Cover photo: the Midnight Sun Hotshots hike while working on the Koyukutuk River Fire located northwest of Russian Mission in the Galena Zone in June of 2019. Photo by Chase Maness, crew superintendent
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NEW TO ALASKA?

Alaska is large. The distance between Fairbanks and the western coast of Alaska can be equal to the distance between Boise, Idaho and the Pacific Coast of Oregon, but without roads.

You should receive an Alaska-specific briefing shortly after arrival and before going into the field. If not – ask for one.

All resources should be field-ready upon arriving in state. Make sure you have a 21-day supply of anything you need while in the bush. Do not rely on field stations to stock up. This includes tobacco, special dietary needs, medications, and personal gear such as a sleeping bag, tent, and rain gear. Costs in rural Alaska are inflated and availability of products are limited. Bring cash.

Do not discredit local knowledge in any form, from any source. Please remember and remain constantly aware of your status as a visitor in rural Alaskan settings, including Native culture. Ask questions and spend a moment becoming familiar with your surroundings, local etiquette, and this guide.

Your preparedness and conduct in the field directly affect the health, safety and reputation of you and everyone else involved in your fire operations and support. Be prepared, exercise good judgement, use common sense, show respect, and have fun. Alaska is a unique place with great people. We hope you enjoy your stay.

Feedback and thoughts on this guide are encouraged. Please send feedback to:

Alaska Fire Service – Branch of Fire Training
Blm_ak_afs_fire_training@blm.gov
(907)356-5630
Or AFS Public Affairs
Blm_ak_afs_public_affairs@blm.gov
Fire information: (907)356-5511
Due to Alaska’s size and the remoteness of many incidents, the golden hour may be unrealistic. This should be considered when pre-planning for a medical emergency.

- Be prepared to use the Medical Incident Report (MIR).
- The supervisor on scene will be in charge of the emergency.
- Provide medical attention immediately if it does not endanger yourself or others. Initiate transportation to proper care unit. This could be a local village, Fairbanks or Anchorage hospitals. Implement burn injury protocol if applicable.
- Use aircraft on scene if possible and not restricted.
- If you need air transportation, notify dispatch immediately. Include location, latitude and longitude.
- Notify dispatch because dispatchers can advise emergency response and notify hospitals. They will also make administrative notifications.
- After stabilizing the injured, secure accident area.
- Gather and verify information (who, what, where, when, why).
- Notify supervisor.

**What Dispatch Needs from the Incident**

- Age and gender of individual. Confidentiality is import. Do not pass names, social security numbers, fatality information or any unnecessary information over the radio or teletype.
- Nature of injury.
- Flight following information for aircraft or vehicle information for ground transport.
  > Tail number or vehicle number
> Estimated Time of Departure (ETD) and Estimated Time
Enroute (ETE).

> Manifest including accompanying personnel (souls on board).

> Actual Time of Departure (ATD) and updated Estimate Time of
Arrival (ETA) after departure.

> Whether an ambulance will be necessary to meet fixed wing
aircraft. Fixed wing aircraft should be instructed to contact
dispatch on the appropriate frequency for direction on where to
meet the ambulance.

- Whether individual is to be released after treatment or returned to
the incident.

**Medical Transportation Guide**

**Knowing the difference between a medical transport and a
medivac is important and will help convey the urgency of the
situation. If unsure of which to request, default to MEDIVAC.**

**Medivac**

This is a medical emergency, either a serious injury or illness, for
which immediate medical attention is required. Zone or incident
aircraft can be used, or a transport aircraft can be requested through
the initial attack dispatch or the Alaska Interagency Coordination
Center. Dispatch may choose to use a commercial air ambulance and
will coordinate directly with the air ambulance service.

**Medical Transport**

This is a non-emergency situation in which an injured or ill person
requires transportation to medical care. On the road system, medical
transports are usually dealt with by the involved group using the
911 system to request transport to the appropriate hospital. Non-
emergency civilian medical transports usually bypass Bassett Medical
Center on Fort Wainwright. For field medical transports, the local dispatch usually receives the request for assistance, coordinates air and/or ground transportation, and contacts local medical facilities.

**General Public Medical Transports**

General public medical transports are those that do not involve people working for the federal government or directly for the incident. They are the responsibility of the Alaska State Troopers (call 907-451-5100). The Alaska Fire Service may provide support only at the request of the Troopers.

**Protect Other Personnel**

Anyone responding to assist a sick or injured employee must be notified of the nature of the illness or injury so they can take proper precautions to protect themselves from exposure to bloodborne pathogens or other communicable diseases.
Smokejumper EMTs are highly effective at getting into remote spots, cutting out helispots and administering initial medical care. EMTs are interspersed on the jump list. They might be on any jumpship. All smokejumper aircraft have an extensive trauma kit on board for smokejumper EMT use only.

If requested and available, a load with a trauma/mass casualty kit with aircraft extraction tools can be dispatched from AFS facilities at Fort Wainwright. The load will include up to eight EMTs, or as many qualified EMTs as available along with ex-EMTs and non-EMTs.

A request for smokejumper EMTs must be coordinated through the AICC Initial Attack Coordinator. Requests should include coordinates of the emergency, nature of the emergency, number of people involved in emergency, and other pertinent information.

All smokejumper EMTs are trained at the basic level. Expanded scope practices can be administered to other DOI employees only.

- Smokejumper EMTs can be utilized for remote search and rescue, aircraft crash rescue, and helispot construction for extraction of injured patients.
- Smokejumper EMTs have extensive parachute training specifically focused on landing in remote forested areas. They can be inserted near most incident sites.
ALASKA FIRE ORGANIZATIONS

There are two types of agencies in Alaska responsible for wildland fire management: jurisdictional and protection.

Jurisdictional agencies have the overall land management responsibility for their units. They prepare the overall planning documents that provide strategic objectives for the unit’s wildland fire management program. The major jurisdictional agencies identified in the Alaska Statewide Master Agreement are the Bureau of Indian Affairs, Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, U.S. Forest Service, State of Alaska, U.S. Army Garrison (USAG) Alaska, and Alaska Native regional and village corporations.

Protection agencies provide wildland fire suppression services to the jurisdictional agencies that are party to the Alaska Statewide Master Agreement. The protection agencies are the Alaska Department of Natural Resources Division of Forestry (DOF), the Bureau of Land Management Alaska Fire Service (AFS) and the U.S. Forest Service (USFS).

Jurisdictional agencies work with protection agencies to designate management options, outlined in the Alaska Interagency Wildland Fire Management Plan, that define the expected initial incident response on lands they manage. Protection agencies provide the specified initial response, notify the jurisdictional agency, and request further direction based on the actual incident size-up information.

Decisions for extended attack or non-standard responses are documented and approved in the Wildland Fire Decision Support System (WFDSS). For extended attack incidents, the jurisdictional and protection agencies jointly develop the suppression alternatives. The jurisdictional Agency Administrators must approve the selected alternative. Often, there are multiple Agency Administrators. The
The protection agency evaluates the decision for operational feasibility and implements the selected alternative. When multiple protection areas are affected by a fire, one will assume operational control.

**Protection Agencies**

**Bureau of Land Management Alaska Fire Service**

The BLM AFS is headquartered on Fort Wainwright and is divided into five zones. The Upper Yukon, Tanana and the Galena Zones provide fire suppression services for wildland fires to all jurisdictional agencies within their Zone. The Military Zone provides fire suppression and fuels management on U.S. Army Garrison Alaska lands and public lands that have been withdrawn for military purposes under an agreement with the USAG Alaska. The Southern Zone, based in Anchorage, is the liaison for Native entities and DOI agencies with the DOF south of the Alaska Range. The AFS Protection Fire Management Officers (FMOs) provide that function for DOF north of the Alaska Range. The Galena Zone operates a station in Galena from late May through August. The Upper Yukon Zone operates a turn-key station in Fort Yukon as needed.

The primary initial response force for AFS are smokejumpers and contracted Fire Boss water-scoopers (AT-802Fs).

The AFS crew program consists of two Type 1 Interagency Hotshot Crews (Chena and Midnight Sun IHCs), an entry-level Type 2 Crew (North Star Fire Crew), village-based Type 2 Emergency Firefighter (EFF) crews, and village-based contract Type 2 crews. The AFS Fire Specialist program provides a pool of personnel to support overhead, air operations, suppression, and prescribed fire activities.
The Division of Forestry (DOF) is divided into eight Area offices spread around the state: Fairbanks, Delta, Tok, Valdez/Copper River, Mat-Su, Southwest (McGrath), Kenai/Kodiak and Southeast. All Area offices, except the Southeast Area, are staffed with firefighting personnel and resources during the fire season.

DOF’s primary initial response forces are engines, air tankers, and helitack. DOF also contracts two air tankers – one stationed in Palmer and the other on Fort Wainwright. Agency crews include the Pioneer Peak Interagency Hotshot Crew (IHC) based in Palmer, two Type 2 Initial Attack (IA) crews (Gannett Glacier in Palmer and White Mountain in Fairbanks), two DOF-cooperative Type 2IA crews (Tanana Chiefs and Yukon [Chugachmiut]), and the Type 2 University of Alaska Fairbanks Nanook Wildland Fire Crew. DOF also sponsors and provides annual training, physical fitness tests, and Red Card certification for approximately five Type 2 EFF crews.

U.S. Forest Service

The Chugach National Forest (CGF) has a Forest Fire Management Staff Officer and Forest Aviation Officer position based out of Anchorage. The CGF also staffs a small dispatch center in Anchorage. The Zone Fire Management Organization, based out of Moose Pass, consists of a Zone Fire Management Officer, an Assistant Fire Management Officer, a five-person Type VI engine module, a prevention technician, and a five-person Hazardous Fuels Crew. These resources provide fire, fuels and aviation management to the Cordova, Girdwood and Seward Districts.

The Tongass National Forest (TNF) has a Fire Staff Officer in Ketchikan and a Deputy Fire Staff Officer in Juneau. There are three dispatch offices on the Forest. Ketchikan Dispatch covers the South Zone and is the primary fire dispatch. The South Zone includes Ketchikan, Thorne Bay, and Craig Ranger Districts, and
Misty Fjords National Monument. Petersburg Dispatch covers the Central Zone and dispatches for fires occurring on the Wrangell and Petersburg Ranger Districts. Juneau Dispatch covers the North Zone and dispatches for fires occurring on the Juneau, Sitka, Hoonah, and Yakutat Ranger Districts, Admiralty National Monument, and in the Haines/Skagway area.

There are four Fire Modules on the Forest. The Thorne Bay Fire Module is a four-person Type VI engine module that provides initial attack (IA) response for the South Zone. The Wrangell Fire Module is a three-person hand crew that provides IA response for the Central Zone. The Hoonah Fire Module is a three-person hand crew that provides IA for Hoonah and Sitka Ranger Districts, and the Gustavus/Glacier Bay area. The Juneau Fire Module is a five-person Type VI engine module that provides initial attack for Juneau and Yakutat Ranger Districts, Admiralty National Monument, and the Haines/Skagway area.

Alaska Interagency Coordination Center

The Alaska Interagency Coordination Center (AICC) is the Geographic Area Coordination Center and the focal point for resource coordination, logistics support and predictive services for all wildland fire management agencies in Alaska. Unique to AICC is the Initial Attack (IA) section. This section works with the local dispatch offices and is the point of contact for dispatching and tracking smokejumpers and air tankers statewide. The IA section also issues fire numbers, and fire code numbers when appropriate, for all fires within DOF and AFS protection. The IA Coordinator hosts the daily tactical meeting during fire season.

The AICC website (https://fire.ak.blm.gov/aicc.php) contains a variety of information including the AICC Situation Report, fire weather maps and briefing materials.
Alaska Protection Agencies

- Bureau of Land Management: 191 Million Acres
- State of Alaska: 153.9 Million Acres
- U.S. Forest Service: 27.6 Million Acres

AFS Protection Zones (acres)

- Galena: 93 million acres
- Military: 1.6 million acres
- Tanana: 44 million acres
- Upper Yukon: 52 million acres

Find this and other maps at https://akfireinfo.com/maps/
Alaska Wildland Fire Jurisdiction

Find this and other maps at https://akfireinfo.com/maps/
Fire Management Options

The Alaska Interagency Wildfire Management Plan outlines four management options which determine the default initial response to a wildfire. Options are selected by jurisdictional agencies based upon legal mandates, policies, regulations, resource management objectives, and local conditions including population density, fire occurrence, environmental factors, and identified values. Management options are assigned at a landscape scale and apply across jurisdictional boundaries. Ideally, boundaries are readily identifiable from both the air and ground; are based on fuel types, access, topographic features, natural barriers, and fire regimes; and can be feasibly defended. Management option designations are flexible. They may be changed to reflect long-term changes in land use patterns, values, resource objectives, and/or fuels. They may also be overridden with a non-standard response when local conditions or resource availability warrants. Once a fire moves into the extended attack phase, initial strategies should be reevaluated and actions adapted to reflect changes in risk, objectives, and probability of success.

Four wildfire management options (Critical, Full, Modified, Limited) are employed statewide by federal and state agencies, and Alaska Native Claims Settlement Act (ANCSA) Corporations in order to:

- Prioritize areas for protection actions and the initial allocation of available firefighting resources to achieve protection objectives.
- Optimize the ability to achieve land use and resource management objectives and integrate fire management, mission objectives, land use, and natural resource goals.
- Reinforce the premise that the cost of suppression efforts should be commensurate with the values identified for protection.
Additional information regarding Fire Management Options can be found in the Alaska Interagency Wildland Fire Management Plan on the Alaska Interagency Coordination Center website under the Alaska Wildland Fire Coordinating Group.

**Critical Fire Management Option**

The highest priority for suppression actions. Lands in wildland urban interface and other densely populated areas where there is an immediate threat to human life, primary residences, inhabited property, community-dependent infrastructure, and structural resources designated as National Historic Landmarks should be considered for the Critical Management Option. This classification is applicable to an entire village or town as well as a single inhabited structure.

**Full Fire Management Option**

High priority but below critical. This option provides for protection of moderately populated areas, cultural and paleontological sites, developed recreational facilities, physical developments, administrative sites and cabins, structures, high-value natural resources, and other high-value areas.

**Modified Fire Management Option**

Allows for a response to wildfire that tailors the initial action to the time of year that the fire starts. It provides for an initial response designed to protect identified sites early in the season when the probability is high that they will eventually be affected. However, later in the year this option allows fire-related land-use and resource objectives to be accomplished in a cost-effective manner while still providing appropriate levels of site protection. Areas are assigned target conversion dates (July 10 for most areas). The conversion date can be adjusted based on seasonal severity and fire activity.
Before the conversion date, fires occurring within Modified Option will receive priority after the protection of Critical and Full areas. After the conversion date, the priority for Modified is equal to the Limited Option, and the default initial action is to conduct surveillance, assessment, and site protection as warranted.

**Limited Fire Management Option**

The lowest priority for fire-related resource assignments. The Limited Option is designed for broad, landscape-scale areas where the low density and wide distribution of values to be protected best allows for fire to function in its natural ecological role.

**Unplanned**

A small percentage of lands in Alaska have no management option assigned. No default initial action or priorities have been identified for these areas.
GENERAL ALASKA FIELD SAFETY

• Only drink water from a secure source. Filter or boil all water taken from rivers, ponds, streams, or lakes before drinking and do so only in emergencies.

• Avoid wild animals. Moose are Alaska’s most dangerous animal, especially a cow with a calf or during rut (August to early October).

• Grizzly and black bears are common in Alaska. Keep a clean camp. Bear avoidance and mitigation information is located in the Safety section of this guide.

• Carry insect repellant, a head net, and anti-itch cream. Mosquitos, white socks, no-see-ums and moose flies are prevalent in Alaska. Bees and yellow jackets are also common. Know if you are allergic and take precautions including notifying medical personnel when arriving.

• Personal hygiene is difficult on Alaska fires. Remote areas and primitive conditions are the norm. Wash your hands as often as you can. Use hand sanitizer and “bath in a bag” towels to avoid bacterial and viral infection. Keep a sanitary camp and latrine area. In primitive living conditions, you have a greater chance of contracting hepatitis, MRSA and other unpleasant infections.

• When cutting trees in typical Alaskan tundra, cut stobs under the vegetation mat to eliminate tripping hazards.

• Spruce trees have shallow root systems. They blow down in strong winds, especially after the roots have burned. Avoid working or putting personnel in spruce stands during these conditions.

• Tussocks, tundra and swampy wet areas create very unstable footing. Make sure log decks and bridges are secure.

• Wet feet lead to foot rot. Change socks often, dry boots when off shift, and dry feet after shift. Apply foot powder and moisturizer (i.e. bag balm or foot cream) to keep foot skin from rotting.
• Fuels in Alaska are volatile and flashy. Extreme fire behavior is common in seemingly moderate weather conditions. Expect the unexpected.

• Fire shelters are required personal protective equipment (PPE) in Alaska. Deployment sites are rare in Alaska fuel types. Find wet/swampy areas or stands of hardwoods if deployment is the last resort. Identify escape routes and safety zones early.

**FIRE MEDIC PROGRAM**

The FIRE MEDIC PROGRAM is operated by the Alaska Division of Forestry and BLM Alaska Fire Service to provide incidents with emergency medical personnel and medical kits. Fire Medics meet State of Alaska certification requirements and have authorization for an expanded scope of care, including medications and expanded emergency medical treatments. Fire Medics and equipment are ordered through normal dispatch channels.

**Fire Medic Kit**

The Fire Medic Kit contains a wide selection of medical supplies, including over-the-counter medications. This kit is normally ordered in support of larger incidents. A Medic Unit Leader, one Lead Fire Medic, one Fire Medic and one trainee are commonly ordered along with the kit. Additional supplies to establish a medical unit, such as a tent with poles, cots, table and propane stove, may be ordered through the AFS cache. The kit, named Medical Kit Supply (#008279), weighs approximately 520 pounds.

**Single Medic Kit**

The Single Medic Kit has a smaller selection of the items in the full Fire Medic Kit. This kit is normally used on Type 3-4 incidents and staging areas. A Lead Fire Medic and one trainee are commonly ordered along with the kit. The kit weights approximately 215 pounds.
**Line Pack Kit**

The Line Pack Kit comes in a large first aid backpack (similar in size to the red fire pack). The kit contains basic EMT supplies and over-the-counter meds. The kit does not come with an EMT. The kit weights approximately 45 pounds.

**Trauma/Oxygen Kit**

The Trauma/Oxygen Kit is a large first aid backpack similar in size to the red fire pack but with oxygen. The kit does not come with an EMT. However, an EMT must be on-site or on order and be assigned responsibility for the kit. It weighs approximately 40 pounds.

**SKED Kit**

The SKED Kit is a plastic stock litter-type product that rolls into a 10-inch by 34-inch tube. It weighs approximately 18 pounds.

**Burn Litter Kit**

The Burn Littler Kit is similar to a soft-shell SKED litter with folding stretcher poles. It comes with a supply of burn dressings and sterile fluids to treat burns. It weighs approximately 24 pounds.

**Stokes Litter Kit**

This kit is a two-piece stokes litter, along with the backboard kit listed below and a tie-down ratchet set. It weighs approximately 61 pounds.

**Backboard Kit**

This kit comes in a backpack and contains C-collars, SAM and air splints, spider straps, and a head bed. It weighs approximately 30 pounds.

**Litter Wheel Kit**

The Traverse Rescue Mule II litter wheel uses a single, ATV tire system that simple and quickly attaches to any rigid litter. It weighs approximately 48 pounds.
**AED Kit**

The AED come in a Pelican case with CPR supplies. It weighs approximately 16 pounds.

For further information Contact the Fire Medic Program Coordinator Jon Thomas at 907-356-5869

**MEDICAL PLAN GUIDELINES**

- Contact dispatch for local standard operating guidelines. Large fire medical unit leaders (MEDL) should get a briefing from the Fire Medic Program Coordinator.
- Order fire medics and first aid equipment/supplies as needed.
- Identify incident medical personnel (EMTs/paramedics) and their locations on the incident/fire.
- Obtain description and locations (latitude/longitude) of drop points, helispots, helibase, local runways (surface, length), etc.
- Confirm air and/or ground transportation times to hospital or clinic.
- Identify medivac aircraft and brief the pilot and helicopter manager. If ground transport is used, brief drivers.
- Decision points – Wait for air transport, turn the patient over to a higher-level medic, transport patient taking incident medic off the incident, meet air/ground transport at another location, etc.
- Document the response plan and brief incident personnel.
- Communicate your plan to dispatch.

**Incident Medical Plan Essentials**

- Incident medical aid station location and level of care (EMT/paramedic/etc.).
- Local ambulance services with phone number, response times, and level of care.
• Incident ambulance (if available), location, and level of care.
• Local medivac services with phone numbers, response times, and level of care.
• Hospital and clinic locations and services with address and phone numbers.
• Helipad coordinates and radio frequencies.
• Travel time via air and ground transport.

**Burn Considerations**
- The closest burn unit is at Harborview Medical Center in Seattle.
- Alaska Native Medical Center (ANMC) in Anchorage (907-729-2337) can best evaluate, triage, and potentially treat burns in-state (established relationship with Harborview)
- All burn patients should be transported to nearest hospital where they will triage and determine next level of care needed (ANMC preferred depending on patient location and severity of burn).
- Build your plan accordingly.

**State of Alaska EMS Levels**
**EMT-I:** Basic skills, limited drugs, may have advanced scope of practice
**EMT-II:** Above plus IV therapy and a few drugs
**EMT-III:** Above plus cardiac defibrillation and more drugs
**Paramedic:** Above plus more drugs and a higher level of care

**NATIONAL POISON CONTROL**
(covers Alaska)
800-222-1222 (503-494-8968)
Bear encounters in Alaska are common. However, with proper prevention, mitigation, and response procedures, the situation usually ends well for fire personnel and the bear.

