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Safety Management System (SMS)

The Importance of Safety Performance Monitoring and Measurement

Safety performance monitoring and measurement is an important component of the Safety Assurance element of our Safety Management System (SMS). But what does this mean, why is it important, and how do you know if you are doing this effectively?

What does it mean to monitor and measure safety performance?

This means we need to have programs in place that verify our safety performance and validate the effectiveness of risk controls. We do this by collecting data in the operation, analyzing trends in the data against our safety policy and safety objectives, and then applying necessary corrective actions when trends indicate our attempts to control risk are degrading or insufficient.

How do we collect this data?

There are a number of critical Safety Assurance programs in place with the purpose of monitoring the operation and collecting important information that gives us an indicator as to how our SMS is functioning. These include:

- **Audits (Self-audits, Internal Audits, Compliance Audits, Internal Evaluation Program [IEP] Audits)** play an important role in safety assurance. Many times specific items are added to audit checklists in order to measure the effectiveness of new risk controls applied.
- **Observations/Surveys** can be used to analyze our performance around specific tasks where heightened risks have been identified and compliance is critical.
- **Event reporting** is critical so that the organization is aware when events occur and is able to respond in a timely manner.
- **Investigations of accidents and non-compliance events** are also important. When we have accidents or instances of non-compliance, it is important that we thoroughly investigate, through root cause analysis, why the event/ non-compliance occurred so that effective corrective actions can be put in place in order to reduce the likelihood of it occurring again in the future.
- **Day-to-Day performance monitoring of the operation** also provides us with a critical dataset. Examples of day-to-day monitoring includes Flight Operations Quality Assurance (FOQA) reviews of data collected from flight data recorders; Line Operations Safety Audits (LOSA) are confidential, non-punitive peer reviews of normal operations in the cockpit in order to identify threats and errors; and Reliability Engineering reviews of significant events (SIG events) such as air turnbacks, gate returns, or diversions for maintenance reasons.

- Lastly, but most importantly, is data collected through **voluntary employee reporting** of errors, violations, and possible safety concerns or hazards identified. We have a number of programs available for confidential, non-punitive employee reporting, including Aviation Safety Action Programs (ASAP) covering our pilots, flight attendants, dispatchers, central load planners, and employees in the Technical Operations organization (a program covering our ground employees is coming soon!). For any employee not included in an ASAP program, the General Hazard Report (GHR) through cers.aa.com or the Safety/EthicsPoint Helpline are programs available for reporting. These reports are critical since frontline employees are more likely to be aware of potential hazards in the operation and have the opportunity to report it before manifests itself into an accident or incident.

All of these programs are critical to our ability to be "assured" we are operating within our defined safety margins (safety assurance). If we fail to adequately collect the right data – we can't be sure that our risk controls, designed to manage risk, are working. If we fail to properly analyze the data – we remain blind to our actual performance and can only "assume" we are in a safe place. If we identify negative trends, but fail to apply corrective actions – we are destined to continue down a path where an accident/incident is predictable – eventually.

Here is an example:

You were involved in a risk assessment (RMW) analyzing the risk associated with bringing in a new piece of equipment (i.e.

AvSax bag in the cabin, fuel truck on the ramp, installing a sanding booth in Tech Ops).

As you work through your risk assessment you find that there is a risk of employee injury if the proper personal protective equipment (PPE) is not utilized by the employee using the equipment. You determine that if the employee isn't trained to use the PPE or the PPE is not readily available, the risk of injury is a serious risk. In order to mitigate this risk to a more acceptable level, you put the following risk controls in place (before the equipment is placed in the operation): a required training program on proper use of the equipment with PPE, and purchase and place PPE with the equipment.

Here is where safety performance monitoring and measurement is critical. If we file the risk assessment away and never follow up, what could happen? First of all, we remain under the "assumption" that we have mitigated this serious risk to a more acceptable level. It sounds good – but did we even issue the training in the first place, was everyone trained that should have been, are they applying the training appropriately as they use the equipment, is the PPE in place with each piece of equipment, is it being used every time? We can assume – but until we validate this, it is only an assumption. If these risk controls weren't implemented or are not effective – then we are left with a serious risk every day in the operation until we correct it.

Taking this one step further, it is also important to monitor systemic trends. In other words, who is analyzing the data for trends across the system and even between departments? Maybe you have mitigated risk in your location, because the risk controls are working, but trends show the risk is increasing in other locations. This would be an example of reassessing the risk to determine what has changed – are there new hazards, different circumstances in one location over another causing risk controls to be less effective, etc. Possibly mitigating risk in one area adds risk to another department, location, or down the line in the process. This systemic, cross-departmental review is the responsibility of the SMS Data Analysis Groups (DAGs). One of the critical responsibilities of the DAG is to monitor the data sets for systemic trends, cross-departmental changes and hazards that may impact your operation, and ensuring a risk management review or corrective actions are implemented to correct and mitigate adverse trends – proactively.

Take-aways:

- **Follow-up!** Don't just file your risk assessments away and move on. We can't operate safely merely assuming our risk controls are implemented and effective. Continuous monitoring is critical to be assured we are operating safely.
- **Don't become complacent!** Continuous monitoring is critical, especially for high risk hazards. Things change constantly in the operation and new hazards emerge that we may not have previously anticipated. Our vigilance in monitoring trends is critical to ensuring we continue to operate safely.
- **If you are a frontline employee – Report Hazards!** If you see hazards or safety concerns, please report them. If you see issues with processes or procedures, report it – don't work around it. Let's work together as a team to optimize the system to protect you, your peers, and our customers – we can only do this effectively with your proactive reports.

For more information on the American Airlines SMS, refer to chapter 5 of the Safety Policies and Procedures Manual (SPPM) or the SMS page on Jetnet.

Did you know?

- The four most dangerous steps on most staircases are the two at the top and the two at the bottom.
- One teaspoon of liquid nicotine or 1/2 ounce of pure caffeine are considered lethal doses for a 150 pound man.
- In one day, an average typist's hands travel 12.6 miles.
- In terms of fatalities per trip, buses are about 100 times safer than automobiles.
- Statistics suggest you have a much better chance of living without back problems if you live in the Northeastern U.S. Your risk increases by almost 45% if you live in the West.

Remaining SMS Classes for 2019;

There are just a few opportunities left to register for the 2-day SMS and Root Cause Analysis training class (SFTY0163) this year!

There is a 50 participant limit on the class, so register today!

- September 24-25
- October 22-23
- November 5-6

You can search for the course in Learning Hub by using course code: SFTY0163.

For questions regarding the course, contact shelley.corzo@aa.com or candra.schatz@aa.com.