RECLAMATION
Managing Water in the West

Safety and Occupational Health Report: Team #11

Information Sharing and Employee Engagement

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Executive Summary

Conclusion 2-1 of the Department of the Interior's Office of Occupational Safety and Health report on the Bureau of Reclamation's Safety and Occupational Health (SOH) Program concluded that Reclamation has not "embedded a culture that empowers and encourages employees to pro-actively recognize, identify and correct facility hazards and compliance issues." To address this concern, Reclamation's SOH Action Plan Team created Safety Team #11 (The Team). The overall goal of The Team was to develop a strategy for the sharing of safety related information within Reclamation and make recommendations for increased employee engagement.

Pursuant to this goal, The Team has produced the following draft report, which details how SOH information is currently reported and shared throughout Reclamation and the recommendations The Team uncovered to improve SOH information sharing, methods to further employee engagement and implementation methods for recommendations.

The Team suggests the following recommendations:

1. Adopt a tool similar to the National Interagency Fire Center's (NIFC) SAFENET, the Yuma Area Office's Safety SharePoint site, or a comparable reporting program to Reclamation's SOH Program to allow for anonymous reporting of minor safety hazards and incidences.
    a. Make the tool accessible Reclamation-wide and provide a paper version for submissions.
    b. List minor safety hazards and incidences reported on the tool and their resolutions in a quarterly newsletter. Cover the topics at safety meetings and post hard copies in break rooms.
    c. The Office of Safety, Security, and Law Enforcement (SSLE) or its delegate would work with Denver Information Resources to determine the best method to establish the tool; and be responsible to respond to the concerns reported and assure newsletter reporting.

2. Expedite Reclamation-wide factual report dissemination surrounding major work-related accidents as defined by Reclamation D&S SAF 01-02 (e.g., intensive care hospitalization, loss of limb, or fatality) throughout Reclamation via an all-employees' message from the Commissioner's office or the appropriate Regional Director within forty-eight hours of the accident.
    a. Regional Public Affairs Offices would assure the message is disseminated timely.

3. Improved use of the Yellow Book – break down the Yellow Book into smaller, more manageable "pocket guides" and an electronic application ("app"), that is searchable, for use on specific tasks.
    a. The SSLE with assistance from the regions should be responsible to create and maintain the content.

4. Incorporation of a Safety Minute across the organization to make the conversation on safety commonplace.
    a. In formal meetings of more than five employees, a brief safety review or tip will be provided by a randomly selected team member.
    b. Implement via management expectation.

5. Leverage existing tools such as the Electronic Time and Attendance System (ETAS) and Bison Connect to relay safety messages on login screens.
    a. SSLE in conjunction with Public Affairs and Denver Information Resources would implement.

The Team feels that implementation of the recommendations presented herein will significantly enhance the awareness and dissemination of SOH Information throughout Reclamation and forms the basis of a strategy to address the Department's concerns regarding Reclamation's SOH Program.

Contents

Introduction

The Department of the Interior's Office of Occupational Safety and Health reviewed the Bureau of Reclamation's Safety and Occupational Health (SOH) Program in July 2013. The report's conclusion 2-1 states: "Reclamation has established mechanisms, forums and opportunities for employee involvement *but has not yet embedded a culture that empowers and encourages employees to pro-actively recognize, identify and correct facility hazards and compliance issues*," (emphasis added).

In January 2014, Reclamation's SOH Action Plan Team identified Action Plan #11 – Information Sharing and Employee Engagement, which calls for developing a plan for information sharing throughout Reclamation, as well as recommendations to increase employee engagement. The outcome of this issuance was the formation of Safety Team #11 (The Team), which was assembled to research the topic and provide recommendations to Reclamation.

The Team met on September 23, 2014, in Salt Lake City, Utah, to set team strategies and goals for developing a plan to improve SOH information sharing within Reclamation. An initial draft report containing The Team's recommendations was produced in February 2015. The Team was asked to revisit objectives and revise the report accordingly. The scope of the report was narrowed to look specifically at improvements that Reclamation can implement related to the reporting and dissemination of serious safety related accidents as well as increasing employee engagement. A revised draft was completed in early March 2015 containing additional recommendations.

The following draft report details the current methods of reporting and dissemination of SOH information in Reclamation, as well as recommendations and proposed implementation methods for improvement.

Objectives

The primary objective of The Team was to identify current methods in practice for information sharing and make recommendations for additional tools to be utilized. The second objective of The Team was to identify potential areas to improve employee engagement.

Through interviews and research it is the opinion of The Team that communication of best practices, near misses and training are done through several different mechanisms throughout the various regions within Reclamation. Some regions have seen success with their programs and a key theme of The Team's recommendations is to establish a medium that allows peers across regions to review best practices and lessons learned. Thus, a plant mechanic at Glen Canyon Dam would have a means to see safety information being utilized by his peers at Hoover or Grand Coulee Dams. Employees from all regions, Denver and the Washington, D.C., offices would benefit from standardized and universal mechanism(s) to communicate hazards and mitigation techniques.

Barriers to Information Sharing and Employee Engagement

The following comments are offered as insights gained from speaking with those employees who are identified as being most at-risk in Reclamation. That is – those working in Operation and Maintenance (O&M) fields. This is provided as anecdotal evidence and was not gathered using a survey instrument. Further research should be conducted using a survey instrument of this population to best determine specific opportunities for improvements to internal communications, which would further employee engagement.

1. ***Poor access to traditional internal communications tools:*** Feedback from O&M representatives indicates that email is not an effective method of communication. Most O&M employees don't use computer systems aside from time and attendance functions.

2. ***Embarrassment or fear of punishment:*** Many employees do not relay stories of near misses or hazards due to Reclamation's "can do" mentality and fear of punishment. They are reticent to report near misses because they feel embarrassed that the incident occurred and fear the current culture of blame rather than relaying the incident in an environment of learning. They believe they would be judged as a poor performer if they reported these occurrences.

