

Real World SMS: Hazard Reporting

By Bryan Smith and the USHST SMS Workgroup

Safety management systems (SMS) have been explained using many models and diagrams, and one of my favorites is the engine (figure 1). The SMS “engine” processes information from all parts of an organization and creates the thrust that keeps everyone moving forward toward safer practices. Sensors and gauges collect information on engine performance so you know when to perform maintenance or adjust components, ensuring your power output (or safety) is as high and efficient as possible.

An engine will not run, of course, without fuel — no matter how well designed — and for an SMS, that essential fuel is data.

What, More Data?

Collecting data on hazards and unsafe conditions is one of the most fundamental aspects of implementing an SMS. And you need to do it — it’s the essential step in correcting any problem.

But before you think another layer of bureaucracy is about to be heaped on you, please note: the data a successful SMS needs is the data you should *already* be collecting. How are things going on the flight line, in the cockpit, and in the hangar? Are people following procedures? Are there any unsafe conditions?

The SMS reporting system used to gather hazard information simply streamlines the sometimes ad-hoc methods you might already employ to keep a handle on safety in your organization.

As always with this series of articles, let’s review the definition of SMS to make sure we are all on the same

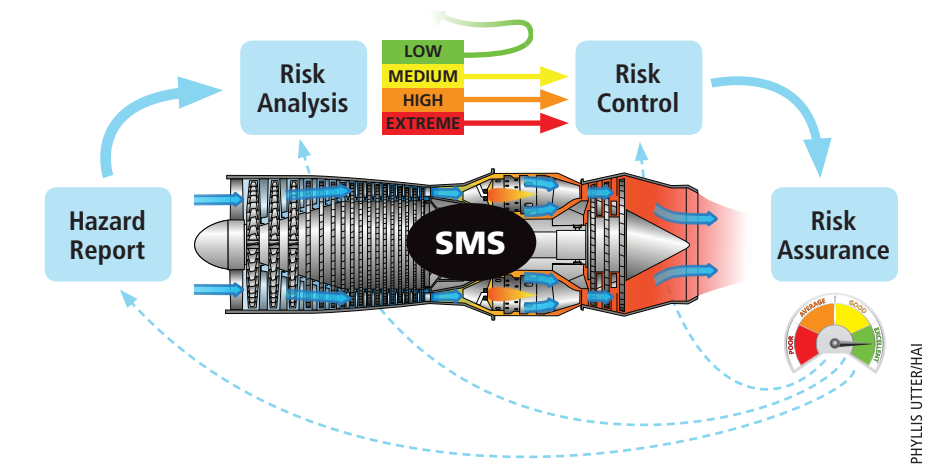


Figure 1. The SMS “engine” keeps the entire organization moving forward on safety.

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THIS IMAGE MAY BE SHARED OR ADAPTED, PROVIDING THAT DAHL AND ROTOR MAGAZINE ARE CREDITED AND FURTHER REUSE PERMITTED.

page. SMS is, simply put, a formal, top-down, businesslike approach to managing safety risk. It includes systematic procedures, practices, and policies for the management of safety. SMS is a more efficient way of doing business that simultaneously facilitates a safer work environment and amplifies an organization’s operational productivity.

Sounds great on paper, but how do we do it in the real world?

When it comes to hazard reporting, we safety managers often make reporting forms overly extensive because we want to collect as much information as possible. But this can weigh down a reporting program so much that it resembles an elephant with wings trying desperately to get off the ground.

Or an organization can operate the other way. In our time, we have all received hazard “reports” via gossip, sticky notes, and scraps of paper. I

once received a bird strike report that was composed of a feather taped to a note that read “last night.”

Neither approach is optimal for efficient collection of hazard data that will encourage a meaningful response across the organization. Let’s look at the dos and don’ts of hazard reporting (and see figure 2 for a list of the Top 10).

Keep It Simple and Follow Up

The U.S. Helicopter Safety Team’s (USHST) safety bulletin on hazard reporting (bit.ly/ushst-hazard) recommends keeping hazard reports simple and easily accessible to staff. The single thing that the initial hazard report needs to accomplish is alerting the safety manager to a problem so that the process of correction can begin. Additional information can be gained in follow-up interviews or site visits.

When establishing the hazard

reporting system for the Columbus Police Department (CPD) Aviation Unit, Ofc. John Cooper said he followed this philosophy: complexity kills safety management. CPD hazard reports thus consist of a single page and are relatively simple to fill out. An example can be found in the IHST SMS Toolkit, available for free online at bit.ly/SMStoolkit.

