Lessons LEARNED, Lessons SHARED:
Near-miss reporting, one year later

An exclusive supplement to *FireRescue Magazine*

FIRERESCUE

LESSONS LEARNED, LESSONS SHARED

Near-miss reporting, one year later

The vision behind the success of the National Fire Fighter Near-Miss Reporting System is Mr. Garry L. Briese, former executive director of the International Association of Fire Chiefs. Garry's image of a safer fire service was the driving force behind the creation and rapid accomplishment of www.firefighternearmiss.com. He believed that the aviation industry's successful system could be transported to the fire service and achieve the same results. His ability to unite people from a variety of backgrounds and industries set the stage for what the system is accomplishing today. This program would never have achieved its level of success without his determination to break the stagnated numbers of firefighter fatalities and injuries.

Dear Colleagues:

The National Fire Fighter Near-Miss Reporting System began as a way to capture statistics on incidents that occur every day in fire departments. Those are the calls that make our hearts beat a little faster. Those are the calls that we nervously laugh about when someone mentions them around the kitchen table during dinner. Those are the calls that make us hug our children a little tighter when we come home after our shift.

More than 1,000 firefighters from across the country have submitted reports to the program. Thousands more have learned from reports posted on the Web site. Who is using the Web site? People like us who don't want another brother or sister to become another statistic. Firefighters you will never meet are sharing their experiences in order to build a safer fire service.

We all talk about the shift occurring in the safety culture in today's fire service. The near-miss program isn't just talking about changing the safety culture. This program is helping make our firefighters safer … one report at a time.

The program belongs to the fire service community. It is an investment in the future of the fire service. Every one of us has a story that immediately comes to mind when we hear the term "near miss" or "close call." Please take the time to submit a report so someone can learn from your experiences.

—**Chief Jim Harmes, CFO**

President, International Association of Fire Chiefs

—**Dennis Smith**

Chair, National Fire Fighter Near-Miss Reporting System Task Force

Goals

The National Fire Fighter Near-Miss Reporting System (www.firefighternearmiss.com) is improving firefighter safety by collecting, sharing and analyzing near-miss experiences. The reporting system is free, voluntary, confidential, non-punitive and secure.

The National Fire Fighter Near-Miss Reporting System has three main goals:

1. To give firefighters the opportunity to learn from each other through real-life experiences;
2. To help formulate strategies to reduce firefighter injuries and fatalities; and
3. To enhance the safety culture of the fire service.

Program History

The concept of near-miss reporting was introduced to the fire service by Garry Briese, longtime Executive Director of the International Association of Fire Chiefs (IAFC). In 2004, the IAFC was awarded a grant from the U.S. Department of Homeland Security's Assistance to Firefighters Grant Program to create a national near-miss reporting system for the fire and emergency service. A supporting grant was awarded from Fireman's Fund Insurance Company. Additional support was given by Deputy Chief Billy Goldfeder and Gordon Graham, founders of FirefighterCloseCalls.com. The National Fire Fighter Near-Miss Reporting System is administered by the IAFC in consultation with the National Fire Fighter Near-Miss Reporting System Task Force. The grant from the U.S Department of Homeland Security was renewed in 2005 and 2006. The program is endorsed by the IAFC, the International Association of Fire Fighters, the Volunteer & Combination Officers Section of the IAFC and several other fire service associations and organizations.

In the summer of 2005, 38 fire departments were selected to test the program. The members of these departments continue to provide critical feedback on the development of the program. After the initial pilot testing, the program was launched nationally in August 2005 at Fire-Rescue International in Denver, Colo. User feedback continues to be the catalyst for changes to the program.

Near-Miss Reporting

Near-miss reporting systems focus on identifying patterns that exemplify system problems. Once identified, strategies and practices can be developed to affect change. The aviation, military and medical industries credit the use of near-miss reporting systems as significant contributors to reducing errors, injuries and fatalities.

The firefighter near-miss program is based on the Aviation Safety Reporting System (ASRS), which recently celebrated its 30-year anniversary. ASRS uses the information it gathers to address reported hazards, conduct research on operational safety problems and facilitate an understanding of aviation safety-related issues. ASRS also provides data on the quality of human performance. This function serves as the basis for further research and recommendations.

Using ASRS as its model, the National Fire Fighter Near-Miss Reporting System is also looking to identify patterns in near-miss reports. Identifying these patterns will help develop strategies for reducing firefighter injuries and fatalities.

"Firefighternearmiss.com is a perfect place to research case study information on a variety of firefighting related activities. What better way to learn from others than by utilizing the wealth of information on this site? The Report of the Week program is also an excellent vehicle for a weekly thought jogger. Each case study provides a situation that can most likely be compared to something within your organization, and with some thought can be a catalyst for change to prevent similar occurrences."

–Mark Turvey

Assistant Fire Chief 501, Lubrizol Corporation - Texas Plants
Captain 830, Friendswood (Texas) Volunteer Fire Department

How the Program Works

Visitors to www.firefighternearmiss.com may either submit reports, search reports or access safety-related information. The online report submission takes on average about 10–15 minutes. There are drop-down questions and open text boxes to describe the event and the lessons learned. Once the report has been submitted, report reviewers (active-duty fire service professionals) analyze the report and de-identify it by removing all department names, individual names, company numbers, etc. The report is then posted on the Web site for other firefighters to learn from. ❖

National Fire Fighter Near-Miss Reporting System
4025 Fair Ridge Drive
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E-mail: nearmiss@iafc.org
Web site: www.firefighternearmiss.com

PHOTO JASON R. HENSKE/FYRFOTO.COM

Note: The statistics shown on these pages are from reports received Jan. 1–Dec. 31, 2006; 580 reports were received in 2006 for a total of 1,082 posted to the Web site.

