

Chapter - 9 Safety Management

A. Introduction

The Bureau of Indian Affairs (BIA), as well as the other Department of the Interior (DOI) Wildland Fire Management (WFM) bureaus, are committed to "Zero Tolerance" of carelessness and unsafe actions. The commitment to and accountability for safety is a joint responsibility of all firefighters, managers, and administrators. All land management plans and all suppression plans and actions must reflect this commitment. Individuals must be personally committed and responsible for their own performance and accountability.

1. Firefighting Code of Safe Practices

- a. Every Firefighter, Every Fireline Supervisor, Every Fire Manager, and Every Agency Administrator has the Responsibility to Ensure Compliance with Established Safe Firefighting Practices.
- b. Every supervisor, employee, and volunteer is responsible for following safe work practices and procedures, as well as identifying and reporting unsafe conditions.
- c. Attention to safety factors is critical to the individual employee incident position evaluation process. These evaluations must be honest appraisals of performances. The documentation of sub-standard or unsafe performances is mandatory.

B. Policy

1. Safety Policy

- a. Firefighter and public safety is the first priority. All Fire Management Plans and activities must reflect this commitment *Federal Wildland Fire Policy*, December, 1995 and as revised 2001.
- b. Every BIA supervisor, employee, and volunteer is responsible for following safe work practices and procedures, and identifying and reporting unsafe conditions.

C. Program Goal

The goal of the fire safety program is to provide direction and guidance for safe and effective management in all activities. Safety is the responsibility of

everyone assigned to a wildland fire, and must be practiced at all operational levels from the BIA Director, Regional Director, Superintendent/Tribe to employees in the field. Agency Administrators need to stress that firefighter and public safety always takes precedence over property and resource loss. Coordination between the fire management staff and unit Safety Officer(s) is essential in achieving this objective. Additional Safety Guidance and References: *Fireline Handbook* (PMS 410-1, NFES 0065); *Incident Response Pocket Guide* (IRPG) (PMS 461, NFES 1077).

D. Physical Fitness Standards, Work Capacity, Physical Examinations

Physical fitness plays an important role in improving fireline safety and effectiveness; unfit persons can quickly become a hazard to themselves as well as others. The Work Capacity Tests (Pack, Field and Walk Test) and physical examinations are the means used for fitness screening of employees who have wildland fire jobs.

1. Physical Training

Physical training should include both aerobic conditioning and strength exercises. Agency Administrators and Fire Management Officers (FMOs) are responsible for ensuring firefighter fitness.

Employees who have a position description requiring them to maintain an arduous redcard rating should be authorized one hour a day for fitness conditioning.

Employees who do not have a position description requiring them to maintain an arduous redcard rating, but who have arduous jobs on their redcard, may be authorized up to three hours per week of duty time for fitness conditioning.

The physical training program should be structured and productive. A fitness initiative by the name of "FireFit" has been created to provide a comprehensive, easy-to-follow, fitness curriculum. It can be found on the web site at: <http://www.nifc.gov/FireFit/index.htm>

2. Work Capacity Testing

FMOs are responsible for administering Work Capacity Tests (WCTs) to all employees who will be serving in fitness dependant wildland fire positions. The WCT can be used to evaluate an employee's level of physical fitness at any time. Employees must have medical clearance prior to taking the WCT. The WCT must be passed prior to assigning the employee to wildland fire duty.

- a. Procedure
- The WCT must be administered and passed at the appropriate level prior to Red Card issue. Testing should follow the procedures outlined in the *Test Administrators Guide for Work Capacity Tests*.
 - Persons administering the WCT must understand the testing instructions and be in command of the testing process. The WCT - Job Hazard Analysis (JHA) identified in **Appendix 9-1**, should be used to analyze the testing program hazards at the local unit.
 - Accurate documentation of the test results must be completed for all employees, see **Appendix 9-2**. This documentation must be retained until the next WCT is administered.
 - Test results must be entered into the IQCS. Physical fitness dates entered in IQCS will reflect the date the employee passed the fitness test. Tests should be administered every calendar year, prior to the fire season.
 - BIA policy allows for two hours to be charged against the DOI Administratively Determined (AD) Pay Plan for Emergency Workers for an individual to take the WCT.
- b. Standards for the work capacity test ratings are as follows:
- Arduous- 3 mile walk carrying 45 lbs in 45 minutes or less
 - Moderate- 2 mile walk carrying 25 lbs in 30 minutes or less
 - Light- 1 mile walk with no weight in 16 minutes or less
- c. Fitness ratings for all incident responder positions can be found in the National Wildfire Coordinating Group (NWCG), *Wildland Fire Qualification System Guide* (PMS 310-1).
- d. Frequency of Work Capacity Testing
- The WCT is the accepted interagency screening tool for rating fitness. It should be considered a minimum standard. The WCT is not considered physical training. The test will not be administered repeatedly until an individual is eventually able to complete it. An individual will not be allowed to take the WCT more than twice in a twelve month period. If an individual fails the first test, and a second test is requested, no more than two weeks shall elapse between the first and second tests. If the

individual fails the second test attempt, they will not be allowed to take the test again for 9 months from the date of the failed second attempt.

- If extenuating circumstances exist, the FMO may determine an additional attempt is warranted. In such cases, the extenuating circumstances must be documented and approval received through the regional FMO before the test is administered.

3. Medical Exams

- a. Medical examinations are a diagnostic tool that can give an early warning to employees involved in wildland fire activities about potential health problems.

The BIA is a signatory to the Interagency Wildland Firefighter Medical Standards Program, and as such utilizes the forms and standards of that program. If the employee is determined to be unfit for arduous-level duty based on the results of the examination, they are not allowed to take the work capacity test or participate in wildland fire at the arduous level.

- b. Medical examination requirements see **Appendix 9-3**.
 - For permanent and seasonal BIA employees, there are two circumstances that require a physical examination.
 - 1) First, a position description may require an employee to be qualified for a wildland fire position at the arduous level of fitness.
 - 2) Secondly, regardless of an employee position description, if the employee participates in wildland fire activities at the arduous level, he or she is required to complete a physical examination.
 - For employees working in positions rated moderate or light, there are no medical examination requirements, although a HSQ, see **Appendix 9-4**, must be completed before participating in the WCT.
 - AD/EFF employees, under the age of 45, participating in wildland fire activities at the arduous level will be required to complete a HSQ before participating in the WCT. These employees will not be required to complete the Medical Standards Annual Exam.
 - AD/EFF employees 45 years and older, with an arduous duty position on their red card, are required to take the Medical

Standards Annual Exam prior to participating in the WCT. These employees will not be required to take the Periodic Form every three years.

- No employee or applicant who fails to meet the Medical Standards as a seasonal/temporary or permanent employee may be hired as an AD/emergency firefighter (EFF) in order to circumvent the medical qualification standards.
- The Medical Standards program was intended by Congress for application to federal employees engaged in hazardous occupations. As such, full participation is not required by Tribal programs. At the discretion of their FMO, Tribal employees may elect to participate in the Medical Standards program at a lesser level than Permanent or Permanent Furlough BIA employees. The level of participation by Tribal employees may never be less than that required for AD/EFF employees; that is a pre-WCT HSQ every year while under the age of 45, and an Annual Exam when 45 or older.
- If for any reason, a change in a firefighters medical status emerges between yearly exams, and that change prevents the firefighter from meeting any of the *Wildland Firefighter Medical Standards*, then the firefighter and his/her supervisor have an obligation to report this change to the Community Health Service (CHS). Upon receipt of the information CHS will make a determination regarding the firefighter's status as pending or cleared.
- More information on the *Wildland Firefighter Medical Standards* can be found at the following web site:
http://www.nifc.gov/medical_standards.