3. ***Supervisory training:*** Supervisors are not trained to solicit employee input on safety. Training for supervisors to proactively ask and actively listen to employees about workplace hazards and near misses and encouraging them to tell these "real life" stories would be a valuable addition. These inquiries would be most beneficial if incorporated into the beginning of every activity and the first agenda item for all safety meetings.

4. ***Safety issue reporting systems:*** There is no current user-friendly electronic or manual system in place for employees to report a near miss or a hazard. There exists a "just fix it" attitude rather than a reporting system that could alert fellow employees to a hazard addressed during the employees' normal work activities. Finding a method for employees to report hazards, how they were addressed and assessing future risk in an objective blame-free environment is vital to creating an environment that encourages employees to adopt a better safety culture.

The Team concluded that a successful safety program, which includes effective employee engagement will hinge more on capturing the hearts and minds of employees than it will on implementing a new set of rules, forms and processes. This finding is consistent with recommendations from the Department's SOH Evaluation Report and the Rapid Improvement Work Team Summary of Discussion and Recommendations. Further, the Action Plan Strategy highlights the need to "identify and communicate the desired outcome in a way that reaches and speaks to all of us."

Information Sharing and Employee Engagement

Current incident and near miss reporting

It is Reclamation policy as outlined in Reclamation Directives and Standards (D&S) [SAF 01-02] and Department of Interior – Departmental Manual (DM) [485 DM 7] for employees to report to their supervisor any occurrence of a work-related accident or near miss. Additional reporting requirements exist for incidents of serious work-related accidents. The supervisor is then responsible for reporting the incident to the respective SOH manager.

Following an initial telecommunications report to the Occupational Safety and Health Organization (OSHA), the Department Manual requires Reclamation to file a written Preliminary Notice with the Departmental Designated Agency Safety and Health Official (DASHO). The Preliminary Notice contains only basic facts surrounding the accident and is intended for information sharing only. The Departmental DASHO will then authorize and appoint for the bureau head an investigative team or specialist. Upon completion of the investigation, which is required within 45 calendar days, the investigative team or specialist will file both a Factual and a Management Report.

The Factual Report is to contain only bare facts related to the serious accident without any inferences, conclusions or recommendations. In addition to the bare facts, the Management Report also contains the results of the investigation with opinions from the investigative team as to why management control systems did not prevent the accident and recommendations for preventing similar accidents. None of the reports which are required by the DM or the D&S describe any formalized process for disseminating SOH information outside of management.

While there is no Reclamation-wide, formalized process for the dissemination of SOH information, the Upper Colorado (UC) Region has a process by which SOH information can be disseminated within the region, which involves the use of Safety Bulletins and could be adapted to address this concern. In the UC Region, once an incident is reported, the Regional Safety Team will evaluate the SOH information surrounding the event and determine whether such information would have applicability to other facilities. In such cases the Collateral-Duty Safety Representative for the facility in which the incident occurred will, in conjunction with the Regional Safety Specialist, identify lessons learned that would be appropriately communicated using a safety bulletin.

The Safety Specialist drafts the safety bulletin with input from the UC Safety Group, the affected employees and the Regional Safety Manager. The Regional Safety Manager then distributes the bulletin to facilities, appropriate managers and contacts outside of the region.

Review of Best Practices: Employee Engagement

When employees have a positive safety attitude, they think first and then take action. Their minds are able to recognize unsafe habits or behavior. They stay alert while on the job. Their positive safety attitude helps them to recognize hazards that arise and respond appropriately. With a positive safety attitude, they develop work habits that lead to greater organization and efficiency

OSHA provides guidance on creating a safety culture in the workplace. The team suggests many of these would be valuable for Reclamation to adopt or enhance.

Safety cultures consist of shared beliefs, practices and attitudes that exist within an establishment. Culture is the atmosphere created by those beliefs, attitudes and accepted norms, which shape employee behavior. An organization's safety culture is the result of a number of factors such as:

- Management and employee assumptions, beliefs and attitudes

- Values, myths, stories
- Policies and procedures
- Supervisor priorities, responsibilities and accountability
- Production and bottom line pressures vs. quality issues
- Actions or lack of action to correct unsafe behaviors
- Employee training and motivation
- Employee involvement and buy-in

An organization with a strong safety culture typically experiences fewer at-risk safety behaviors; consequently such organizations also experience lower accident rates, low turnover, low absenteeism, and higher productivity. Creating a safety culture takes time. It is frequently a multi-year process. Employer and employee commitment are hallmarks of a true safety culture where safety is an integral part of daily operations.

Ultimately within a safety culture, safety becomes everyone's responsibility and not just the responsibility of those with the term “safety” in their job title. Safety becomes a value of the organization and is an integral part of operations. Management and employees are committed and involved in preventing losses. Over time, the norms and beliefs of the organization shift focus from eliminating hazards to eliminating unsafe behaviors and building systems that proactively improve safety and health conditions.

The Connection between Employee Engagement and Safety:

The term “employee engagement” was first addressed and published in the Academy of Management Journal (Kahn, 1990). The term was again addressed in a publication (Gibbons, 2006) highlighted by the Conference Board that defined engagement as “a heightened emotional connection that an employee feels for his or her organization that influences him or her to exert greater discretionary effort to his or her work”. A simple version (Anders-PRSA) is, “the emotional connection that gets employees tuned in, turned on and eager to go the extra mile”.

Their engagement gives them a greater sense of ownership in their role, and increases the chance of them taking on the responsibility to act on potential problems.

Attitudes drive performance and behaviors. There has been extensive research into the link between employee engagement and safety outcomes. A meta-analysis undertaken by Harter et al. found that the top 25 percent of business units (in terms of engagement) have 49 percent less safety incidents than the bottom 25 percent. Furthermore, it has been estimated that unsafe behaviors cause up to 70 percent of workplace accidents.

Research has shown that, "engaged employees are motivated to work safely" and non-engaged employees are more susceptible to ‘burnout’," (Nahrgang, Morgeson & Hofman, 2011; Gonzalez-Roma et al. 2006). This decreases employees focus and motivation to do the right thing.