Department Type

Reporters select the type that best describes their department. If the department doesn't fit any of the descriptions, reporters can select "other" and provide a description. Rescue Squads and Training Academies were added to the drop-down menu in December 2006.
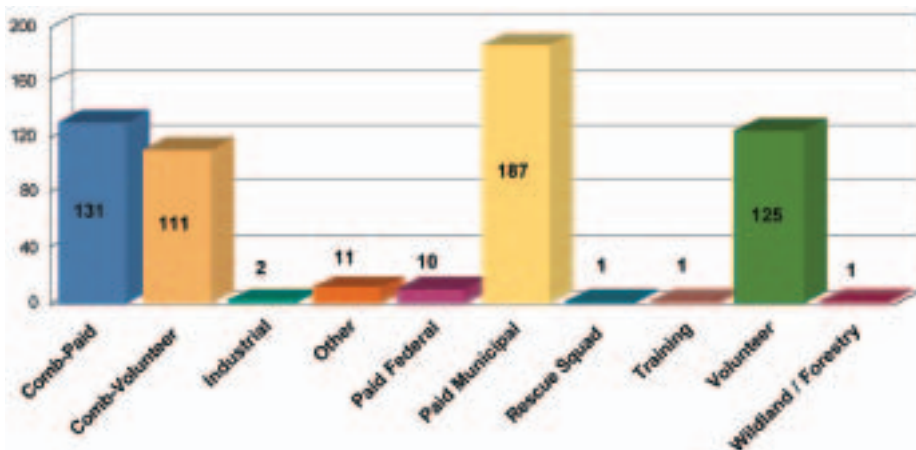
Job/Rank

Reporters select their job/rank. If the job/rank doesn't appear, reporters can select "other" and provide a description. The categories of Chief Officers and Company Officers were consolidated on this chart to illustrate that reports are received fairly equally from chief officers, company officers and firefighters.
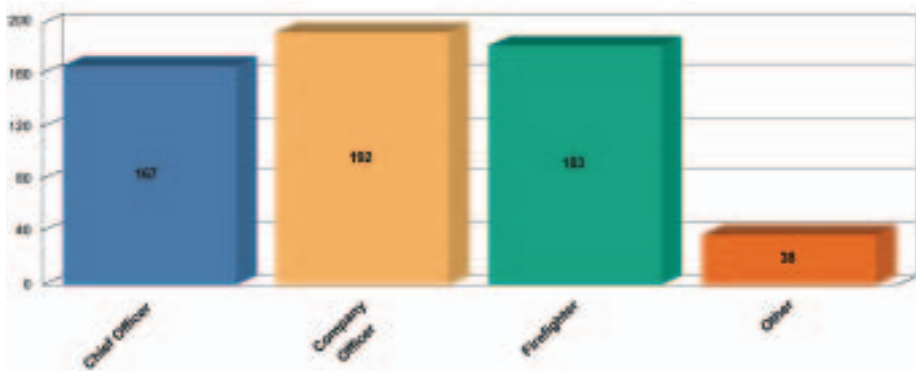
FEMA Region

Reporters select their state when submitting a report. The FEMA region is automatically generated to protect the identity of the report submitter. Only the FEMA region is posted on the Web site. Reports were received from 48 of the 50 states and 3 Canadian provinces.
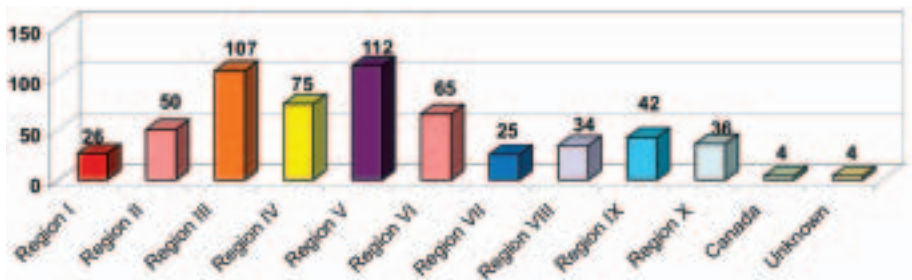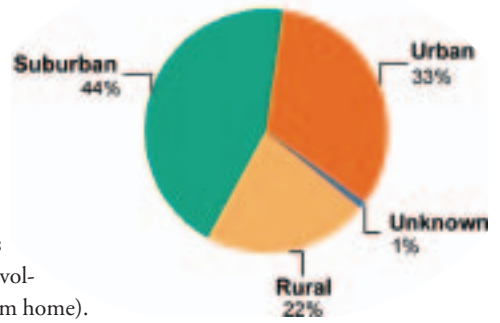
Service Area

Service area is a self-declared field; reporters select the service area that best describes the area their fire department serves.

Department Shift

Reporters select the work shift in their department. This category applies to both career departments (hours on/hours off, days/nights, straight days) and volunteer departments (stand-by, duty night, respond from home).
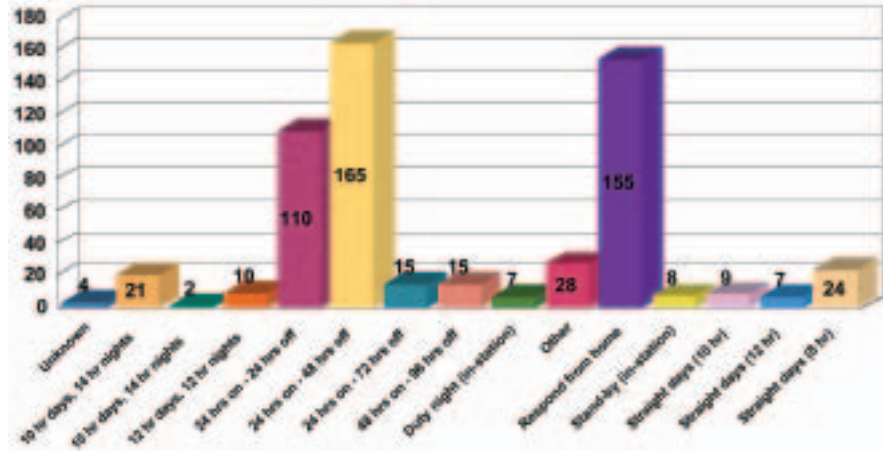
Age