E. Safety Refresher Training

1. Policy

- a. The BIA requires all personnel who will serve in a fireline position to participate in 8 hours of annual safety refresher training. In addition to red-carded BIA and Tribal personnel, this includes all EFF mobilized for local, regional or national use. Refresher training may be taken in-house or through another NWCG member agency. The refresher will include mandatory hands on fire shelter inspection and deployment practice.

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BIA policy allows for up to 8 hours to be charged against the AD pay authority for an individual to take Annual Safety Refresher Training.

- b. Refresher training should include pertinent local safety issues, as well as discussions on the following:
 - Entrapments

Use training and reference materials to study the risk management process (as identified in the IRPG) and rules of engagement (as appropriate to the participants, e.g., LCES, Standard Firefighting Orders, Eighteen Watch Out Situations, WFSA direction, Fire Management Plan priorities, etc.).
 - Current Issues

Review and discuss identified “hot topics” and “national emphasis topics” as found on the current WFSTAR web site at: <http://www.nifc.gov/wfstar/index.htm>. Review forecasts and assessments for the upcoming fire season and discuss implications for firefighter safety.
 - Fire Shelter

Review and discuss last resort survival. Conduct “hands-on” fire shelter inspections. Practice shelter deployments in applicable crew/module configurations. When possible practice shelter deployments should be conducted in rough terrain and windy conditions. No “live fire” exercises for the purpose of fire shelter deployment training will be conducted.
 - Other Hazards and Safety Issues

Choose additional hazard and safety subjects, which could include SAFENET, current safety alerts, site/unit specific safety issues and hazards.
- c. The WFSTAR website has been established to provide a centralized resource for instructors of refresher training. This web site can be found at: <http://www.nifc.gov/wfstar/index.htm>.

F. Food and Nutrition

Nutritious food can be a morale booster, but more importantly, it fuels muscles for hard work and internal organs for health and fitness. A firefighter may burn 5,000 to 6,000 calories a day. These calories must be

replaced to avoid cramping, fatigue, and impaired judgment. Government-provided food must be low in fats and high in complex carbohydrates.

Drinks provided must replace essential fluids lost from the body during exercise. On a normal fireline assignment, firefighters may replace 12 or more quarts of fluids a day. In some cases, firefighters may need to replace one to two quarts of fluids per hour. Water is an excellent way to replenish fluid loss. Natural juices and sport drinks contain energy-restoring glucose. Avoid caffeinated, carbonated, and "diet" drinks.

G. Fatigue

Firefighting is hard, dirty, and inherently dangerous work. The fire itself creates much of that danger, but fatigue is a less visible threat. Without enough sleep and rest even the fittest worker tires. Fire management staff, dispatchers, and support personnel are subject to long hours and high levels of stress as well. At any level in the fire organization or management, fatigue can lead to mistakes which result in accidents and injuries. Here are some ways to monitor fatigue:

1. Management of Fatigue

- a. Managers and incident management teams should establish work and rest schedules that minimize fatigue in the following ways:
 - Establish record-keeping systems that track crew work time.
 - Plan and strive to provide one hour of sleep or rest for every two hours worked.
 - When deviating from work/rest guidelines, the Agency Administrator or IC must approve in writing.
 - Start each operational period with rested crews.
 - Provide an adequate sleep environment.
 - Breaks during fire operations should be from 10 to 30 minutes in length.
 - Frequent breaks of between 10 to 30 minutes should be encouraged.
- b. The pulse is a good way to gauge fatigue. The pulse should recover to less than 110 beats per minute; if not, a longer break is needed. A firefighter's wake-up pulse can signal potential

problems. If it is 10% or more above normal, it can mean fatigue, dehydration, or even a pending illness.

H. Work/Rest Guidelines

In order to assure safe, productive fire operations, supervisory fire management personnel and fire program management must manage work/rest periods for crew, overhead and support personnel. BIA policy follows guidelines outlined in the NWCG *Interagency Incident Business Management Handbook* (PMS 902, NFES 3139), Chapter 10, Section 12.7.

1. Policy For Work/Rest

- a. Work Rest Guidelines should be met on all incidents. Plan for and ensure that crews, overhead personnel, and support personnel are provided a minimum 2:1 work to rest ratio (for every 2 hours of work or travel, provide 1 hour of sleep and/or rest).
- b. The IC or Agency Administrator shall justify and document, in the daily incident records, work shifts exceeding 16 hours, and periods that do not meet 2:1 work to rest ratio, including travel time.
- c. Any period where the 2:1 work/rest ratio is not met should be the exception. However, in those situations where it does occur, incident management personnel will work towards resuming 2:1 work/rest as quickly as possible. Documentation should include mitigation measures employed to reduce fatigue.
- d. Days Off
 - Supervisors must manage work schedules for initial attack, dispatch and incident support personnel during extended incident operations. Every employees schedule should include regularly scheduled days off, regardless of fire activity. During periods of non-routine or extended activity, employees will have a minimum of 1 day off in any 21 day period.
 - If an employee has been on assignment away from their home unit, upon completion of a 14 day assignment and return to the home unit, two days off will be provided and charged to the incident. Pay entitlement, including administrative leave, for a paid day off cannot be authorized on the employee's regular day off at their home unit.
 - AD/EFF employees are not entitled to a paid day off upon release from the incident.

e. Length of Assignment

- An assignment is defined as the time period (days) between the first full operational period at the first incident or reporting location on the original resource order, and commencement of return travel to the home unit.
- Standard assignment length is 14 days, exclusive of travel from at to home units. Possibilities for extensions are identified below.
- Time spent in staging and preposition status counts toward the 14-day limit, regardless of pay status.
- Assignments may be extended in situations where life and property are imminently threatened, suppression objectives are close to being met, a military battalion has been assigned, or replacement resources were ordered and unable to fill.
- Upon completion of the standard 14-day assignment, an extension of up to an additional 14 days may be allowed (exclusive of mandatory day off). Regardless of the duration of the extension, prior to the 21st day, two mandatory days off will be provided.
- Upon release from the assignment, regardless of extension duration, two mandatory days off will be provided immediately following the return to the employees home unit, chargeable to the incident.
- "Military battalions" are mobilized on a 30 day commitment (including training and travel), by prior agreement, as well as the Crew Advisors and Battalion Liaisons assigned to those units. Military Crew Advisors and Battalion Military Liaisons can expect to be staged in hotel accommodations up to 5 days prior to actual assignment to a military unit, at which time the 30 day commitment begins.
- Assignments to Federal Emergency Management Agency (FEMA) incidents may also be extended to 30 days. However, ICs will give strong consideration as to the health and condition of these crews by varying the intensity and exposure of their assignments.

I. Heat Stress

Heat becomes a problem when humidity, air temperature, and radiant heat combine with hard work to raise body temperature beyond safe limits. Sweat is your main defense. Everyone on the fireline must understand the importance of drinking water often.

There are three forms of heat stress. The mildest is heat cramps. Heat stress can progress to heat exhaustion and eventually heat stroke. Heat stroke is a medical emergency! Delayed treatment can result in brain damage and even death. At the first sign of heat stress, stop work, get into the shade, and begin drinking fluid.

