

Preliminary Best Practices Identification

By: Chris Neal

One of the several methods being used to reduce line-of-duty deaths and injuries is to identify operating methods, procedures, and policies which have been demonstrated to provide safer conditions while still getting the job done. What slows the effectiveness of this method is that no single department has all the answers. Thus it is necessary to seek the advice of many departments in order to compile even a beginning list of “best practices.”

With an early effort to gather examples of best practices, the National Fallen Firefighters Foundation and the Public Entity Risk Institute asked the Fire Protection Publications unit of Oklahoma State University to obtain examples of best practices from two panels of expert fire personnel – one from the United States and the other from the United Kingdom (UK). These examples are still very valid, and are preceded here by additional examples of safe-operating recommendations from the National Institute of Occupational Health and Safety (NIOSH).

This joint NFFF – PERI project was headed by Chris Neal, Director of OSU’s Fire Protection Publications, with guidance from Gerry Hoetmer, Executive Director of PERI, Professor Robert England (OSU), Nancy Trench (FPP), and Chief Dennis Compton.

The following lists of best practices for reducing firefighter deaths and injuries is compiled from NIOSH recommendations and the U.S. and U.K. expert panels. The list is preliminary and subject to review and modification as the larger research project progresses. Clearly, however, the list includes sound leadership and management practices focused on firefighter safety.

NIOSH Recommendations

- Conduct pre-incident planning inspections to facilitate development of a safe fireground strategy.
- Review, revise where appropriate, implement, and enforce written standard operating guideline (SOGs) that specifically address incident command (IC) duties, emergency evacuation procedures, personnel accountability, rapid intervention teams and mutual aid operations on the fireground.
- Train on the SOGs, the incident command system, and lost firefighter procedures with mutual aid department to establish interagency knowledge of equipment, procedures, and capabilities.
- Ensure that the IC maintains the role of directing fireground operations for the duration of the incident or until the command role is formally passed to another individual.
- Ensure that the IC conducts a risk-versus-gain analysis prior to committing firefighters to the interior and continually assesses risk versus gain throughout the operations.

Reducing Firefighter Deaths and Injuries: Changes in Concept, Policy, and Practice

- Consider appointing a separate, but systemically integrated, incident safety officer.
- Ensure that all firefighters are equipped with radios capable of communicating with the IC.
- Ensure personnel accountability reports (PAR) are conducted in an efficient, organized manner and results are reported directly to the IC.
- Revise and enforce policies and guidelines regarding activation of personal alert safety system devices.
- Ensure that firefighters train with thermal imaging cameras and they are aware of their proper use and limitations, and ensure that firefighters are trained and aware of the hazards of exposure to carbon monoxide and other toxic fire gases (“Firefighter Fatality Summary,” 2004: 13).

Best Practices Emerging from U.S. and U.K. Expert Panels

Listed below are the best practices as defined by participants at the U.S. Expert Panel held on 2 May 2005 in Oklahoma City, Oklahoma. The practices are organized into the six major domains emerging from the National Firefighter Life Safety Summit in 2004. These best practices are applicable in most instances to career, combination, and volunteer fire departments. In addition, for each domain, additional good practices identified at the U.K. Expert Panel held on 24 and 25 May 2005 at the Fire Service College in Moreton-in-Marsh are listed.

Domains

I. Health, Fitness, and Wellness

From the U.S. Panel:

- Establish and maintain a comprehensive health and wellness program for career personnel and modified for volunteers. Include medical exams plus physical and mental fitness components.
- Establish standard operating procedures and train for instances of terrorism, criminal acts, and civil unrest.
- Use a joint labor-management fitness planning committee.
- Adopt and enforce a no-smoking and no-tobacco policy.
- Adopt a zero-tolerance drug and alcohol policy appropriate to the type of department.
- Establish an annual job appropriate physical performance test.
- Identify existing medical pre-conditions of personnel, plus establish baseline physical profiles.
- Enforce proper use of safety clothing and equipment.
- Allow self-contained breathing apparatus (SCBA) removal only after Immediately Dangerous to Life and Health (IDLH) air sampling allows.

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- Implement the United States Fire Administration model rehabilitation protocol for personnel.
- Appoint a physical fitness coordinator.
- When appropriate, encourage health club membership.
- Establish station exercise areas.
- Keep records of exposure to hazardous materials above and below allowable limits.
- Establish a critical incident stress debriefing and employee assistance program.
- Enforce the cleaning and decontamination of personal protective gear.

From the U.K. Panel:

- Include a lung capacity test as part of all medical exams, including entry exams.
- Require a health screening exam every three to five years up to age 40; an annual exam every year between the ages of 41 and 49; and an exam every six months after a firefighter reaches the age of 50.
- Require an annual physical fitness test.
- Allow for light duty personnel to be assigned by a shift commander and approve return to operational duty only by permission of a physician.
- Require compulsory fitness programs.
- Require a health staffing conference before a firefighter is allowed to return to work after taking a stress leave.
- Limit a firefighter to four hours of incident work, require rehydration, and use energy bars for nutrition.

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- Develop a policy that requires one day annual self-contained breathing apparatus retraining.
- Provide for the use of a mobile canteen support vehicle at protracted incidents.
- Based on a firefighter's eyesight exam, provide a prescription lens for their self-contained breathing apparatus mask.