Reporters select their age range. In December 2006, this question was changed from "Age" to "Age at time of event" based on comments from Web site visitors.
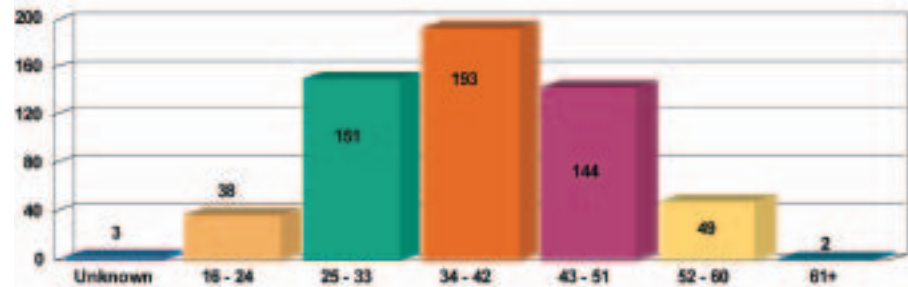
Experience

Reporters select their fire service experience in number of years. In December 2006, this question was changed from "Experience" to "Experience at time of event" based on comments from Web site visitors.❖
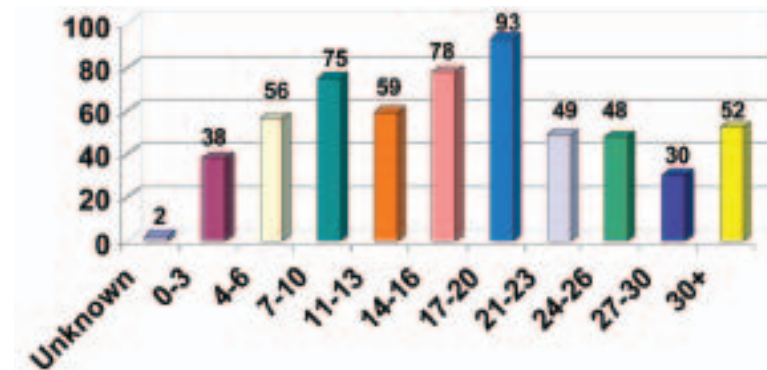
PHOTO COURTESY JOE PACHECO/MARIETTA (GA.) FIRE DEPARTMENT

Note: The statistics shown on these pages are from reports received Jan. 1–Dec. 31, 2006; 580 reports were received in 2006 for a total of 1,082 posted to the Web site.
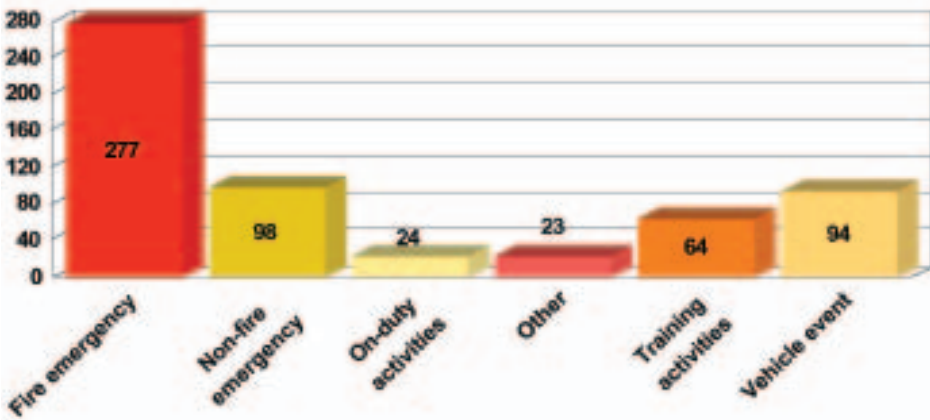
Event Type

Reporters select from five categories or "other." The categories mirror the five main categories where statistics indicate firefighters suffer injuries and fatalities.


Event Participation

Reporters identify their level of involvement in the event. This question was requested by program users so readers would have an idea of the perspective of the reporter. The category "submitted by safety officer" was added in early 2006 to distinguish incidents investigated by a safety officer.
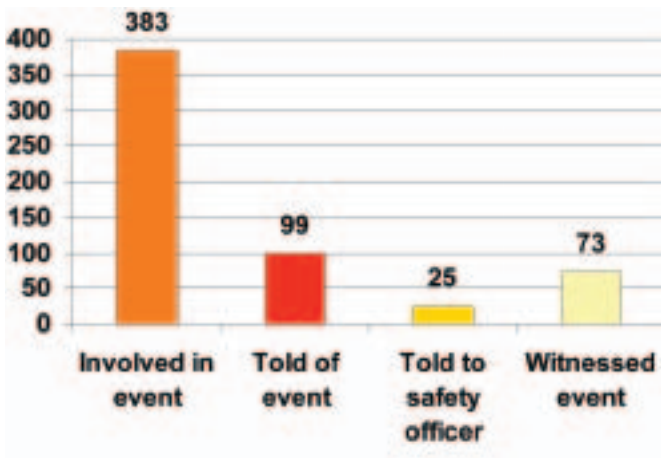
Hours into Shift

This data reflects the number of hours into a shift prior to the event occurring. The "0–4 hours" category reflects volunteer reports when they respond from home.
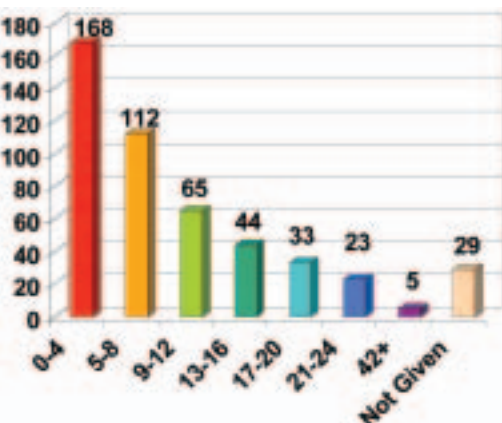
Contributing Factors & Crew Resource Management

It is important to note that the most frequently occurring contributing factors in near-miss reporting are situational awareness, human error and decision making. These three factors are also the underpinning components of crew resource management (CRM), which is the practice of effective use of all resources. CRM creates a force multiplier for fire department leaders and teams that employ its concepts and principles. Crews trained in CRM learn skills that enhance communication, maintain situational awareness, strengthen decision making and improve teamwork.