Aided by Cooper's KISS (Keep It Simple, Stupid) philosophy, the CPD hazard reporting system produced a large number of reports the first year the SMS was in place, and that number keeps growing. This brings up a point about hazard reporting that seems counterintuitive: a large number of reports is *not* an indication of an operation with many problems, but a sign of a healthy safety culture. Components break, a work area becomes disorganized, people make mistakes: there are always going to be hazards cropping up. An operator who is proud of generating zero hazard reports just isn't listening to staff.

Josh Goldschmidt, chief pilot for the Portland (Ore.) Police

Share Your SMS Story

Does your organization have an SMS story to tell? Lessons learned to share? Tips and tricks to pass on? Please contact us (safety@alea.org) so we can move together toward a safer helicopter industry.

Until then, visit ushst.org for free safety information. And don't forget to download the *Iflysafe* app. The USHST is a regional partner and the U.S. component of the International Helicopter Safety Team (IHST).

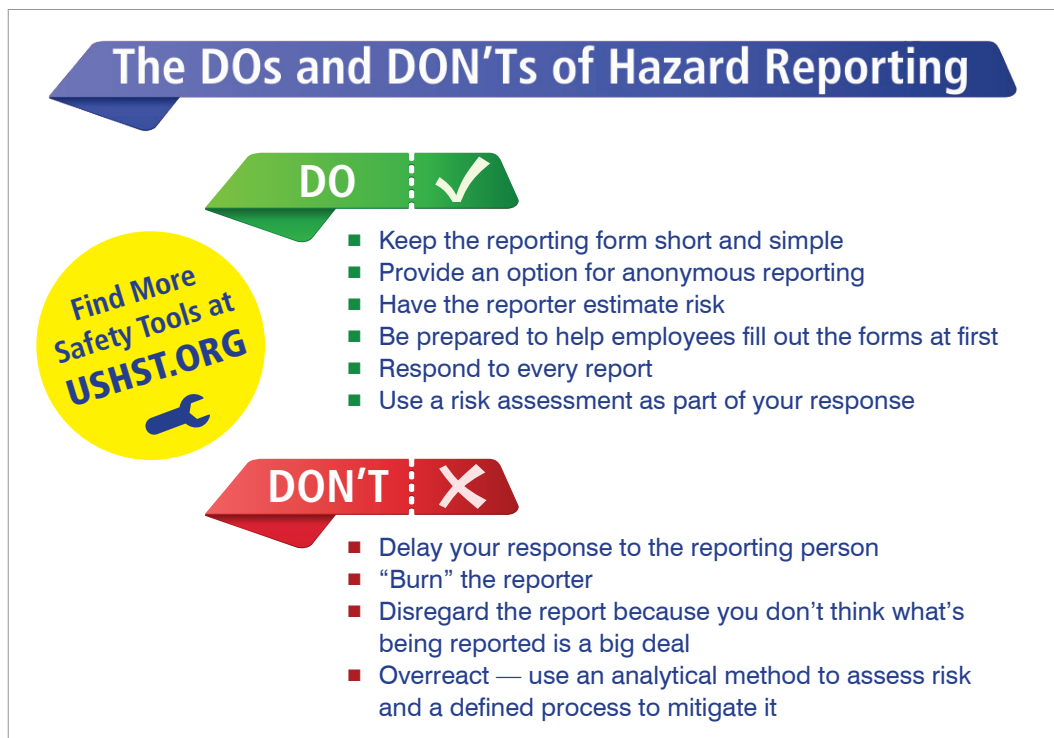


Figure 2. The Top 10 suggestions for building a robust hazard reporting program.

Department, recalls how he helped colleagues get used to filling out hazard reports: "I sat down with the person to help them put their safety concern in the new reporting form, telling them how the reports helped me with the new system." After having been through the process with several employees — providing feedback for everyone to see — Goldschmidt found that hazard reports started showing up on their own.

Goldschmidt's comments highlight another best practice that encourages hazard reporting: let staff know that you use and value their hazard reports. Make it clear that their reports are the crucial first step in the correction process.

Then respond to every report in a timely manner. This is the most important thing you can do to increase use of a reporting system. No one is going to get excited about filing a report that goes nowhere.

A Just Culture Is a Must

USHST SMS Workgroup member Glenn Daley recommends good old-fashioned recognition and rewards for those who complete safety reports that lead to positive change within their organizations. It is the reality of human nature that preaching how

hazard reports will increase safety cannot match the motivation provided by a gift card for a steak dinner or coffee shop. Still, you may have a barrier that even free baked goods cannot overcome: fear of reprisal.