The U.S. Office of Personnel Management's (OPM) annual Federal Employee Viewpoint Survey (FEVS) has illustrated that employee satisfaction numbers are near all-time lows since 2003. Employee satisfaction means that an employee may have his or her overall needs met but may not have an incentive to excel. Additionally, employee engagement means that employees have an emotional investment in the organization and look upon their work as fulfilling a mission.

According to OSHA, employee safety and doing something the right way takes precedence over short term production pressures. Simultaneously, production does not suffer but is enhanced due to the level of excellence developed within the organization.

Further research refers to the ABC model of behavior-based safety: An Antecedent, a Behavior and a Consequence. While some employers believe that if they continue reciting safety slogans and repeating workplace hazards and ensure all the equipment is functioning properly, employee accidents and injuries will not occur. However, in reality, 80 percent of workplace injuries are caused by unsafe acts and only 20 percent by unsafe conditions. This reinforces that attitudes are what keeps employees safe (Shulz, 2004).

Behavioral based safety is also addressed in terms of complacency. “Complacency on the job injures and kills. And it spreads like a disease from one worker to another…get the message across that complacency is dangerous – as dangerous as any machine, chemical or other recognized workplace hazard,” (LaDuke, 2012).

Recommendations

A. Incorporation of SAFENET or similar reporting database

Currently, Reclamation does not have a database or system for employees to anonymously report minor safety hazards and incidences. Employees are trained to inform supervisors of safety incidents. Reclamation D&S, SAF 01-02, Section F, dictate that investigative reports are to be shared but no direction exists on how and when to disseminate the information to employees.

The Department currently provides a database called the Safety Management Information System (SMIS) https://www.smis.doi.gov/. SMIS is an automated system for reporting accidents and filing claims for compensation. Although this database is available, the main purpose is to record and track accidents with or without injury or property damage and compensation cases within the Department. SMIS lacks the ability for anonymous reporting of hazards and minor incidents that may otherwise be reported and addressed.

There are several other similar programs in place at institutions and agencies across the nation. A number of anonymous reporting processes are available through electronic methods. A few sites are listed:

http://www.csub.edu/BAS/srm/hazardform.html ;
http://www.langleyflyingschool.com/safety/anonymous_safety_reporting_form.html;
http://www.dartmouth.edu/~security/services/forms/anonreport.html

A great example A similar anonymous reporting system exists at the Yuma Area office Intranet site at: http://ibr3yaowb003/sites/rmo/safety/Lists/SDR/Item/newifs.aspx?List=10d64d65%2D93e4%2D4982%2Da7e7%2D2d91607fa75c&Source=http://ibr3yaowb003/sites/rmo/safety/default.aspx. This site also provides employees a simple and easy to fill out form to report safety concerns or suggestions. This site offers an appealing element of allowing the employee to view past comments/suggestions.

The most well-known best current example of this type of reporting school resides with the National Interagency Fire Center (NIFC). NIFC developed a simple form and process to give frontline firefighters and support staff involved in wildland fire operations a tool to address safety-related concerns that aren't necessarily covered through accident or other official agency reporting processes. This tool is called SAFENET (http://safenet.nifc.gov/).

The process by which SAFENET operates is as follows:

1. An employee observes anything in the course of their duty that could be considered unsafe. Such things could include malfunctioning equipment, unsafe orders routinely given by a supervisor or a near miss which has the potential to be repeated.

2. If the employee has access to a computer they can navigate to SAFENET to detail their concern in a form entry. If the employee does not have access to a computer or will only have access once relieved of duty, they can fill out a field card with the pertinent data to be entered online at a later date or by a designated Safety Officer. The employee can maintain anonymity through the process if desired.

3. The entry is received by a central administrator who applies a standardized protocol prior to listing on the website and forwards the listing to the action authority. Once listed, anyone with an internet connection can track the resolution of the entry.

Implementation

The Team recommends that SSLE or its delegate work with Denver Information Resources to determine the best method to establish the tool; and be responsible to respond to the concerns reported and assure newsletter reporting. SAFENET appears to be a valuable tool that gives frontline employees the ability to see unsafe conditions addressed before they cause safety accidents. This recommendation has the ability to both increase safety related information sharing in Reclamation and increase employee engagement in safety.

The Bureau of Land Management utilizes a contract to operate and maintain the SAFENET program, which is estimated to cost $8,000 every five years. The NIFC hosts the servers internally, which SAFENET utilizes. Reclamation could replicate SAFENET by incorporating the source code which NIFC has stated a willingness to release, issuing a contract for O&M from the programming side and assigning server space to the effort. The Reclamation SAFENET could be incorporated onto the Reclamation internet or intranet sites depending upon the levels of transparency and accessibility required.

Alternatively, a similar form and database system could be created within the Google (Bison Connect) interface that the Department currently utilizes. This alternative would require specialized knowledge that might have to be acquired outside of Reclamation but would offer the prospect of accessibility to all Reclamation employees without being transmitted to the internet at-large as SAFENET currently is.

In order for the use of a SAFENET style tool to be valuable and utilized, it is critical that leadership and management communicate the standard and priority for reporting minor safety hazards and incidents by employees to the system. It must be simple, transparent and anonymous or the tool will fail. Some suggestions for these steps by leadership and management are to incorporate the database into safety briefings when relevant.

B. Incorporation of Reclamation-wide accident notifications

Employees feel information surrounding serious accidents and incidents is not being shared to Reclamation at large. The fact that employees feel they are left out of the loop undermines their perception of management's concern for their safety, especially when the facts surrounding the event have applicability to their job duties. Additionally, employees may have a tendency to perpetuate false information regarding the events. Thus, The Team recommends creating a formalized process to disseminate SOH information surrounding major work-related accidents and incidents.