There are five CRM principles: communication, situational awareness, decision making, teamwork and task allocation. Training in the five principles creates a better performing work group and more informed leader.

Communication is the key to success in any endeavor. CRM teaches people to focus on the communication model (sender-message-medium-receiver-feedback), speak directly and respectfully and communicate responsibility.

Situational awareness focuses on the need to maintain attentiveness to an event. It involves the effects of perception, observation and stress on personnel. In the emergency services, situational awareness is particularly important because emergencies are dynamic and require our full attention.

Decision making is based on information. Emergency service decision making relies heavily on risk/benefit analysis. Too little information results in poor risk assessment by the decision maker and can lead to errors, injury and death. Too much information overloads the decision maker and makes it difficult to make effective decisions. CRM training concentrates on giving and receiving information so appropriate decisions can be made.

CRM emphasizes the importance of *teamwork* through group exercises and informal crew performance evaluations. It focuses on two elements in teamwork, leadership and followership, so all members understand their place on the team. It also focuses on the need for mutual respect and the benefits of working together.

Task allocation focuses on knowing the strength and weaknesses of team members, so work can be assigned to the team member most capable of successfully completing the task. It also emphasizes dividing labor so no single team member is overworked.

CRM is not an attempt to undermine the legal, ranking fire/rescue officer's authority. It is not management by committee. In fact, CRM enhances personal authority. All team members will direct information flow to the officer. While opinions are valid, the final decision on a course of action still rests with the officer.

For CRM to succeed, leaders must make a commitment to change the department's traditional, standard operating culture. It requires leaders to remain flexible and receptive to input and be prepared for an initial shift in some perceptions of department structure.

CRM's success in minimizing the effect that human error has on operations and maximizing human performance is irrefutable. The lessons learned and success experienced by the aviation industry's development and adoption of CRM speak for themselves. The same successes are being realized in the medical industry, shipping industry and the U.S. military. Adopting and practicing CRM for the nation's emergency services seems like the next logical step toward a safer, more effective service.

The guidebook "Crew Resource Management" *is available for free at www.iafc.org/downloads/CRM %20Manual.pdf.*

Could This Happen Again?

This question provides reporters an opportunity to state whether the near miss was an isolated incident or could possibly reoccur. Reoccurrence could be an indicator of a need for systemic change in a procedure, technology or culture.
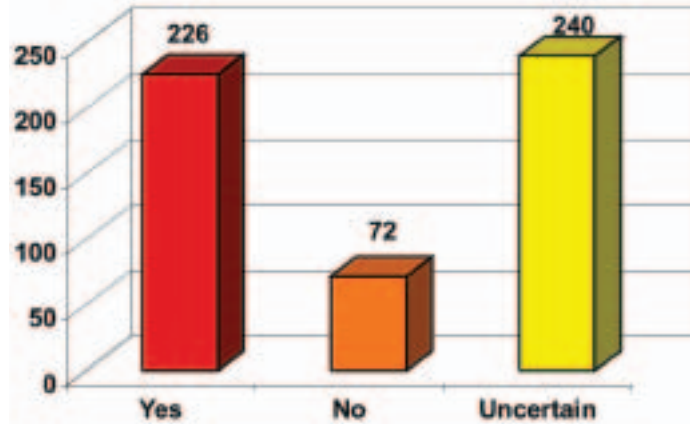
Contributing Factors

Reporters can select up to five of 20 contributing factors, including factors frequently encountered in standard injury reporting systems and human factors.
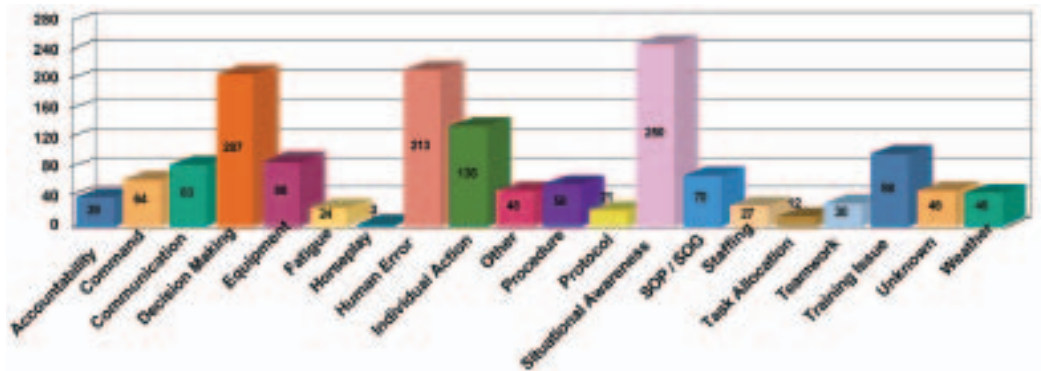
Loss Potential