J. Smoke and Carbon Monoxide

For decades, firefighters and fire managers have been concerned about the health effects of smoke from wildland fires. In 1997, a NWCG team studying the short and long-term effects of exposure to smoke reached consensus on a risk management plan that could be implemented within the existing fire management structure.

In brief, participants concluded that while toxic emissions were present in smoke, that the incidence of exposure in excess of Occupational Safety and Health Administration (OSHA) permissible exposure limits was relatively low (fewer than five percent of prescribed fire cases, even less in wildfire), and that documented health effects were moderate and often reversible.

Call United States Department of Agriculture (USDA) Forest Service, Technology and Development Program, Publications, (406) 329-3978, and ask for *Health Hazards of Smoke, Recommendations of the Consensus Conference*, April 1997 (Item Number 97512836). Copies are available free of charge in limited numbers.

1. Tactics to Minimizing Exposure to Smoke

- a. Include smoke hazards on the ICS-215A worksheet at planning and briefing sessions.
- b. Use flanking attack as opposed to head attack (where appropriate), in heavy smoke situations.
- c. Minimize mop-up when possible.
- d. Adjust operational periods on mop-up to avoid periods of inversion.

- e. Use time and patience instead of water to put the fire out: use burn piles, allow areas to burn themselves out. Rely on burn-up instead of mop-up.
- f. Minimize snag felling, consistent with safety concerns, to avoid putting heavy fuels on the ground that will require mop-up.
- g. In heavy smoke conditions, give up acres to gain control.
- h. Fire behavior forecasts should discuss smoke and inversion potentials.
- i. Locate camps and incident command posts in areas that are not prone to inversions.
- j. Reduce dust by watering roads at the incident, on drier roads leading to the incident, and in the incident base area.
- k. Use minimum impact suppression techniques (MIST).

K. Driving Limitations

1. Policy

- a. This policy addresses driving by operations personnel actively engaged in wildland fire or all-risk activities; including driving while assigned to a specific incident (check-in to check-out) or during initial attack fire response (includes time required to control the fire and travel to a rest location).
- b. Agency resources assigned to an incident or engaged in initial attack fire response will adhere to the current BIA work/rest policy for determining length of duty day.
 - No driver will drive more than 10 hours (behind the wheel) within any duty-day.
 - Multiple drivers in a single vehicle may drive up to the duty-day limitation provided no driver exceeds the individual driving (behind the wheel) time limitation of 10 hours.
 - A driver shall drive only if they have had at least 8 consecutive hours off duty before beginning a shift.

Exception to the minimum off-duty hour requirement is allowed when essential to 1) accomplish immediate and critical

- Documentation of mitigation measures implemented to manage fatigue, as provided by the existing work rest guidelines, is also required for drivers who exceed 16 hour work shifts. This is required regardless of whether the driver is still compliant with the 10 hour individual (behind the wheel) driving time limitations.
- c. Casuals hired as drivers when employed by BIA
- In accordance with the BIA Motor Vehicle Policy, Casuals hired as drivers are required to possess a valid driver's license in order to operate a motor vehicle and the Casual must also have safe driving record in carrying out duties in support of wildland fire operations.
 - Agencies should recruit prior to fire season a pool of drivers. They must submit the General Services Administration (GSA) Form 3807, Government Motor Vehicle License and Driving Record in advance to verify they have a favorable driving record. The GSA Form 3807 will be processed through Regional channels to retrieve the driving record of the application with the State, or National Driver Registry and applicable Tribe. Regional Directors can contact the Division of Safety and Risk Management for information on completing and submitting GSA Form 3807.
 - Meeting the qualification requirements for a motor vehicle license is a condition of employment with the BIA for those individuals whose duties require the operation of a motor vehicle for official Wildland operations business. Failure to adhere to the policy will result in automatic termination of the casual.

L. Personal Protective Equipment (PPE)

1. Policy

All operational personnel on wildland fires are required to use PPE. Employees must be trained to use safety equipment effectively. Common permanent-press materials are not to be worn, as they melt and stick to the skin when exposed to flame or heat. Because most synthetic fibers melt when exposed to flame or extreme radiant heat, personnel should wear only undergarments made of 100 percent cotton or wool, aramid, or other fire resistant material.

2. Required PPE

- a. 8" high laced leather boots with lug soles (condition of hire)

Personnel assigned to wildland fires must wear heavy duty, all leather, lace-type work boots with non-slip (Vibram type), melt-resistant soles and heels. The leather top must be at least 8 inches in height, measured from the bottom of the heel. The boots are a condition of hire for firefighting positions and are purchased by the employee prior to employment. Non-traditional style boots (e.g., Glacier Boot) that meet the footwear standard as described above are authorized for firefighting.

- b. Fire shelter

Fire shelters will be issued and worn by all line personnel. They will be inspected regularly, and "training" shelters will be deployed annually at required refresher safety training. Supervisors and firefighters must never rely on fire shelters instead of using well-defined and pre-located escape routes and safety zones. The shelter is to be viewed as a last resort, and will not be used as a tactical tool.

- c. Hard hat with chin-strap

- Personnel must be equipped with hard hats and wear them at all times while on the fireline. Hard hats must be equipped with a chin strap—which must be fastened while riding in, or in the vicinity of, helicopters.
- Helicopter crew persons and helitack crews will be issued and wear flight helmets—with chin strap securely fastened when riding in helicopters. All contract helicopter personnel must comply with this standard.
- Acceptable helmets for fireline use are "Helmet, safety, plastic" (NFES 0109, 8415-01-055-2265/GSA) listed in NWCGs *National Fire Equipment System Catalog: Fire Supplies and Equipment*, or equivalent helmet meeting 1977 NFPA Standard requirements.

- d. Aramid shirts

- e. Aramid trousers

- f. Leather gloves

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- g. The Job Hazard Analysis (JHA) will determine when eye and hearing protection is required.
- h. Special PPE and a JHA are required for operations involving aluma-gel. Aluma-gel mixing crews must be equipped with eye protection, fire retardant anti-static or 100 percent cotton coveralls, dust masks, and gloves.

- i. Eye and Face Protection

The following positions require the wearing of eye protection: nozzle person, chainsaw operator/faller, heliport and ramp personnel, and retardant mixing crew. Other personnel in the immediate vicinity of these operations may also require eye protection. Face shields providing full face protection must be worn by Terra-Torch nozzle operators and power sharpener operators.

- j. Hearing Protection

- Personnel who are exposed to a noise level in excess of 80db must be provided with, and wear, hearing protection. This includes, but is not limited to, chainsaw operators/fallers, pump operators, helibase and aircraft ramp personnel, retardant mixing personnel, and any other personnel exposed on a regular basis to damaging noise levels.
- Seasonal fire suppression personnel must be issued two pairs of earplugs (either universal or fitted), at the beginning of the fire season. Other fire crew members must be issued earplugs upon fire assignment. Personnel must be trained to use and clean earplugs to prevent hearing damage and hygiene problems. Hearing protection may be required on helicopter flights.

- k. Face and Neck Protection

Nomex "shrouds" are not required PPE. If used, the shrouds must meet the design and performance requirements identified in the NFPA 1977 *Standard on Protective Clothing and Equipment for Wildland Fire Fighting*, 1998 ed.

- l. Leg Protection

Chainsaw chaps, in good condition, must be worn by all chainsaw operators/fallers and swampers.