Implementation

1 - Expedite Reclamation-wide factual report dissemination surrounding major work-related accidents as defined by Reclamation D&S SAF 01-02 (e.g., intensive care hospitalization, loss of limb, or fatality) throughout Reclamation via an all-employees message from the Commissioner's office or the appropriate Regional Director within forty-eight hours of the accident. Public Affairs would assure the message is disseminated timely.

2 – Once the formal investigation has been completed, the respective safety office would create a "Lessons Learned" document. This document is then recommended to be circulated to the Reclamation Leadership Team either directly from the region or through safety officials in Denver and released Reclamation-wide.

An example of a Lessons Learned template utilized by the Department can be found in Appendix B. Further, an example of the use of the Lessons Learned document as prepared by the U.S. Forest Service during the aftermath of a helicopter crash incident can be found in Appendix C. A standardized procedure will more easily allow the flow of relevant safety information to facilities where lessons-learned from a safety incident can be applied.

C. Standardization of Safety Bulletins across Reclamation

Accident and incident investigations are not communicated consistently across Reclamation and the results of those various tools may not be particularly effective. As discussed, the UC Region has established a procedure for conveying SOH information in and out of the region, which could be pertinent to other facilities. The Team feels that Reclamation's SOH Action Plan Team should evaluate the possibility of applying UC Region's Safety Bulletin procedures to all regions. This recommendation could result in the formalization of a Reclamation-wide Safety Bulletin Program.

The Team recommends utilizing the Safety Bulletins procedure, currently employed by the UC Region, for any incident or near miss which does not meet the threshold of a serious accident.

Implementation

The utilization of Safety Bulletins is a powerful communication tool that allows all Reclamation employees to quickly see accident information and make instantaneous adjustments or adaptations for their functional area. Implementation of this recommendation will require the formalization of guidelines from Reclamation Safety Managers on the timeline surrounding incident investigations and reporting requirements. Where applicable, guidelines should be developed for the assignment of a safety bulletin release to the appropriate Safety Group.

Implementation of this recommendation would first require a survey of existing procedures within each region with regards to dissemination of SOH information. Best practices from this survey would be established into a formalized procedure that all regions would be able to implement. Coordination between regions on dissemination of SOH information between regions would also need to be formalized.

D. Improved use of the Yellow Book

Currently the Reclamation safety guide, commonly called the "Yellow Book", is difficult to incorporate into daily work primarily because of its size. This finding is aligned with the Department's SOH Evaluation Report Component 5: Training and Awareness and Component 6 – Conclusion 6-2.

Broken down, the Yellow Book is an extremely valuable tool that can be better used by all employees. The Team suggests breaking sections out into portable publications that can fit into a pocket, vehicle or boat and creating a searchable electronic application ("app").

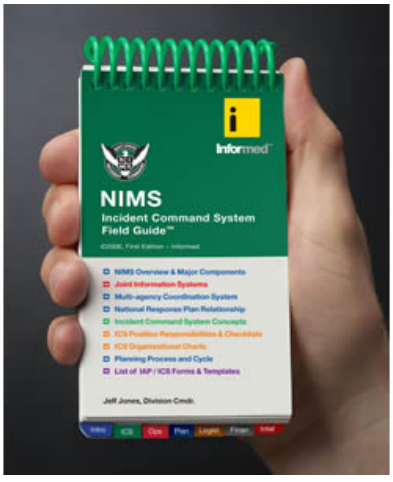

Figure 1: An example of a NIMS pocket guide

The sections can be distributed based on the kind of work each specialty performs such as construction, dam inspection, dive and rope teams, HEM projects, etc. The pocket guides can also use the front inside or back cover for the basics of First Aid and an Emergency Procedures Checklist.

The National Wildland Fire Coordinating Group, including Department agencies (Bureau of Land Management, U.S. Fish and Wildlife Service, and National Park Service) are already using this tool so that safety guidelines are portable and easily referenced. It is called the 'Red Book' by the associated agencies and is on the web at http://www.nifc.gov/policies/pol_ref_redbook_2014.html.

The Bureau of Indian Affairs has adapted this publication for its processes in working with Tribal lands in their Blue Book. The Incident Response Pocket Guide shown in the photo is available in the National Wildfire Coordination Group (NWCG) Publications Catalog (PMS 461). The pocket guides could also be provided to contractors as an important tool to increase communication of Reclamation safety practice expectations and reporting processes.

Implementation

The Team recommends the SSLE with assistance from the regions should be responsible to establish and maintain the content. SSLE can contract with companies to create and maintain the pocket guides and the app.

E. Incorporate the use of a Safety Minute prior to every meeting

A critical tool in use by Chevron, one of the largest corporations, is the use of a Safety Minute Protocol. The function of this tool is to demonstrate amongst all staff the importance of a safety culture. The Safety Minute is not meant to shorten a safety briefing prior to entering a work site, but rather is a task conveyed to any random member of a meeting to provide a very short talk to the group about safety, be it the importance of hydration, the use of sunscreen, the importance of cleaning up spills on the break room floor, etc.

Implementation

This is a top-down implementation that must be first demonstrated as critical by the Commissioner's Office, followed by Regional Office staff, which would also incorporate it into their day-to-day meeting schedules. If leadership and top management demonstrate this protocol and instruct mid-level managers and supervisors to do this with their own teams, it will circulate throughout the entire organization. This no-cost tool will result in a drastic shift in safety culture and can be realized in a very short amount of time. If done consistently, each office should become proficient with the use of this simple tool within several weeks of use.

F. Leverage existing tools for expanded internal communications

Reclamation has several tools in place that could be further utilized. The ETAS time reporting system has the functionality that would allow a specific safety message to be prompted upon login that must be acknowledged before the user is able to enter their time. A similar functionality may be available in Bison Connect and on the Maas 360 tool used to manage mobile devices. This will ensure that strategic messaging related to safety is communicated consistently and frequently across several platforms already in place. A critical note is that anecdotal evidence suggests that many of the workers in the field jot down their hours and those hours may be being manually entered by supervisors or managers. As such, the messaging can be adjusted to encourage those managers to relay the message to their teams.