Reporters can select up to five of seven critical loss items. In the majority of the reports, reporters recorded the possibility of death or serious injury. Report reviewers stated that reporters frequently cited the life-threatening potential as a compelling reason for filing a report.❖
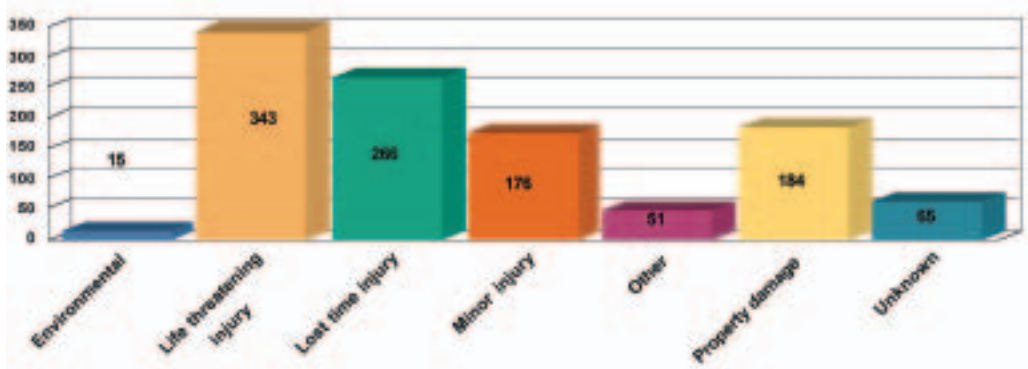
Introduction

The National Fire Fighter Near-Miss Reporting System is a Web-based tool for collecting and disseminating information on near-miss events involving firefighters. A frequently asked question concerning the program is, "What have you learned?" Since the purpose of the program is primarily data collection in a non-judgmental format, program administrators convened working groups of firefighters and officers to analyze reports in the database.

Methodology

Invitations were sent to the International Association of Fire Fighters and the Volunteer and Combination Officers Section of the IAFC, requesting representatives to serve on the working groups. Additional invitations were sent to the 38 fire departments that participated in the pilot testing of the program prior to its August 2005 launch. Facilitators were selected from a pool of the pilot department contacts.

The "fire event" category receives the largest number of reports, so this was the category selected for the first analysis of aggregate reports. Three sub-event types (falls, lost/trapped/disoriented firefighters and structural collapses) were selected based on common causes of firefighter fatalities and injuries from the U.S Fire Administration's report "Firefighter Fatalities in the United States in 2005" and because of the frequency of the number of near-miss reports on these topics. A fourth sub-event type, power lines, was selected based on a recommendation from the system's report reviewers.

A database search identified:
- 30 reports dealing with power lines;
- 99 reports dealing with falls;
- 50 reports dealing with firefighters who were lost, trapped or disoriented; and
- 60 reports dealing with structural collapses.

From this initial group of reports, 10–12 reports were selected in each category based on their readability, descriptive qualities and discussion potential. The facilitators and working group participants were provided the reports prior to conducting the analysis.

Facilitators were also provided with a copy of the U.S. Navy's Human Factors Analysis and Classification System (HFACS) and

PHOTO COURTESY CHARLOTTE (N.C.) FIRE DEPARTMENT

Grouped Reports

A benefit of collecting near-miss reports from different departments is the ability to analyze similar reports together. Analyzing an individual report provides insight on a particular incident but can sometimes be viewed as an isolated event that "isn't going to happen in my department." Looking at grouped reports provides a valuable tool for studying behaviors and identifying similar actions taken.

Curricula development, low-tech/high-impact safety reminders and best practices are just three of the many ways grouped reports can be used. Here are other examples of ways you can use grouped reports:

✓ Chief officers can improve the performance and safety culture of their department by requiring personnel to frequently review grouped reports, reinforcing the need to communicate, remain alert and make better decisions.

✓ Company officers can access grouped reports for didactic as well as practical skills drill preparation.

✓ Training officers can interweave case studies found in grouped reports into curriculum development.

✓ Recruits can use grouped reports as a resource for class projects and review grouped reports to enhance their knowledge base.

✓ Others in the fire service industry can use grouped reports for research, statistics and talking points for papers.

Reports are grouped based on inquiries from program users, report reviewers and program administrators. Grouped reports can be found on the Resources Page of www.firefighternearmiss.com. If you would like to request a group of reports on a particular topic or subject matter, e-mail your request to nearmiss@iafc.org.

instructions on how to use this analysis tool (see p. 10). Working group participants were not provided with the HFACS information prior to meeting. The intent was to prevent them from applying the tool to the reports and drawing premature conclusions. Facilitators and working group members found HFACS user-friendly and applicable to the analysis.

The working groups were assembled for a general meeting for an overview of HFACS. Then they were divided into four working groups led by a single facilitator. Students from Eastern Kentucky University assisted the facilitators. The analysis discussions were recorded. The findings of the analysis are on pages 11–13. ❖

WHY SUBMIT A REPORT?

A near miss experienced by one firefighter shared with all firefighters improves the knowledge, skills and abilities of everyone who reads the report. This program fulfills a need to capture the experience of veteran firefighters and pay that experience forward to the next generation of firefighters. Other industries that use near-miss reporting report developing more experienced team members, enjoying lower injury rates and experiencing fewer worker fatalities.

Reviewed Reports

Falls
✓ Firefighter falls when floor fails during structure fire. (05-504)
✓ Firefighter falls from second-floor window while making fire attack. (06-384)
✓ Firefighter falls through roof during ventilation at a commercial fire. (05-570)
✓ Firefighter nearly falls through hole in floor during search. (05-638)
✓ Officer and firefighter fall through hole in floor at single-family dwelling fire. (05-552)

Lost/Trapped/Disoriented Firefighters
✓ Front porch collapse at a structure fire traps two firefighters under burning debris. (06-243)
✓ Ceiling collapse strikes a firefighter while he was engaged in fighting a cockloft fire in an occupied apartment building. (06-157)
✓ Crews trapped by fire on second floor of a two-story, single-family dwelling. (06-042)
✓ Crews trapped by fire in the rear of a mobile home when a PPV blower was started. (06-272)
✓ Firefighter becomes disoriented under high heat and smoke conditions. (06-211)

Structural Collapses
✓ Crews evacuate just prior to roof collapse at church fire. (06-056)
✓ Firefighter struck by debris when garage collapses. (05-376)
✓ Restaurant roof collapses 3 minutes after crews exit. (06-023)
✓ Roof collapses at rekindle; one firefighter struck, two others trapped. (06-181)
✓ Roof collapses at structure fire; two firefighters trapped. (06-042)