M. Fireline Safety

1. Incident Briefings

- a. The fire manager must ensure that safety briefings are occurring throughout the fire organization, and that safety factors are covered with incident personnel at all operational briefings.
- b. The IC, Safety Officer, Fire Behavior Analyst, and remainder of the command and general staff will use the 10 Standard Fire Orders, 18 Watch Out Situations, and the LCES Analysis of Tactical Applications on the Incident Action Plan Safety Analysis (ICS 215-A) for guidance at strategy meetings, during briefings, and when developing the incident action plan, safety message, and medical plan.
- c. A web site has been established that incorporates a daily safety message called "Six Minutes for Safety". The web site address is: <http://www.nifc.gov>.
- d. The elements of a briefing checklist, adopted by NWCG and identified in the IRPG, should be used in all operational briefings, see **Appendix 9-5**.

2. LCES—A System for Operational Safety

- a. Purpose
 - LCES is a safety procedure put in place before fighting the fire. It is a self-triggering mechanism that functions sequentially: lookouts assess—and reassess—the fire environment; lookouts communicate to each firefighter threats to safety; firefighters use escape routes and move to safety zones.
 - L - Lookout(s)
 - C - Communication(s)
 - E - Escape Route(s)
 - S - Safety Zone(s)
 - 1) Before safety is threatened, each firefighter must be informed on how the LCES system will be used.
 - 2) The LCES system must be continuously reevaluated as fire conditions change.
 - While individual lookouts may be designated and posted, all firefighters should be alert to changes in the fire environment and have the authority to initiate communication.

- b. Using the Principles of LCES for Risk Analysis
 - "Safety" is defined as freedom from exposure to danger, exemption from injury, and to protect from accident. Being safe requires knowledge and skill in methods of avoiding accidents, injury, and exposure to hazards. As such, it requires an ability and attitude that grows with experience and training.
 - In fire management activities there are objective and subjective hazards. The objective hazards, such as fire entrapment, snags, rolling debris, and terrain cannot be eliminated—these are risks inherent to firefighting. The possibility of injury or entrapment is always there; the probability may be large or small.
 - Subjective hazards are those that we create and also have control over (attitudes and abilities). By using a set procedure during each operational period, we can ensure our safety by taking the following steps to minimize our exposure to hazards:
 - 1) Define the assignment.
 - 2) Identify the hazards.
 - 3) Analyze and reevaluate the situation as it changes.

3. Risk Management Process

The risk management process is a tool. It helps ensure that critical factors and risks associated with fireline operations are considered during decision-making.

In situations of low complexity you may be able to do your risk management in your head. However, as the situation gets more complex (more hazards or higher probabilities), a more formal risk management process is required.

The Risk Management Process checklist can be found in **Appendix 9-6**, and in the IRPG.

4. Escape Routes and Safety Zones

- a. An **Escape Route** is "a preplanned and understood route firefighters take to move to a Safety Zone or other low-risk area. When escape routes deviate from a defined physical path, they should be clearly marked (flagged)."

- b. A **Safety Zone** is "an area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuelbreaks; they are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of blowup in the vicinity."
- Identification of Escape Routes and Safety Zones is one of the primary responsibilities of any wildland firefighter working on or near the fireline. The following guidelines can be used when selecting Safety Zones:
 - 1) The best escape route is usually fireline constructed against the "black". Similarly, the most secure safety zone is also "the black",
 - 2) A safety zone should be large enough so that the distance between firefighter and flames is at least four times the maximum flame height.
 - 3) If potential for the fire to burn completely around the Safety Zone exists, the diameter should be twice the values indicated above.
 - 4) Factors that will reduce Safety Zone size include reduction in flame height by thinning or burnout operations, shielding the Safety Zone from direct exposure to the flame by locating it on the lee side of ridges or other geographic structures, or reducing flame temperatures by applying fire retardant to the area around the Safety Zone.
 - 5) Keep in mind that these guidelines do not address convective energy.

5. Standard Safety Flagging

The NWCG has established the following standard for wildland fire activities:

- Safety Zones/Escape Routes- Hot-Pink flagging marked **ESCAPE ROUTE** (NFES 0566). When flagging no longer shows valid escape routes/safety zones, remove it immediately.
- Hazards- yellow w/black diagonal stripes, fluorescent, biodegradable 1" wide (NFES 0267).

6. Common Denominators of Fire Behavior on Tragedy Fires

- a. Most incidents happen on the smaller wildfires or on isolated portions of larger wildfires.
- b. Most fires are innocent in appearance before unexpected shifts in wind direction and/or speed results in "flare-ups" or "extreme wildfire behavior." In some cases, tragedies occur in the mop-up stage.
- c. Flare-ups generally occur in deceptively light fuels, such as grass and light brush.
- d. Wildfires run uphill surprisingly fast in chimneys, gullies, and on steep slopes.
- e. Some suppression tools, such as helicopters or airtankers, can adversely affect fire behavior. The blasts of air from low flying helicopters and airtankers have been known to cause flare-ups.

7. Downhill / Indirect Line Construction Guidelines

- a. Management must be aware of the potential hazards of downhill line construction when determining incident objectives and strategies, developing alternatives in the Wildland Fire Situation Analysis (WFSA) process, and providing overall direction to ICs.
- b. Fireline can be constructed with handtools, mechanized equipment, water, or retardant. Some line, in order to be reliable, must be cut to mineral soil, constructed so as to catch rolling material, and built along the wildfire's edge.
- c. As a general rule, construct line moving uphill. If there is no practical alternative to constructing line downhill, do so with extreme caution. Many firefighters have lost their lives attacking wildfires from above. Direct attack methods should be used whenever possible. The following guidelines also apply to fireline that is being constructed some distance from the wildfire's edge, where wildfire behavior cannot be observed and responded to.
- d. The decision is made by a qualified supervisor after evaluating the situation.
- e. Downhill line construction should not be attempted when wildfire is present directly below the proposed anchor point.

- f. The fireline should not lie adjacent to a chute or chimney that could burn out while the crew is in the area.
- g. Communication is established between the crew working downhill and crews working toward them from below. When neither crew can adequately observe the wildfire, communications will be established between the crews, supervising overhead, and a lookout posted where the wildfire can be seen.
- h. The crew must be able to rapidly reach a Safety Zone from any point along the line if the wildfire unexpectedly crosses below them.
- i. A downhill line should be securely anchored at the top. Avoid underslung line if at all possible.
- j. Line firing should be done as the line progresses, beginning from the anchor point at the top. Go as fast as is safe. The burned out area provides a continuous safety zone for the crew and reduces the likelihood of wildfire crossing the line.
- k. Maintain full compliance with the 10 Standard Fire Orders.
- l. Be aware of and avoid the 18 Watch Out Situations.

8. Six Minutes for Safety

Six Minutes for Safety is an interagency safety initiative that, on a daily basis, addresses the high risk situations that historically get firefighters in trouble. The intent of the program is to give firefighters six minutes of training every day on high risk fire activities that are performed infrequently.

All BIA fire programs are encouraged to participate in daily 6 Minutes for Safety training. The program can be accessed at the following web site: http://www.nifc.gov/sixminutes/index_j.asp.

N. Unexploded Ordnance (UXO)

1. Managing the Risk

- a. Millions of acres of in the United States contain unexploded ordnance (UXO), most a result of weapons system testing and troop training activities conducted by the Department of Defense. The risks posed by property containing UXO could be great depending on the types and amount of UXO present and how the property is or may be used.