Implementation

SSLE in conjunction with Public Affairs and Denver Information Resources would implement this recommendation.

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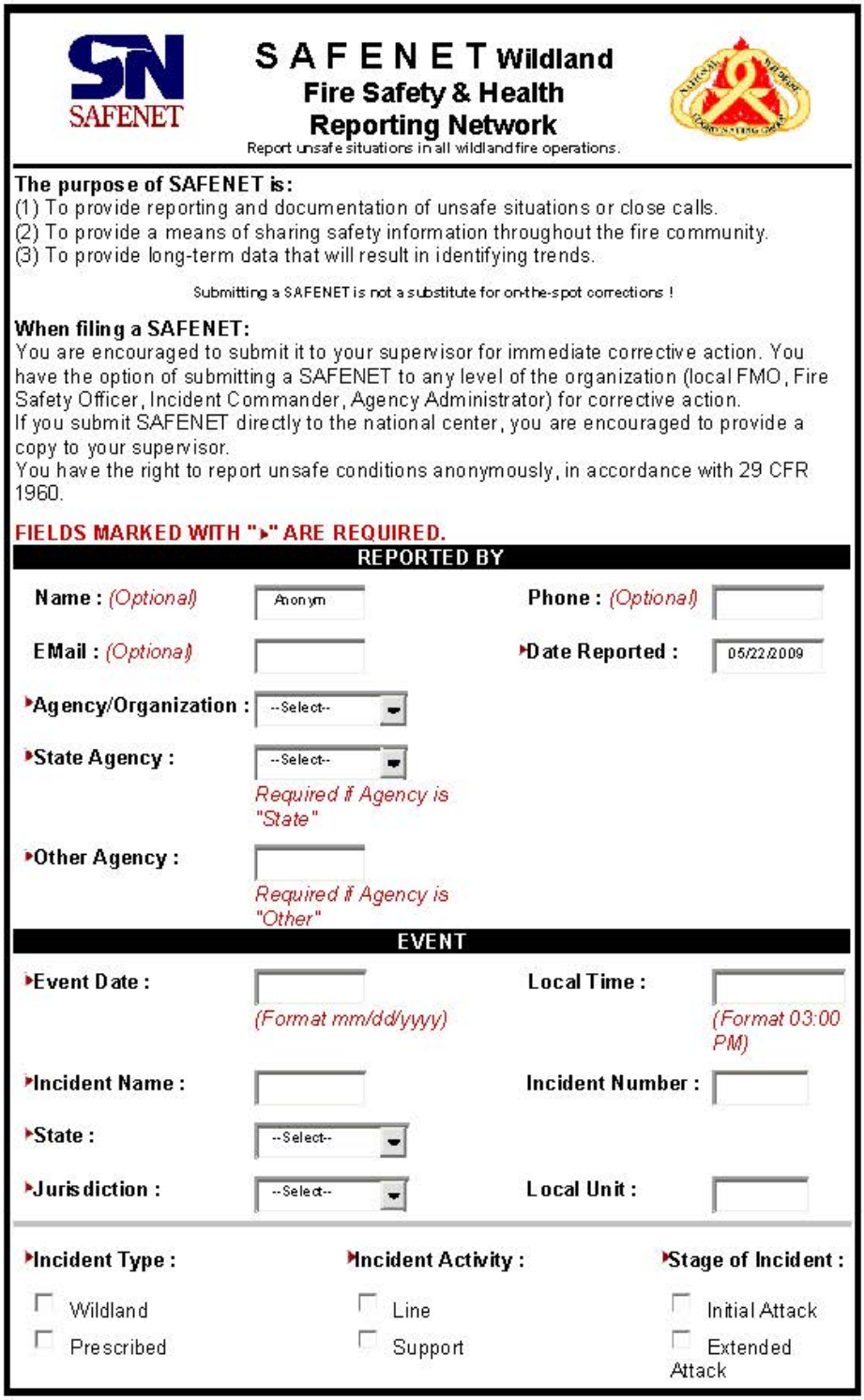
Appendix A: SAFENET Template



SAFENET Wildland Fire Safety & Health Reporting Network

Report unsafe situations in all wildland fire operations.

The purpose of SAFENET is:
(1) To provide reporting and documentation of unsafe situations or close calls.
(2) To provide a means of sharing safety information throughout the fire community.
(3) To provide long-term data that will result in identifying trends.

Submitting a SAFENET is not a substitute for on-the-spot corrections !

When filing a SAFENET:
You are encouraged to submit it to your supervisor for immediate corrective action. You have the option of submitting a SAFENET to any level of the organization (local FMO, Fire Safety Officer, Incident Commander, Agency Administrator) for corrective action.
If you submit SAFENET directly to the national center, you are encouraged to provide a copy to your supervisor.
You have the right to report unsafe conditions anonymously, in accordance with 29 CFR 1960.

FIELDS MARKED WITH "▸" ARE REQUIRED.

REPORTED BY

Name : *(Optional)* Anonym
Phone : *(Optional)*
EMail : *(Optional)*
▸Date Reported : 05/22/2009
▸Agency/Organization : --Select--
▸State Agency : --Select-- *Required if Agency is "State"*
▸Other Agency : *Required if Agency is "Other"*

EVENT

▸Event Date : *(Format mm/dd/yyyy)*
Local Time : *(Format 03:00 PM)*
▸Incident Name :
Incident Number :
▸State : --Select--
▸Jurisdiction : --Select--
Local Unit :

▸Incident Type : ☐ Wildland ☐ Prescribed
▸Incident Activity : ☐ Line ☐ Support
▸Stage of Incident : ☐ Initial Attack ☐ Extended Attack

- [ ] All Hazard
- [ ] Training
- [ ] Fuel Treatment
- [ ] Work Capacity Test
- [ ] Transport to/from
- [ ] Readiness/Preparedness
- [ ] Transfer of Command
- [ ] Mop Up
- [ ] Demobe
- [ ] Non-Incident
- [ ] Other

Position Title :

(Firefighter, division supervisor, facilities unit leader, etc.)