Power Lines
✓ Structure fire where power lines burned off of a structure and fell across a pumper parked under the lines, arcing. (06-349)
✓ Aerial tower that auto-rotated into high tension lines, arcing violently. (05-395)
✓ 13,000-volt transmission line that arced and came down after impingement from a shed fire. (05-429)
✓ Firefighter nearly stepped on a live power line at fire scene. (05-556)
✓ Fire crew called to wires down. The lines are re-energized by the power company and arc violently while the crew is standing by, awaiting the power company's arrival. (05-616)
✓ Firefighter struck by a falling power line that burns through while the company fights a debris pile fire. (05-602)
✓ Firefighters repeatedly walk under a taped-off area that has a burn-damaged live line suspended from a structure. (06-195)

The U.S. Navy's Human Factors Analysis and Classification System (HFACS) was selected as the first analysis tool to use in evaluating near-miss reports. It focuses on four areas of human performance as they relate to what the U.S. Navy refers to as "mishaps." It was readily transferable to an analysis of firefighter near-miss reports with some minor modifications to performance examples in the categories and some terminology. Since the Navy uses HFACS for investigating mishaps, it was immediately applicable to the analysis of near-miss reports.

HFACS evaluates an event based on four levels of individual and institutional performance:

- Unsafe acts;
- Preconditions to unsafe acts;
- Unsafe supervision; and
- Organizational influences.

Within each of these levels are categories that define and classify the root causes. The most enlightening component of HFACS is it views the mishap or near miss as the end result of a long chain of preceding events. This approach creates a prospective environment for the fire service to evaluate events and make improvements.

By looking at the totality of the event, we can begin to assess and identify different points where actions lead to near-miss events. These actions include ingrained behaviors, practices, mindsets and traditions that have become the norm for fire departments. These prior practices may hold the key, as they have in other industries, to changing culture and reducing firefighter injury and fatality rates.

HFACS Level 1: Unsafe Acts

The "unsafe acts" level contains two categories: errors and violations. The determination of an unsafe act is not an indictment against an individual or individuals involved in the near miss. To date, near-miss data shows that over 80 percent of all near misses are the result of errors or mistakes that occur within the rules and regulations.

Errors can be classified as the result of a lack of skill, education or training; poor decision making; or misperception. Each of these classifications can be further broken down into omissions, failure to properly prioritize actions, poor technique in a skill-based area, misinterpretation of conditions, wrong responses to conditions and decision errors and misjudgments in the perceptual category.

Violations are the willful disregard for rules and regulations. Making the distinction between errors and violations is the root of effective error management, injury reduction and life safety.

HFACS Level 2: Preconditions to Unsafe Acts

The "preconditions to unsafe acts" level refers to substandard conditions and practices of the individuals involved. This category assesses the condition of the person or people involved. The analysis tool assesses the state of the individual, such as:

- Was the individual focused or distracted?
- Was the individual hurried?
- Was the individual physically ill or unfit?
- Was the individual incompatible with the task?

The practices of the members of the team are also analyzed. For example, do the team members follow the principles of crew resource management and personal readiness?

"We began hearing ceiling tiles and kitchen items falling from overhead. It was at this time we realized the fire was in the overhead and decided that we needed to exit quickly. We communicated to command that we were exiting at our entry point and that no further crews should enter due to the heat and fire overhead ... We had been in rehab for no longer than 2–3 minutes when the center of the roof collapsed precisely where we had been ... Without the situational awareness, training and recent familiarization with the structure, I feel we would have lost four firefighters that morning."

(Report #06-23)

HFACS Level 3: Unsafe Supervision

The third level of evaluation assesses "unsafe supervision." The military places a heavy emphasis on an officer's role in all aspects of operations. Inadequate supervision, planned inappropriate operations, failure to correct problems and supervisory violations are assessed. This section required some additional emphasis for fire service teams because the fire department chain of command does not truly conform to military structure.

HFACS Level 4: Organizational Influences

"Organizational influences" comprise the final level of evaluation. The decisions of an organization's top management contribute to some degree and in some cases to a firefighter's decision to take an action that results in a near miss. This concept is somewhat controversial since a large portion of fire service injury investigation revolves around the confines of actions on the street. However, when the working groups applied this element of the tool, they often discovered elements in resource management, departmental climate and process that were as significant to the near miss occurring as the actions taken by the firefighter.❖

Online resource: Further information about HFACS is available at www.nifc.gov/safety_study/accident_invest/humanfactors_class&anly.pdf.

PHOTO THE CHARLOTTE OBSERVER/JEFF SINER

Analysis Level 1: Unsafe Acts

Errors—mistakes that occur within the rules and regulations—dominated the analysis in each of the four working groups. The groups were nearly unanimous in the belief that an unsafe act was performed by the involved firefighter(s) in each of the incidents. It is important to note that blame was not placed on the firefighter(s) involved. Each of the working groups acknowledged numerous times that it is the series of events leading up to the event that is the real "cause" of the event.

The premise of a series of events contributing to the near miss provides a very important starting point for the development of new strategies to change the way the fire service approaches mishaps. The groups found that less than 10 percent of near misses were the result of a willful violation of policies and procedures. More than 90 percent of the near misses analyzed were the result of inadvertent actions, due in part to:

- Poor decision making due to insufficient/incorrect information;
- Inadequate or incorrect perception of a situation; and
- A lack of skill for the task.

Excerpt from Report #06-272: "We were called to a fully involved mobile home fire … A police officer was yelling that there were two people inside … There was zero visibility … The engine crew knocked down most of the fire in the front area and went to the back area to extinguish the rest … The fan was started … It took only seconds and the entire mobile home was burning … crews were bottlenecked with no egress to the rear."