"A very big problem we face is getting people to trust that they won't get in trouble for reporting — either from the employer or the overseeing agency," says USHST SMS Workgroup member Katherine Hilst. "When one employee gets 'bit' by reporting, guaranteed it will take a lot of effort to get folks back on board. For this reason, having a clearly written policy — that the company follows — about how safety reports are handled is important, so people know what they can expect."

A policy protecting those who file hazard reports should be incorporated into the organization's policy manual. It should also be referenced in the accountable executive's safety statement. That statement will be more trusted if it is signed and dated by that executive once a year. More information on safety statements can be obtained from our safety bulletin, "SMS: How to Get Started for the Small Operator," (bit.ly/SMS-smallop) and the SMS Toolkit (bit.ly/SMStoolkit).

Just as hazard reporting is the engine of SMS, a just culture — where employees feel empowered to report hazards with no fear of reprisal but where conforming to standards of acceptable behavior is explicitly reinforced — is what makes your hazard reporting system work. And staff new to a just-culture environment may not understand exactly how hazards, especially ones stemming from human error or unsafe behavior, will be handled in this environment.

A good way to reinforce your operation’s just culture is to display where all in the organization can see it a flow chart or other graphic that represents how human errors and violations will be handled. This will help keep everyone on the same page about what to expect, especially when the process has yet to be tested on an actual incident. You can download an example of this type of graphic on p. 59 of the SMS Toolkit (bit.ly/SMStoolkit).

Don’t be surprised if it takes a while to build confidence in your organization’s just culture. Typically, the philosophy will need to be applied correctly to a couple of incidents before people begin trusting it enough to report hazards. Until that trust is built, you will need an option to report anonymously.

“Having a means of anonymous reporting is important, although in smaller companies that can be pretty difficult,” Hilst says. She recommends that the safety manager make efforts to de-identify the reporting person from hazard reports. Exceptions should be made, however, in positive reports that warrant recognition.

Other Sources of Hazard Data

Hazard reports aren’t your only source of hazard information. Safety inspections, surveys, flight risk assessments, and audits are other sources of data that can augment individual reports. A periodic safety survey can be extremely effective. But remember, just like with hazard reports, the more complex the survey, the less likely it is to be completed.

Over the years, I have collected fantastic hazard information with a one-page survey that asks four questions:

- What are your three biggest safety concerns?
- What would you suggest we do about them?
- What do you like about our safety program?
- What would you like to see changed?

You can also ask respondents to estimate the risk level of each hazard they list. Include a risk matrix as a reference.

Another, often overlooked, source of valuable hazard information is the flight risk assessment tool (FRAT). In addition to the benefits a FRAT offers an aircrew on a daily basis, the safety manager can use it to track hazard scores over time. For those mandated to have one, the FAA requires keeping FRATs for 90 days, but we recommend keeping the scores for at least one year, or preferably longer for trending purposes. By simply charting those scores on a graph, you will see which elements consistently pose the highest risk to your organization (see figure 3).

This data will not only help guide your safety efforts, but it can also be used to illustrate and justify budget requests. One large state agency used FRAT scores to prove to their parent organization that fatigue from staffing issues was the highest risk facing the unit.

They had had been making this argument for years. Only after showing the risk quantified and depicted on a simple bar graph did the agency finally get the personnel changes needed to lower their risk. Another agency used FRAT scores to get funding approval for instrument training.

Consider including a blank item in the list of hazards in your FRAT. The crew then can list a hazard that was not previously included in the FRAT and give it a risk score. This turns your FRAT into a mini-hazard report form.

Flying Solo?

What if you do not fly with a group of people? Perhaps you are a private operator or run a commercial flight or maintenance operation yourself. How