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- b. Those who use and manage property with UXO, as well as those responsible for making decisions regarding the property, need information on the risks presented by UXO, options for eliminating or reducing the risks, and factors to be considered in the decision-making process.
- c. A person's ability to recognize a UXO is the first and most important step in reducing the risk posed by a UXO hazard.
- d. The following types of UXO are those most likely to be encountered on active military sites and FUD and BRAC sites:
 - Small arms munitions
 - Rockets
 - Projectiles
 - Projected grenades
 - Sub-munitions
- e. UXO may be found fully intact or in parts or fragments. All UXO, whether intact or in parts, present a potential hazard and should be treated as such.
- f. Being Safe Around UXO.
 - "IF YOU DIDN'T DROP IT, DON'T PICK IT UP!"
 - When you see UXO, stop. Do not move closer.
 - Never transmit radio frequencies (including walkie talkies, citizens' band radios, and cell phones).
 - Never attempt to remove anything near a UXO.
 - Never attempt to touch, move, or disturb a UXO.
 - Clearly mark the UXO area.
 - Avoid any area where UXO is located.
 - Keep a minimum of 500 feet away from any UXO that is on fire.
 - Report discovery of UXO to your immediate supervisor.

O. Hazardous Materials

1. Purchasing

Purchase of hazardous materials (products containing chemicals) should be done using waste minimization principles to prevent surplus of product. Many products are sold with a shelf life that can expire before use if not managed properly. Material Safety Data Sheets (MSDSs) should be obtained at time of purchase and used as part of safety briefings.

2. Use

Use of any product containing chemicals must be in compliance with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. The primary elements of that standard require employee training, MSDSs (including hazard determination), inventory of products, and a written hazard communication plan intended to protect employees using the products.

3. Storage

Proper storage of hazardous materials is essential for the protection of employees. This is particularly important in the case of flammables and combustibles. The quantity of product affects storage requirements, and should be considered when purchasing is done. Storage of flammables and combustibles must be in compliance with OSHA 29 CFR 1910.106.

4. Surplus

Avoid the over purchase of products. Surplus products remain the field, and may create a disposal or use problem for the field office that receives them. Any products left behind after an incident must be properly labeled and be accompanied by the appropriate MSDS.

5. Classification

The National Fire Protection Agency (NFPA) 704 HazMat Classification descriptions can be found in the IRPG.

P. Safety For Managers Visiting Fires

The BIA recognizes the need for Agency Administrators to become actively involved in the management of wildfires, and to personally visit an appropriate number of escaped wildfires each year. PPE is required for certain scenarios. If you have any questions, please discuss them with your fire and aviation management staff.

1. Visit to Incident Base

The minimum requirements for PPE at an incident base are the same as all field locations.

- 8-inch leather lace boots with non-slip soles and heels
- Long trousers
- Long-sleeve shirt

2. Visits to the Fireline

- a. When visiting the fireline, there are two major considerations: required PPE, and the required physical fitness and training requirements which vary based on whether or not the manager is escorted or unescorted. Escorts must be qualified at the Single Resource Boss (Crew or Engine) level.
- b. PPE Required
 - 8-inch leather lace boots with non-slip soles and heels
 - Long trousers made of flame-resistant material
 - Long-sleeve shirt made of flame-resistant material
 - Hard hat
 - Leather gloves
 - Fire shelter and hand tool
 - Water canteen and personal first-aid kit
- c. Training and Physical Fitness Requirements
 - If Escorted

No previous training required. No specific physical fitness requirements; however, managers must be able to walk in mountainous terrain and be in good physical condition with no known limiting conditions.
 - If Unescorted

A fitness level of Moderate is required, plus successful completion of the following:

 - 1) Introduction to Fire Behavior (S-190)
 - 2) Firefighter Training/Standards for Survival (S-130)

3. Helicopter Observation Flights

- a. Managers who take helicopter flights to observe fires must receive a passenger briefing and wear the following required PPE:
 - Flight helmet
 - Leather boots
 - Fire-resistant clothing
 - All leather or leather and aramid gloves

- b. Training Requirements can be met by any of the following courses: B1 Basic Helicopter Safety, B3 Basic Helicopter/Airplane Safety, or, S-270 Basic Air Operations. Occasional passengers have no training requirement, but a qualified flight manager must supervise loading and unloading of passengers.

4. Fixed-Wing Observation Flights

- a. No PPE is required for managers who take fixed-wing flights to observe wildland fires; however, a passenger briefing is required, and the flight level must not drop below 500 feet AGL.
- b. Training Requirements can be met by any of the following courses: B2 Basic Airplane Safety; B3 Basic Helicopter/Airplane Safety; or, S-270 Basic Air Operations.

Q. SAFENET

1. Reporting Unsafe Situations In Wildland Fire Operations

- a. The DOI bureaus and the USDA Forest Service have created and adopted a common reporting form and system to report unsafe situations or close calls in wildland fire operations, all-risk incidents, and training events. SAFENET is the "SAFECOM" for on-the-ground fire incidents. SAFENET denotes "safety and health network in fire operations."
- b. The objectives of the form and process are:
 - To provide immediate reporting and correction of unsafe situations or close calls in wildland fire.
 - To provide a means of sharing safety information throughout the fire community.
 - To provide long-term data that will assist in identifying trends.
 - Primarily intended for wildland and prescribe fire situations; however, SAFENET can be used for training and all-risk events.
- c. Individuals who observe or who are involved in an unsafe situation should initiate corrective action, if possible, and then report the occurrence using SAFENET. You are encouraged, but not required, to put your name on the report.

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- d. There is no punishment or penalty for filing a SAFENET. SAFENET submissions may be done anonymously.
- e. Prompt replies to the originator (if name provided), timely action to correct problems, and discussion of filed SAFENETs at local level meetings encourage program participation and active reporting.
- f. SAFENET does not replace agency accident reporting criteria. See the SAFENET form in **Appendix 9-7**.

R. Reviews and Investigation Procedures

1. Introduction

Reviews and investigations are two methods used by wildland fire and aviation managers to ensure or improve safety and efficiency, determine if any policy or operational changes should be initiated, and identify any management system failures. Reviews are usually based on improving performance and increasing safety, while investigations are conducted when an accident or incident with potential for injury or fatality occurs.

Depending on the complexity and severity, reviews and investigations may be conducted at the local, regional, or national level.

2. Policy

DOI and BIA policy require investigation or review of all wildland fires with entrapments and/or fire shelter deployments, multiple injuries, fatalities, escaped prescribed fires, and property or equipment damage of more than \$250,000.

3. Reviews

Reviews address all or any aspects of wildland fire and aviation management. Reviews may focus on program oversight, safety, leadership, operations, specific incidents, preparedness, training, staffing, business practices, budget, planning, interagency cooperation, and linkage between fire and other BIA programs. Review teams will develop findings and recommendations and establish priorities for action.

Reviews may be conducted in the form of Preparedness Reviews, Fire and Aviation Safety Team Reviews (FAST), Individual Fire Reviews, or program specific reviews. An example Delegation of Authority (DOA) for such reviews is attached in **Appendix 9-8**.