Task :

(Line construction, structure protection, camp activities, etc.)

Management Level : ○ 1 ○ 2 ○ 3 ○ 4 ○ 5

(Type 5, 4, 3, 2, 1)

Resources Involved :

(Crew, equipment, overhead, etc.)

CONTRIBUTING FACTORS

Contributing Factors : ☐ Fire Behavior ☐ Communications ☐ Equipment ☐ Environmental ☐ Human Factors ☐ Other

Human Factors : ☐ Decision Making ☐ Leadership ☐ Risk Assessment ☐ Fatigue ☐ Performance ☐ Situational Awareness

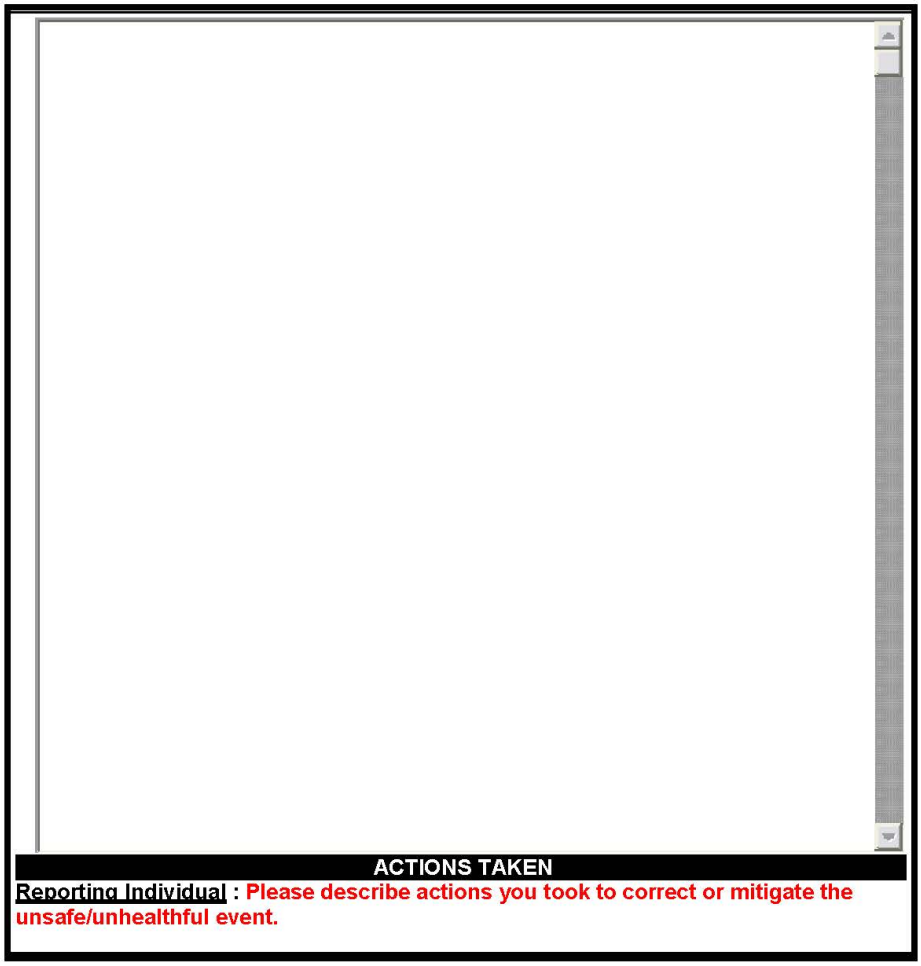
Required if Contributing Factors is "Human Factors"

Other Factors :

Required if Contributing Factors is "Other"

NARRATIVE

Describe in detail what happened including the concern or potential issue, the environment (weather, terrain, fire behavior, etc), and the resulting safety/health issue.


ACTIONS TAKEN
Reporting Individual : Please describe actions you took to correct or mitigate the unsafe/unhealthful event.

AGENCY CORRECTIVE ACTIONS

Reserved space for agencies supplemental corrective actions.

(You will be given an opportunity to PRINT this SAFENET once you have submitted the form)

Revised 5/26/2009

Appendix B: Lessons Learned Template

OAS-35
(12/12)

Department of the Interior
Lessons Learned

No. **Date:** **Page 1 of**

Subject:

Area of Concern:

Distribution:

Discussion:

Is/ Author

Author
Position/Agency

Appendix C: Lessons Learned Example

OAS-35A
(12/12)

Interagency Aviation
Lessons Learned

No. IA LL 15-01 **February 17, 2015** **Page 1 of 3**

Subject: Helicopter Load Management

Area of Concern: Helicopter Operations

Distribution: All Aviation Activities

Discussion Last summer, a contracted helicopter was destroyed when the pilot lost control of the aircraft while conducting external load operations in support of wildland fire operations. Fortunately, neither the pilot nor the firefighters who were in close proximity of the aircraft were injured. The investigation revealed the accident involved several links in that famous chain and lined up all the holes in the Swiss cheese model that contributed to the accident. In other words, it took a village.

Lessons Learned: Latent conditions that directly contributed to the accident were present in many places beyond the cockpit. Specifically, there were inaccurate passenger/cargo manifesting procedures and calculations in addition to a lack of understanding of how those calculations are applied. We continue to see improvements in the utilization of the Interagency Load Calculations card (OAS 67/FS 5700-17 07/13). Unfortunately, there are many opportunities for improving the quality of the data, the process of communicating/confirming the weights, and most important, understanding how those numbers apply to helicopter performance in relation to the type of landing zone (IGE, OGE) on every flight.