Incidents such as this example had been viewed as everything from "just part of the job" to total incompetence. However, in the lessons learned arena of error management, HFACS more appropriately classifies the incident as a string of errors; inadvertent actions committed by well intentioned, but misinformed, or undertrained members who had not properly fully evaluated the cause and effect of their actions.

In the near-miss reports involving power lines, an unsafe act occurred in more than 90 percent of the reports. This percentage is normally about 80 percent. Errors in these near-miss incidents occurred due to:

- Incorrect information provided;
- Poor decision making;
- Attention failure or loss of situational awareness; and
- Underestimation of critical incident factors.

Excerpt from Report #05-556: "My crew had been assigned without me … captain made safety officer … driver and other truckie pulled in to cover exposure … I rushed to join my crew … almost stepped directly on the live power line."

The working groups discovered that errors and violations were committed in each of the events. The errors fell into two predominate categories: skill-based and perceptual. Skill-based errors included loss

PHOTO THE CHARLOTTE OBSERVER/JOHN D. SIMMONS

of situational awareness and memory failure of missed or forgotten steps in procedures. Perceptual errors included an underestimation or misinterpretation of critical incident factors, such as building construction and fire stage development.

Where violations were cited, the determinations were more defined. The most frequently selected categories were failures to follow best tactile and cerebral best practices (e.g., firefighters crossing under banner tape or other barriers used to section off hazardous areas).

Analysis Level 2: Preconditions to Unsafe Acts

Adverse mental states dominated the findings in this level of analysis. In one collapse report that provides a fair representation across all four working groups, a crew is directed to enter a rekindled fire that had been fought defensively earlier in the shift. A collapse occurs, trapping three firefighters. The working group analyzing this report determined that personnel on the scene exhibited:

- Loss of situational awareness (entering a heavily damaged, unstable structure);
- Channelized attention (mount an interior attack because the building is on fire);
- Distraction (overlooked structural damage because of the flames showing);
- Misplaced motivation (we must put the fire out because we are the fire department);
- Lack of sleep (the rekindle occurred at 0100 HRS); and
- Haste/"get home-itis" (the faster we put this thing out, the sooner we get back to bed).

Excerpt from Report #06-181: "First fire was heavily involved on the previous day, same shift … attempted interior attack … structure deemed unsafe … went defensive … When we started walking into the house, I stated that I had a 'bad feeling' about the situation … going back into a home that was deemed unsafe a half an hour ago … Inside the attic/crawl space … after approximately 2 minutes … heard a large crash … noticed roof collapsed … third firefighter nowhere to be found."

Analysis Level 3: Unsafe Supervision

Failures on the part of supervisors were found to be the most frequent cause in the unsafe supervision level. The groups were instructed to remain open-minded when assessments were made in this category. A lack of guidance, oversight and failure to correct inappropriate/unsafe behaviors were the leading selections in this category. The fine line that could not be determined in many cases was how many instances were supervisors failing to supervise versus firefighters ignoring orders or misunderstanding orders.

Excerpt from Report #05-410: "The floor was gone about a foot from the door … ran into the Chief doing his size-up … told him not to let anyone enter through that point … Captain and I were standing under burned-out portion of floor … started hearing debris falling … looked down and noticed a firefighter on the ground between captain and myself … Another hose team had entered through the front door."

Analysis Level 4: Organizational Influences

The working groups had a difficult time reaching conclusions in this category because of the format of the reports and the information provided. The facilitators guided them to "read between the lines" to make educated determinations about department structure and organizations based on their own professional experience. For example, were firefighters operating alone or in companies where the officer is heavily engaged in advancing hose?

The leading determination in the Human Resources analysis of this level was inadequate provision for training. Under the category of Organizational Climate, inadequate/inferior chains of command were cited, recklessly aggressive cultures existed and risk-management programs were not in place.

Excerpt from Report # 06-384: "I was on a ladder next to the window … a stream of water coming through the window from inside hit me … I ducked … a blurry figure flew by me … firefighter on nozzle did not see the window … fell two stories … veins surging with adrenaline, only focus was the fire."

Excerpt from Report #05-376: "Evident garage was a total loss … crews moved closer to the weakened structure … structure collapsed … falling debris struck firefighter."

Recommendations

The working groups made recommendations individually, based on the reports they analyzed. The findings and recommendations were, however, remarkably similar.

Collectively, there appears to be a call for fire departments to adopt an error-management approach to improving firefighter performance. Near-miss reporting and analysis of near-miss reports contributes to that call. A sample of the recommendations the groups made includes:

- Require a 360-degree evaluation of all structures prior to going into action.
- Require all officers to conduct risk/reward evaluations. When risk exceeds reward, safety trumps exposure to harm.
- Adopt an error-management philosophy at the department level that creates different tiers for dealing with firefighters who make mistakes versus firefighters who willfully violate policies.
- Explore and adopt the concept of crew resource management to improve leader performance, crew safety and incident management.
- "Aggressive" philosophies need to be transitioned to "intentional" actions philosophies. Blind "duty to act" mindsets are institutional climates that place firefighters in jeopardy.
- Fire departments must share knowledge gained from near misses that were prevented by following procedures as well as those that occur due to error.
- The near-miss reporting system needs to add additional questions about department SOPs, supervisor training and organizational elements to assist reviewers and analysts in the review/analysis process.❖

CASE STUDIES

Case Study 1: Report #05-602

Event Description

Earlier in the shift, my crew and I had noticed a pile of household belongings on the curb. A family had apparently been evicted. We commented that it would probably burn. Sure enough, at 0251 HRS, we received a report of an outside mattress fire at the location we had noticed earlier. When we turned the corner, we saw a wall of fire 30 feet wide and 20 feet high. The entire pile of belongings was ablaze.