II. Vehicle Safety

In the area of vehicle safety, the Panel endorsed the National Volunteer Fire Council's ten-point model for vehicle safety, which is applicable to all types of fire departments. The points include the investigation of all accidents, a loss analysis, the identification of the responsible party, training and retraining of drivers and company officers, and related loss prevention practices. The Panel also endorsed the very detailed "Emergency Vehicle-Safety-Best Practice Assessment" model established by the Volunteer Firemen's Insurance Services, Inc. (VFIS) office, which is also applicable to all types of fire and rescue departments. This assessment consists of more than 50 detailed sub-areas, including available resources, under each of the eleven categories. The assessment includes "best practices" for drivers that focuses on the management of driver behavior through the enforcement of standard operating procedures, speed limitation policy, and an awards program.

In addition, the Panel identified the following best practices:

- Require the same training for career and volunteer personnel relative to vehicle operation.

Reducing Firefighter Deaths and Injuries: Changes in Concept, Policy, and Practice

- Strictly enforce the use of seat belts.
- Uniformly enforce vehicle safety-related rules.

Additional practices from the U.K. Panel:

- Mandate strict driver certification practices.
- Develop an effective training strategy for seat belt use.
- Remind operators that the possibility of litigation is ever present based on not following vehicle safety policies and procedures.
- Use traffic incident analysis as a training device.
- Establish and differentiate response protocols for various types of alarms and dispatch.
- Provide special training for officers and others responding in cars and light trucks.
- Require that fire brigade standard operating procedures be followed with respect to traffic regulations when operating fire appliances and nonemergency compliance when in a private vehicle.

III. Prevention and Public Education

From the U.S. Panel:

- Establish time goals for a business to reopen after various types of fires.
- Strengthen sprinkler ordinances.
- Establish fire-safe cigarette laws.
- Establish and manage citizen-service programs.

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- Establish policies designed to minimize unnecessary building alarms.
- Establish pre-planning activities and improve pre-planning reviews and turn-around time for such reviews.
- Streamline code enforcement practices.
- Establish civil liability for preventable fires.
- Provide safety training to hotel, hospital, and “meeting place” employees.
- Encourage the development and use of public safety education programs

From the U.K. Panel:

- Prevent the use of dangerous buildings or occupancies.
- Emphasize prevention and public safety education as core values for firefighters.
- Develop and use the “Integrated Risk Management Plan” for all communities.
Four detailed papers describing this methodology are available through the Public Entity Risk Institute (see <http://www.riskinstitute.org/peri/>).
- Restrict the use of dangerous lightweight construction.
- Intensify anti-arson efforts.
- Intensify policies and efforts to reduce unnecessary alarms.
- Establish community wide fire safety programs.
- Establish strategic public education partnerships.
- Develop “troublesome youth” programs.
- Work with police and other municipal workers to remove abandoned vehicles and structures.

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- Develop special fire fighting training and management policies and procedures to deliver services to non-English speaking communities.

IV. Training

From the U.S. Panel:

- Use certified fire instructors.
- Develop a detailed recruitment manual.
- Validate recruitment and training programs.
- Provide live fire training for all recruits.
- Provide salary enhancements for advanced certifications.
- Ensure enforcement of training site safety.
- Require special certification(s) for live fire training instructors.
- Provide leadership and management education for chief officers.
- Encourage higher education for all firefighters.
- Training officers should be encouraged to join professional associations.

From the U.K. Panel:

- Do not burn abandoned buildings for training purposes.
- Conduct live fire training only at controlled facilities.
- Spend considerable training time on safety practices.
- Use pre-promotion training courses.
- Enforce rigorously a no “horseplay” policy and no hazing policy during training.
- Risk assessments should be conducted for all training exercises.

V. Structural Fire Fighting

From the U.S. Panel:

- Use crew resource management protocols.
- Mandate certified safety officers at all working incidents.
- Develop fire fighting procedures manuals for strategy and tactics for all types of fires.
- Require commanding officer training.
- Develop regional standardization and training for field operations.
- Ensure that all personnel are issued radios.
- Establish improved personnel accountability protocols.
- Prepare for all types of non-fire incidents.
- Mandate enforcement of safety philosophy and practice for structural fires.

From the U.K. Panel:

- Use control points for self-contained breathing apparatus entry into buildings.
- Do not allow the use of understaffed apparatus crews.
- Ensure that high-rise fire fighting operations do not begin until sufficient companies are on scene.
- Use nationally established standard operating procedures for generic risk assessments.
- Be sure that risks-versus-cost strategies are emphasized.
- Establish and enforce a “no self-dispatch” policy.

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- Do not allow action on a pitched roof until the incident commander provides a safety/risk assessment.
- Require a risk and safety findings report after all large incidents.
- Require a performance review of Incident Command personnel after large incidents.

VI. Wildland Fire Fighting

From the U.S. Panel:

- Ensure that all aircraft equipment meets high priority maintenance standards.
- Use only authorized personnel.
- Use large initial attack forces.
- Require special driver-operator training.
- Use only appropriate vehicles.
- Check communications and brief mutual aid crews before assignment.
- Check medical certification reciprocity for out-of-state ambulances.
- Integrate the wildland and structural crews in interface fires.
- Adopt the National Fire Plan (see www.fireplan.gov/overview/whatis.html) for wildland areas.
- Provide joint training for urban-wildland interface situations.

From the U.K. Panel:

- Use high gain aerial photos and ordinance survey maps to control fire fighting units.

- Establish a private/public fund to pay for aerial support.

VII. Best Practices Applicable to All Six Domains

- Investigate all injuries and sicknesses.
- Require safety-oriented training and education for all levels of management.
- Health and safety committees must be driven from the top down.
- The analysis of significant safety events needs widespread dissemination.
- Insurance carriers can offer important information and assistance.
- Risk/safety management applies to all fire department areas, not just operations, and requires appropriate policy and a strong leadership presence.

About the Author

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About the Symposium

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