A Few Things to Remember
When Working Around Bears in the Bush

Rule #1 – A fed bear is a dead bear. Bears are extremely food driven. If a bear physically obtains food from humans, it will be back. If this occurs, see response procedures and firearms ordering section below. Even sealed MREs have been eaten. Consider moving camp if possible.

Sanitation – Keeping a clean camp is the best mitigation for keeping bears away. Backhaul trash early and often.

Avoidance – If walking alone, make noise. Scan busy channels to create extra noise. Walk with the wind at your back if possible and avoid areas of thick vegetation such as willows or terrain traps. Statistics show bears are very rarely an issue when encountered in groups of two people or more. Place camps in areas that are visible and away from game trails. River corridors are naturally high traffic areas – unfortunately, these areas are also the most suitable locations to place camps. Avoid streams that have large numbers of salmon running. Never run from a bear!

Monitoring – Leaving a person in camp during shift is common practice. Many of the Alaska emergency firefighter (EFF) crews will choose to leave a camp boss in place while the crew goes out to the line. This provides area oversight, assures cleanliness, and is a good bear deterrent.
Response Procedures for Bear Issues

Communicate – Notify all incident personnel and dispatch/zone.

Hazing – Is used often but has short-lived results. Yelling, starting a chainsaw, lighting a fusee, and using a helicopter (if on the line) have been used. Know your limits. Firearm hazing (warning shots) is not permitted.

Firearms – You may order a shotgun kit if qualified. If not, order a qualified shooter.

Move camp – While this is a logistically taxing operation, it is effective and may be the best option.

Firearm Ordering

Any firearm issued from the warehouse must have an associated qualified shooter. The AFS warehouse keeps a current list of individuals certified to carry. Note that the ordering party does not have to be certified but the name(s) of certified person receiving the firearm must be given at the time of order. The IC or Safety Officer will track the firearm location and its assigned shooter, and will certify that the shooter is within his/her agency requirements. Shotguns will be transported in hard cases with trigger locks to ensure firearm is not exposed to dirt and grime. The magazine and chamber will be empty for transport. The firearm comes with 10 slugs and additional ammunition should be ordered. Order a firearm with a certified shooter as a critical need if necessary. Firearms can be delivered by paracargo.
Reporting Bear Encounters

In order to continue to track occurrences and trends, the IC must follow up with dispatch and/or AFS Zone personnel. In accordance with Alaska Department of Fish and Game (ADFG) defense of life/property procedures, any action resulting in the death of a bear must have a written report submitted to ADFG within 15 days. These forms are issued with all firearms from the AFS warehouse and are located in the firearms case. The hide, claws, and skull of the bear must also be sent to ADFG in the case of a kill. Notify the AFS Safety Manager immediately.

The bear encounter/sighting reporting form should be completed for all encounters and sightings, even when no further contact or issues occur. The form should be turned in to the AFS Safety Manager.

OFF-HIGHWAY VEHICLE OPERATIONS

*NOTE* After Jan. 1, 2018, as per FA-IM-2016-022, BLM personnel will not utilize all-terrain vehicles (ATVs) for any wildland fire management activities, regardless of incident jurisdiction or project/activity location, without a waiver. Consult with Safety Managers for current waivers and status. Employees of cooperating agencies/entities may utilize ATVs and utility terrain vehicles (UTVs) on BLM incidents if allowed by their individual agency/entity policy. UTVs must be equipped with a roll cage.

- Off-road vehicle operation reference; BLM Manual H-1112-1 Ch.17 Off-Highway Vehicle Safety. All requirements listed in this reference must be followed when utilizing OHVs on BLM-managed fires or by BLM personnel.
- UTVO Red Card Qualification required
- ATVs may only have a single rider. Passengers are prohibited even if ATV is designed for two riders.
• UTV passengers are limited to the number of seats installed by manufacturer. Seat belts are required for all occupants when the vehicle is in motion.

• Operators must use required PPE while loading/unloading ATV/UTV. Only qualified operators are permitted to load or unload OHVs.

• Cargo loads shall be loaded and secured as to not affect the vehicle’s center of gravity and shall not exceed manufacturer’s recommendations for maximum carrying capacity.

• When transporting external fuel containers with a UTV/ATV, a 5-pound class BC fire extinguisher must be secured to the vehicle.

• Use only if essential to accomplish mission.

• The following equipment must be carried when operating an OHV in the field:

  > First aid kit – In addition to a standard first aid kit, a bloodborne pathogen protection kit is recommended. Operators should enclose the first aid kit in a sealable plastic bag or other dust and water-resistant container.

  > Personal communications device and spare batteries – This equipment may include a two-way radio, cellular phone, satellite phone, or other BLM-approved equipment.

  > Manufacturer’s tool kit, including a manual and low pressure tire gauge.

• Riding alone in the back country is prohibited unless otherwise authorized.

• All tools or equipment must be securely attached to the vehicle to prevent loose cargo from falling under the wheels, to prevent cargo from striking the rider or vehicle, or to prevent a sudden shift in the center of gravity.
• Operator must be current and qualified to their agency standard.
• Alaska’s landscape is very fragile. Tread lightly!
• Respect the environment. Avoid sensitive areas such as wetlands, sloughs, bogs and meadows.

**Required**

• Operators and passengers must wear Snell or DOT-approved helmet and all other required PPE such as flame-resistant clothing including shirt, pants, gloves, boots. PPE can be ordered from AFS Cache.
• Eye Protection – Goggles, face shield or safety glasses are mandatory if factory-installed windshield is not present.
• Personal communication device (handheld two-way radio, cellphone, satellite phone).

For additional guidance, reference Chapter 14 of the Interagency Standards for Fire and Aviation Operations.
ALASKA BOAT SAFETY

Alaska has one of the highest boating fatality rates in the nation. Do not underestimate Alaska’s cold swift rivers!

- All motorized boats must be registered.
- All vessels must receive a documented inspection, which includes.
  - Hulls – Bottoms inspected. Drain plug(s) installed before launch. General inspection / walk around.
  - Outboard Engines – Belts, hoses and fittings checked. The water pump is operational. A water stream is a telltale that it is. Props and lower units inspected. Engines(s) secure on transom, clamps or bolt nuts tight. Start and warm up the engine for five minutes, monitor gauges, check fuel and cooling systems for leaks. Test forward and reverse gears, steering and emergency cut-off switches.
  - Boats will have a port line, bowline, or stern line to secure boat to shoreline or dock.
- All personnel must wear Coast Guard approved personal flotation devices (PFD). Remain seated while in watercraft. Take fire packs off and sheath on tools.
- Never overload a watercraft. Post the maximum safe load limit on each craft under 26 feet in length.
- Secure cargo to ensure it will not shift when the craft is in motion.
- Spare oar, paddle, pole or other alternate propulsion must be on board.
- A first aid kit and fire extinguisher are required.
- Have a compass and/or GPS.
- Use hand held radio for communication. Dedicate frequency if needed.
• Discuss mission, time of pick up, crew name, overhead names, drop point, boat operator’s name, communicate to ICP or Operations (have a float plan).
• Just like flying, weather can determine mission.
• No smoking.
• Manifest passengers. Can use helicopter manifest style.
• Life ring for boats over 16 feet.
• Sound producing device required, whistle or air horn.
• When using more than one boat; space out on waterway for less wake.
• Give a thorough boat safety briefing to all passengers.

Firefighters load gear onto a boat while a qualified boat operator holds the Zodiac steady.
CRITICAL WEATHER PATTERNS IN ALASKA

**Upper Level Ridge**
- Brings the most lightning to Alaska. Starts with an upper level ridge over Canada, pushing into Alaska
- Lasts for several days/weeks, causing significant drying of fuels
- Weakening ridge allows unstable air to move in along edges, bringing dry thunderstorms
- Breakdown is critical to the fire weather pattern in many areas

**Southwest Flow/Flat Ridge**
- Wettest pattern for most of Alaska
- May signal end of fire season
- The key to bring moisture across the state is the upper level flow parallel to the Alaska Range
- Allows clouds and rain to reach into the usually protected areas near the Alaska-Canada border
- Copper River Basin may be protected by Talkeetna Mountains.

**Backdoor Rain Pattern**
- There is a surface and upper level closed low near Yakutat
- Easterly flow will bring clouds and rain from Canada into the upper Tanana and Yukon valleys
- **The amount and the extent of the precipitation will be difficult to predict.**

(Continue on next page)
**South Winds Aloft**
- Brings moisture to coastal areas
- Creates Chinook winds in areas downwind of mts, i.e. north of:
  - Chugach Mountains for Copper River Basin
  - Alaska Range
  - White Mountains
  - Brooks Range
- Winds can be funneled and very strong through mountain passes near Healy and Delta Junction.

**North Winds Aloft**
- North winds aloft will bring cooler air but little moisture - acts as a dry cold front
- High pressure to north causes strong winds through mountain ranges which funnel and accelerate through passes
- Low temperatures and humidities!
- With strong winds this pattern can increase fire danger.

**Taku Winds**
- One of few patterns that will bring fire danger to Southwest Alaska
- Surface high will exist northeast of the Alaska Panhandle
- Upper flow comes over Canada
- Downsloping over the coastal mountains create strong, dry offshore winds.
Alaska Fire Weather Zones

National Weather Service
Alaska Weather Forecast Offices

Anchorage WFO: Phone (907-266-5167)
Fairbanks WFO: Phone (907-458-3705)
Juneau WFO: Phone (907-790-6824)
https://fire.ak.blm.gov/predsivcs/weather.php

Daily Weather Briefing @ 0945:
(877) 568-4106
Access Code: 824-605-389#

Alaska Predictive Service Areas (PSAs)

FUELS, WEATHER AND FIRE BEHAVIOR
Canadian Forest Fire Danger Rating System (CFFDRS) and Fire Weather Index (FWI)

CFFDRS has been utilized in Alaska since 1992 and accurately portrays the fluctuations in fire season conditions. The FWI system is comprised of codes and indices which fluctuate based on environmental parameters. They are not directly measured in the field, but are instead based on 1400 Alaska Daylight Time (AKDT) weather observations and the previous code or index value. CFFDRS focuses on below surface fuels to determine fuel moisture codes and indices.

**Fine Fuel Moisture Code (FFMC)** – The FFMC is a numeric rating of the moisture content of litter and other cured fine fuels. This is an indicator of the relative ease of ignition and the flammability of the fine fuel.

**Duff Moisture Code (DMC)** – The DMC is a numeric rating of the average moisture content of loosely compacted organic layers of moderate depth. This gives an indication of fuel consumption in moderate duff layers and medium-sized woody material.

**Drought Code (DC)** – The DC is a numeric rating of the average moisture content of deep compact organic layers. This is a useful indicator of seasonal drought effects on forest fuels and the amount of smoldering in deep duff layers and large logs.
**Initial Spread Index (ISI)** – The ISI is a numeric rating of the expected rate of fire spread. It combines the effects of wind and the FFMC on rate of spread without the influence of variable quantities of fuel.

**Buildup Index (BUI)** – This is a numeric rating of the total amount of fuel available for combustion. It combines the DMC and the DC.

**Fire Weather Index (FWI)** – This is a numeric rating of the fire intensity. It combines the ISI and the BUI. It is suitable as a general index of fire dangerous throughout the forest areas of Canada. FWI values can be found at [https://akff.mesowest.org/](https://akff.mesowest.org/)

---

**FWI Structure and Thresholds**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Rain</th>
<th>Relative Humidity</th>
<th>Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Fuel Moisture Code (FFMC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Spread Index (ISI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Weather Index (FWI)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Rain</th>
<th>Relative Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duff Moisture Code (DMC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buildup Index (BUI)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Rain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought Code (DC)</td>
<td></td>
</tr>
<tr>
<td>20° C, or 68° F</td>
<td></td>
</tr>
</tbody>
</table>
### Range Class

<table>
<thead>
<tr>
<th>Range</th>
<th>Class</th>
<th>Forest floor Thresholds and Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to &lt;80</td>
<td>LOW</td>
<td>Ease of Ignition and flammability in fine dead surface fuels shaded by forest canopy.</td>
</tr>
<tr>
<td>80 to &lt;86</td>
<td>MOD</td>
<td>- Use Grass Fuel Moisture Code (GFMC) for cured grasses</td>
</tr>
<tr>
<td>86 to &lt;89</td>
<td>HIGH</td>
<td>- Below 80, little ignition or spread</td>
</tr>
<tr>
<td>89 to &lt;92</td>
<td>V HIGH</td>
<td>- At 86, open flames in forest fuels</td>
</tr>
<tr>
<td>92+</td>
<td>EXT</td>
<td>- At 89, spotting spread common</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- At 92, very intense surface flames</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 96 is the typical maximum value</td>
</tr>
</tbody>
</table>

### DMC – Duff Moisture Code; 15 day or 360-hour time lag

<table>
<thead>
<tr>
<th>Range</th>
<th>Class</th>
<th>Thresholds and Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to &lt;40</td>
<td>LOW</td>
<td>Mid-level drying - a measure of resistance to control.</td>
</tr>
<tr>
<td>40 to &lt;60</td>
<td>MOD</td>
<td>- Represents loosely compacted organic layer 0-4” below surface</td>
</tr>
<tr>
<td>60 to &lt;80</td>
<td>HIGH</td>
<td>- Duff layer not involved below 20</td>
</tr>
<tr>
<td>80 to &lt;100</td>
<td>V HIGH</td>
<td>- At 40, noticeable increase of duff influence on surface fire behavior</td>
</tr>
<tr>
<td>100+</td>
<td>EXT</td>
<td>- Extreme fire behavior becomes possible above 60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- A key factor in fire behavior during June and July</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- One of the inputs to BUI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Maximum values can be over 300</td>
</tr>
</tbody>
</table>
### DC – Drought Code; 53 day or 1288-hour time lag

<table>
<thead>
<tr>
<th>Range</th>
<th>Class</th>
<th>Thresholds and Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to &lt;150</td>
<td>LOW</td>
<td>A measure of seasonal drought effects on forest fuels - a measure of resistance to extinguishment.</td>
</tr>
</tbody>
</table>
| 150 to <350 | MOD   | • Below 300, mop-up relatively easy  
• Between 300 and 500, mop-up becomes more difficult, extensive effort on edges  
• Above 500, dry mop-up not possible and wet mop-up difficult. |
| 350 to <400 | HIGH  | • A key factor in fire behavior in late July and August  
• The other input to BUI  
• Maximum values over 600 during very dry seasons |
| 400 to <450 | V HIGH|                                                                                                                                                         |
| 450+        | EXT   |                                                                                                                                                         |

### ISI – Initial Spread Index

<table>
<thead>
<tr>
<th>Range</th>
<th>Class</th>
<th>Thresholds and Interpretations</th>
</tr>
</thead>
</table>
| 0 to <2     | LOW   | Best indicator of pre-green potential for fire ignition and spread.  
• Changes through day due to windspeed.  
Monitor expected change |
| 2 to <5     | MOD   |  
• Beware of forecast winds of 15mph  
• Below 2, little ignition or spread  
• At 5-8, primarily surface fire  
• Above 10, anticipate extreme fire behavior  
• Wind is an important factor, very wind speeds to calibrate ISI |
| 5 to <8     | HIGH  |                                                                                                                                                         |
| 8 to <11    | V HIGH|                                                                                                                                                         |
| 11+         | EXT   |                                                                                                                                                         |
## BUI – Buildup Index

<table>
<thead>
<tr>
<th>Range</th>
<th>Class</th>
<th>Thresholds and Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to &lt;40</td>
<td>LOW</td>
<td>Overall fuel availability and season severity.</td>
</tr>
<tr>
<td>40 to &lt;60</td>
<td>MOD</td>
<td>• Indicates depth of burn, fuel consumptions and mop-up problems</td>
</tr>
<tr>
<td>60 to &lt;90</td>
<td>HIGH</td>
<td>• At BUI of 40, heavy fuels just begin to burn</td>
</tr>
<tr>
<td>90 to &lt;110</td>
<td>V HIGH</td>
<td>• At BUI of 80, large fire growth more likely</td>
</tr>
<tr>
<td>110+</td>
<td>EXT</td>
<td>• 12-14 rain-free days corresponds to 60-point increase in BUI, beware of crown fire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Standard measure of seasonal severity that combines DMC and DC</td>
</tr>
</tbody>
</table>

## FWI – Fire Weather Index

<table>
<thead>
<tr>
<th>Range</th>
<th>Class</th>
<th>Thresholds and Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to &lt;9</td>
<td>LOW</td>
<td>A general index of head fire flame length that varies through the day due to changes in wind.</td>
</tr>
<tr>
<td>9 to &lt;18</td>
<td>MOD</td>
<td>• Good indicator of extreme fire behavior</td>
</tr>
<tr>
<td>18 to &lt;28</td>
<td>HIGH</td>
<td>• At 20, Intense surface fire &amp; torching begin</td>
</tr>
<tr>
<td>28 to &lt;35</td>
<td>V HIGH</td>
<td>• At 28, frequent torching causes problems</td>
</tr>
<tr>
<td>35+</td>
<td>EXT</td>
<td>• By 35, expect active crown fire behavior</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A combination of BUI and ISI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Represents weather’s effect in fireline intensity.</td>
</tr>
</tbody>
</table>

## GFMC - Grass Fuel Moisture Code for Matted Grass; 1-hour time lag

<table>
<thead>
<tr>
<th>Range</th>
<th>Class</th>
<th>Cured Grass Thresholds and Interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to &lt;86</td>
<td>LOW</td>
<td>To estimate percent (%) grass fuel moisture, subtract the GFMC value from 101.</td>
</tr>
<tr>
<td>86 to &lt;91</td>
<td>MOD</td>
<td>• GFMC &lt; 89 equals moisture of extinction for cured grass fuel models is 12-15%</td>
</tr>
<tr>
<td>91 to &lt;94</td>
<td>HIGH</td>
<td>• Changes rapidly with weather changes and shading</td>
</tr>
<tr>
<td>94 to &lt;97</td>
<td>V HIGH</td>
<td>• Fire spread easily dictated by wind direction</td>
</tr>
<tr>
<td>97+</td>
<td>EXT</td>
<td></td>
</tr>
<tr>
<td>GFMC</td>
<td>Relative Humidity (%)</td>
<td>Cloud Cover Temp</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Overcast</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41°F</td>
<td>91</td>
<td>88</td>
</tr>
<tr>
<td>50°F</td>
<td>92</td>
<td>89</td>
</tr>
<tr>
<td>59°F</td>
<td>93</td>
<td>90</td>
</tr>
<tr>
<td>68°F</td>
<td>94</td>
<td>91</td>
</tr>
<tr>
<td>77°F</td>
<td>95</td>
<td>93</td>
</tr>
<tr>
<td>86°F</td>
<td>96</td>
<td>94</td>
</tr>
<tr>
<td><strong>Broken, Clouds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 50% of sky</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41°F</td>
<td>94</td>
<td>91</td>
</tr>
<tr>
<td>50°F</td>
<td>95</td>
<td>92</td>
</tr>
<tr>
<td>59°F</td>
<td>95</td>
<td>93</td>
</tr>
<tr>
<td>68°F</td>
<td>96</td>
<td>94</td>
</tr>
<tr>
<td>77°F</td>
<td>97</td>
<td>95</td>
</tr>
<tr>
<td>86°F</td>
<td>98</td>
<td>96</td>
</tr>
<tr>
<td><strong>Scattered Clouds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 50% of sky</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41°F</td>
<td>96</td>
<td>93</td>
</tr>
<tr>
<td>50°F</td>
<td>96</td>
<td>94</td>
</tr>
<tr>
<td>59°F</td>
<td>97</td>
<td>95</td>
</tr>
<tr>
<td>68°F</td>
<td>97</td>
<td>96</td>
</tr>
<tr>
<td>77°F</td>
<td>98</td>
<td>97</td>
</tr>
<tr>
<td>86°F</td>
<td>99</td>
<td>98</td>
</tr>
<tr>
<td><strong>Clear Skies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41°F</td>
<td>97</td>
<td>95</td>
</tr>
<tr>
<td>50°F</td>
<td>98</td>
<td>96</td>
</tr>
<tr>
<td>59°F</td>
<td>98</td>
<td>97</td>
</tr>
<tr>
<td>68°F</td>
<td>98</td>
<td>97</td>
</tr>
<tr>
<td>77°F</td>
<td>99</td>
<td>98</td>
</tr>
<tr>
<td>86°F</td>
<td>99</td>
<td>99</td>
</tr>
</tbody>
</table>
Seasonal Trend Analysis – Alaska’s equivalent to Pocket Cards
Current BUI graphs for all PSAs can be found at https://fire.ak.blm.gov/predsvcs/fuelfire.php

Alaska’s Fire Season in the Boreal Interior Historic Range of Buildup Index (BUI) and MODIS Detections

- Historic Range
- Avg Weekly MODIS
- Avg
Seasonal Trend Analysis – Alaska’s equivalent to Pocket Cards

Current BUI graphs for all PSAs can be found at [https://fire.ak.blm.gov/predsvcs/fuelfire.php](https://fire.ak.blm.gov/predsvcs/fuelfire.php)
Common Fuels Found in Alaska

Black Spruce (C-2 or SH5)
- Feathermoss on surface is generally more flammable than birch and leatherleaf.
- Tree canopies extend down to ground.
- Transitions rapidly from surface to torching/spotting or crown fire.
- Alaska’s problem fuel.
- Extreme rates of spread possible under favorable weather conditions.

Tundra (O-1a and O-1b or GS3)
- Heavy load of matted dead tussock mixed with live fuels.
- Drought can be a factor.
- Wind driven fire can spread rapidly.
- Fires will back readily into the wind.