4. Incident/Accidents Requiring An Investigation

The following provides guidance and establishes procedures for incident/accident investigations, and should be used as a guide for this procedure. Investigations for the following categories are required, and must be conducted by a trained Team Leader and Chief Investigator. Initial notification to the National Office of Forestry and Fire Management is mandatory. All investigations will follow the policy outlined in the DOI Departmental Manual, Part 485, Chapter 7 (485 DM 7).

a. Entrapment

Defined by NWCG as situations where personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes and safety zones are absent, inadequate, or have been compromised. Entrapments may or may not include deployment of a fire shelter for its intended purpose, and they may or may not result in injury.

b. Incidents with Potential and/or Non-Serious Injury

Include wildland fire-related mishaps that result in serious or non-serious injuries involving multiple personnel, near accidents (which would have resulted in a serious injury or fatality), substantial loss of property (less than \$250,000), or are so complex and fraught with operational discrepancies that it has the potential to produce an accident, serious injury, or fatality given a similar environment or set of circumstances that existed at the time of the incident.

c. Wildland Fire Serious Accident

Defined as accidents where one or more fatalities occur and/or three or more personnel are inpatient hospitalized as a direct result, or in support of, wildland fire operations, and substantial property or equipment damage of \$250,000 or more occurs.

d. Shelter deployment

May occur in situations where individuals are not entrapped. However, any time a shelter is deployed (other than for training purposes), regardless of circumstances, notification to the National Fire and Aviation Safety Officer is required. Level of investigation will be determined at the national level.

5. Investigation Process

Immediately following an incident or accident identified in any of the preceding categories, the following groups and individuals should be notified: Agency Superintendent, BIA National Fire and Aviation Safety Specialist, law enforcement (if appropriate), National Interagency Coordination Center (NICC), Regional FMO, and BIA Director, Branch of Fire Management.

- a. Following initial notifications, the Director, Branch of Fire Management will form the investigation team and coordinate their dispatch through the National Interagency Coordination Center (NICC). Investigation team composition, as outlined in 485 DM 7, is as follows:
 - Team Leader

A senior BIA management official, at the equivalent agency superintendent level. The team leader receives a DOA from the Regional Director, and then acts to direct the investigation and serve as the point of contact with the BIA safety office and Bureau Designated Agency Safety and Health Official (DASHO).
 - Chief Investigator

A qualified accident investigation specialist responsible for the direct management of all investigation activities. The chief investigator reports to the team leader.
 - Accident Investigation Advisor

An experienced safety and occupational health specialist or manager who acts as an advisor to the team leader, to ensure that the investigation focus remains on safety and health issues. The accident investigation advisor also works to ensure that strategic management issues are examined.
 - Technical Specialists

Personnel who are qualified and experienced in specialized occupations, activities, skills, and equipment, addressing specific technical issues such as fire operations, fire behavior, weather, and terrain.
- b. The senior Agency Administrator/Line Officer with jurisdiction (usually the Regional Director) will receive the factual and management reports once they have been completed by the

Investigation Team. The Agency Administrator/Line Officer, in conjunction with the BIA National office of Forestry and Fire Management, will convene a board of review (if necessary) to evaluate the adequacy of the factual and management reports and suggest corrective actions

6. Fire and Aviation Team (FAST) Protocols

A FAST is activated during periods of high wildland fire activity. They assist agency administrators in the mitigation of critical operational issues. The FAST can also assist the agency administrator by providing guidance on safe fire and aviation activities, reviewing and clarifying compliance with OSHA abatement plans and other safety-related action plans, and provide short-term technical or managerial assistance.

a. Requests

Requests for a FAST will be routed through agency's Multi-Agency Coordinating Group (GMAC) representative. The request must specify mission objectives and skills required. FAST teams receive Delegation of Authority (DOA) from the GMAC. If the GMAC is not activated and an Agency or Tribe employs the services of a FAST, the operational and reporting protocols described herein should be maintained. The national Multi-Agency Coordination group (NMAC) may order a FAST team for multi-area assignment(s). In these instances, the NMAC will be responsible to complete a DOA for the team, to coordinate with the GMACs involved, and to follow the FAST management duties listed below.

b. Membership

FAST composition should be interagency whenever possible. At a **minimum**, a FAST should include the following:

- A team leader that is qualified as an agency administrator or fire/aviation program leader, selected with the objectives of the mission in mind.
- A safety and health manager.
- Technical experts necessary to address the objectives set out in the DOA.
- Scribe (if available).

The assigning GMAC has the responsibility to ensure technical representatives assigned to the FAST are qualified at or above the complexity level of the operation being reviewed or assisted.

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c. Operating Procedures

- The GMAC group or assigned representatives will conduct an entry briefing with the FAST to review and provide the DOA, specific tasks, issues, incidents/ organizations/operations, and time frames allotted to complete the review(s) and/or provide assistance.
- Each agency representative on the GMAC will notify the respective agency field-unit managers of the impending visit by the FAST. The Zone or Local Coordination Centers will notify the IC (when applicable) and / or the local unit manager responsible for the incident/organization/operation to be reviewed and/or assisted.
- The FAST will provide an entry briefing with the Agency Administrator and assigned ICs responsible for oversight of an incident, or the appropriate manager of the organization/operation being reviewed or assisted.

d. Reporting

The FAST should report regularly to the GMAC as agreed during the entry briefing. FAST operational activities are preeminent, however it is critical that significant findings, solutions, and observations be recorded and reported. Reports need not be lengthy nor include detail beyond that necessary to describe the conditions, mitigations, or other significant safety-related details of the assignment. The FAST will prepare a report for each incident/organization/operation reviewed or assisted (mission segment). Upon completion of the mission the GMAC will conduct an out-briefing with the FAST, who will then present the final report. (See "FAST Final Report Outline", contained in Delegation of Authority – Template, **Appendix 9-8**.)

- The GMAC coordinator will forward a copy of the mission segment report(s) to the agency administrator or IC responsible for the incident/organization/operation which was/were reviewed or assisted for necessary follow up actions. The GMAC coordinator will forward a copy of the final report to all members of the GMAC and to the NICC coordinator at the National Interagency Fire Center (NIFC) in Boise, ID. The NICC coordinator will forward the copy to the Chair, FAST for necessary follow up actions, trend analysis, and archiving.

e. Administration

Each GACC will be responsible for maintaining a list of qualified FAST members, identified by area(s) of expertise. If the organizing GMAC requires assistance to form a team, requests may be forwarded to the Federal Fire and Aviation Safety Team (FFAST), located at NIFC, for names of qualified members. (See Delegation of Authority and Reporting templates in **Appendix 9-8.**)

S. Firefighter Burn Injury Protocol

The following procedures will be used when DOI employees sustain burn injuries, regardless of agency jurisdiction. These procedures will also apply to federal employees, casuals, and other personnel covered by the Federal Employee's Compensation Act who are burned during a wildland fire operation within DOI jurisdiction.

1. Procedures

After on-site medical response, initial medical stabilization, and evaluation are completed, the agency administrator will coordinate with the attending physician to ensure that an employee whose injuries meet any of the following burn injury criteria (identified by the American Burn Association as warranting immediate referral to an accredited burn center) is immediately referred to the nearest regional burn center. A list of possible burn care facilities can be found at: <http://www.blm.gov/nifc/st/en/prog/fire/im.html>.

The decision to refer the employee to a regional burn center will be made directly by the attending physician or may be requested of the physician by the agency administrator.

a. Burn Injury Criteria

- Partial thickness burns (second degree) involving greater than 5% Total Body Surface Area (TBSA).
- Burns involving the face, hands, feet, genitalia, perineum, or major joints.
- Third-degree burns of any size are present.
- Electrical burns, including lightning injury are present.
- Inhalation injury is suspected.
- Burns are accompanied by traumatic injury (such as fractures).
- Individuals are unable to immediately return to full duty.

It is imperative that action is expeditious, as burn injuries are often difficult to evaluate and may take 72 hours to manifest themselves. When there is any doubt as to the severity of the injury, the required action is to immediately refer and transport the employee to a regional burn center.