What happened? Starting off, the load manifest was incorrect resulting in a heavier load than what was on the form as well as what was communicated to the pilot over the radio. The Helicopter Crewmember (HECM) in charge of manifesting loads recorded the individual items in a separate notebook then entered the combined weight as one entry on the cargo manifest. Instead of using a scale as required by the IHOG (one was present), he used the average weight of personal gear (bags) and multiplied it by the number of bags. He also used the "Cubee/water (5 gal)" weight from the incident pocket guide which was listed at 40 lbs. but when weighed by the investigation team, they weighed 45 lbs. NWGC Memorandum No. 14-020 has revised this estimated weight. Result: the pilot picked up a load that was 172 lbs. more than what was communicated by the HECM and much more than the 852 lbs. allowable as HOGE jettisonable payload determined by the load calculation form. The load actually weighed 942 lbs. The helicopter was equipped with a load cell that indicated the weight of the load, but the pilot didn't note the difference from what was communicated. The added weight placed the helicopter closer to its performance limit.

Other factors: During the preceding load delivery, the firefighters requested that the next/last (mishap) load be delivered below the landing zone for matters of convenience. The original/designated landing

zone was on top of the ridge at an elevation of approximately 9000 feet. The requested landing zone moved the landing area below the ridge where winds were likely to travel downslope. Operating a helicopter with a long line places the helicopter in the environment that is conducive to Loss of Tail Rotor Effectiveness (LTE) due to increased weight and the requirement to HOGE. The pilot was likely experiencing turbulent wind conditions due to the rising terrain in this area. The unstable air mass and surface heating caused moderate winds (10-20 knots) that were measured at the surface. These winds were flowing up over and around the hilltop near the landing area creating updrafts on the windward side of the ridge and downdrafts and turbulence on the leeward side. A demarcation line, or the point that separates the up flow air from the turbulent down flow air, forms at the mountains highest point and extends diagonally upward. The velocity of the wind and slope gradient determines the demarcation line. The higher the wind speed and the steeper the terrain, the steeper the demarcation line angle is and the closer it forms near the crest. This would likely create the turbulent wind conditions near the location that the mishap aircraft would be hovering out of ground effect (HOGE). It's highly conceivable that the down flowing air reduced performance thus increasing the power required which in conjunction with directional winds, contributed to the onset of LTE. As the aircraft slowed to a hover to deliver the sling load, it began to rotate to the left. The pilot attempted to maintain control and to jettison the load, but was unable. The aircraft rotated several times, lost altitude, and impacted the ground.

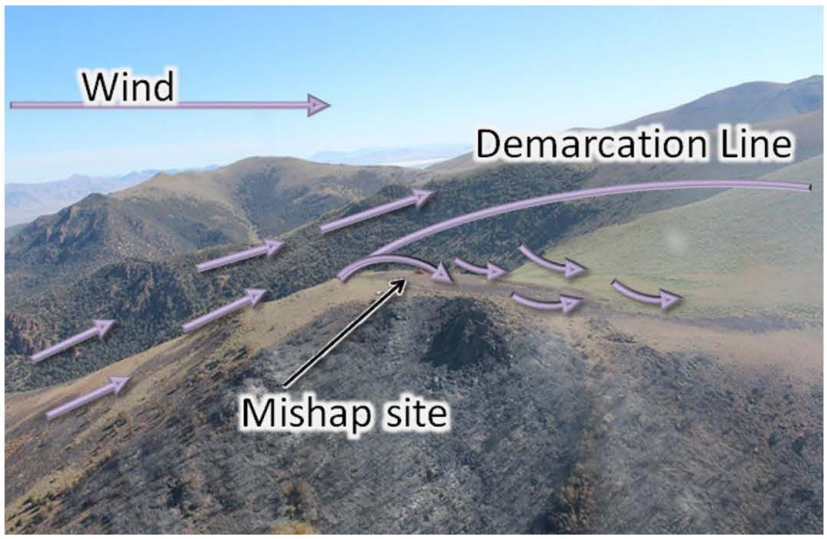


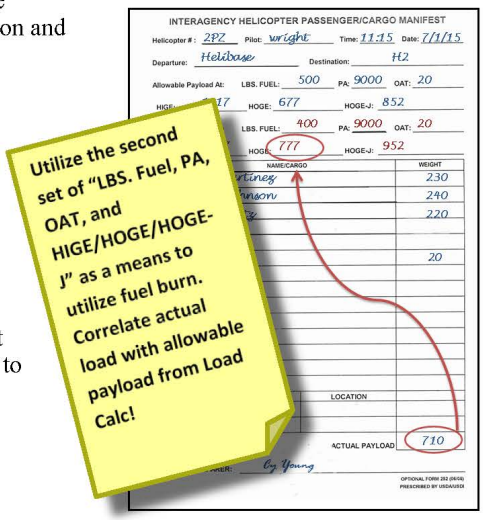
Figure 1 Wind flow over mountainous terrain contributed to increased performance requirements and the onset of LTE.

The goal in recovery is to gain airspeed without increasing power. Decreasing collective (reducing power) also decreases the power required for antitorque. The problem is that these recovery actions will also result in a substantial loss of altitude which may not be an option when operating in close proximity to the ground. Prudent pilot planning should include a clear escape route in these types of conditions/operations. Although it is not included in the AS350 B3e Rotorcraft Flight Manual, jettisoning the load will reduce weight and subsequently reduce the power required. This action should have been accomplished simultaneously along with the other procedures.

Repeat Offender. As part of the investigation, all of the helicopter load calculation and manifest forms for that fire were reviewed. The review uncovered many, similar errors as the mishap aircraft for

all the helicopters supporting of that fire. Many planned loads were greater than allowable payload weights for conditions, locations, and landing areas (IGE, HOGE, or OGE).

Errors of Omission. Most of the errors were simple omissions of required information. There are required items specified by the IHOG such as allowable payload weights for HIGE, HOGE, and HOGE-J. Without the performance data on the manifest, the individual creating the load is unable to correlate payload weight to the actual aircraft performance requirement/capability as determined by the load calculation and type of operation.



Interviews also revealed that some were increasing the available payload by compensating for fuel usage. The only problem was that their figures weren't being recorded on load calculations or passenger/cargo manifests as directed by the IHOG (Feb 13 – Chapter 7, III.B.2, page 7-3).