Mixedwood (M-1 and M-2 or TU5)
- Will burn much more readily before green up, especially with taller spruce.
- Significant torching and spotting under dry conditions.
- Percentage of conifer dictates potential for crown fire.
- White spruce has a shallow root system and is very unstable after surface fire.

(Continued on next page)
Hardwoods (D-1 and D-2 or TU1)
• Generally only surface fire.
• Slow to moderate spread rates and low flame lengths.
• After green-up, usually a barrier until severe drought cures surface vegetation.
• Late July during dry seasons question hardwoods ability to slow fire spread or during periods of extended drought.

Beetle Kill
• Normally found in white spruce stands
• Well established on the Kenai Peninsula and Southcentral Alaska
• More open stands can have dense grass surface fuels which can be extremely flammable before green-up.
• Shallow rooted trees and very unstable after mortality

Burn Scars
• Do not always assume they will be an effective barrier, especially during prolonged drought.
• Ask local expertise.
**FIRE OBSERVATION/DESCRIPTION**

<table>
<thead>
<tr>
<th>Rank 1</th>
<th>Rank 2</th>
<th>Rank 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoldering</td>
<td>Creeping</td>
<td>Running</td>
</tr>
</tbody>
</table>

- **Rank 1: Smoldering**
  - No open flame in surface fuels
  - **White smoke**
  - Smoldering ground fire

- **Rank 2: Creeping**
  - Visible open flame, **1-4 ft.** in surface fuels
  - Surface fire only
  - Unorganized flame front
  - Little or no spread

- **Rank 3: Running**
  - Organized surface flame front, **4-8 ft.** in surface fuels
  - Moderate rate of spread
  - Vigorous surface fire
  - May see some candling or torching along the perimeter and/or within the fire

(Continued on next page)
FIRE OBSERVATION/DESCRIPTION

**Rank 4**
Torch/Spot

- Organized surface flame front, **8-12 ft.** in surface fuels
- Moderate to fast ROS on the ground
- Grey to black smoke
- Torching/short range spotting
- Disorganized crown involvement

**Rank 5**
Crowning

- Organized crown fire front
- Moderate to long range spotting
- Independent spot fire growth
- **Black to copper smoke**
- **12-18 ft.** flames in open and slash fuels

**Rank 6**
Erratic

- Organized crown fire front
- Moderate to long range spotting
- Independent spot fire growth
- Presence of fire balls and whirls
- Violent fire behavior
The combination of temperature and relative humidity, falling below the orange line in this graph, signals potentially severe fire behavior. Beware that severe conditions may exist even if crossover doesn’t occur. The 20/20 Rule is a specific example of this when temp is 20° C, or 68° F.

**Alaska Specific Guidelines**
- Black spruce is more likely to burn when temperatures are above 70 and relative humidity (RH) levels are near or below 30%.
- Fire behavior increases significantly after seven continuous days above 70°.
- Check viability of barriers after 12-14 days of little or no precipitation.
- Expect an increase in the amount of jackstraw in burned areas with a DMC of 65 or greater.
• FFMC above 92 can support extreme fire behavior.
• BUI above 80 is a sign that fuels below the surface are dry enough to support increased fire behavior.
• Do not be fooled by 1 inch of rain. A lot more is needed to put a fire out.
• Fires are much harder to mop up in August than they are in June.
• Do not underestimate fire behavior in black spruce.
Alaska Tactics

Alaska tactics differ from other places in the Western U.S. due to the abundance of water and the thick organic layers covering the ground. Hand line construction is rarely used. Line construction in most Alaska fuel types consists primarily of saw line and hose lay, or saw line reinforced by using beaters (limbed up spruce boughs or pre-constructed synthetic models) to swat down flames and sweep in burning materials off the edge. Fires in Alaska usually have a water source nearby to support pump and hose operations. Hand line construction is very time consuming, labor-intensive, and damaging to the land. If hand line is required, use cold trailing along the edge and dig line where needed by anchoring and tying into the cold black.

One effective method of direct hand line construction:

- Use leapfrog method – have each person take approximately 15-25 inches of proposed line.
- Chop and pull out a small section at your starting point so that the person behind you has a target.
- Cut parallel lines 12-18 inches in width with axe side of Pulaski.
- Chop end point and begin to pull up tundra block with the hoe end.
- Work back to starting point, trying to roll sections into manageable pieces.
- Place rolls on green side of the line with the root side down to preserve them for rehabilitation.
- Clean out organic material down to permafrost or water.

Hardwood stands typically make good fuel breaks due to the moderate fire behavior associated with the hardwood fuel types. Remember, spotting is the rule, not the exception, for black spruce. Expect extreme fire behavior when relative humidity levels are less than 30% (see Fuels, Weather, and Fire Behavior section).
Mop-Up
Since the organic layers of black spruce (tundra) and hardwoods can smolder throughout the entire winter, extensive mop-up, thorough gridding, and cold trailing are necessary. Often, hot areas will not be visibly smoking. Most buried or capped heat in the tundra, hardwood roots and duff is found by touching the area. Where permafrost is present underneath the organic layer, use it to cool the burning materials. Always cold trail after mop-up. Just one missed ember in the tundra will grow if not found and extinguished.

Point Protection
Point protection in Alaska generally consists of protecting small cabins, homesteads, and larger sized allotments. The resources commonly used for these missions are smokejumpers, Zone personnel, Fire Specialists, and hotshot crews. During an active fire season, resources can quickly be stretched thin, resulting in many simultaneous small-scale point protection operations in the Zones. In AFS protection areas, personnel will be working for a Zone (see the Fire Management section of this guide). Upper Yukon-Tanana (UYT) and Galena dispatch centers work for the Zones. Fire reports, supply orders and resource orders will go through UYT or Galena, while questions regarding tactics and site-specific issues will be directed to the FMO, AFMO or their appointed representative. Make sure objectives, tactics, and values at risk are understood prior to departing. Be aware that all of those can change depending on where you are on a large incident. Point protection in Alaska is almost always remote and relies heavily on helicopter support. It is not uncommon to access sites using boats.
Cabin Protection

Remote cabin sites are scattered throughout the Alaskan Bush. They range in size from a 10-by-10 trapping cabin with a sod roof to a full-sized home with all the amenities. Some may be located on private landholdings or on trap lines and mining claims. The following are some things to consider:

- **Water Sources** – If you have a water source, evaluate whether it is close enough for a lightweight pump kit or if a Mark III is needed. Ensure the pump site is protectable and practical.

- **Time Frames** – Evaluate if the fire is going to reach you and how long it will take to reach the area of protection. Are you going to be forced to burnout to save the cabin or do you have time to do prep work? A little prep work goes a long way and there is almost always prep work that needs to be done.

**DON’T** get focused on just the cabin. White spruce stands around structures have been known to fall over destroying cabins days after firefighting resources have left the scene. Due to shallow root systems, green spruce generally starts to fall over 1-2 days after the area has burned, creating a work hazard and a line holding issue. Consider setting up sprinklers in green tree stands that have a potential to fall over and impact the structure.

- **Resources** – Keep in mind that there may not be other resources available to assist you due to higher priority incidents. However, don’t hesitate to order additional resources if they are needed to meet objectives. All they can do is say no. In Alaska, you can do a lot of firefighting with a Pulaski, light pump kit, and a backpack pump.

- **Occupied Cabins** – It is not uncommon for a small remote cabin to be occupied. Individuals choose to live a secluded remote lifestyle for a reason and “The Code of the Bush” should be respected. Be sure to announce your arrival to a cabin site or camp by projecting...
“Hello” or something equivalent at a shouting distance. It is advisable to let the occupants know that you are a firefighter since not all remote-dwelling citizens look favorably upon government agencies. If you use any firewood or food at a cabin site be sure to replace it prior to departing. This could be a lifesaver for someone seeking shelter in the winter. If you are not using the latrine, be sure to bury waste in an area where mop-up will not occur and in an area that will minimize impact on the cabin site.

Cabin Protection Set-up Tips
Cabin protection in Alaska consists of two primary tasks: structure protection and surrounding land preparation.

Structure protection:
- Identify fire hazards that need to be mitigated to protect cabin
  > Are the roof and eaves clear?
  > Are there building materials or firewood stacked against the cabin?
  > Are there trees, snags, or other vegetation that poses a direct hazard to the cabin?
- Sprinkler system set up tips
  > Both AFS and DOF have sprinkler kits available from the warehouse.
  > Sprinkler coverage should wet all surfaces of the structure.
  > Sprinklers at the cabin corners provide the best coverage with two at or above roofline and another two below the roof line.
  > Adjust sprinklers for long range spray or short-range mist.
- Sprinkler head attachment methods
  > Set sprinkler heads on poles, tripods, or stands to get them above the ground/cabin roof level.
> Use p-cord or fiber tape to secure to pole, stand or tripod.
> Bring your own fiber tape; it is not provided in sprinkler kits.

• Pumps
> Shindaiwa type pumps work well close to water sources.
> Use five gallon can and fuel line attachment in sprinkler kit for Shindaiwa.
> Mark III type pumps work well when the structure is far from or high above the water source.
> Tie down pumps and fuel cans because rivers can rise unexpectedly due to water from melting glaciers.

• Miscellaneous
> Use extra sprinklers on wood piles or surrounding fuels.
> Make sure your hose lay is protected.
> Take the extra step to prevent water from entering the structure.

**Surrounding Land Preparation Tips**
• Cut problem trees, snags, and vegetation.
• Stack rounds away from structure and scatter limbs.
• Remove hazard dead and down trees.
• Clear away enough to accomplish the job, but remember why people have cabins in the woods.
Alaska Native Allotment Protection

Under federal law, Alaska Native allotments are granted full-protection status unless there are no available resources or it endangers firefighter safety. Allotments can be up to 160 acres in size. Sites were selected by individuals for various reasons, and those reasons should be considered while protecting them. Examples are white spruce stands for cabin logs and lumber, traditional berry gathering locations, and traditional fish harvesting and moose hunting camps. Zone FMOs will have more specific information on sensitive areas within allotments being protected. Some things to consider:

- **Resources** – The resources you have directly affects the timeframe for protecting an allotment. If an entire allotment is being protected, then at least one hand crew is recommended for the line construction, pump and hose setup, and potential burnout operation. Hotshot crews work well for this and are low maintenance. If you need resources immediately, smokejumpers are a good option. Resource needs are site-specific.

- **Time frames** – There can be multiple logistical needs for protecting a large allotment. You may not have the time or resources to cut and prep a control line around the entire allotment. Consider using natural barriers and vegetation changes instead. Tussock fields burn well, are easy to control with minimal water usage, have quick mop-up timeframes, and recover quickly after being burned. However, tussocks are hard to navigate through and act as a flashy fuel. Areas where hardwood and black spruce stands meet are well suited for control lines because fire behavior usually moderates in hardwood stands. If the entire allotment cannot be protected, prioritize larger white spruce stands, cultural sites, and other high-value resources. It may be easier to back off the allotment and protect a larger area using natural features. Do not be afraid to ask for advice or direction from the FMO.
ALASKA KNOWN SITES DATABASE COLLECTOR

The Alaska Known Sites Database (AKSD) is a statewide collaborative effort to collect infrastructure, and cultural and natural resource site data outside of urban areas for wildland fire response. The primary audience for this data is protecting agencies, jurisdictional authorities, and Incident Management Teams (IMT). AKSD is not a stand-alone dataset. It is a dynamic product that allows a wide variety of users to view and make edits in real-time. At its core, AKSD is comprised of a point feature class, a polygon feature class, and a collection of web maps and web applications.

IMTs working in Alaska are expected to use Alaska Known Sites Database in lieu of the National Interagency Fire Center Structure Triage template or other structure/values at risk templates.

Often, conditions at a site are different than those described in the initial briefing. Updated site information and information for any new sites discovered during the incident should be provided to the FMO as soon as possible. Photos, descriptions of actions taken at the site, and updated coordinates are extremely helpful and will help improve situational awareness for the Zone and future responders. In Alaska, site assessment data is collected on a statewide scale. Contact the Plans Chief and Situation Unit Leader for specific guidance.

All site updates will be added to the AKSD. Inputs are reviewed by agency GIS staff and jurisdictional agencies.

Collector for ArcGIS is the preferred tool for site updates. See the AKSD Collector Checklist for tips on using Collector. If you do not have a Collector device, you can order one. If you need to record information manually (for example, if you do not have a device with you and will not be back to the site), please record:

- Type of site (cabin, allotment, camp, mining, threatened and endangered species, historical/archaeological, etc.)
• Coordinates
• Site description and condition
• Fuels on or surrounding the site
• Terrain (slope, aspect)
• Access (boat, helicopter, UTV, etc.)
• If this is a structure, is it inhabited?

Alaska Known Sites Database Collector Checklist

✓ Please review the AKSD Collection Key for questions regarding what information goes in the attribute field.

• Fill out the attributes as completely as possible.
• Note: The voice dictation feature works in Collector.
• Attribute data can be edited/added offsite. Not all data needs to be entered in the field BUT it should be attributed ASAP.
• A point can be edited on the computer through the web map accessed through: https://nifc.maps.arcgis.com/home/index.html

• Do not include Personally Identifiable Information (PII) in any of the fields.

✓ Limit to one photo per point. Multiple photos reduce performance and increase the likelihood of database corruption.

• The ideal photo shows the general site conditions, vegetation and location of nearby water sources. An overview photo is better than a close-up.

  > Take photo in the normal photo app or Theodolite and then load into Collector. This enables the selection of the best photo.
> Photos may not be authorized on some jurisdictions.
> Photos are the icing on the cake, not the cake itself.

✔ Do not use special characters when filling out attributes.
Examples: @#$%&

✔ Delete is not enabled to data collectors.

• If you mistakenly add a point, please change the Flag for Deletion field to Yes and add a note to Delete Notes field.

• If you want to change the attributes, you can go back and edit them.

• If you want to move the point to the correct place, you can move the point.

✔ Follow the sync and download schedule set by the Plans/ SITL/ GISS to ensure all your hard work is properly captured.

Find extensive instructions by clicking on this link: Alaska Known Sites Database.

**PORTABLE PUMP OPERATION**

**Cautions on Pump Use**

• Do not run engine at full speed until it is thoroughly warmed up, which takes about one minute, or head of engine is hot to the touch.

• Do not run engine with pump disconnected.

• Do not run pump dry.

• Do not run pump without foot valve strainer.

• Remove and drain pump after final use and at night if temperature dips below freezing.
Setting Up and Starting a Mark III Pump

1. Connect fuel line to fuel can and pump.

2. Connect suction hose to the pump. Connect male end of the suction hose to the foot valve. Tighten female end of suction hose, with gasket, to the pump, using spanner wrench. Do not allow foot strainer to rest on the bottom or come too close to the surface.

3. Attach wye valve to discharge side of pump hand tighten only. Connect priming pump to one side of the wye and the hose to the other side of the wye. Close valve to the hose. Stroke primer until water squirts from the small holes or until the resistance is too great to keep going. If neither occurs, check for suction leaks. If no leak is found, prime the pump by filling the suction hose and the pump head with water. After priming, close valve to primer and open valve to hose.

4. Move choke lever to START (if engine is cold).

5. Move throttle to START AND WARM UP position.

6. Pull starter rope several, full pulls until engine pops. It is extremely important to turn off choke immediately after the engine makes any noise otherwise flooding will occur on the next pull.

7. Move choke lever to RUN and pull starter cable until engine starts. It usually takes one to three pulls to start.

8. Allow engine to warm up until head is hot to the touch before using full throttle.

Stopping a Mark III

1. Move throttle lever to START/WARM UP position.

2. Let pump cool down for one minute.

3. Press and hold STOP switch until engine is fully stopped, or flip toggle switch to OFF.
Components of a Portable Pump

Fuel

- Use premixed fuel, 40:1 mix whenever possible. If you must mix your own, this is 5 gallons of straight gasoline to 1/2 quart of 2-cycle oil.
- Thorough mixing is important and is best achieved by pouring one gallon of gasoline into the fuel tank, adding the oil and then adding the remaining gasoline. Vigorous stirring will complete the mixing.
- Fuel consumption: Mark III: 5 gallons in three hours. Shindaiwa: 5 gallons in 10 hours.

Fuel Can and Fuel Line

All AFS fuel cans now use quick connect fittings. The fuel can, more commonly referred to as a Jerry can, is listed in the warehouse catalog as “Tank, Gasoline, 5 GL, Pump Adapted.”

1. Put male end of the fuel line in the receptacle at the front bottom edge of the can. Make sure both “O” rings are seated.
2. Loosen the vent valve on top of fuel can to allow venting. Make sure the gas can is securely tied off and situated several feet from the pump, either uphill or level with the pump.
3. Fuel can and pump exhaust should be on opposite sides of the pump to avoid exhaust/spark/heat from impacting the fuel can.

Starter Operations

The starter has an automatic rewind. Proper technique extends the life of the starter cable and starter internal mechanism.

1. The Mark III engine has high compression. Grasp handle firmly while holding the pump in place (with a foot or help from another person). Pull with a full, vigorous stroke, but do not pull starter rope to its full extension. Retain grip on handle and allow starter
cable to rewind slowly. Do not release handle and allow starter
cable to snap back. Excessive wear is caused by pulling handle
sideways.

2. Continue to pull with full, vigorous strokes.

3. When engine starts, retain grip on handle and allow cable to
rewind slowly. If the rewind starter spring breaks, the complete
starter assembly can be easily removed. This gives access to a
manual starter rope pulley mounted on the flywheel. Reuse the
starter cable by tying a knot at the end and wrapping the cable
around the starter pulley.

**Automatic Cutoff Switch**

The Mark III is equipped with an automatic manual cutoff switch,
which stops the engine instantly to eliminate over-speeding. If the
switch activates under normal operating conditions, always look
for the reason before resetting. Air is getting into the intake of the
pump assembly. Possibilities include improper prime, loose suction
coupling, loose priming cap, clogged foot valve strainer, or foot
valve strainer too close to the surface. The Wick Pump and many
of the Mark IIIs have an electronic cutoff switch. This works like
the mechanical except that it automatically resets itself. Look for
the reason prime was lost. If you fix it, the electronic switch will
automatically reset itself.

**Air Cleaners**

Air cleaners on the Mark IIIs do not need replacement when dirty.
Simply remove it from its housing and clean with gasoline.
Troubleshooting a Mark III Pump

**Engine Won’t Start**
1. Check ON/OFF switch.
2. Make sure fuel reaches carburetor; no leaks or kinked hose, plugged filter.
3. Make sure air filter is clear.
4. Check for spark. Remove and ground spark plug away from gas fumes. Pull starter cable and check for spark. If no spark, try with new spark plug. If there is a spark, replace spark plug and if engine is not flooded, retry cold-starting procedure.
5. If spark plug is covered with fuel, the engine is flooded.
6. If spark plug is dry, there may be a lack of fuel.
7. To clear flooded engine – Disconnect fuel line, pull starter cord 5-10 times with spark plug removed, choke and throttle open. Before reinstalling spark plug, clean and dry electrode and insulator tip. Then check for spark.

**Engine Runs Improperly or Misses**
1. Check for suction leaks. Tilt pump back and work water from the hose back into the pump.
2. Check fuel supply, all fuel connections, and fuel can vent.
3. Check spark plug for evidence of fouling; deposits on electrode, white ash, cracked insulation. If present, change spark plug.
4. Clean air filter.
5. Make sure spark plug cap has a good connection.
Setting Up and Starting a Lightweight Shindaiwa or Honda

Both pumps use 40:1 premix fuel even though the Honda is a 4-stroke engine.

1. Set the fuel switch on the pump to pick the fuel source.

2. Shut off handle parallel or pointing at internal fuel tank (internal), or 90 degrees handle pointing away from pump (external). A strainer is needed but no foot valve is required because a flapper in the pump keeps water in the pump.

3. When starting the Honda, pump the primer bulb approximately 20 times to get fuel to the carburetor.

4. Leave the throttle at idle and choke off to start.

CHAINSAW TROUBLESHOOTING

Fuel consumption: 4 gallons/shift
Bar oil consumption: 1 gallon/shift

**Engine will not start:**
- Check toggle switch
- Check choke operation. Butterfly valve must be closed to start cold.
- Check fuel supply and fuel filter.
- Check spark plug wire and spark plug. When checking spark plug for spark, do no pull starter cord without grounding the removed spark plug.

**Engine does not run well:**
- Clean air and fuel filters
- Check spark plug
- Check for water or dirt in fuel
Type 3 Fires

Type 3 fires in Alaska are common and range from small, complex fires to hundreds of thousands of acres. Due to the remote nature of most of our fires, logistical concerns are a major factor and play into the decision to manage a fire at the Type 3 level.

Tips for Type 3 Incident Commanders

• Keep it simple. Ordering a few key positions will enable you to do this (see following sections).

• Your basic daily duties are the same as in the Lower 48, but there are usually fewer political concerns. Most AFS fires are straightforward and utilize appropriate management techniques. We rarely fully suppress fires in Alaska; point protection is common.

• Communicate. Before heading into the field, get a thorough briefing about objectives from the land manager. Get your 209s in on time (over the radio or satellite phone).

• Communication with a fire manager will be anywhere from once daily to several times a day. Set up a schedule that works for you and stick to it.

• Plan ahead and think about demobilization from the beginning. Backhaul at every opportunity. A good staging area manager will be integral to your success.

• Have enough supplies on site to last at least three days. Stay ahead of the curve on supplies.
Type 3 Organization

Typically, Type 3 fires in Alaska are managed by organizations, not teams. Grow your organization as needed but try to keep it simple. Consider the following positions:

- **Operations** – Utilizing a local firefighter as Ops. This will be a great benefit in dealing with tactics and local customs. Think outside the box. If you need a boat, utility terrain vehicles (UTV), or truck – request them. Zodiac boats with operators are available through dispatch.