APPENDIX 9-1 Work Capacity Testing - Job Hazard Analysis

U.S. Department of the Interior Bureau of Indian Affairs JOB HAZARD ANALYSIS		Date: Page 1 of 3	New <input type="checkbox"/> Revised <input type="checkbox"/> Issued by: (Safety Mgr)
Field Office/work Group		Supervisor:	Qual, Trng, Experience Req'd:
This JHA must be reviewed, approved, and signed by the Agency Administrator:			
Name		Title	Date
BASIC JOB STEPS	POTENTIAL HAZARDS	SAFE JOB PROCEDURES	
Work Capacity Testing	Physical Overexertion	1. Provide prospective test subjects information about the test and describe how to prepare for it.	
		2. Test subjects complete the Health Screen. Only appropriate responses of the prospective subjects to the Health Screen will result in administering the Work Capacity Test.	
		3. Brief test subjects about the test just prior to the test -- answer questions concerning the test. Make them understand they are to quit and get help from one of the Test Administrators on the course if they begin to feel ill during the test.	
		4. Test Administrators monitor subjects for distress during test. Test Administrator is to terminate test if indicated by level of subject distress.	
		5. Provide prospective test subjects official time for fitness training where policy permits.	
		6. Schedule tests when environmental conditions are most favorable.	
		7. Have a person currently qualified in first aid and CPR (with first aid supplies and equipment) on site when testing is done.	
		8. Have unit medivac plan and make sure Test Administrators know how to activate it.	
		9. Make sure test subjects do not exceed a walking pace.	
		10. Ensure test subjects are properly hydrated.	

Work Capacity Testing	Strains and Sprains	1. Provide information to prospective subjects describing how to get into shape for the tests.
		2. Provide prospective subjects official time for fitness training where policy permits.
		3. Brief subjects about the test just prior to beginning.
		4. Monitor subjects for indications of distress and terminate the test for them.
		5. Ensure test subjects have comfortable footwear that provides adequate support and protection to feet and ankles.
		6. Give subjects time to adjust packs for comfort prior to beginning the test.
		7. Provide time prior to starting the test for subjects to warm up and stretch.
		8. Have subjects cool down and stretch after the test.
		9. Make sure the test subjects do not exceed a walking pace.
Work Capacity Testing	Heat Stress	1. Make sure Test Administrators understand the effects of exercising in heat, can recognize the symptoms of heat stress, and how to treat it.
		2. Where possible, schedule tests for the most favorable environmental conditions. Use the Heat Stress chart, <i>Fitness and Work Capacity</i> , 2nd Edition, (p. 29). Avoid the "High" range.
		3. Inform prospective test subjects on how to dress for the conditions and include the information in the pre-test briefing.
		4. Make sure test subjects are aware of the need for acclimatization. Provide time for employees to become acclimatized if conditions of their employment permit.
		5. Test Administrators include heat stress information in the test briefing if appropriate.
		6. Provide water at key points along the test course if conditions dictate.
		7. Test Administrators monitor all test subjects for signs of heat stress, terminate test if stress is indicated, and are prepared to provide treatment needed.

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Work Capacity Testing	Cold Temperature	1. Make sure Test Administrators knows symptoms of cold-related physical effects and are prepared to treat them.
		2. Inform prospective test subjects on how to dress for the conditions and include information in the pre-test briefing.
		3. Locate an indoor facility suitable for testing if conditions warrant.
		4. Postpone testing if conditions warrant.
Work Capacity Testing	Slippery Course Conditions (ice, snow, mud)	1. Locate a suitable test surface. Consider indoor facility, plowed airport, plowed road or other safe area.
		2. Postpone testing if conditions warrant.
		3. Test subjects wear footwear with good traction.
Work Capacity Testing	Traffic	1. Select test course without traffic.
		2. Arrange for traffic control to eliminate traffic hazard.
		3. Make sure test subjects are briefed about traffic hazard and controls implemented prior to the test.
Work Capacity Testing	Pack Rubbing, Chafing, or Straining Subjects	1. Make sure test subjects have practiced with a pack and have become work hardened to carry a pack.
		2. Recommend upper body clothing that protects from pack rubbing.
		3. Makes sure subjects have an opportunity prior to testing to adjust and try out the pack.
		4. Terminate testing for subjects struggling to carry the pack or maintain a pace adequate to complete the test successfully.
		5. Permit subjects to use a self-provided pack that meets the applicable weight requirement.

APPENDIX 9-2 Work Capacity Test Record

To be completed by employee:			
Name (Last, first): _____			
Where employed: _____			
Date test taken: _____			
Test administered by: _____ (print name)			
ICS position for which test is required (highest needed) _____			
Performance level needed (circle one): Arduous Moderate Light			
Type of test taken (circle one): Pack Test Field Test Walk Test			
Work Capacity Test Descriptions:			
	Pack Test	Field Test	Walk Test
Pack weight	45 lbs.	25 lbs.	none
Distance	3 miles	2 miles	1 mile
Time	45 minutes	30 minutes	16 minutes
To be completed by test administrator:			
Test result time: _____			
Employee passed test (circle one): yes / no			
I certify that the pack test was administered according to Bureau guidelines.			
_____ (Signature of Test Administrator)			
_____ (Title)		_____ (Date)	

APPENDIX 9-3 BIA Medical Examination Requirement

Employment Status	Fitness Requirement	Medical Examination Type	
		IMQS	HSQ
Permanent Full Time	Arduous	X	
	Moderate/Light		X
Permanent Furlough	Arduous	X	
	Moderate/Light		X
Temporary Seasonal	Arduous	X	
	Moderate/Light		X
AD/EFF Under Age 45	Arduous		X
	Moderate/Light		X
AD/EFF Age 45 and Older	Arduous	X (annual)	
	Moderate/Light		X

Note: IMQS: Interagency Medical Qualifications Standards Examination

Permanent and Permanent Furlough Employees

- a. Baseline exam in the first year.
- b. A "Periodic Exam" every 5th year when under age 45.
- c. A "Periodic Exam" every 3rd year when age 45 and older.
- d. A "Annual Exam" in intervening years.
- e. Exit exam upon retirement.

Seasonal Employees

- a. Annual Exam every year when under age 45.
- b. a "Periodic Exam" at age 45 and every 3rd year thereafter.
- c. A "Annual Exam" in intervening years when over age 45.

HSQ: Health Screen Questionnaire

APPENDIX 9-4

Wildland Firefighter Health Screen Questionnaire

The purpose is to identify individuals who may be at risk in taking the Work Capacity Test (WCT) and recommend an exercise program and/or medical examination prior to taking the WCT.

Employees are required to answer the following questions. The questions were designed, in consultation with occupational health physicians, to identify individuals who may be at risk when taking a WCT. The HSQ is not a medical examination. Any medical concerns you have that place you or your health at risk should be reviewed with your personal physician prior to participating in the WCT.

The information on this form may be disclosed as permitted by the Privacy Act (5USC552a(b)) to meet employment requirements.

Circle the appropriate Yes or No response to the following questions.

