFO, General Accepted Accounting Practices (GAAP), procedures, controls, audits, accountability

What's in a name?

- Safety Management Systems
  - "Something you have"

- Safety Management
  - "Something you do"

  - From Don Arendt, Ph.D., FAA

The Four SMS Components

Safety Policy

Establishes senior management's commitment to continually improve safety; defines the methods, processes, and organizational structure needed to meet safety goals

Safety Assurance

Evaluates the continued effectiveness of implemented risk control strategies; supports the identification of new hazards

Safety Risk Management

Determines the need for, and adequacy of, new or revised risk controls based on the assessment of acceptable risk

Safety Promotion

Includes training, communication, and other actions to create a positive safety culture within all levels of the workforce

SMS Components

1. Written policies, procedures and guidelines
2. Data collection and analysis
3. Risk management
4. Safety culture

SMS Components

1. Written policies, procedures, guidelines

Washington DC Subway (WMATA)

Probable Cause

- Failure of the track circuit modules
- WMATA's failure to ensure that an enhanced track circuit verification test was institutionalized and used system-wide after a 2005 precursor event (near-collisions)

SMS Components

2. Data collection and analysis

Keeping Fingers on the Pulse

- How do you detect and correct performance deficiencies before an accident?
- How do you keep your finger on the pulse of your operations?
- Do you have multiple data sources?

Employees

Are employees comfortable reporting?

- Employees are open to report safety problems, if they receive assurances that:
  - The information will be acted upon
  - Data are kept confidential or de-identified
  - They will not be punished or ridiculed for reporting

SMS Components

3. Risk Management

Risk Management

"We manage risk whenever we modify the way we do something to make our chances of success as great as possible, while making our chances of failure, injury or loss as small as possible."

– FAA System Safety Handbook

What is the best order for these?

Incorporate Guards/Safety Devices

(Guards put up to decrease exposure)

Eliminate the hazard through Design
(Hazard is corrected and eliminated)

Develop Procedures and Training

Provide Warning Devices

(Warn personnel if you can't eliminate or control the hazard)

Hierarchy of Controls*

1. Eliminate the hazard through Design
   - Hazard is corrected and eliminated
2. Incorporate Guards/Safety Devices
   - Guards put up to decrease exposure
3. Provide Warning Devices
   - Warn personnel if you can't eliminate or control the hazard
4. Develop Procedures and Training

*Also know as "Safety Order of Precedence"

Controls to mitigate risks associated with grade crossings

1. Eliminate the hazard through **Design**

2. Incorporate **Guards/ Safety Devices**

3. Provide **Warning Devices**

4. Develop **Procedures** and **Training**

SMS Components

4. Safety Culture

Safety Culture is:

"Safety culture is the core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment."

Source: U.S. Nuclear Regulatory Commission

Do you have a good safety culture?

Do you have a good safety culture?

- "… it is worth pointing out that if you are convinced that your organization has a good safety culture, you are almost certainly mistaken."
- " … a safety culture is something that is striven for but rarely attained…"
- "…the process is more important than the product."

- James Reason, "Managing the Risks of Organizational Accidents."

“Good can be Bad”

- With good safety performance, people/organizations can easily become complacent.
- Don’t ever believe that a lack of accidents means you are “safe.”
- To counter this complacency, there must be a leadership obsession with continuous improvement.

- Courtesy of Jim Schultz

Are you on the right track?

“Even if you're on the right track, you'll get run over if you just sit there.”

- Will Rogers

Point Two

Don’t make safety your top priority.

Don’t make it a priority – make it a core value.

NTSB

MAKING TRANSPORTATION SAFER

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