Bob’s Helicopters FRAT Score Tracking

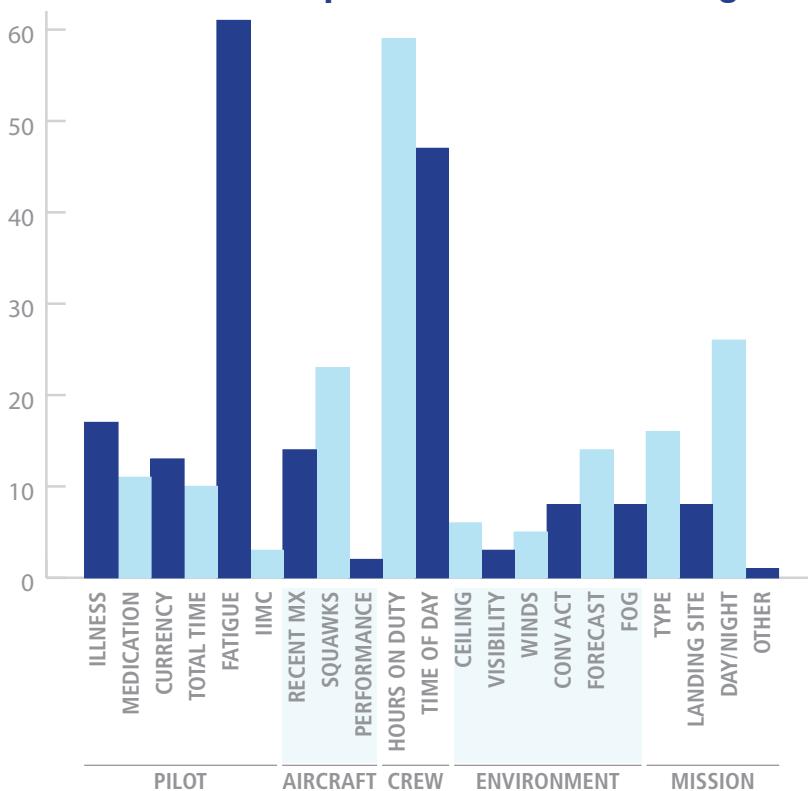


Figure 3. Based on their FRAT scores, the staff of Bob’s Helicopters are most concerned with fatigue and the number of hours on duty — important information for their safety officer.

can you collect hazard information so your own safety management efforts can work?

I asked someone who is no stranger to this exact scenario: Chuck Aaron. If you are not familiar with Aaron or the Red Bull helicopter, don't tell any helicopter friends this embarrassing fact — look up some videos online, quick!

At first glance, Aaron's aerobic routine makes it seem as though risk management is not in his vocabulary, but nothing could be further from the truth. He is an experienced test pilot and licensed aircraft mechanic.

Still, Aaron says he sought input and advice from a large group of people in order to better understand the risks he faces and how to mitigate them. He recommends doing the same: connect with other people in the industry and ask for input. Aaron even held "camps" where people got together to discuss his plans.

Ask questions and seek input from your aviation friends or other people at your airport. Being a member of an organization such as HAI gives you access to a huge group of helicopter professionals who can help you uncover hazards in your operation.

In modifying a helicopter and developing a complete aerobic routine, Aaron was treading into uncharted territory. Risk *mitigation* requires identifying a hazard and understanding it before a risk *control* can be put in place. I asked him, "How

do you mitigate the unknown?"

Aaron says he went through "a very methodical process, one small step at a time." Each flight he would progress a maneuver, "one degree at a time," instead of just jumping in with both feet and hoping for the best. After the flight, data recorders and video would be analyzed.

By employing such a methodical process, each flight became a source of hazard data collection for Aaron. The hazards were identified while they carried low risk, not when they were on the verge of breaking the aircraft. In the end, Aaron only included maneuvers in his routine that could have their risk mitigated to an acceptable level. Maneuvers that, while possible, could not be done safely were removed from the program.

If you're on your own in your organization, you can pretty much do the same. A simple self-evaluation after a flight or maintenance job can uncover extremely valuable hazard information that may otherwise be ignored in the relaxing moments after completing a task. Take the time to do it, and write down those things you feel could have been done better or differently.

Remove the Unknown

While discussing his methodical, step-by-step process, Aaron summed up perfectly the importance of collecting hazard information: "Remove the

'unknown' part of the equation. We can deal with the 'known,' so make it so."

There is no mystique to an SMS: collect data; analyze it; act on it; make sure it works. You most probably do these things already, but by following the guidelines of an organized SMS program, you make your efforts more efficient, uniform, and effective — saving you time and, ultimately, keeping you safer.

Hazard reporting and data collection is how we shed light on the shadows where the nasty little aviation monsters lie in wait. It also keeps us from guessing and wasting resources on the wrong stuff. As Aaron says, "That's how NASA did it in the '60s, and it took them to the moon."

You may not be flying that high or that far, but maintaining a robust hazard reporting system in your operation will help you to keep your rotors turning. **R**

Bryan Smith is a member of the U.S. Helicopter Safety Team (USHST) — part of the International Helicopter Safety Team — and serves on the USHST SMS Workgroup. He is also the safety program manager for the Airborne Law Enforcement Association (ALEA). Bryan is a full-time pilot for a sheriff's office in central Florida where he flies a variety of public-safety missions.



1920 Ballenger Avenue, Alexandria, VA 22314-2898
703-683-4646 | rotor@rotor.org
www.rotor.org