Yes No

- 1) During the past 12 months have you at any time (during physical activity or while resting) experienced pain, discomfort, or pressure in your chest?
2) During the past 12 months have you experienced difficulty breathing, shortness of breath, dizziness, fainting, or blackouts?
3) Do you have a blood pressure with systolic (top#) greater than 140 or diastolic (bottom#) greater than 90?
4) Have you ever been diagnosed or treated for any heart disease, heart murmur, chest pain (angina), palpitations (irregular beat), or heart attack?
5) Have you ever had heart surgery, angioplasty, pacemaker, valve replacement, or heart transplant?
6) Do you have a resting pulse greater than 100 beats per minute?
7) Do you have any arthritis, back trouble, hip/knee/joint pain, or any other bone or joint condition that could be aggravated or made worse by the Work Capacity Test?
8) Do you have personal experience or doctor's advice of any other medical or physical reason that would prohibit you from taking the Work Capacity Test?
9) Has your personal physician recommended against taking the Work Capacity Test because of asthma, diabetes, epilepsy, elevated cholesterol, or a hernia?

Regardless whether you are taking the Work Capacity Test at the Arduous, Moderate or Light duty level, a "Yes" answer requires a determination from your personal physician stating that you are able to participate. For Arduous Duty Employees, if you do not have a personal physician determination allowing you to take the Work Capacity Test, the FMO may request an Annual Form examination through the Interagency Wildland Firefighter Medical Standards Program.

I understand that if I need to be evaluated, it will be based on the fitness requirements of the position(s) for which I am qualified.

Participant Administrator Date

APPENDIX 9-5 Elements of an Incident Briefing

SITUATION

- Fire name, location, map orientation, other incidents in the area
- Terrain influences
- Fuel type and conditions
- Fire weather (previous, current, and expected)
- Fire behavior (previous, current, and expected)

MISSION/EXECUTION

- Command (Incident commander/Immediate Supervisor)
- Commanders Intent (Overall strategy/Objectives)
- Specific tactical assignments
- Contingency Plans

COMMUNICATIONS

- Communication plan (Tactical, Command, A/G frequencies, Cell phone numbers, etc.)
- Medivac Plan

SERVICE/SUPPORT

- Other resources
 - working adjacent
 - available to order
 - aviation operations
- Logistics
 - Transportation
 - Supplies and equipment

RISK MANAGEMENT

- Identify known hazards and risks
- Identify control measures to eliminate hazards and reduce risk
- Identify trigger points for disengagement, or reevaluation of operational plan

QUESTIONS OR CONCERNS

APPENDIX 9-6 Risk Management Process

Step 1- Situational Awareness

Gather Information:	Objectives	Previous Fire Behavior
	Communication	Weather Forecast
	Who's in Charge	Local Factors
	Scout the Fire	

Step 2- Hazard Assessment

Estimate Potential Fire Behavior Hazards - Look up/Down/Around Indicators
Identify Tactical Hazards - Watch Outs
What other safety hazards exist?
Consider severity vs. probability

Step 3- Hazard Control

Fire Orders and LCES Checklist- Mandatory
- Anchor Point
- Downhill Checklist (if applicable)
What other controls are necessary?

Step 4- Decision Point

Are controls in place for identified hazards?
NO- Reassess situation YES- Next question
Are selected tactics based on expected fire behavior?
NO- Reassess situation YES- Next question
Have instructions been given and understood
NO- Reassess situation YES- Initiate Action

Step 5- Evaluate

Personnel: Low experience level with local factors?
Distracted from primary tasks?
Fatigue or stress reaction?
Hazardous attitude?
The Situation: What is changing?
Are strategy and tactics working?

**APPENDIX 9-7
SAFENET**



S A F E N E T
Wildland Fire Safety and Health Network

REPORTED BY

Name (optional) _____ Phone _____

Agency/Organization _____ Date Reported _____

EVENT

Date and Time _____ Jurisdiction/Local Unit _____

Incident Name & Number _____ State _____

Incident Type	Incident Activity	Stage of Incident
<input type="checkbox"/> Wildland	<input type="checkbox"/> Line	<input type="checkbox"/> Initial Attack
<input type="checkbox"/> Prescribed	<input type="checkbox"/> Support	<input type="checkbox"/> Extended Attack
<input type="checkbox"/> Wildland Fire Use	<input type="checkbox"/> Transport to/from	<input type="checkbox"/> Transition
<input type="checkbox"/> All Risk	<input type="checkbox"/> Readiness/Preparedness	<input type="checkbox"/> Mop Up
<input type="checkbox"/> Training		<input type="checkbox"/> Demobed
<input type="checkbox"/> Fuel Treatment		<input type="checkbox"/> Non-Incident
<input type="checkbox"/> Work Capacity Test		<input type="checkbox"/> Other

Position Title

Task

Management Level

Resources Involved

CONTRIBUTING FACTORS

- Fire Behavior Environmental Communications
 Human Factors Equipment Other (Explain Below)

Other:

NARRATIVE

Describe in detail what happened including the concern of potential issue, the environment (weather, terrain, fire behavior, etc), and the resulting safety/health issue. If more room is required, write on a separate piece of paper and include it with this form.

EXAMPLE



NO POSTAGE
NECESSARY IF
MAILED IN THE
UNITED STATES

BUSINESS REPLAY MAIL

FIRST-CLASS MAIL PERMIT NO. 253 BOISE, ID

BOISE ID 837 15-9700

Fold on dotted line

SAFENET

Wildland Fire Safety and Health Network



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 have the option of submitting SAFENET at any level of the organization, but are encouraged to submit it to your supervisor for immediate 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.

File a SAFENET by Phone

1-888-670-3938

Fold on dotted line

Please document how you tried to resolve the problem and list anything that, if changed, would prevent this safety issue in the future.

APPENDIX 9-8

Delegation of Authority - Template Fire & Aviation Safety Team (FAST)

_____ Geographic Area

Situation Summary (Issues and Concerns. Reason for ordering the FAST)

Objectives (Quantifiable)

Team Skills Required (Per Objectives listed above.)

The final team composition will be determined at time of dispatch and members named on the resource order.

Mission

The FAST is to conduct an independent assessment and evaluation of operational and managerial activities (related to the specific objectives stated above) at the following locations (mission segments):

The team may determine visits to other incidents/organizations/operations are appropriate, and may do so after coordination with the GMAC.

The FAST will contact the GMAC Coordinator (describe frequency of contact):

_____.

The FAST is to provide technical or managerial assistance when requested and where necessary to immediately correct an identified, critical problem. The FAST may also provide short-term assistance in managing situations or incidents when requested by the incident, organization, or operation, and when doing so will enable the accomplishment of critical, near-term objectives.

Protocols

The FAST will organize and conduct an entry briefing with the appropriate managers of the locations/incidents identified previously. The entry briefing will provide the objectives and operational parameters of the mission.

Once the mission segment is completed, the FAST will organize and conduct an exit briefing with the same officials or their designees, during which a draft of the mission-segment report will be presented and discussed. Components of this report will include:

Mission Segment Report Outline

- A. Purpose and Objectives
- B. Findings, Commendations, and Recommendations
- C. Follow-up Actions Needed
 - 1. Immediate
 - 2. Long-term
 - 3. Scope [local, area, national]

The FAST will provide a final written report to the GMAC Coordinator upon completion of all mission segments. This report will include:

FAST Final Report Outline

- A. Executive Summary
 - 1. Summary (Findings, Recommendations, Commendations, Assistance Provided)
 - 2. Critical and Immediate Follow-up Actions Required
- B. Mission Segments (Summary of Incidents, Organizations, Operations Reviewed. Include copies of Mission Segment Reports.)
- C. Findings and Trends, Commendations, and Recommendations
- D. Follow-up Actions Needed
 - 1. Immediate
 - 2. Long-term
 - 3. Scope [local, area, national]
- E. A copy of the DOA

The _____ Multi-Agency Coordination Group hereby charters and delegates the preceding authority to _____, FAST Leader, effective on _____.