- **Air Operations** – It’s different up here. Helicopters come with a manager only. Order HECMs if needed. Most Alaska crews are used to traveling by fixed- or rotor-wing and are very capable of loading and unloading personnel. A helicopter manager on each end is most likely all that is needed if two helicopters are doing personnel transport. Ordering a HECM or two for the staging area, which also serves as a helispot, is a good idea; they will be able to assist the STAM also. Consider DECK, ABRO, and HEBM as complexity demands.

- **Plans** – This person will help you stay organized, develop a communications plan, medivac plan, produce IAPs, maps, 209s, establish check-in and track resources, gather and crunch information, request spot weather, etc. A PSC3, SITL, or FOBS is well-suited for this position. Is there computer access? Order a plans kit if necessary.

- **Logistics** – An Alaska Staging Area Manager (STAM) is your best bet and will be integral to your success. Order one immediately if one is not already in place. In Alaska, the STAM is responsible for ordering equipment, supplies, demobilizing, and whatever else may be needed (see Alaska Staging Areas under Logistics).
Staging areas are not restricted to equipment. They often double as helispots, ramp, fueling areas, ICP, etc. Supplies can be delivered in a variety of ways: fixed wing to ramp; paracargo directly to fire; rotor-wing via longline; and internal or cargo-kick if unable to land. Ask your helicopter managers about options.

- **Finance** – Having this function in place early will alleviate headaches later on. This person will be able to track times, rental agreements, costs, etc. If they do not set-up near your fire, ensure a way to get CTRs, rental agreements and paperwork to Fairbanks in a timely fashion (usually with backhaul). A PTRC from the Lower 48 may not be able to meet your needs. Consider ordering an Alaska resource.

- **Equipment Manager** – If your fire is utilizing boats, UTVs, and/or vehicles from a local village, assigning a person to track this equipment will come in handy.

- **Safety** – Good to have around, especially if they are local.

- **PIO** – Establish if fire is near town/village and/or interface areas. Otherwise, coordination can go through the BLM AFS Public Affairs Office or the Alaska Division of Forestry PIO at (907) 356-5511.

- **AK Fireline Medic and Kit** – See [Alaska Fire Medic Program](#) section for list.
Highly recommend activating the Operations, Plans, Logistics, and Finance positions using local/AK Smokejumper, Fire Specialist, Zone Personnel, or State Tech. If in doubt about qualifications for Type 3 incidents, contact the local Fire Management Officer.

As of October 1, 2019, PMS 310-1 qualifications as Operations Section Chief Type 3 (OPS3), Planning Section Chief Type 3 (PSC3), Logistics Section Chief Type 3 (LSC3), and Finance Section Chief Type 3 (FSC3) are required for national mobilization. See the Logistics section for more ordering hints for Alaska.

**ALASKA SMOKEJUMPER PARACARGO GUIDELINES**

To receive supply orders by paracargo (PC), simply make that request to dispatch when you place your standard order. Basic fire supplies such as pumps and hose, MREs, cubies, and chainsaws are pre-rigged in the paracargo warehouse. Supplies are usually received faster by paracargo.

<table>
<thead>
<tr>
<th>Type 3 Functional Responsibility</th>
<th>Minimum Qualification Standards for local incidents (per 2021 Red Book)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Commander</td>
<td>ICT3</td>
</tr>
<tr>
<td>Safety</td>
<td>Line Safety Officer (SOFR)</td>
</tr>
<tr>
<td>Division</td>
<td>Single Resource Boss – Operational qualification must be commensurate with resources assigned (i.e., more than one resource assigned requires a higher level of qualification.</td>
</tr>
<tr>
<td>Information</td>
<td>Local entities can establish level of skill</td>
</tr>
</tbody>
</table>

*Highly recommend activating the Operations, Plans, Logistics, and Finance positions using local/AK Smokejumper, Fire Specialist, Zone Personnel, or State Tech. If in doubt about qualifications for Type 3 incidents, contact the local Fire Management Officer.*
Any helispot will be an acceptable drop zone (DZ) for a paracargo mission. If multiple drops are required, be sure to specify what you want at each DZ to allow the PC specialists to load the plane accordingly. This can be very helpful when establishing a large pump operation on your fire. A large DZ is not needed for dropping a small amount of supplies such as a pump and some hose on the edge of a lake. The PC aircraft can assist in selecting a DZ if one isn’t apparent from the ground.

The PC plane will broadcast on the AFS air-to-ground frequency (166.6375 rx/tx) at least 10 minutes prior to arrival on the fire unless another frequency is specified on the resource order. The PC plane will ask if the air space is clear for the drop. Ground personnel must provide a radio contact at the DZ. Anyone with a radio can be the contact. Input during the drop is encouraged if the cargo is landing other than in the desired area.

All cargo parachutes have a canvas bag attached to them and are easily stuffed for ease of handling and transport. These parachutes weigh from 13-18 pounds each.

Larger orders may be palletized. These pallets can be moved to different areas on the fire by helicopter if needed. A pallet of water contains 24 cubies and a pallet of MREs contains 48 cases of MREs.

**Drop Zone Considerations**

- Football field size for the green netting and canvas, called A-22s, used to wrap the cargo for large bundles. Small bundles, aka “garbage” can be dropped into smaller spots.
- Convenience or distance to the point of use
- Ease of cargo and parachute retrieval
- Safe approach and departure paths for drop aircraft
- Safety of personnel and equipment on the ground during operations
• Good communications with aircraft and the ground
• If using your helispot, clean up the parachutes before helicopter use
• Clear the DZ of all personnel during the drop
• No camps within 400 yards of DZ
• Advise all aircraft on the fire of paracargo mission
• Mark DZ in some way if it is nondescript

**Non-standard equipment available from paracargo**
• Sprinkler kits for cabin protection
• Foldable water tanks for pump shows
• Off-road vehicles
• Zodiaks and motor for multiple cabins on lakes etc.
• 55-gallon fuel drums, jet fuel, or gasoline
• Containment dikes for remote fueling sites
• Lumber and plywood

Paracargo has the capability to deliver almost anything. If you have any questions about paracargo ordering call dispatch, the Zone, or PC direct at 907-356-5534.

**Approximate Paracargo Aircraft Payload Capabilities**

<table>
<thead>
<tr>
<th>Aircraft</th>
<th>Payload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casa 212</td>
<td>4,000 pounds</td>
</tr>
<tr>
<td>Dornier 228</td>
<td>3,500 pounds</td>
</tr>
<tr>
<td>Dash-8</td>
<td>7,500 pounds</td>
</tr>
</tbody>
</table>
USING BOATS ON ALASKA FIRES

What Kind of Boats Are Available and Where Do They Come From?

Most often the boats are hired locally by the Zone using the Emergency Equipment Rental Agreement (EERA). These are usually flat-bottom river skiffs. The boats can be hired with a local operator or a DOI/BLM certified boat operator. Contract conditions vary. Work with the Zone admin and see the Admin section of this guide for boat hiring details.

AFS has Zodiac inflatable boats for use with or without a motor. A DOI/BLM certified boat operator will need to operate a motorized boat. A DOI/BLM non-motorized watercraft certificate will be needed to operate a non-motorized Zodiac. Zodiacs can be delivered by any type of aircraft. They are packaged and typically delivered via paracargo by the Alaska Smokejumpers. Please feel free to call paracargo before you place your order so the best boat and motor can be sent for your specific water conditions (907-356-5534). Do not forget about fuel. Twenty gallons are included with the kit, but it is a good idea to order more.

A 16-foot and two 21-foot jet boats are also available. These units can be transported via trailer to road accessible launch points and driven to the fire by a connecting waterway. You can also call paracargo to match the best boat for your water conditions (907-356-5534). DOI/BLM certified operators are required for AFS boats. Normally, two operators are ordered per jet boat. Operators are available through AFS.

How Are the Boats Used?

Boats are typically used to transport equipment and personnel between fires and a transfer point – usually a village. They are especially useful when dealing with multiple site protection efforts – usually cabins scattered around a lake or river.
Are the Boats Safe?

Boats acquired by EERAs are inspected prior to use. They are hired with a local operator familiar with the local waterways or an experienced certified DOI/BLM operator. Personal floatation devices (PFDs) must be worn by all individuals in the boat and either come with the boat or can be ordered through the AFS Cache.

All AFS boats will be delivered with enough PFDs for the boat’s maximum personnel capacity, paddles, a fire extinguisher, signaling devices, throw bags, tool kits, and briefing checklists. See the Safety section of this guide for information on boat safety and use it as an outline for briefings before utilizing any boat.

How Do I Get A Boat?

Requests for the hiring and/or delivery of a boat will be approved by the Zone. Requests are placed through dispatch. The Zone will provide hiring preference instructions.

Firefighters are shuttled back to their camp by a qualified boat operator.
The use of handheld infrared, otherwise known as palm IR, is common in Alaska due to the heavy tundra and duff layer. Alaska fuels and surface conditions, in combination with a rain event, have a tendency to mask heat – sometimes for days – allowing the fire to re-establish and run when the weather turns hot and dry.

The handheld palm IR is not the same as a fixed wing IR flight. Handheld IR is used for finding hot spots or areas of concern to complete mop-up and is usually done immediately before fire demobilization. A palm IR can be used from a helicopter or on the ground.

Consider the following before initiating palm IR operations:

- **Timing** – Early mornings or late evenings are generally the best, due to daytime surface heating. IR immediately following a light precipitation event works well.

- **Aircraft availability** – To assure an overall cold perimeter on a large fire, use a helicopter platform.

- **Operator availability** – IRs must be used with qualified operators to ensure quality results, prevent damage to the equipment, and for the overall safety of the mission.

- **Operator skills and experience** – Although the palm IR can be a great benefit, the product is only as good as the operator. Having a spotter on the flight, in addition to the operator, is useful. Spotters can assist the operator, drop markers, manage workload, and handle communications during the flight.

Palm IRs are available at the AFS warehouse along with a list of qualified local operators.

*Another IR option is an IR-capable UAS with operator. Check with your Duty Officer for available options.*
ECOLOGICAL CONSIDERATIONS DURING FIRE SUPPRESSION

Mechanized Equipment and Protecting Watersheds

Fine, silty and ice-rich soils are susceptible to water and wind erosion on firelines, especially when bladed to mineral soil. Water from thawing frost layers will quickly saturate bladed firelines, even without rain. Use bladed fireline only as a last resort and with explicit permission of the land manager. When bulldozers are used, maximize the use of walkdown versus bladed line (only one blade-width to mineral), and use the contours of the slopes. Building drainage into the constructed fireline will minimize erosion potential and environmental damage. To protect sensitive fish spawning habitat and water quality, firelines should never be bladed across a waterway or stream. Instead, they should be connected using handline, brushing, or dozer walkdown (See fireline diagram below).
Fireline Rehabilitation Considerations

Reclamation of firelines, camp areas, staging areas, access trails, and helispots.

• **Vegetation mat** – Initiate actions to reclaim firelines ASAP. Replace vegetation mat on denuded areas (areas that have been removed, destroyed or cover and which may result in or contribute to erosion and sedimentation) prior to heavy equipment leaving the fire area. Some vegetation material may have to be replaced by hand. This action replaces topsoil, provides seed and propagule source, increases the water holding capacity, decreases drying, and provides shade and shelter. In particular, lines located on north slopes, south toe slopes, or drainages, may require this treatment.

• **Water bars** – Water diversion structures should be initiated during line construction. Add and improve where needed. Water bars should be placed at 50- to 150-foot intervals depending on slope and soil texture. Coarse soils containing sand and gravel generally do not require water bars spaced as frequently as those located on fine-textured materials (silt and clay). Gravelly slopes may be adequately protected with water bars at 300-ft intervals. Fine-textured, ice-rich materials are subject to severe erosion even with slopes of <2%. The goal is to divert water from the lines or denuded areas at a velocity which will not cause erosion. Generally, this means that the diversion channels themselves should be <2% slope. Angle them to divert the water into undisturbed vegetation where possible. Make sure that the diversion cuts or structures are “daylighted” to drain the water rather than just accumulating it until it flows over or around. The berm should be at least 12 inches high with an 18 inch-deep trench on dozer or excavator-created water bars. Log diversions are less effective than trench water bars.
• **Seeding** – Seeding is only necessary to temporarily stabilize sites which cannot be protected by replacing vegetative mat. Consult local jurisdictional agency personnel for information and specifications.

• **Fertilizer** – Denuded soils tend to be deficient in plant nutrients. Contact the local jurisdictional agency for information and specifications.

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**HABITAT PROTECTION GUIDELINES**

These guidelines are for withdrawing water from bodies of water during wildland fire suppression activities in Alaska. They are intended to protect sensitive fish habitat with minimal impact on fire suppression operations and without compromising safety. Provide water withdrawal and stream crossing information to Alaska Department of Fish and Game (ADF&G) by email, text, or phone.

**Notification to ADF&G**

• Fire number, name

• Location: NAD83 or WGS84 in decimal degrees; highway milepost if applicable.

• Withdrawal type(s): Small pump, engine, helicopter bucket, scooper plane.

• Waterbody name.

• Basic information on situation if needed.

**Stream Crossing Regulations**

For vehicles and heavy equipment during active wildland fire suppression activities, consider the following before crossing streams:

• Crossings can create ruts or berms that block fish passage, and can cause death of fish eggs on surface or buried in stream gravel (i.e. Salmon redds where the females lay their eggs).
• Applies statewide on all ownerships.

• For non-anadromous fish-bearing water bodies, use specifications below. Reference Fish Habitat Permit FH14-SW-0001.

• For anadromous water bodies that fish use to migrate from marine waters to fresh water in order to breed you must first gain authorization from ADFG before crossing using the specifications below. Reference Freshwater Fish Inventory Maps on the ADFG website at http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.interactive

> All crossings shall be used and maintained in a manner that does not obstruct the free passage of fish. Any obstruction to the free passage of fish (such as debris accumulations, ruts, or berms) resulting from activities associated with this permit shall be restored to resemble the streambed upstream and downstream of the crossing site.

> Equipment crossings shall be made from bank to bank in a direction substantially perpendicular to the direction of stream flow, at locations with gradually sloping banks to the extent practicable.

> Banks shall not be altered to facilitate crossings. If stream banks are inadvertently disturbed, they shall be immediately stabilized. To maintain bank stability, bump logs may be placed temporarily within the stream parallel to channel flow to support equipment during crossings. ADFG recommends that roots and stumps within 50 feet of stream banks not be grubbed and that any woody material being cut be felled away from the water body.

> The following minor modifications to the bed and banks of crossed water bodies may be made when necessary to facilitate safe crossings: (a) logs may be temporarily placed parallel to current flow in low spots to help equipment cross deep water and
to minimize disturbance to steep banks; and (b) woody debris obstructing or compromising the driven path may be moved intact to the downstream side of the crossing or used under item (a) above.

Water Withdrawal Regulations

For water withdrawal from fish-bearing fresh water bodies during active wildland fire suppression and training activities, and control of prescribed fires, reference Fish Habitat Permit FH14-SW-0002. It applies to all fish-bearing waters. Water withdrawals can suck fish into pump intakes or kill them by trapping against pump intakes. Certain surface-feeding salmon may be drawn up during scooping.

• Notify ADFG within 24 hours of a water withdrawal using water scooper planes, aerial buckets, and small capacity pumps with a rate no greater than 110 gallons per minute (gpm).

• For pumps with a capacity greater than 110 gpm, you must contact ADFG for authorization by phone, text or email.

• For small portable pumps less than or equal to 110 gpm
  > Pump intakes shall have a screen structure with mesh no larger than a quarter inch, and velocity less than a half a foot per second (window screen or burlap bags)

Water bodies shall not be dammed, bermed, or otherwise altered to block or trap fish.

  > Maintain spill prevention and containment dykes for both the fuel containers and the pumps.

Heavy Equipment Policy

• Applies only to state owned lands, but is useful on all lands especially where permafrost occurs and when operating on existing trails and old fire lines.
• Obtain documented approval from land manager via **Wildland Fire Decision Support System** (WFDSS) for use of off-road vehicles over 1,500 pounds (bulldozers, skidders, Nodwells, etc.) on State of Alaska managed lands.

• When immediate action is necessary, the FMO or IC may approve tactical use of heavy equipment on an individual case basis. Land manager approval must be attained immediately thereafter for continued use, and document it on the fire notification form.

• Suppression techniques used should limit disturbance to ground surface and vegetation.

• A fire line suppression repair plan will be prepared by DOF, approved by the land manager, and implemented by DOF.

• Follow guidelines specified in the Heavy Equipment Policy.

**ADFG Contacts and Offices**

Anchorage: (907) 267-2342, dfg.hab.infoanc@alaska.gov
Craig: (907) 826-2560, dfg.hab.infocga@alaska.gov
Douglas: (907) 465-4105, dfg.hab.infodou@alaska.gov
Fairbanks: (907) 459-7289, dfg.hab.infofai@alaska.gov
Palmer: (907) 861-3200, dfg.hab.infopaq@alaska.gov
Soldotna: (907) 714-2475, dfg.hab.infosxq@alaska.gov
INVASIVE SPECIES
BEST MANAGEMENT PRACTICES

Invasive species can damage ecosystems supporting fish and wildlife populations and add challenges to land management activities. Any living organism can become an invasive species when introduced outside of its native range. Invasive species are adept at colonizing places that have been disturbed, including disturbance by fire management activities. Preventing new introductions of invasive species is the most cost-effective way to avoid infestations. Firefighters should implement operational habits and techniques to inhibit spread, such as avoiding travel through known infested areas or shaking out gear before moving between fires. The Alaska Wildland Fire Coordinating Group’s Fire and Invasive Species Committee provides guidance to help firefighters identify the most concerning invasive species and offering best management practices.

Best Management Practices

Mapping – Request an invasive species map for your incident, including infested dip sites. Flag the known concentrations as avoidance areas. You can never be certain that invasives are NOT present, but at least you will know ahead of time where they ARE known to be present.

Ground Operations – Shake out gear before leaving an incident. Inspect and remove all insects, seeds, plant fragments, debris, and soil from clothing, boots, tents, gear, vehicles, and equipment (including borrowed or rented) before leaving an incident. This is especially important before travel between Alaska and the Lower 48. Large incidents will often have a vehicle wash station. Avoid or minimize ground disturbing activity in areas where invasive species occur whenever possible, including planned ignitions. Request a Resource Advisor (READ) to inspect the incident command posts, camps, staging areas, and aircraft landing pads for invasive plants.
Keep these areas mowed and remove the flower and seed heads of invasive plants. All plant material (seed heads, flowers and cuttings) should be bagged for disposal.

**Aquatics** (Scoopers, helicopters, boats, pumps, hoses, tanks, suction hoses, and strainers, etc.) – Aquatic invasive species can be spread from infested ponds and lakes to clean locations, creating new infestations. Avoid using water from sites with known infestations of aquatic invasive species. Remove all plant or animal parts, debris, and mud from boats, gear and equipment after an operational period and before relocating. Use hot, pressurized water when available. Research indicates two minutes at 140°F is effective. Fill tanks from municipal water sources whenever possible. Avoid obtaining water from multiple sources during a single operational period unless drafting/dipping equipment is decontaminated or changed out with clean equipment. Carry spare buckets, hoses, foot valves and other gear. If it is necessary to use waterbodies with known infestations, avoid using the water in areas where it can reach other uninfested water sources. Decontaminate equipment before utilizing in other water bodies within the state or outside of the state. Clean on a level, high, and dry area away from water. Permeable surfaces that allow water to seep into the ground without pooling are best. Do not use chemicals that contain bleach or quaternary ammonium compounds to clean aircraft fuselages or water deliver components (e.g., helicopter buckets and foot valves). These chemicals do not meet corrosion requirements for aluminum.

**Reporting** – Note the location, and lat-long, and access points. Flag the site. Take photos of the suspected invasive species and the larger area. Collect a sample in a sealable plastic bag. Make a report online or contact the incident Resource Advisor or Incident Commander. For plants, insects, and diseases submit a report at [https://www.uaf.edu/ces/invasives/](https://www.uaf.edu/ces/invasives/).
For plants, use the Alaska Weeds ID app. For mussels or other animals call: 1-877-INVASIV or report online at https://www.adfg.alaska.gov/index.cfm?adfg=invasivespeciesreporter.main.

More Information:
Alaska Wildland Fire Coordinating Group’s Fire and Invasive Species Committee “Invasive Species Pocket Guide for Alaska Firefighters”

USDA Forest Service Selected Invasive Plants of Alaska.

GIS Data for plants can be found at Alaska Exotic Plants Information Clearinghouse.

PUBLIC INFORMATION IN ALASKA

Alaska Interagency Fire Information Office – 907-356-5511
This office is for statewide fire information needs. It is staffed by a DOF Statewide Information Officer and a BLM AFS Public Affairs Specialist. This number will reach a Joint Information Center after the Alaska reaches Preparedness Level 4 (PL4).

Interagency Information on Alaska Fire Information (akfireinfo.com)
This is an interagency website developed by federal and state agencies in Alaska to provide timely and accurate wildland fire information for the entire state.

Media Interviews
You play a major role in communicating important safety and prevention information to the public.

If asked to do a media interview, ensure the appropriate Public Information Officer (PIO) or Public Affairs Office is aware of the request. You may politely decline to take an interview for several reasons. If you are not the right person for the interview, direct the
reporter to an appropriate contact and alert that contact. Never answer questions that require you to speak on subjects outside of your knowledge and/or authority.

Helpful interviews tips may be found in the Incident Response Pocket Guide (IRPG).

**AWFCG Education/ Prevention Committee Key Messages** for Alaska:

- Public and firefighter safety is our first priority.
- Wildland fire happens, be ready.
- Wildland fire is an essential, natural process.
- Alaskans work together to manage wildland fire.
- Managing wildland fire in Alaska balances risks and benefits in an ever-changing environment.