We stretched a line, doing a loop around the fire to put a couch out that was only a few feet from a house. We extinguished the couch and started work on the main body of the fire, hitting it from the side yard to push the heat out into the street. After about 30 seconds, the power lines above the trash fire, unnoticed and unplanned for up to this point, snapped, exploding and popping as they fell to the ground. One of the wires brushed me on the way down and nearly landed on my firefighter, who, not surprisingly, had been knocked to the ground and was scrambling to get away. I followed, and we ran out into the street away from the wires.

We checked ourselves, took a few deep breaths and thanked our lucky stars. I called for the power company; we marked where the wires were, went back to our line and finished extinguishing the fire.

Lessons Learned

I failed to mark the power lines above the fire. I did not do an adequate size-up. If I had done size-up correctly, we would have approached the fire differently. I forgot to take in the whole scene. Yes, it was the middle of the night and "only" a trash fire, but by not being fully aware of my surroundings, I came within a couple of feet of losing my firefighter as well as possibly suffering a serious injury myself.

Discussion Questions:

1. The reporter writes this was "the middle of the night and 'only' a trash fire." What strategy do you use to overcome sleepiness and complacency?
2. Are there any steps you can take when you notice potential incidents like this one?
3. Would you use SCBA on this fire? Why?
4. What was used to start the fire?
5. What other tactics might have been employed to reduce exposure?

Case Study 2: Report #06-181

Event Description

On the morning of Dec. 24, 2004, at 0100 HRS, our department responded to a rekindled structure fire in a three-story balloon construction building. The first fire was heavily involved on the previous day, same shift.

The department attempted an interior attack. After some time, the structure was deemed unsafe and the department went to a defensive posture. Approximately 20 minutes later, the OIC created a "task force" of three firefighters from our department and three from a mutual aid department to attempt an interior attack on the third floor. There were no accountability tags from the other department.

When we started walking into the house, I stated that I had "a bad feeling" about the situation and was wary of going back into a home that was deemed unsafe a half an hour ago. As we made our way into the third floor, our department split from the mutual aid department. We all remained on the third floor but in separate rooms.

Another firefighter and I crawled into an attic space to hit the fire while our third member stayed in the room to feed hose around a knee wall to our position. Inside the attic/crawl space, after approximately 2 minutes, we heard a large crash. We reversed our direction and once in the room, we noticed the roof had collapsed. All we could see were stars and the full moon. Our third firefighter was nowhere to be found. He was buried in the collapsed roof, which was made of very heavy slate tiles.

RIT was activated and our member was removed safely by RIT with little entanglement or extrication. Now the two of us were trapped as the rubble had blocked the stairs, our egress. We were assisted through a hole in the rubble to the stairs below the pile after 5 minutes of moving debris. The mutual aid department was then removed.

No injuries, no deaths. However, the firefighter that had the roof fall on him stated he felt the roof hit his head and push him down. He stated had his head been turned in either direction even by a slight amount, he would have a broken neck or been killed.

Lessons Learned

Once a structure is deemed unsafe and you move to a defensive posture, NOBODY goes back in. I also learned that if I have a "bad feeling" to let command know my concerns and not blindly follow orders. Communication goes both ways.

Discussion Questions

1. Think back over your time in the fire service and recall an event where you had a "bad feeling" about a situation. Recount your incident. How did you react? What was the outcome?
2. Describe how you handle the "bad feelings" that creep into your psyche on an incident. What are the catalysts that trigger "bad feelings" for you?
3. What is your reaction when a crewmember comes up and says, "I got a bad feeling about this one?"
4. How large a role does communication and situational awareness play in your decision making?
5. What are the important elements of situational awareness for you? For your crew members? ❖

Looking for More Info?

Check out the Online Resources Page

The National Fire Fighter Near-Miss Reporting System Web site, www.firefighternearmiss.com, recently launched a Resources Page, designed to further promote firefighter safety and respond to user needs.

Access the page through the homepage task bar by clicking on "Resources." You'll be taken to a screen with 11 categories created to provide a dynamic information feedback stream and user-friendly navigation. Here, you can access pertinent information related to firefighter safety, preparing and conducting drills, report data and equipment-related announcements.

While visiting the Resources Page, consider helping out your fellow firefighters by posting a resource. Users are encouraged to submit drills, SOPs, best practices, video clips, photographs, news accounts or other informative material by clicking on the "Submit a File" button and following the easy-to-use submission screen. *Note:* All submissions must be accompanied by contact information so near-miss staff can verify permission to use. Submissions are screened prior to posting. Video clips and photographs are edited and cropped to conceal or otherwise alter the identities of the fire department or individuals depicted. All information posted on the page is for the purpose of preventing firefighter fatalities and injuries, the goal of the National Fire Fighter Near-Miss Reporting System. Resources are in no way intended to embarrass or defame any member of the fire service.

The program is seeking submissions to further develop the 11 categories, which include:

- **Analysis and Statistics** — a repository of information gathered from studying near-miss reports.

- **Drills** — submissions from the fire service that feature or focus on safe practices. Submissions may be in the form of Word documents, PowerPoint presentations or other media formats.
- **Endorsements** — a section where users can review organizations' supporting statements for the National Fire Fighter Near-Miss Reporting System.
- **Grouped Reports** — search yields from incident- or topic-specific requests.
- **News Articles and Publications** — a section devoted to media articles and other documents that foster or are related to firefighter safety.
- **Notifications** — equipment and product information, advisories and recalls.
- **Other** — safety-related materials that don't fall into any of the other categories.
- **Report of the Week** — the storehouse for the system's weekly e-mail drill program.
- **Testimonials and Success Stories** — postings from departments and individuals describing how they benefit from www.firefighternearmiss.com.
- **Videos and Photos** — visual media that depicts near misses.
- **Tools** — instruments, best practices and other media developed by fire departments to incorporate near miss into their departments.

The Resources Page is intended to provide users with an added benefit to using the system. Submitting near-miss reports as well as submitting items to the Resources Page will continue to support the expanding National Fire Fighter Near-Miss Reporting System as it strives to reduce firefighter death and injury.

Visit the Resources Page of www.firefighternearmiss.com today! ❖

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