Your full name here. Another area of concern was that many of the passenger/cargo manifests listed only last names. The passenger manifest may be the only document that can indicate who was actually on an aircraft and used to account for individuals in the event of a mishap involving passengers. The IHOG requires that manifests contain full names.

"Standard" Deviation. Individuals often deviate from established standards in order to become more efficient. It appears a lack of perceived negative consequences resulted in a gradual acceptance of these deviations from many. This is called "normalization of deviance." Individuals across the organization were found to be deviating from a known standard to which it became acceptable. Many times, when people omit steps or requirements, they are rewarded; time is saved, fewer tools are needed, fewer people are needed to do the job, etc. However, in this mishap, failing to adhere to standards set the stage for providing a load that was heavier than anyone expected and was one of the first links in the mishap chain. Complacency that often manifests during numerous routine tasks compounds this problem.

Bottom Line. The IHOG and other standards were designed to mitigate the risk of overloading a helicopter. Skipping steps and omitting information on the forms effectively removes safety measures required by those policies. Helicopter Managers and authorized individuals are responsible to complete a manifest for each flight leg flown. Creating accurate passenger/cargo manifests and correlating the actual load weight with the allowable payload weights is a safety measure that must be performed to ensure we are not placing the helicopter in an overloaded condition for the type of operation and landing area. Loads heavier than planned can be identified by either aircraft performance indications (i.e. torque, etc.) or load cell (if installed). Pilots have a responsibility to manage risk and that also means to ensure the quality of the data brought before them is consistent with requirements and expectations. Unfortunately, placing all of that responsibility squarely on the pilot will most often result in failure. In other words, it takes a village.

/s/ Keith Raley
Keith Raley
Chief, Aviation Safety &
Program Evaluations

/s/ Gary Sterling
Gary Sterling
Branch Chief, Aviation Safety
Management Systems

Appendix D: ICS Form 215a

INCIDENT ACTION PLAN SAFETY ANALYSIS (ICS 215A)

1. Incident Name:	2. Incident Number:	
3. Date/Time Prepared: Date: Date Time: HHMM	4. Operational Period:	Date From: Date Date To: Date Time From: HHMM Time To: HHMM

5. Incident Area	6. Hazards/Risks	7. Mitigations

8. Prepared by (Safety Officer): Name: Signature: _____

Prepared by (Operations Section Chief): Name: Signature: _____

ICS 215A Date/Time: Date

Appendix E: Rescinded Information

The following information was removed from the draft report as considerations for recommendations that were ultimately either found to be overlapping with other safety teams or deemed to not be a good fit at this time:

Overlapping effort with Safety Team 6: Increased use of awards and recognition

Expanding the ability of workers to easily suggest peer-to-peer safety awards can reward positive risk-management behaviors. Allowing employees to create a way to acknowledge one another could also lead to increased employee engagement through heightened situational awareness of each employee in the workplace.

Peer initiated Special Safety Act awards, with nominations easy to submit either by hard copy or electronically to a single location. The Special Safety Act awards would be provided monthly and can be separated into categories for office workers, field workers, and Police and security workers. The target category of the O&M workers could become engaged if they see this occur within their workplace community by making them more aware of the behaviors and environment around them.

The Team also feels that facility-level and regional-level safety awards that would recognize a specific facility with an annual honorary award for excellence in safety. Likewise, one region per year would compete for and be awarded the Reclamation Safety Award, which would include recognition of specific activities that warranted the award.

Implementation

The Team has not currently created an implementation plan and is waiting for approval of recommendations by management. Upon approval The Team will reconvene to prepare the implementation plan.

Overlapping effort with Safety Team 9 – JHA Process Evaluation: Adjust the JHA reporting tool

While the current JHA is being addressed by another SOH team, The Team believes the JHA can be fundamentally changed to engage all employees in the identification and mitigation of hazards by using a new tool. This finding is aligned with the Department's SOH Evaluation Report 4.1.3 – Conclusion 3-1.

Using a larger 2 x 3 foot laminated NWCG ICS-215A could further engage employees. With a larger version placed on a wall or any other prominent area, all individuals are called on to identify the hazards and mitigation for those hazards at the beginning of every shift/activity rather than a pre-created JHA doing it for them. Rather than a standard set of hazards, employees are encouraged to think and come up with the list of hazards they could be facing on each project or assignment. This leads to employee engagement in identifying hazards and ideas for mitigating them. An example of a blank ICS Form 215A is included in Appendix D.

Implementation

The Team has not currently created an implementation plan and is waiting for approval of recommendations by management. Upon approval, The Team will reconvene to prepare the implementation plan.

Overlapping effort with Safety Team 14–: Employee Viewpoint Survey (or alternative survey tool)

Annually the Office of Personnel Management administers the Federal Employee Viewpoint Survey, of which Reclamation is included. The survey is a tool which is intended to measure employees' perception of their workplace, which includes safety related perceptions among employees. The Team feels that including a question specifically on employees' perceived effectiveness on the dissemination of SOH information within Reclamation would provide valuable feedback to leadership on the subject.

Implementation

Implementation of this recommendation would likely involve a request on the behalf of Reclamation to either the Department and/or Office of Personnel Management for the inclusion of such a question in the Viewpoint Survey.

Forwarded to Safety Team 4: Communications Planning: Break Room and facility level marketing communications program

As discussed previously, the most at-risk group for potentially serious safety incidents spend little, if any, time in front of a computer terminal during their normal day-to-day operations. As such, it is critical to reach this population where they're at with engagement tools. The use of a marketing campaign in break rooms, elevators, restrooms, equipment, and other commonly frequented areas may be the only opportunity to reach these employees beyond direct verbal communication while in the workplace. Utilizing posters in break rooms, fliers, pocket cards, and other traditional print media will be a critical tool.

Implementation

The Team has not currently created an implementation plan and is waiting for approval of recommendations by management. However, the concept has been discussed with Reclamation communications leadership who are supportive of this concept. Upon approval the team will reconvene to prepare the implementation plan.