**USE OF SOCIAL MEDIA**

Social media can be very positive for the fire and aviation community, providing an instant medium for messages and education. On the flip side, there have been instances of video or photographs taken in unsafe, unprofessional or embarrassing circumstances. When that happens, it reflects poorly on the entire fire and aviation community. Please adhere to your agency guidelines.

If you are unsure of agency guidelines, consider the following:

- The priority must be performing your job/duty in a safe manner. Ensure proper PPE is utilized in images.
- Posting work-related content on your personal social media reflects on the professionalism of your crew, your agency, and the wildland firefighting community.
• If you share work-related content, make sure it’s already available to the public (nothing is truly private regardless of your settings).

• Always maintain situational awareness on the fireline. Firefighters looking at a camera are not looking up, down, and around — take photos when it’s safe.

• No compensation for content posted that related to your job.

• Uphold our reputation. Always do what’s right on the fireline and online.

• Remember, everything posted online is PERMANENT.

• If you have questions, ask your supervisor or contact your Public Affairs Officer (PAO) or Public Information Officer (PIO). You can reach agency PIO/PAO at 907-356-5511.

**Photos and Video**

Please contact your agency PAO or Incident PIO and ask how you can share photos and video. The public and media in Alaska are interested in wildland fire and appreciates photo and video to accompany stories. People in photos and video must be in proper PPE and behaving in a safe manner. Your photos and video can be a useful social media tool to educate the public about an incident’s current situation or wildland fires in general. Your PIO/PAO is always looking for photos and video to share with the public on the various social media platforms.

**ALASKA FIRE SPECIALIST SECTION**

The [Fire Specialist Section](#) is a unique program specific to Alaska. Personnel in this section are skilled in a variety of functional areas including operations, logistics, plans, and air operations. Diverse backgrounds and experience make fire specialists a valuable resource to consider for many positions on your incident.
Common roles filled by fire specialists include: staging area manager, Type 3 operations/logistics/plans, remote base camp manager, air operations, and communications.

Questions regarding FSS ordering should be directed through the AFS Duty Office at (907) 356-5660.

**ALASKA SMOKEJUMPERS**

The [Alaska Smokejumpers](#) consist of approximately 70 highly trained, highly experienced, and skilled wildland firefighters.

The Alaska Smokejumpers’ primary mission is to provide highly qualified, safe, and aggressive firefighters who can quickly and effectively respond to initial attack, extended attack, and point protection missions in Alaska and Lower 48.

Secondary missions include providing support for IMT teams and performing in specialized roles unique to Alaska. These roles include bear guards, boat operators, helispot construction and water handling. Smokejumpers specialize in managing fires and logistics in the remote, roadless areas of the Alaska.

Smokejumpers can be ordered for initial attack, extended attack, or point protection by ordering “a load of smokejumpers” through zone or state dispatch centers. A load of smokejumpers consists of 8-12 jumpers with saws, pumps, hose, food, and water sufficient for 48-72 hours. See the [Aviation Section](#) for more information.

**ALASKA HAND CREWS**

**Alaska Interagency Hotshot Crews (IHC)**

The BLM AFS hosts the [Chena and Midnight Sun IHC crews](#) out of AFS facilities on Fort Wainwright and the Alaska Division of Forestry hosts the [Pioneer Peak IHC](#) in Palmer.
Other DOF And AFS Agency Crews

DOF Gannett Glacier Type 2 Initial Attack Crew – based in Palmer, Alaska.

DOF White Mountain Type 2 Initial Attack Crew – Established in 2009 and is based at the DOF compound in Fairbanks.

BLM AFS North Star (volunteer) Fire Crew – Type 2 training crew that develops and supervises entry level hand crew personnel. Although classified as a Type 2 crew, the North Stars are trained and equipped to IHC standards. The North Star Fire Crew is designed to provide an experienced pool of potential recruits for the AFS Type I Interagency Hotshot Crews; provide entry level positions; provide AFS with an additional quick response hand crew; and provide Alaska natural resource agencies a low cost, labor intensive crew for project work.

Cooperative Alaska Fire Crews

Type 21A Yukon Fire Crew – Operates under a cooperative agreement between Chugachmuit, Inc. and the State of Alaska. The Yukon Crew was established in May 2005 as a Type 2 Hand Crew. It was elevated to initial attack status in 2006. Chugachmiut is a tribal consortium created to promote self-determination to the seven Native communities of the Chugach Region in Southcentral Alaska. The crew is based in Soldotna.

Tanana Chiefs Fire T21A Crew – Consists mostly of Alaskan Native tribal members. It is primarily supported by cooperative agreements between Tanana Chiefs Conference and the State of Alaska. The crew supports wildland fire incidents and works on fuel reduction projects in Alaska. Tanana Chiefs Conference (TCC) is a regional, non-profit consortium of 42 member tribes in interior Alaska. The crew is based in Tok.
Type 2 University of Alaska Fairbanks Wildland Fire Crew – Is supported by a cooperative agreement between the State of Alaska and the University of Alaska Fairbanks. The crew provides on-the-job training to students enrolled in the Wildland Fire Science program. The crew is based out of the Interior Alaska Campus in Fairbanks.

Other Alaska Type 2 Crews

Village Emergency Firefighter (EFF) Type 2 Crews

• AFS Galena Zone and the Alaska Division of Forestry sponsor Type 2 handcrews based in Alaska village communities.

• Hired and assembled on an as-needed basis. Qualifications and experience vary greatly depending on the personnel available.

• Do not come equipped. All support equipment, including Nomex, tools, line gear, etc. must be ordered.

• EFF crews come with a qualified overhead (CRWB and FFT1s) and fallers.

• Order a Strike Team Leader – Crew for each EFF crew.

• EFF crews can be ordered as a full crew (16-20 personnel) or as a squad. For L48 assignments, crews will have 20 crewmembers.

• EFF crews are available for fire assignments in Alaska and the L48.

Type 2 Wildland Fire Contract Hand Crews (AK2CC)

• Upper Yukon Region: Council for Athabascan Tribal Governments (CATG)
  > Assembly Points: Fort Yukon, Venetie, Arctic Village

• Lower Tanana Region: Capstone Fire
  > Assembly Points: Minto, Tanana

• Upper Koyukuk Region: S. E. S. Fire
  > Assembly Points: Huslia, Hughes, Allakaket
• BLM AFS is soliciting contracts for additional Type 2 hand crews based in the AFS Galena Zone for faster response to wildfires in Western Alaska for the 2021 fire season.

Important notes for AK2CCs:
• Mandatory Availability Period (MAP) – June 1 to August 31.
• Crews are fully outfitted at assembly points and ready to work.
• Upper Yukon Tanana (UYT) Dispatch is the Host Unit Coordination Center (HUCC).
• These crews are NOT on the EFF Crew Rotation list.
• Crews can be ordered for use on all incidents in AK and L48.
• Zones will determine the need to send Contracting Officer’s Representative (COR) with crew.
• These are standard Type 2 crews trained and qualified to national standards.

*The AFS Midnight Sun Hotshots (red hardhats) and Chena Hotshots (black hardhats) on the Oregon Lakes Fire near Delta Junction in 2019.*
INCIDENT COMMANDER DEBRIEFING OUTLINE

Fire Size-up:
• Gave an accurate size-up of the fire to dispatch upon arrival?
• Managed fire suppression resources in accordance with the management objectives for the area and availability of resources?
• Did the unit support organization provide timely response and feedback to your needs?
• Were there any radio communication issues?

Provide for the Safety and Welfare of Assigned Personnel:
• Gave operation briefing prior to firefighters being assigned to incident operations?
• How were incoming resources debriefed; via radio, personal contact?
• Were agency work/rest guidelines followed? Was adequate food and water provided to firefighters?

Fire Suppression Operations:
• Explain how the strategies and tactics used met management objectives, without compromising adherence to the Fire Orders, Watch Out Situations, and LCES.
• How were weather conditions monitored: daily weather briefings, spot weather forecasts or other?
• Were adjustments needed to strategy and tactics?
• What were the potentially hazardous situations, and their mitigations?
• How were projected changes in the weather, tactics, hazards and fire behavior communicated to fire personnel?
• Were communications effective with dispatch and supervisor?
• Were all interested parties kept informed of progress, problems, and needs? Was aviation support used? If so, was it effective?

• Were there any injuries, close calls, or safety issues that should be discussed? Were these documented?

**Administrative Responsibilities:**

• Submitted complete documentation to supervisor for time, accidents, incident status, unit logs, evaluations, and other required or pertinent reports?

• Provided timely and effective notification of the fire status and unusual events or occurrences to dispatch and management?

• As requested, provided effective input into the Wildland Fire Decision Support System?

• If necessary, provided team transition briefing as assigned?

• Forms completed in accordance with local policy?

**DETERMINATION AND INVESTIGATION OF HUMAN-CAUSED FIRES**

• Determine if there is any possibly that the fire may be caused by human activity and not natural causes.

• Take pictures of the initial attack, aerial resources, fire behavior/wind, smoke column, and of general area of possible origin.

• Suppress fire as necessary but also locate and preserve the general area of the origin if safe to do so. Avoid disturbance such as mop up or walking through the origin. Flag off the area and ensure dispatch knows that it may be human caused. Determine if a Fire Investigator is needed to be dispatched to the incident. Dispatch or the Protection FMO should contact the Jurisdictional FMO for further guidance.

• Note that there may be more than one ignition area.
• Take note of witnesses. Get contact information (if possible) and or/other info such as picture or license plate number.
• Do not disturb or attempt to collect physical evidence.
• Document and write down all information collected.
• Ensure prompt ordering and delivery of the Fire Investigator since some materials degrade in time and weather exposure.

**Aids to Locating Fire Origin**

• The fire origin is key to fire investigation. Evidence at the origin can provide important information regarding the cause of the fire. Identifying and protecting this area should be of high priority for the initial attack responders. **PROTECT THE FIRE ORIGIN.**

• When the fire scene is reached, set up a systematic search of the area surrounding the origin. Look for the obvious to the not-so-obvious.

• Learn basic fire directional indicators: V at the tail, shielding and char indicators.

More indicators and origin determination information can be found at: [https://www.nwceg.gov/sites/default/files/publications/pms412.pdf](https://www.nwceg.gov/sites/default/files/publications/pms412.pdf)
Flag and Protect the circle around the origin.

Example of a V shaped burn pattern.

Example of irregular V or U shaped fire pattern.
ALASKA STAGING AREA MANAGER CHECKLIST

Before You Leave Civilization
- Get a briefing on objectives, lines of authority, priorities, limitations, previous contracts in the area, expected fire activity, expected duration and resources committed and ordered.
- Determine availability of services such as fuel, manpower, and equipment. Get proper paperwork to procure these services. Initiate orders to establish communication or to obtain aircraft, fuel and other resources that will take time to obtain.

On the Incident
Establish a base of operations. Lay out and designate facilities and areas. Command Post and dispatch should be set up away from the noise and dust with good access and line-of-sight to aircraft landing area(s).
- Establish and maintain separation of rotor and fixed-wing operations. Consider fueling needs for each as well as off-loading needs for heavy cargo transports.
- Consider support vehicle needs and traffic routes.
- Separate sleeping and cooking areas from work areas. Make sure latrine and wash areas are sanitary and appropriately located.
- Evaluate power or telephone needs. Determine availability and costs.
- Maintain separation from local activities if incident is near a village.
- Fill overhead and crews. Hire local casual hires, otherwise known as EFF, for jobs they can fill.
- Plan shifts based on expected workload. Use people in multiple functions if appropriate.
- Keep track of time, locations and assignments for all assigned personnel. Hire a timekeeper early in the incident.
- Provide pilot facilities including a quiet sleeping area and a standby area with maps of the incident.
• Develop and post a medivac plan.
• Considering ordering an Alaska Fire Medic Unit.
• Establish order times and procedures with the supporting dispatch offices. Use AK Logistics Job Aid for an ordering guide (also in Logistics Section of this guide).
• Establish property management and resource order systems for surrounding incidents and the staging area. Document all orders, issues, returns and demobilizations.
• Develop a communications plan. Identify frequencies for tactical, command, and air-to-ground, logistical, and emergency functions. Flight follow incident assigned/support aircraft locally. Assign RADO/ABRO for the staging area.

Before Demobilization of the Staging Area
• Backhaul everything. Burn cardboard and paper if conditions permit. Pick up any micro-trash, such as staples, afterwards.
• Check with locals for permission to use the village dump. Leave the incident area cleaner than it was before the camp was set up.
• Rehabilitate high impact areas. Fill in latrines and fire pits.

ORDERING HINTS FOR ALASKA

Basics
• Organize your orders by type (supplies, overhead, aviation, equipment, crews, equipment, fire medic, and commissary). Next, number your orders.
• Have dispatcher read your order back to you.
• Order one Strike Team Leader (STCR) for every Alaska Type 2 Emergency Firefighter (EFF) crew.
• Specify delivery time (do not say “ASAP”) and method (Paracargo, fixed wing, vehicle, etc.).
• Identify any priority items.
• Order for two or three days at a time (maximize delivery methods, especially aircraft).

**Basic Pump and Hose**
• 1 Mark 3 Pump Kit
• 40 Gallons Premix (5 gallons burns for 3 hours) – you get 24+ hours of pump operation time.
• 5,000 feet 1 ½ inch hose in hose bags
• 2,800 feet 1-inch hose in hose bags
• 25 1 ½ inch gated wye’s
• 25 1 ½ inch to 1-inch reducers
• 25 1-inch nozzles
• ½ Mile Hoselay Kit: 1300 feet 1-inch hose, 2600 feet 1-½ inch hose, nozzles, wyes, reducers

**Basic Chainsaw Order (EFF crews do not come with saws)**
• 1 Chainsaw Kit
• 5 gallons premix (approx. 20 hours trigger time)
• 10 quarts Bar Oil (approx. 20 hours trigger time)

**Basic Cabin Protection Order (see Pumps section for set-up guidelines)**
• 1 lightweight pump kit (Shindaiwa or Honda)
• 1 sprinkler kit
• 700 feet of 1-inch hose
• 10 gallons premix
• More supplies and kits are listed later in the Logistics Section.
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<th># of Crews</th>
<th>Items</th>
<th>OH Suggestions</th>
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</thead>
<tbody>
<tr>
<td>1 Crew</td>
<td>25 cubies 20 MREs 5 cans coffee 1 roll Visqueen</td>
<td>1 case bug dope 1 box garbage bags 1 belt weather kit 1 Boden kit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 STCR 1 line pack kit****</td>
</tr>
<tr>
<td>2 Crew</td>
<td>50 cubies 40 MREs 10 cans of coffee 10 boxes of sugar 2 rolls of Visqueen</td>
<td>2 case bug dope 2 box garbage bags 2 belt weather kits 10 rolls fiber tape 2 Boden kits</td>
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<tr>
<td></td>
<td></td>
<td>2 STCR 1 line pack kit****</td>
</tr>
<tr>
<td>3 Crew</td>
<td>75 cubies 60 MREs 15 cans coffee 15 boxes of sugar 4 rolls of Visqueen</td>
<td>3 case bug dope 3 box garbage bags 3 belt weather kits 15 rolls fiber tape 3 Boden kits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 STCR Timekeeper 1 line pack kit****</td>
</tr>
<tr>
<td>4 Crew</td>
<td>100 cubies 80 MREs 120 cans coffee 20 boxes of sugar 4 rolls of Visqueen</td>
<td>2 case bug dope 2 box garbage bags 2 belt weather kits 10 rolls fiber tape 2 Boden kits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 STCR Timekeeper Staging Area Manager 1 line pack kit****</td>
</tr>
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(Continued on next page)
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<tr>
<th># of Crews</th>
<th>Items</th>
<th>OH Suggestions</th>
</tr>
</thead>
</table>
| 5 Crew     | 125 cubies  
100 MREs  
25 cans coffee  
25 boxes of sugar  
5 rolls of Visqueen | 5 case bug dope  
5 box garbage bags  
5 belt weather kits  
25 rolls fiber tape  
5 Boden kits | 125 burlap bags  
5 cases AA batteries**  
5 cases toilet paper | 5 STCR  
Timekeeper  
Staging Area Manager  
1 single medic kit**** |
| 6 Crew     | 150 cubies  
120 MREs  
30 cans coffee  
30 boxes of sugar  
6 rolls of Visqueen | 6 case bug dope  
6 box garbage bags  
6 belt weather kits  
30 rolls fiber tape  
6 Boden kits | 150 burlap bags  
6 cases AA batteries**  
6 cases toilet paper | 6 STCR  
Timekeeper  
Staging Area Manager  
1 single medic kit**** |
| 7 Crew     | 170 cubies  
140 MREs  
35 cans coffee  
35 boxes of sugar  
6 rolls of Visqueen | 7 case bug dope  
7 box garbage bags  
7 belt weather kits  
35 rolls fiber tape  
5 Boden kits | 175 burlap bags  
7 cases AA batteries**  
7 cases toilet paper | 7 STCR  
Timekeeper  
Staging Area Manager  
1 single medic kit**** |

Type 2 Emergency Firefighter (EFF) Crews are expected to be 16-20 people  
*EFF Crews might come with nothing. Be sure to check with dispatch & order crew kits and radios (3-4 per crew).  
**Amounts are for old BK radios. New KNG radios use at least twice as many batteries as the old radios. Rechargeable batteries are recommended. Solar chargers are available from the warehouse.  
*** Fresh Food A Boxes are for two people for three days. B Boxes are for four people over three days.  
**** See Handy Safety section for definition of medical kits  
Other considerations after the first three days: Fresh food, gloves, flagging, fusees, files, ear plugs, head nets, lime, foot powder, p-cord, juice, Gatorade, box tea, extra coffee pots, drinking cups, coffee creamer, extra crew tarps, port-a-potties.
AFS CACHE ISSUE AND RETURN PROCEDURES

Issue to incident from initial attack paracargo aircraft or Alaska Cache System

- Spotter or head paracargo kicker tracks what supplies were dropped on which incident. Document delivery to fire on smokejumper run sheet/Paracargo Drop Report for following actions:
  - Cache issue – for all paracargo drops/orders.
  - Alaska smokejumper action – for all initial attack orders.

- All Alaska Cache orders are issued to the incident number or designated person. The Incident Commander or delegate will sign one copy of warehouse issue, noting discrepancies. The IC or delegate will ensure issue/interagency incident waybill is generated for supplies being returned to a Cache, and will ensure copies of issues/waybills are kept for the incident package.

Incident to Incident

Incident initiates an issue or Interagency Incident Waybill to the other incident. Issuing incident will keep one copy and send two copies to receiving incident.

- Receiving incident will sign and note any discrepancies on the waybill and return to appropriate cache. Upon notification of transfers, the Cache will transfer from one incident to the other.
- Receiving incident will keep supporting documentation for incident package.
- Verbal notification and agreement from both incidents to Cache will suffice if paperwork is not available (IA to IA). Cache and/or Dispatch will document names, dates and transaction to be performed.
Returns from Incident

- Incident initiates an issue or Interagency Incident Waybill to Cache.
- Keep copy of documentation for incident package.
- Tag all supplies and equipment with incident number.
- Any biohazard requires special packaging and/or handling. Contact Cache prior to returning.
- Tag garbage as garbage!

Theft Reporting

The Incident Commander is responsible for immediately reporting all incidents of theft. A written statement of circumstance must be forwarded to the AFS Cache Supply in Fairbanks within 24 hours.

Theft or damage involving government property where there is an indication of breaking and entering or other burglary activity requires immediate and direct reporting to local or federal law enforcement officials at or near the scene. All available information will be provided, including complete description of property damaged or missing, nature of break-in or vandalism, time of day, location, and any other pertinent data.

Theft of government property will be immediately reported through proper chain of command.
Portable fueling sites are critical to support remote Alaska fires. Fueling sites can consist of barrels (55-gallon drums) with a pump, or a larger fuel bladder operation.

What you need to know about portable fueling:

- **Barrels** – 55-gallon drum fueling is ideal for minimal fueling needs with anticipated short incident duration. Drums can be a challenge to deal with physically. A full drum weighs about 450 pounds. The drums are typically delivered to locations via fixed wing aircraft. Barrels must be kept in containment berms, which are available through the AFS warehouse.

- **Bladders** – Portable fuel bladders are typically used for fire support involving multiple aircraft with anticipated extended incident duration. The sites require a large, flat area usually found at remote airfield aprons. AFS has a full-time fueling staff which will set up and maintain the site.

If you are assigned in a logistical position for fire support (such as Staging Area Manager), you should have the AFS Aviation Fuel Shop’s assistance. Also keep these things in mind:

- **Location** – The site must be accessible by aircraft while not in the way of other operations.

- **Support** – Aviation Fuelers (AFUL) should be on site for the duration of the incident. If not, the actual fueling process needs to be handled by qualified individuals only (pilot or helicopter managers).

Monitor fuel level in anticipation of demobilization. Always leave enough fuel on hand for emergencies such as medical evacuations. Order additional fuel in advance.

The AFS Fuel Shop are the only personnel authorized to package a bladder for demobilization.
In general, the key positions to coordinate with are the Zone fire managers (FMOs and AFMOs), Unit Aviation Managers (UAMs), incident helicopter managers and pilots, and the on-site Aviation Fueler (AFUL).

**Fueling sites are a critical need! Order early and keep the Unit Aviation Manager informed. Fuel delivery can take up to 96 hours.**

See the Aviation section of this guide for important information about aviation transport of hazmat.
ALASKA FIRE CAMPS

Fire camps in rural Alaska are similar to remote fires in the Lower 48, but have their own special concerns. Reducing animal issues and camp illnesses are high priorities. Camps should be monitored for cleanliness. All personnel should be supplied for three days, including food and water.

Camp location should be based on:

- Distance to fire – difficult to travel overland in remote parts of Alaska.
- Helicopter access – Most likely mode of re-supply.
- On or near rivers – Water rises and sand bars disappear; bears travel along water ways.
- Latrines – Typically, latrines are dug and used at camp locations.
- Land ownership – Make sure it’s not an allotment or privately held.

Type 2 Emergency Firefighter Crews in camp:

Generally, crews are located near but not in camp with overhead personnel. Also, it is common for crews to leave a camp boss back to prepare meals, keep camp areas clean and ward off bears. Overhead personnel should be considerate when approaching a crew camp and wait for an invitation to approach the campfire/kitchen area. Meals, especially once fresh food is ordered, are cooked for the entire crew by the camp boss. Remember that the crews are comprised of people from the same village and most of the folks are related. You are entering their village when entering their camp. Be considerate.

Unique Camp Features:

- Latrines are dug by the crews for the crews. Dig your own for overhead.
• Tundra refrigerators are constructed by cutting a square out of the tundra down to permafrost, placing a fresh food box into the hole or lining it with Visqueen, and then placing the tundra on top of the box. Your food items will remain cold for several days.

A firefighter makes an arctic fridge by digging a hole in the ground down to the permafrost while keeping the tundra mat intact and used on top of the frame lid.

• Visqueen for tents, crew tarps, and parachutes for eating area can make life bearable when it rains.

• Fire pits are normally placed under the crew tarp. This will keep you warm and dry instead of warm/wet or cold/dry when it rains.

• Wash basins and kitchen areas are constructed from fresh food boxes and empty water cubie containers. Additionally, furniture and tripods are constructed from spruce or birch trees. Some camps get quite elaborate.

• When in doubt about camp life, ask a local firefighter.
• Items you will want to bring or order include insect repellant, head net, toilet paper, coffee cup, food and water for three days, rain gear.

• Trash should be backhauled as often as possible using proper bag and tag techniques – plastic garbage bag inside of burlap bag, marked as TRASH/GARBAGE. Burn anything that can safely be burned (paper, cardboard, etc.) and clean up microtrash, such as staples, afterward. More on backhaul under that heading.

• Cargo chutes are a priority backhaul item, as is trash.

FRESH FOOD BOXES

Fresh food may be used as an alternative to Meals-Ready-to-Eat (MREs). There are situations where the use of MREs does not make sense and alternative feeding methods should be considered.

There will be times when fresh food is not available. MREs will be substituted.

The fresh food Box A is designed to feed two people for three days. Box B is an alternative – not a supplement – to the Box A. Box B is designed to feed four people for three days and provide some slight diet changes and prevent an excess accumulation of food. (See comparison chart below.)

Keep in mind for ordering that Box A has been redesigned as a two-person box.

In preparation for fresh food delivery, ensure adequate pots, pans, cooking utensils, etc. are on hand or ordered. Crew kits contain these items, but additional cooking equipment will likely be needed. Open fires are a generally accepted method of cooking food. When this is not appropriate, or firewood is scarce, white gas stoves are available. Ice chests and ice delivery may need to be considered if there is limited permafrost for refrigeration.
On a typical incident, all personnel have some responsibility including preparation, cooking, cleaning, gathering of firewood, etc. if they want to eat. For crews, one crewmember commonly remains in camp to attend to these duties, particularly on fresh food delivery days.

Each crew will typically establish a kitchen at their camp. While generally not a problem, these camps should occasionally be inspected for sanitation and bear safety. For overhead, it is recommended to have one large cooking/eating area rather than several small ones.

When fresh food boxes are delivered, it is advised to label each box with the intended recipient’s name and box quantity. (For example: “CATG - 1 of 4” and “CATG - 2 of 4”, etc.) Label the crew’s boxes first and overhead’s last.

Every effort should be made to educate those unfamiliar with fresh food boxes on some of the basics such as posting the food cycle with a list of how many of each item an individual is entitled to over that cycle. For example, for each three days from the start of fresh food delivery, an individual gets one steak, three tortillas, three candy bars, two potatoes, etc.

**Fresh Food Ordering**

If the incident will last more than three days, order fresh food on the second day for delivery on the fourth. If the incident will last for an additional three or more days, order the Box As. If less, consider ordering the Box Bs.

There will always be situations where splitting a box to provide food to small groups makes sense. This practice should be the exception and not the rule.

Sufficient quantities should be ordered to limit division of boxes between cohesive units. For example, if you have three Type 2 crews, one with 20 personnel and two with 19 personnel, order 10 boxes per crew instead of trying to split a box between the two short crews.
For overhead, order box quantities for those assigned to each specific eating area. A typical example would be to order 19 boxes for 38 personnel at the Incident Command Post (don’t forget bus drivers, boat operators, etc.); seven boxes for 13 personnel at the helibase (don’t forget pilots, fuelers, etc.) and two boxes for the spike camp with six overhead. When in doubt – round up.

When assessing whether to order Box As or Box Bs, consider that the goal is to have adequate food for all personnel without accumulating too much. This requires continual monitoring for long duration incidents. Keep in mind that Box B feeds four people.

Anticipate incoming resources and keep the entire incident on the same three-day, fresh food cycle when it makes logistical sense to do so. This is a generally accepted practice and is highly recommended unless adequate quantities were not anticipated. In this case, new arrivals may have to wait until the following cycle. Other considerations include the incident’s ability to distribute large deliveries of fresh food because of staffing levels or transportation resources.

Toward the end of an incident, many crews will divide any leftover fresh food amongst the crewmembers to take home. This is a generally accepted practice if it doesn’t compromise demobilization, especially those requiring demob via aviation resources.

If the timing of crew or overhead demob is imminent, it is a generally accepted practice to limit the quantity of fresh food ordered. Personal items must be contained in one bag both to and from the fire, with a weight limitation of 45 pounds, as per the crew management guide.

Any remaining food items may be donated to a local food bank, if one exists or distributed equitably to a community.
**Fresh Food Contents and Quantity**

All food items shall meet the quality standards as noted in Section 5.10.

**Box A (feeds 2 people for 4 days)**

<table>
<thead>
<tr>
<th>Box A Item</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Steak, fresh frozen, New York Cut, 12 oz. each, individually wrapped</td>
<td>2</td>
<td>Each</td>
</tr>
<tr>
<td>2. Ham, precooked, frozen, boneless, 16 oz. package</td>
<td>1</td>
<td>Pkg.</td>
</tr>
<tr>
<td>3. Tuna solid white meat pouches 4 to 6 oz.</td>
<td>4</td>
<td>Pkg.</td>
</tr>
<tr>
<td>4. Chicken, white boneless meat, 12 oz.</td>
<td>1</td>
<td>Can</td>
</tr>
<tr>
<td>5. Wiener/Sausage, all beef, frozen, prepackaged, 1 lb.</td>
<td>1</td>
<td>Pkg.</td>
</tr>
<tr>
<td>6. Beef Jerky, 2.5 - 4 oz.</td>
<td>2</td>
<td>Pkg.</td>
</tr>
<tr>
<td>7. Bacon, precooked</td>
<td>1</td>
<td>Lbs.</td>
</tr>
<tr>
<td>8. Bread, 24 oz. 1 oz. or greater per slice, sliced, wrapped, 1 multi-grain, 1 white</td>
<td>2</td>
<td>Loaves</td>
</tr>
<tr>
<td>9. Potatoes, #1 bakers, Russet, Large</td>
<td>2</td>
<td>Each</td>
</tr>
<tr>
<td>10. Cabbage</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>11. Onion, medium, yellow</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>12. Carrots, fresh, 1 lb.</td>
<td>1</td>
<td>Bag</td>
</tr>
<tr>
<td>13. Oranges, L and small, mandarin or Tangelo</td>
<td>10</td>
<td>Each</td>
</tr>
<tr>
<td>14. Apples, (Two different kinds), Minimum Size 100 count</td>
<td>4</td>
<td>Each</td>
</tr>
<tr>
<td>15. Cheese, cheddar, mild or medium, sliced, 1 lb.</td>
<td>1</td>
<td>Lbs.</td>
</tr>
<tr>
<td>16. Cheese, Monterey Jack or Provolone, sliced 1½ lbs.</td>
<td>1/2</td>
<td>Lbs.</td>
</tr>
<tr>
<td>17. Peanut Butter, 8 oz Jar</td>
<td>2</td>
<td>Each</td>
</tr>
<tr>
<td>18. Jelly, squeeze bottle, (Grape or Strawberry) 20 oz</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>19. Vegetables, 2 corn, 2 green beans, 2 pork &amp; beans, 7.75 to 8.75 oz. (may substitute can size as long as quantity of food remains the same)</td>
<td>6</td>
<td>Cans</td>
</tr>
</tbody>
</table>

*(Continued on next page)*
<table>
<thead>
<tr>
<th>Box A Item</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. Rice, minute/instant, type, boil in a bag</td>
<td>1</td>
<td>Bag</td>
</tr>
<tr>
<td>21. Tortillas, Flour, large size, minimum 10 count</td>
<td>1</td>
<td>Pkg.</td>
</tr>
<tr>
<td>22. Refried beans, 16 oz.</td>
<td>1</td>
<td>Can</td>
</tr>
<tr>
<td>23. Salsa, individual packets (Minimum of 2 oz)</td>
<td>6</td>
<td>Each</td>
</tr>
<tr>
<td>24. Pilot Bread, 12 crackers total</td>
<td>1</td>
<td>Bag</td>
</tr>
<tr>
<td>25. Fruit, canned, variety of 4 cans such as pears, peaches, fruit cocktail, Mandarin oranges, etc.</td>
<td>4</td>
<td>Cans</td>
</tr>
<tr>
<td>26. Fruit, dried, assorted: apricots, dates, apples, pears, prunes, cranberries, etc. 6 oz. packages</td>
<td>2</td>
<td>Pkg.</td>
</tr>
<tr>
<td>27. Macaroni and Cheese, 7.25 oz. box</td>
<td>1</td>
<td>Box</td>
</tr>
<tr>
<td>28. Bouillon Cubes, 3 cubes chicken and 3 cubes beef where 1 cube makes 2 cups OR 1 Bag 6 cubes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>chicken and 6 cubes beef where 1 cube makes 1 cup; vendor bags contents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Breakfast Cereal, instant, oatmeal, 1.2 oz., assorted flavors</td>
<td>12</td>
<td>Pkg.</td>
</tr>
<tr>
<td>30. Egg Substitute (i.e. Egg Beaters), 1 box each equals 4 egg</td>
<td>1</td>
<td>Box</td>
</tr>
<tr>
<td>31. Candy bars, no less than three (3) different varieties of candy bar per Box that contains</td>
<td>6</td>
<td>Each</td>
</tr>
<tr>
<td>chocolate, “King</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Energy Bars, assorted flavors, a minimum of 2.25 oz. individually wrapped</td>
<td>6</td>
<td>Each</td>
</tr>
<tr>
<td>33. Breakfast Bars, fruit filled, individually wrapped, assorted fruit flavors</td>
<td>6</td>
<td>Each</td>
</tr>
<tr>
<td>34. Candy, assorted with a minimum of 2 varieties of hard, individually wrapped, 6 oz. or greater</td>
<td>1</td>
<td>Bag</td>
</tr>
<tr>
<td>35. Powdered Milk, 1 quart package</td>
<td>1</td>
<td>Pkg.</td>
</tr>
</tbody>
</table>

(Continued on next page)
<table>
<thead>
<tr>
<th>Box A Item</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>36. Drink mix. (Emergen-C brand or like product)</td>
<td>12</td>
<td>Each</td>
</tr>
<tr>
<td>37. Hot Chocolate, instant, 1 oz. pkg., makes 3/4 cup serving</td>
<td>10</td>
<td>Each</td>
</tr>
<tr>
<td>38. Salt, iodized, table, 4 oz. shaker</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>39. Pepper, black, table, ground, shaker, 1/2 oz.</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>40. Garlic, powder, shaker, 2 oz. or more</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>41. Honey, 12oz. squeeze bottle</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>42. Margarine, 12 oz.</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>43. Mayonnaise squeeze bottle. 10 -12 oz</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>44. Ketchup, squeeze bottle, 12 -14 oz.</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>45. Mustard, squeeze bottle, 8 -11 oz.</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>46. Hot Sauce, Tabasco, Tapatio or similar pepper sauce, 2-5 oz</td>
<td>2</td>
<td>Each</td>
</tr>
<tr>
<td>47. Plates, disposable, paper, 10”, heavy duty</td>
<td>18</td>
<td>Each</td>
</tr>
<tr>
<td>48. Utensils, eating, plastic, heavy duty, forks, spoons, knives, 3 to a pkg.</td>
<td>12</td>
<td>Sets</td>
</tr>
<tr>
<td>49. Paper Towels, heavy duty, 75/95 two-ply towels per roll</td>
<td>1</td>
<td>Roll</td>
</tr>
<tr>
<td>50. Aluminum Foil, 12” x 25’ roll/box</td>
<td>1</td>
<td>Box</td>
</tr>
<tr>
<td>51. Resealable (i.e. Ziploc or similar type), pint or quart freezer bags</td>
<td>25</td>
<td>Each</td>
</tr>
<tr>
<td>52. Bags. Garbage type, plastic, heavy duty, 13gallon</td>
<td>3</td>
<td>Each</td>
</tr>
<tr>
<td>53. Can opener, lid removing type, P-38 or similar size</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>54. Moistened towelettes, individually wrapped</td>
<td>12</td>
<td>Each</td>
</tr>
<tr>
<td>55. Gloves for food handling</td>
<td>6</td>
<td>Pair</td>
</tr>
</tbody>
</table>

Note: May substitute can size as long as the total quantity of fruit remains the same.
## Box B (feeds 4 people for 3 days)

<table>
<thead>
<tr>
<th>Box B Item</th>
<th>Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Steak, fresh frozen, New York Cut, 12 oz. each, individually wrapped</td>
<td>4</td>
<td>Each</td>
</tr>
<tr>
<td>2. Sausage/hotlinks, all beef or pork, frozen, prepackaged 1 lb.</td>
<td>2</td>
<td>Pkg.</td>
</tr>
<tr>
<td>3. Summer Sausage/Salami or like, all port or beef, frozen</td>
<td>1</td>
<td>Pkg.</td>
</tr>
<tr>
<td>4. Chicken, white boneless meat, 12 oz.</td>
<td>2</td>
<td>Can</td>
</tr>
<tr>
<td>5. Beef Jerky, 4 oz.</td>
<td>4</td>
<td>Pkg.</td>
</tr>
<tr>
<td>6. Bread, 24 oz. 1 oz. or greater per slice, sliced, wrapped</td>
<td>3</td>
<td>Loaves</td>
</tr>
<tr>
<td>7. Cheese, Swiss, sliced (or combination of sizes = 1 bl. or greater.</td>
<td>1</td>
<td>Pkg.</td>
</tr>
<tr>
<td>8. Breakfast cereal, instant oatmeal, 1.2 oz, assorted flavors</td>
<td>12</td>
<td>Pkg.</td>
</tr>
<tr>
<td>9. Candy bars, no less than 3 different varieties of candy</td>
<td>12</td>
<td>Each</td>
</tr>
<tr>
<td>10. Granola bars, moist &amp; chewy, individually wrapped</td>
<td>12</td>
<td>Each</td>
</tr>
<tr>
<td>11. Hot chocolate, instant, 1 oz. pkg., makes ⅜ cup servings</td>
<td>12</td>
<td>Each</td>
</tr>
<tr>
<td>12. Plates, disposable, paper, 10”, 3-layer construction, heavy duty</td>
<td>36</td>
<td>Each</td>
</tr>
<tr>
<td>13. Utensils, eating, plastic, heavy duty, forks spoons, knives</td>
<td>16</td>
<td>Sets</td>
</tr>
<tr>
<td>14. Paper towels, heavy duty, 75/95 two-ply towels per roll</td>
<td>1</td>
<td>Roll</td>
</tr>
<tr>
<td>15. Aluminum foil, heavy duty, 12”x50’ roll/box</td>
<td>1</td>
<td>Box</td>
</tr>
<tr>
<td>16. Margarine, 12 oz.</td>
<td>1</td>
<td>Each</td>
</tr>
<tr>
<td>17. Gloves for food handling</td>
<td>12</td>
<td>Pair</td>
</tr>
<tr>
<td>18. Moistened towelette, individually wrapped</td>
<td>16</td>
<td>Each</td>
</tr>
</tbody>
</table>
BACKHAUL

Incident personnel must take every opportunity to backhaul unused and unnecessary equipment, supplies, and trash. Remember, Alaska is huge and good logistical planning is paramount.

A helispot manager is a good resource for dealing with backhaul. A Cache Demobilization Specialist (CDSP) can be requested through the Cache system, and is another great source to handle backhaul necessities.

Backhaul Tips

Deadheading (returning with an empty aircraft) is not advisable. There is always something to backhaul. Keep efficiency in mind.

Burning paper/cardboard products on site avoids costly and unnecessary aircraft weight. However, consider the fire danger when picking a burning site. River gravel bars work well. Also, be sure to clean up any box remains such as staples.

Trash – Must be double wrapped. A plastic bag inside of a burlap bag is standard. This is critical because the trash may pass through many hands and be exchanged between several aircraft. Removing trash early and often reduces bear encounters. Do not use local dumps for disposal unless authorized. Don’t forget to label anything in a burlap bag. Label burlap trash as trash, and label other items packaged in burlap with the contents (fittings, etc.).

Fuel and fuel containers – It is often cheaper and safer to offer reasonable amounts of unused fuel to rural communities. This is done through a representative of the village council. Note that whenever fuel is transferred, a “BLM Record of Transfer of Ownership of Surplus Fuel” is required (available from the Zone FMO or Property Manager). All BLM labels must be removed or overwritten from any containers left behind. Do not leave anything without proper authorization and documentation.
Label all backhaul with the fire number. This is critical for warehouse tracking and proper incident credit.

Assemble backhaul at helispots every morning so it can be ready for pickup in the event an aircraft shows up, even if it is not anticipated.

**Proper backhaul assembly** – Whether in a net or internal, backhaul should be processed efficiently. Take time to build the backhaul into clean and compact loads. Save hazmat shipping boxes for use when backhauling. Purge all equipment and remove spigots from fuel containers. Remember, pilots and flight crews have the responsibility for not only what goes on the aircraft, but how it goes on the aircraft. For the sake of all passengers and crew, and considering the long flight back to Fairbanks, be sure that ALL garbage is properly packaged and sealed to limit odors.

**Safety**

Backhaul inherently contains hazmat. A few examples are pumps, saws, empty fuel containers, batteries, and fire extinguishers. Pay close attention to the packaging of these items and label appropriately. Always notify the pilot and/or crew of any aviation related hazmat transport. Hazmat transportation containers are available at the AFS warehouse – use them! Order a CDSP (backhaul specialist) a few days ahead of planned demobilization if necessary.

*See the Aviation Section of this guide for specific information on aviation transportation of hazmat.*
COMMUNICATIONS

The DOF and BLM Alaska Fire Service still depend heavily on conventional frequencies and repeaters. The DOF also uses digital frequencies and the statewide trunking system or Alaska Land Mobile Radio (ALMR). While there are many advantages to this, radio use has become a bit more complex. The BK Radio KNG-P150 is the standard portable radio that will work on both systems.

Digital channels are programmed the same way as conventional channels, except that most require a Network Access Code (NAC). See the DOF Radio Programming Guide for NAC codes. The NAC code is an option in the programming sequence (steps 18 and 19 below).

Scanning with the KNG – ALMR and Conventional

Two types of scan options are available in DOF portables – Dual Mode Scan (DMS) and channel scan. DMS Scan is used to scan trunking (ALMR) and conventional channels at the same time. This is useful when an ALMR talk group is used as part of daily operations. The drawback to this type of scan is that you have no priority option. It also limits the scanning speed and the number of conventional channels. Even though the DMS list will take 16 channels, generally you should limit the number of conventional channels to six. It is also important to note that the DMS scan list is global, meaning that any channel in the entire radio (even from different groups) can go into the list. DMS is activated by using the collar switch underneath the channel selector. An indicator will appear in the upper right corner of the screen.

Channel scan is for conventional channels only and works in much the same way as other BK Radio products. It is set up within each zone. The priority channel will be the selected channel unless changed in the menu under “Priority Channel Select.” Channel scan
is activated with the left-hand toggle switch, and priority scan is activated by the right-hand toggle. The channel scan option will not physically work on a trunking channel. The radio must be set to a conventional channel.

**KNG Radio Guide**

**To hand program a Conventional Channel:**
1. Start in a conventional channel. Press the menu button.
2. Arrow up until “keypad prog” is highlighted, then press enter.
3. Enter the password “000000,” then press enter.
4. Select “Keypad” and press enter.
5. Arrow down until “Channel” is highlighted.
6. Select either “Edit Channel or “Add Channel,” and then press enter.
7. Arrow up/down until the desired Zone is show, then press enter.
8. If adding a channel, enter the channel number you want to add. Press enter. Use 16 channels or less. Return to step 6.
9. If editing a channel, arrow up/down until the desired channel to edit is highlighted, then press enter.
10. Select “Channel Label,” then press enter.
11. Press CLR to remove the generic label or EDIT to edit the present label.
12. Enter the desired channel label using the alphanumeric keys. Cycle through the button for capital letters, press enter.
13. Select RX Frequency, then press enter.
14. Press CLR to remove the present frequency or EDIT to edit the present frequency.
15. Enter the desired frequency using the alphanumeric keys, then press enter.
16. Select RX Mode, press enter. AFS standard is analog.
17. If applicable, select RX Guard, then press enter.
18. Select appropriate mode: Off, Tone or Digital, then press enter.
19. If you selected Tone or Digital, press CLR or Edit, then enter the tone guard or NAC code, then press enter.
20. Select bandwidth, press enter. AFS standard is narrowband.
21. Select TX Power, press enter. AFS standard is selectable low.
22. Select TX Frequency, then press enter.
23. Press CLR to remove the present frequency or EDIT to edit the present frequency.
24. Enter the desired frequency by using the alphanumeric keys, then press enter.
25. Select TX Mode, then press enter.
26. Select the appropriate mode – i.e. analog, digital or mixed – then press enter. Note, always use analog unless directed otherwise.
27. If applicable, select TX Guard, then press enter.
28. Select appropriate mode – off, tone or digital, then press enter.
29. If you selected tone or digital, press CLR or Edit, then enter the Tone Guard or NAC code, then press enter.
30. Repeat this procedure for each channel to be programmed.
31. When done, press ESC until you return to the main screen, or turn the channel select dial. After you have completed hand programming then channel, adjust the squelch levels for best sensitivity.
Squelch Level Adjustment on Conventional Channels

1. Press the menu button.
2. Highlight “Squelch Adjust,” then press enter.
3. Highlight “Adjust,” then press enter.
4. Use the +/- buttons to the deserved level, then press enter.
5. If the squelch level is adjusted too high, you will hear the squelch noise through the speaker. This will cause constant open squelch. If you move the squelch marker just below the level of the constant open squelch, the radio receiver will be at its most sensitive setting. If you get sporadic breaking squelch noise, you want to move the squelch level one or two spaces more to the left.
6. Press ESC or turn the power off to return to the main screen.

Menu Shortcuts

• Add a conventional zone (steps separated by /):
  Menu/16/000000/ENT/ENT/3/2/Standard/ENT/ESC back to home screen/Zone/Pick zone just added/ENT

• Add a command zone:
  Menu/16/000000/ENT/ENT/3/2/Command/ENT/ESC back to home screen/Zone/Pick zone just added/ENT

• Add a conventional channel to a command or conventional zone:
  Start in zone/channel to be copied/Menu/5/select zone you want channel copied to/select channel to be copied/ENT

• Delete Conventional Channel:
  Menu/16/000000/ENT/ENT/4/3/select zone/ENT/select channel/ENT

• Delete command channel:
  Start in zone/turn to desired channel/Menu/5/ENT

• Program a channel:
  Menu/16/ENT/000000/ENT/ENT/4/ENT/1/ENT/Select Zone/ENT/select channel/ENT/enter the information under appropriate heading

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• Adjust squelch:
  Menu/8/ENT/Adjust/ENT/choose category/ENT/adjust squelch using + or - arrows/ENT

**Cloning Guide**

Attach cloning cable to the two radios you want to clone to/from. The cord can go either way between radios.

**KNG to KNG**

- On destination radio, place the radio in the zone you want to be
  Menu/10/ENT/Enter Dest Clone
- On source radio, place radio in the zone to be cloned from
- Menu/10/ENT/Clone Active Zone/ENT
- Be patient. This takes longer than DPH to DPH.

**KNG to DPH**

- On DPH radio, select group to be cloned. Turn squelch button fully counterclockwise.
- On KNG radio, place radio in the zone to be cloned from.
- Menu/10/ENT/Clone Active Zone/ENT

**DPH to KNG**

- One KNG radio, place the radio in the zone to be cloned.
- Menu/10/ENT/Enter Dest Clone/ENT
- On DPH radio, place radio in the group to be cloned from.
- Press button on cloning cable and hold ENT button/000000/
  ENT/*/FNC
- You must check squelch on your new zone. They automatically
default to midline squelch.
Telephone Feature

Making a Call on a Handheld Radio

1. Press the PTT button from your handheld radio and enter *99, then release the PTT.

2. Wait for radio to respond with a dial tone.

3. Press the PTT and enter the desired phone number, then enter #. Example: 00190735634#

4. Release the PTT. Wait for several seconds to make the connection.

5. Talk on radio. Remember, this is a radio. Press PTT to talk. Release PTT to listen.

6. When finished, hang up the line by pressing PTT and entering #999

Answering an Incoming Call

1. When the Radio rings, press PTT and enter #99 release PTT. The phone will only ring twice.

2. Talk on radio. Remember, this is a radio. Press PTT to talk. Release PTT to listen.

3. When finished, hang up the line by pressing PTT and entering #99.
LARSEN/THROW ANTENNAS

Larsen antennas are available for checkout through the AFS warehouse. The antennas work well on Interior Alaska’s extensive flats and boost the receiving and transmission capabilities of handheld KNG radios.

The antenna is simple and straightforward. It is essentially a 20-foot antenna extension cable that plugs in to the port on the side of your KNG radio. The antenna can be thrown in a tree, raised on a branch, or attached to a hotstick pole. Ideally, the one-foot metal end should not contact any metal objects. This allows for the best communication, however, hastily throwing them in a tree for a quick conversation will often immediately improve clarity.

The Larsen antenna kit and hotstick are both available to order through the warehouse.
• Make sure a SIM card is inserted and the battery is charged.

• Check antenna seating and reseat if not firmly against body of phone. Swing antenna up to click stop. Hold base of antenna, pull body of antenna to extend it to its full length.

• Press the power button on the keypad. It is the red circle at the lower left.

• Most phones from AFS do not require a PIN number, however, some phones may have the PIN checking turned on. If so, the default PIN is set to 1111. Be sure to check out your phone prior to travel so you know the PIN if one is required.

• Check the display as the phone cycles through its power on testing and resisters with the satellite system. Once the phone displays “Registered” and has three to four bars showing in the signal strength across the top, you should be able to make or receive calls. Signal strength is displayed across the top along with the time and battery charge indicator.

• When holding the phone to your ear, swing the antenna into a position that keeps it as vertical as possible. There are click stops for left- and right-handed use.

• You will hear a tone indicating the system is connecting the call. You should hear the normal ringing sound when it is connected. If you hear a double beep, or the tone or ringing stops, look at the display to see the status. If the call is aborted, you’ll be able to press “OK” to redial after a few seconds following the termination of the call.
• Anytime the display shows “Iridium,” press “OK” to bring up the last number dialed. Press “OK” again to dial the number.

• Pressing the “^” key on the lower right brings up an iconic menu on the display. The arrow buttons below the display scroll the icons.

• If all else fails, read the manual.

**Call Procedures**

**To call a landline or cell phone from an Iridium phone:**
00-697-area code-7-digit phone number

**To call an Iridium phone from another Iridium phone:**
00 then 12-digit Iridium phone number

**To call an AFS Iridium phone from a cell phone or landline:**
1-807-794-last four digits of Iridium phone number

**To use the SOS button:** Remove the top cover and depress the red button

**To cancel the SOS:** Select “Menu,” arrow to highlight “Setup,” press “Select,” “Location Options” will be highlighted, press “Select,” arrow to highlight “Emergency Options,” press “Select,” “Cancel Emergency” highlighted, press “Select.”

**To send an SMS text message:** Select “Menu,” arrow to highlight “Messages,” press “Select,” “Create Message” will be highlighted, press “Select,” type your message, press “Options,” “Send” will be highlighted, press “Select,” “New Recipient” will be highlighted, press “Add,” enter email address, press “Send.”
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handy Dandy</td>
<td>Order “filled,” 36 per pallet</td>
</tr>
<tr>
<td>Cubies</td>
<td>48 per pallet</td>
</tr>
<tr>
<td>MREs</td>
<td>AAs, 24 per package, 8 pkgs per case</td>
</tr>
<tr>
<td>Batteries</td>
<td>Batteries</td>
</tr>
<tr>
<td>Bug Dope</td>
<td>Cutter pump, 12 per box</td>
</tr>
<tr>
<td>First aid kit</td>
<td>SAFETY ITEM, red crew style</td>
</tr>
<tr>
<td>Coffee</td>
<td>Approximately 2 pounds</td>
</tr>
<tr>
<td>Sugar</td>
<td>1-pound box</td>
</tr>
<tr>
<td>Creamer</td>
<td>50 packets per container, 20 containers per box</td>
</tr>
<tr>
<td>Coffee pot</td>
<td></td>
</tr>
<tr>
<td>Toilet paper</td>
<td></td>
</tr>
<tr>
<td>Trash bags</td>
<td>100 per box</td>
</tr>
<tr>
<td>Burlap bags</td>
<td>50 per bundle</td>
</tr>
<tr>
<td>Fiber tape</td>
<td>36 per case</td>
</tr>
<tr>
<td>Plastic sheeting</td>
<td>Black, 20x100 foot roll</td>
</tr>
<tr>
<td>P-cord</td>
<td>110-feet bundles</td>
</tr>
<tr>
<td>Satellite phone kit!</td>
<td>SAFETY ITEM, extra batteries?</td>
</tr>
<tr>
<td>Premix*</td>
<td>5 gallon can, HAZMAT, got spigot?</td>
</tr>
<tr>
<td>Bar oil*</td>
<td>12 per case, HAZMAT</td>
</tr>
<tr>
<td>Standard “Canned”</td>
<td></td>
</tr>
<tr>
<td>Sleeping bags</td>
<td>Things get wet.</td>
</tr>
<tr>
<td>Long sleeping bags</td>
<td>Cold WX and for tall firefighters</td>
</tr>
<tr>
<td>Earplugs</td>
<td></td>
</tr>
</tbody>
</table>

(Continued on next page)
<table>
<thead>
<tr>
<th>Item Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard “Canned”</strong></td>
<td></td>
</tr>
<tr>
<td>Head nets</td>
<td></td>
</tr>
<tr>
<td>Flagging</td>
<td>Orange, 12 per box</td>
</tr>
<tr>
<td>Larson antenna</td>
<td></td>
</tr>
<tr>
<td>Lime</td>
<td>32 ounce bottles</td>
</tr>
<tr>
<td>Foot powder</td>
<td></td>
</tr>
<tr>
<td>Bath in a bag</td>
<td>255 per box</td>
</tr>
<tr>
<td>Mole skin</td>
<td></td>
</tr>
<tr>
<td>Rite in the rain pad</td>
<td>4-5/8 inches x 7 inches</td>
</tr>
<tr>
<td>Tent fly</td>
<td>16’x24’</td>
</tr>
<tr>
<td>Tent fly upright poles</td>
<td>2</td>
</tr>
<tr>
<td>Tent fly ridge poles</td>
<td>2</td>
</tr>
<tr>
<td>Tent fly stakes</td>
<td>12 should do</td>
</tr>
<tr>
<td>Crash rescue kit*</td>
<td>SAFETY ITEM</td>
</tr>
<tr>
<td>Fire extinguisher</td>
<td>SAFETY ITEM/HAZMAT</td>
</tr>
<tr>
<td>Pulaski*</td>
<td>10 per box</td>
</tr>
<tr>
<td>Shovel*</td>
<td>10 per box, good for camp too</td>
</tr>
<tr>
<td>Backpack pumps*</td>
<td></td>
</tr>
<tr>
<td>Chainsaw kit</td>
<td>HAZMAT</td>
</tr>
<tr>
<td><strong>Extended</strong></td>
<td></td>
</tr>
<tr>
<td>Canteens</td>
<td></td>
</tr>
<tr>
<td>Paper cups</td>
<td></td>
</tr>
<tr>
<td>Leather firefighting gloves</td>
<td>Size XL, large, medium, small</td>
</tr>
<tr>
<td>Boot grease</td>
<td>Small can</td>
</tr>
</tbody>
</table>

*(Continued on next page)*
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extended</td>
<td></td>
</tr>
<tr>
<td>Fire pants</td>
<td>Small/Medium/Large</td>
</tr>
<tr>
<td>Sleeping pads</td>
<td></td>
</tr>
<tr>
<td>Writing paper</td>
<td>Pad, 8-1/2”x11”</td>
</tr>
<tr>
<td>Pens</td>
<td>12 per box</td>
</tr>
<tr>
<td>Mosquito coil</td>
<td>2 coiled per box</td>
</tr>
<tr>
<td>Fire shirts</td>
<td>Large/XL</td>
</tr>
<tr>
<td>Shipping tags</td>
<td></td>
</tr>
<tr>
<td>Ice chests</td>
<td></td>
</tr>
<tr>
<td>Bung wrench</td>
<td></td>
</tr>
<tr>
<td>Life vests</td>
<td>SAFETY ITEM</td>
</tr>
<tr>
<td>Cook pot</td>
<td></td>
</tr>
<tr>
<td>Frying pan</td>
<td></td>
</tr>
<tr>
<td>Utensil kit!</td>
<td></td>
</tr>
<tr>
<td>Belt weather kit!</td>
<td></td>
</tr>
<tr>
<td>Calculator</td>
<td></td>
</tr>
<tr>
<td>Dry erase board</td>
<td>Specify size</td>
</tr>
<tr>
<td>Dry erase markers</td>
<td></td>
</tr>
<tr>
<td>Cardboard filing box</td>
<td>For your records</td>
</tr>
<tr>
<td>Clipboard</td>
<td></td>
</tr>
<tr>
<td>Alarm clock</td>
<td></td>
</tr>
<tr>
<td>Scale</td>
<td>Lay on the ground type</td>
</tr>
<tr>
<td>T-card sorter</td>
<td></td>
</tr>
<tr>
<td>Folding tables</td>
<td></td>
</tr>
<tr>
<td>Propane stove</td>
<td></td>
</tr>
<tr>
<td>Folding chairs</td>
<td></td>
</tr>
</tbody>
</table>

*(Continued on next page)*
<table>
<thead>
<tr>
<th>Item Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extended</td>
<td></td>
</tr>
<tr>
<td>Propane heater</td>
<td></td>
</tr>
<tr>
<td>Wall tent</td>
<td></td>
</tr>
<tr>
<td>Hotstick telescoping pole</td>
<td></td>
</tr>
<tr>
<td>ICOM radio</td>
<td>If heavy air traffic</td>
</tr>
</tbody>
</table>
| Mark 3 pump kit*             | Should include A and B boxes. Specify.
| Lightweight pump kit*        |                                      |
| Cargo net kit*               | 6,000 lb., includes lead line and swivel. |
| Unleaded gas                 | 5 gal. can, HAZMAT, got spigot?      |
| Propane                      | 20 lb. tank, HAZMAT                  |
| Driptorch flue*              | 5 gal. can, HAZMAT, got spigot?      |
| Fusees*                      | 72 per box, HAZMAT                   |
| Crew kits                    |                                      |
| Crew kit!                    | Huge, see AK warehouse catalog for details. |
| EFF line gear                |                                      |
| Fresh Food                   |                                      |
| Box A                        | Order 72 hours ahead. Zone approval? |
| Box B                        |                                      |

Re-evaluate these items often. HAZMAT

*Tactical/Air Ops Item - Need and amounts vary by assignment!
Kit item - may include items listed individually. This is to be used as a guide only. Use common sense and good judgement when ordering. Consult Alaska Interagency Catalog for details.

Other items to consider (see appropriate Handy Dandy section): Firearms (shotgun and shells), medical kits, portable fueling sites.
ALASKA LOCAL SUPPLIES

Reference the Alaska Interagency Catalog for catalog numbers and detailed contents for kits.

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit of Measure</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog, Alaska Interagency</td>
<td>BK</td>
<td>1</td>
</tr>
<tr>
<td>Food, Fresh Food Box A</td>
<td>BX</td>
<td>65</td>
</tr>
<tr>
<td>Food, Fresh Food Box B</td>
<td>BX</td>
<td>30</td>
</tr>
<tr>
<td>Fuel, White gas, 1 gal (6 cans/case)</td>
<td>CN</td>
<td>7</td>
</tr>
<tr>
<td>Fuel, Jet-A, 55 gal (local purchase item/fuelers)</td>
<td>DR</td>
<td>425</td>
</tr>
<tr>
<td>Fuel, Premix, 5 gal</td>
<td>CN</td>
<td>40</td>
</tr>
<tr>
<td>Fuel, Gas, Unleaded 5 gal</td>
<td>CN</td>
<td>40</td>
</tr>
<tr>
<td>Fuel, Driptorch 5gal</td>
<td>CN</td>
<td>40</td>
</tr>
<tr>
<td>Fuel, Premix 55 gal</td>
<td>DR</td>
<td>420</td>
</tr>
<tr>
<td>Fuel, Unleaded 55 gal</td>
<td>DR</td>
<td>420</td>
</tr>
<tr>
<td>Fuel, Driptorch 55 gal</td>
<td>DR</td>
<td>350</td>
</tr>
<tr>
<td>Lime, Hydrated, 32-64 oz</td>
<td>BT</td>
<td>1</td>
</tr>
<tr>
<td>Net, Head, Mosquito</td>
<td>EA</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Repellent, Insect, PIC (package = 12 coils)</td>
<td>PG</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Kit, Firefighter, EFF Pack</td>
<td>KT</td>
<td>20</td>
</tr>
<tr>
<td>Kit, Air Ops</td>
<td>KT</td>
<td>96</td>
</tr>
<tr>
<td>Kit, Berm, Containment, Large (9-drum)</td>
<td>KT</td>
<td>58</td>
</tr>
<tr>
<td>Kit, Copier Box A</td>
<td>KT</td>
<td>93</td>
</tr>
<tr>
<td>Kit, Copier Box B</td>
<td>KT</td>
<td>64</td>
</tr>
<tr>
<td>Kit, Crew, 20-person</td>
<td>KT</td>
<td>1008</td>
</tr>
</tbody>
</table>

(Continued on next page)
<table>
<thead>
<tr>
<th>Description</th>
<th>Unit of Measure</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kit, Fuel Transfer</td>
<td>KT</td>
<td>545</td>
</tr>
<tr>
<td>* Does not include fuel bladder. Contact fuel shop for sizes and options.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kit, Hose Lay, ½ Mile</td>
<td>KT</td>
<td>520</td>
</tr>
<tr>
<td>Kit, Mop-up (3/4” hose)</td>
<td>KT</td>
<td>28</td>
</tr>
<tr>
<td>Kit, Net, Cargo (3000 lb)</td>
<td>KT</td>
<td>48</td>
</tr>
<tr>
<td>Kit, Net, Cargo (6000 lb)</td>
<td>KT</td>
<td>82</td>
</tr>
<tr>
<td>Kit, Pump, Barrel, Aircraft, Hand</td>
<td>KT</td>
<td>71</td>
</tr>
<tr>
<td>Kit, Pump, Barrel, Hand</td>
<td>KT</td>
<td>18</td>
</tr>
<tr>
<td>Kit, Satellite Phone</td>
<td>KT</td>
<td>5</td>
</tr>
<tr>
<td>Kit, Spill Containment, Small</td>
<td>KT</td>
<td>12</td>
</tr>
<tr>
<td>Kit, Sprinkler (need lightweight pump)</td>
<td>KT</td>
<td>39</td>
</tr>
<tr>
<td>Kit, Sprinkler (need MK-3 pump)</td>
<td>KT</td>
<td>65</td>
</tr>
<tr>
<td>Kit, Shotgun</td>
<td>KT</td>
<td>24</td>
</tr>
<tr>
<td>Kit, Utensil</td>
<td>KT</td>
<td>5</td>
</tr>
<tr>
<td>Saw, Fano, folding (lg teeth – 17” blade)</td>
<td>EA</td>
<td>1</td>
</tr>
<tr>
<td>Blade, Replacement (F180 for Fano Saw)</td>
<td>EA</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Kit, Shelter, Weatherport (10’x20’)</td>
<td>KT</td>
<td>430</td>
</tr>
<tr>
<td>*Shipped in 2 wooden crates (82”Lx33”Wx9”D). Bug screen on one end with doorway.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type III Incident Support (DOF)</td>
<td>KT</td>
<td></td>
</tr>
</tbody>
</table>

DR= drum; CN=can; PG=package; KT=kit; EA=each; BX=box; BK=book; BD=bundle; BG=bag

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Flight Following

Flight following is required from departure to arrival. The approved standard methods of flight-following are:

- Automated Flight Following (AFF) – AFF with an approved Dispatch Center.
- Instrument Flight Rules (IFR) – An IFR flight plan filed with FAA

The chosen method of flight following must be relayed to the dispatch center responsible for flight following.

Upon departure, the pilot or flight manager must inform dispatch of:

- Entire aircraft tail number
- Departure and destination and/or heading
- Souls on board
- Fuel on board
- Estimated time enroute (ETE)
- Estimated time on the ground (if applicable)

The pilot or flight manager must contact dispatch prior to each departure, as soon as practical after each landing, and before any deviations.

If AFF capability is lost, 30-minute radio or satellite phone check-ins with dispatch must resume. Pilots and flight managers are responsible for monitoring radio repeaters and satellite phones to receive messages from dispatch.

Note: If unable to contact your dispatch center for flight following, you may contact an FAA Flight Service Station and ask them to relay a message. The FAA does not provide flight following services.
Sterile Cockpit

Sterile cockpit is defined as limiting communications and actions within the cockpit to only those required for safe maneuvering and traffic separation. This means that communications with dispatch, ground personnel and other aircraft concerning mission information is prohibited. Pilots will always be given the opportunity to maneuver the aircraft safely, without undue physical or mental interference. This is especially important during approach/departure and take-off/landings.

A sterile cockpit will be maintained within a five-mile radius of controlled and uncontrolled airports, and during approach and departure at remote helispots and airstrips for a time period specified by the pilot.

Exception: When conducting firefighting missions within five miles of an uncontrolled airport, maintain sterile cockpit until departing the traffic pattern and reaching final altitude. Monitor common traffic advisory frequency (CTAF) if feasible while engaged in firefighting activities. Monitor CTAF as soon as practical upon leaving the fire and returning to the uncontrolled airport. When conducting firefighting missions within Class B, C, or D airspace, notify dispatch that air traffic control (ATC) will have priority over dispatch communications.
Latitude-Longitude Formats for Aviation Use

Most people are familiar with reading coordinates from paper maps and GPS units. However, different agencies utilize different formats. Using the correct datum and format when working with aviation resources will cut down on confusion and errors.

GPS Datums

- Datums define the origin and orientation of latitude (lat)/longitude (long) lines.
- Describing a place by lat/long is not good enough. The datum must also be stated.
- Changing the datum changes the lat/long of a point on the surface of the Earth.
- There are hundreds of different datums; agencies use different datums.
- Referencing lat/long coordinates to the wrong datum can result in positional errors of hundreds of feet/meters.
- Common North American Datums (NAD): WGS84, NAD83, NAD27.

Know Your Agency’s Standard Format and Datum

- BLM GIS (Various).
- BLM Fire (Degrees and Decimal Minutes, WGS84).
- BLM Aviation (Degrees and Decimal Minutes, WGS84, DD° mm.xxxx’/DDD° mm.xxxx’).
- FAA Temporary Flight Restrictions (Degrees, Minutes and Seconds, WGS84). US NOTAM OFFICE FORMAT DD° mm’ ss” N/DDD° mm’ ss” W.
- National Weather Service (Decimal Degrees, NAD83).
- Common Map format (Degree, Minute, Seconds, Various Datums).
Remember to:

- Use only ONE period/decimal point when writing a latitude or longitude in **Decimal** Degrees (DD.xxxx°/DDD.xxxx°), Degrees and **Decimal** Minutes (DD° mm.xxxx’/DDD° mm.xxxx’) or Degrees, Minutes and **Decimal** Seconds (DD0 mm’ ss.xxxx”/DDD° mm’ ss.xxxx”).

- Do NOT use periods/decimal points for degrees, minutes or seconds when writing a latitude or longitude in Degrees, Minutes and Seconds (DD° mm’ ss”/DDD° mm’ ss”).

- There can NEVER be more than 60 minutes or seconds in Minutes and Seconds formats.

- Do NOT mix formats.

- Know, use, and state the proper datum.

*When in doubt, utilize WGS84 Datum in Degrees Decimal Minutes when working with Aviation*
## AIRPORT LOCATIONS AND RUNWAY INFORMATION

### Galena Zone

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<thead>
<tr>
<th>Location</th>
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<th>Runway Info</th>
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## Tanana Zone

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**Distance (Air Miles)**
The Alaska Smokejumpers use the CASA 212-200, the Dornier 228, and the Dash-8. The Dash-8 significantly increases the number of personnel, amount of cargo, response time, and range available for initial attack. Both the Dornier and the CASA carry eight jumpers, referred to as a “load of smokejumpers,” while the Dash-8 can carry 12 smokejumpers. Each jumper exits the aircraft with a personal gear bag, personal items, and a tent/shelter. They are then supplied with paracargo from the same aircraft with remaining gear needs (sleeping bags, tools, food/water, cookpots, bug netting, etc.). Each aircraft also carries two chainsaw kits per load and an assortment of pumps and hose.

- The CASA carries one lightweight pump kit, one Mark III pump kit, 1000 feet of 1 ½-inch hose, and 1400 feet of 1-inch hose.
- The Dornier is a smaller frame and carries two lightweight pump kits.
- The Dash-8 carries two Mark III pump kits, two lightweight pump kits, three chainsaw kits, 20 gallons of premix, six 1 ½-inch hose bags, 1 drip torch kit and two sprinkler kits.
All aircraft have a trauma kit on board set up for paracargo delivery.

**Deployment Time Frames**

Once a load is officially requested from the Alaska Interagency Coordination Center, the goal is wheels-up in six minutes.

A CASA 212 can cruise about 170 knots and is loaded with three hours and 15 minutes of fuel, while a Dornier can cruise about 200 knots and is loaded with two hours and 45 minutes of fuel. The Dash-8 can cruise at about 260 knots and is loaded with four hours and 30 minutes of fuel. Its speed provides statewide IA coverage from Fairbanks to all typical fire activity areas in less than two hours.

Due to the long response distances in Alaska, the CASA and Dornier smokejumper aircraft are often prepositioned at outstations such as McGrath, Galena, and Fort Yukon when fire activity is predicted. Sometimes a fuel stop is required prior to arrival on a fire.

Once on scene, smokejumper operations generally take 20-35 minutes depending on wind conditions, jump-spot selection, and other aircraft. Smokejumpers can usually be delivered directly to the fireline or work assignment location.
CASA 212:

Approximate PC Capabilities: up to four pallets and a 4000-pound aircraft payload

Possible standard loads for one pallet (each is a full pallet):

• 24 cubies
• 48 MREs
• 1-mile hose kit (5,400-feet standard hose lay with fittings)
• Three 55-gallon fuel drums
• Eight fresh food boxes
• Eight Mark 3 pump boxes
• 24 5-gallon fuel cans
• One Zodiac boat kit (boat, motor, fuel, PFD’s, etc.)
• 12 hose bags (5,000 feet of 1 ½ inch per bag or 700 feet of 1 inch per bag)

Dash-8:

Approximate PC Capabilities: several A-22s up to 500 pounds each and a max aircraft payload of 7,500 pounds

• The Dash-8 is not normally used for paracargo orders; however, it can be utilized under certain circumstances. Talk with dispatch and paracargo if you think this may be the best platform for delivery of your supplies.
**Ordering Info Needed:**
- Lat/Long of drop zone(s)
- Ground contact person to receive load at drop zone
- Air to Ground frequency being used on the fire

**Ordering Tips:**
- When you place an order with dispatch, request delivery via paracargo.
- After order is placed with dispatch, call paracargo directly (907-356-5534) to discuss order. Information useful to PC includes: priorities, timeframe, drop zones (A-22s or garbage), visibility, other aircraft in the area.
- In low visibility situations, inquire about the use of a JPAD (a GPS-guided parachute capable of delivering up to 500 pounds.)

**Ultimately, AICC makes the decision to use paracargo for delivery of your supply order. Be sure to follow up with dispatch to confirm how your order will be delivered.**
PC-12 N190PE “Interior 77”

The BLM-owned PC-12 is manufactured by Pilatus Aircraft. It is a single-engine turboprop with a pressurized cabin and performs passenger, cargo transport, aerial detection, and air tactical missions. OPE (pronounced “Opie”) is an AICC resource and must be scheduled through AICC.

**Specifications**

- **Max Takeoff Weight:** 9,965 lbs.
- **Max Fuel Capacity:** 2,702 lbs.
- **Endurance:** 6 hours
- **Cruise Speed:** 255 knots
- **Max Seating:** 9 passengers
- **Max Payload:** 3,200 lbs.
- **Max Cargo Load:** 2,200 lbs.
- **Fuel Type:** Jet A, Jet A-1, Jet B, JP-4
- **Fuel Consumption:** 400-500 lbs/hr
- **Service Ceiling:** 28,000 ft
- **Wingspan:** 53 ft.
- **Length:** 47 ft.
- **Height:** 14 ft.
- **Cargo Door:** 4’4” high x 4’5” wide

**Payload Scenarios**

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Quest Kodiak 100 N700FW

The Kodiak is an American utility aircraft designed and built by Quest Aircraft. The high-wing, unpressurized, single-engine turboprop has fixed tricycle landing gear and is suitable for short takeoff and landing (STOL) operations from unimproved airfields. It performs passenger, cargo transport, aerial detection, and air tactical missions. “OFW” is an AFS Military Zone resource and must be scheduled through the Military Zone. The Kodiak and PC-12 are two of four BLM-owned aircraft utilized in Alaska.

Specifications

Max Takeoff Weight: 7,255 lbs.
Max Fuel Capacity: 2,110 lbs.
Endurance: 5.7 hours
Cruise Speed: 145 knots
Max Seating: 6 passengers
Max Payload: lbs.
Max Cargo Load: lbs.

Fuel Consumption: 300 lbs/hr
Service Ceiling: *12,500 ft. w/passengers
25,000 ft w/oxygen
Wingspan: 45 ft. 0 in.
Length: 34 ft. 2 in.
Height: 15 ft. 3 in.
Cargo Door: 4’0” high x 4’0” wide

Payload Scenarios

<table>
<thead>
<tr>
<th>Hours of fuel</th>
<th># of Passengers (180 pounds each)</th>
<th>Passenger baggage (pounds)</th>
<th>Cargo load only (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2/3/4</td>
<td>1,640/1,460/1,280</td>
<td>2,000</td>
</tr>
<tr>
<td>2</td>
<td>5/6</td>
<td>1,100/920</td>
<td>2,000</td>
</tr>
<tr>
<td>3</td>
<td>2/3/4</td>
<td>1,140/1,260/1,080</td>
<td>1,800</td>
</tr>
<tr>
<td>3</td>
<td>5/6</td>
<td>900/720</td>
<td>1,800</td>
</tr>
<tr>
<td>4</td>
<td>2/3/4</td>
<td>1,140/960/80</td>
<td>1,500</td>
</tr>
<tr>
<td>4</td>
<td>5/6</td>
<td>600/420</td>
<td>1,500</td>
</tr>
<tr>
<td>5</td>
<td>2/3/4</td>
<td>840/660/480</td>
<td>1,200</td>
</tr>
<tr>
<td>5</td>
<td>5/6</td>
<td>300/120</td>
<td>1,200</td>
</tr>
<tr>
<td>6</td>
<td>2/3/4</td>
<td>540/360/180</td>
<td>900</td>
</tr>
</tbody>
</table>
Air Tractor AT-802F “Fire Boss”

The AT-802F is manufactured by Air Tractor Inc., in Olney, Texas. It is a single-turbine, purpose-built aircraft used for water bombing. The AT-802F is powered by one Pratt & Whitney PT-6 with 1,350 or 1,600 horsepower. AFS annually contracts four of these water-scoopers for the fire season.

Specifications

Max Takeoff weight: 16,000 lbs.
Max Fuel Capacity: 2,546 lbs.
Endurance: 4 hours
Cruise Speed: 150 knots
Drop Speed: 105-110 knots
Skim Distance: 2,200 ft.
Takeoff Distance: 5,600 ft.
Fuel Type: Jet A
Fuel Consumption (Bomb): 95 lbs/hr
Fuel Consumption (Ferry): 85 lbs/hr
Wingspan: 59.2 ft.
Length: 35.7 ft.
Height: 16.2 ft.
Tank Capacity: 800 gallons
**Water source**

**Minimum Lake size:** Roughly 1-mile shore to shore  
**Water Depth:** 4 feet  
**Skim time:** 12-15 seconds  
*Rivers that are clear enough to see the bottom and any hazards can be used if the minimum scoopable distance can be met.

**Loading**

Two probes deploy from the float, loading 40 gallons per second at 60 miles per hour.

**Doors**

Fire retardant, foam, gel, or water flows from beneath the aircraft though a computer-controlled dispersal system. This gate permits either salvo drops or multiple drops with a constant flow of material at specific coverage levels.

**Limitations**

- Head Wind – 35 mph limit. Withstand rough water very well due to durable hull design.  
- Cross Wind – Excellent crosswind capability due to spaced floats providing stability.  
- Restricted to VFR daytime flights only.
The CL-415 is manufactured by Canadair Limited, Montreal. It is a twin turbine, high-wing, purpose-built aircraft used for water bombing. The CL-415 is powered by two Pratt & Whitney PW123 AF 2,380 horsepower engines. These aircraft are ordered when needed during the fire season.

**Specifications**

**Max Takeoff weight:** 16,000 lbs.

**Max Fuel Capacity:** 10,250 lbs.

**Endurance:** 4 hrs.

**Cruise Speed:** 170 knots

**Drop Speed:** 105-110 knots

**Skim Distance:** 1,250 ft.

**Takeoff Distance:** 4,200 ft.

**Fuel Type:** Jet A

**Fuel Consumption (Bomb):** 1,554 lbs/hr

**Fuel Consumption (Ferry):** 1,200 lbs/hr

**Wingspan:** 93.1 ft.

**Length:** 66.9 ft.

**Height:** 29.5 ft.

**Tank Capacity:** 1,620 gallons
**Water Source**

Minimum lake size: Roughly 1-mile shore to shore  
Water depth: 5 feet  
Skim time: 10-12 seconds  
*Rivers that are clear enough to see the bottom and any hazards can be used if the minimum scoopable distance can be met.*

Two water probes aft of each tank fill the tanks while skimming. The pilot controls the load level via a cockpit gauge and pulling up the probes when the desired level is reached. However, in order to load four tanks with two probes, a bifurcation is incorporated.

**Doors**

One 63-inch by 11-inch door for each compartment. Doors are electronic unlatch, free fall open and hydraulic close. The four compartments can be released singly, in pairs or all four doors together simultaneously.

**Wind Limitations**

- Head wind – 35 mph limit. Can withstand rough water very well due to durable hull design.
- Cross Winds – Excellent crosswind capability due to wing-tip floats.
CONVAIR CV-580

The Conair CV-580 is a turboprop version of the highly successful Convair 340/440 series of passenger and freighter aircraft. Possessing all the proven attributes of its predecessor, the CV-580 offers turbine reliability, improved fuel availability, and improved aircraft performance. Two tankers, T-42 and T-52, are contracted annually by the Alaska Division of Forestry with more ordered as needed.

**Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Takeoff Weight</td>
<td>58,156 lbs.</td>
</tr>
<tr>
<td>Normal Fuel Capacity</td>
<td>8,000 lbs.</td>
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<tr>
<td>Loaded Endurance</td>
<td>3 hrs.</td>
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<tr>
<td>Cruise Speed Loaded</td>
<td>270 knots</td>
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<tr>
<td>Drop Speed</td>
<td>125 knots</td>
</tr>
<tr>
<td>Takeoff Distance</td>
<td>5,000 ft.</td>
</tr>
<tr>
<td>Fuel Type</td>
<td>Jet A or B</td>
</tr>
<tr>
<td>Fuel Consumption</td>
<td>2,450 lbs/hr</td>
</tr>
<tr>
<td>Wingspan</td>
<td>104.3 ft.</td>
</tr>
<tr>
<td>Length</td>
<td>81.5 ft.</td>
</tr>
<tr>
<td>Height</td>
<td>29.1 ft.</td>
</tr>
<tr>
<td>Tank Capacity</td>
<td>2,000 gallons</td>
</tr>
</tbody>
</table>

The Convair CV-580 aircraft are approved by the Interagency Airtanker Board (IAB) and are capable of delivering 2000 gallons of long-term retardant or water. The RADS 2 (Retardant Aerial Delivery System) tank can provide retardant at coverage levels 0.5 through 8. Key missions include: indirect, parallel, or direct retardant line application; perimeter and anchor application on moderate to high intensity fires; pretreatment or offset of indirect line and burnout operations; and/or urban interface pretreatment for structures or other improvements.
<table>
<thead>
<tr>
<th>Name</th>
<th>Agency</th>
<th>Location</th>
<th>Coordinates</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta Junction</td>
<td>Alaska Division of Forestry</td>
<td>AirField</td>
<td>64 00 x 145 43</td>
<td>DOF only Blaze Tamer Gel Plant</td>
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<tr>
<td>Wainwright</td>
<td>Interagency</td>
<td>Ladd Army Airfield</td>
<td>64 50 x 147 40</td>
<td></td>
</tr>
<tr>
<td>Kenai</td>
<td>DOF</td>
<td>Kenai Municipal Airport</td>
<td>60 34 x 151 14</td>
<td></td>
</tr>
<tr>
<td>McGrath</td>
<td>DOF</td>
<td>McGrath Airfield</td>
<td>62 57 x 155 36</td>
<td></td>
</tr>
<tr>
<td>Palmer</td>
<td>DOF</td>
<td>Palmer Municipal Airport</td>
<td>61 35 x 149 05</td>
<td></td>
</tr>
</tbody>
</table>
Remote pilots operate under Federal Aviation Administration (FAA) and individual agency policies. Part 107 of the Federal Aviation Regulations (FAR) is the overarching regulation for small UAS. All remote pilots are required to follow agency policies when operating UAS on incidents and should refer to NWCG Standards for Fire Unmanned Aircraft System Operations (PMS-515) and the Department of the Interior OPM-11 for policy. Generally, small UAS operate line-of-sight in Class G airspace up to 400 feet above ground level (AGL). UAS can operate above 400 feet AGL and beyond visual line of sight (BVLOS) through various FAA waivers.

**Advantages of UAS on Wildland Fires**

- Limits exposure and reduces risk to pilots and wildland firefighters.
- Cost is a fraction of manned aviation resources.
- Able to fly in remote locations and easily packable.
- Diverse mission set including video, infrared, mapping, PSD.
- UAS can be flown beyond visual line of sight (BVLOS) and at night in certain circumstances. This includes flights that occur during periods of inversion or inclement environmental conditions.
Operational Considerations for Requesting UAS

Operation of UAS requires a BLM-qualified UAS pilot and a visual observer. Because the remote pilot or observer must always maintain line-of-sight with the UAS, it can only be flown during the day. The DOI has a limited number of qualified pilots with the ability to fly beyond visual line of sight (BVLOS) within a temporary flight restriction (TFR) and at night with special considerations and notifications. Available UAS platforms and pilots may be limited.

Mission Objectives and Final Data Products

Missions and products include fireline situational awareness, perimeter and acreage calculation or mapping, aerial photos and videos, infrared, and PSD.

Other Considerations

• Smoke impacts on manned aircraft
• Airspace ownership: restricted and controlled airspace, Memorandum of Agreements, who is in control?
• Current and expected weather: UAS cannot operate in rain
• Limited availability of manned aircraft

UAS Positions

• Unmanned Aircraft System, Pilot (UASP) – Pilots provide data to tactical and strategic decision makers and are responsible for flying, managing, and coordinating UAS missions on wildland fire incidents. UASPs work in the Air Operations branch.
• Unmanned Aircraft System, Module Leader (UASL) – Module Leaders serve as single point of contact for incidents with more than two UAS modules on scene.
• Unmanned Aircraft System, Data Specialist (UASD) – Data specialists collect, store, and disseminate data and intelligence collected by UAS for wildland fire incidents.
• Unmanned Aircraft System, Manager (UASM) – Managers are the conduit between a UAS vendor (under federal contract/agreement) and the Incident Management Team (IMT) or ordering unit. The UASM coordinates UAS vendor missions with operations, air operations, and planning personnel, and is the designated government representative for the UAS contract/agreement.

**Ordering Unmanned Aircraft Systems (UAS) in Alaska**

Agency-owned UAS are ordered as an overhead position (UASP, UASL, etc.) with the UAS platform identified in the Special Needs block in Interagency Resource Ordering Capability (IROC).

The DOF Areas will place requests to Northern Forestry Dispatch Center (NFDC), who will work with DOF Aviation to determine which resource will fill the request. If NFDC is unable to assign a resource, an order may be placed with the AICC.

AFS Zones will place requests through their local dispatch to AICC, who will work with the UAS Program Coordinator to determine which resource will fill the request. Once the order is filled, the filling dispatch will document which drone is being taken by the property number.

BLM AFS Interagency hotshot crews have drones assigned to them and will need to have “UAS Approved” documented in the special needs block on their crew order.

The BLM smokejumpers have qualified operators who may order UAS once they are on an incident. They will place the order through the local dispatch center to which they are assigned. That dispatch center will contact paracargo to identify the drone to be used. Documentation for approved use will be provided on the UAS pilot’s resource order, with the drone’s property number.
## UAS Typing and Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Configuration</th>
<th>Endurance</th>
<th>Data Collection altitude (AGL)</th>
<th>Max Range (Miles)</th>
<th>Sensors (payloads)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fixed-Wing Rotorcraft</td>
<td>6-14 hrs. NA</td>
<td>3,500-8,000 NA</td>
<td>50 NA</td>
<td>EO/Mid Wave IR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>High Quality IR</td>
</tr>
<tr>
<td>2</td>
<td>Fixed-Wing Rotorcraft</td>
<td>1-6 hrs. NA</td>
<td>3,500-6,000 NA</td>
<td>25 NA</td>
<td>EO/Long Wave IR</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Moderate Quality IR</td>
</tr>
<tr>
<td>3</td>
<td>Fixed-Wing Rotorcraft</td>
<td>20-60 min. 20-60 min.</td>
<td>2,500 and below 2,000 and below</td>
<td>5 5</td>
<td>EO/IR Video and Stills</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mod Quality IR and PSD</td>
</tr>
<tr>
<td>4</td>
<td>Fixed-Wing Rotorcraft</td>
<td>Up to 30 min.</td>
<td>1,200 and below 1,200 and below</td>
<td>&gt;2 &gt;2</td>
<td>EO/IR Video and Stills</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Moderate Quality IR</td>
</tr>
</tbody>
</table>

*Taken from [PMS 515 NWCG Standards for Fire Unmanned Aircraft System Operations](#)*
<table>
<thead>
<tr>
<th>Model</th>
<th>Flight time</th>
<th>Number of batteries</th>
<th>Charging time per battery</th>
<th>Weight of UAS kit</th>
<th>Max speed</th>
<th>Camera</th>
<th>Capabilities</th>
<th>Accompanying equipment</th>
<th>Any special considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>3DR Solo Quad</td>
<td>Up to 20 min.</td>
<td>1</td>
<td>30 min.</td>
<td>25 lbs.</td>
<td>20 Mph</td>
<td>Anafi Camera</td>
<td>IR/High Res video and photo/mapping</td>
<td>Battery box, accessory kit &amp; generator</td>
<td>Transport requirements for large boxes</td>
</tr>
<tr>
<td>Parrot Anafi</td>
<td>Up to 25 min.</td>
<td>1</td>
<td>25 min.</td>
<td>5 lbs.</td>
<td>35 Mpg</td>
<td>Anafi Camera</td>
<td>IR/High Res video and photo/mapping</td>
<td>Accessory kit &amp; generator</td>
<td></td>
</tr>
<tr>
<td>MAVIC PRO</td>
<td>Up to 30 min.</td>
<td>1</td>
<td>30 min.</td>
<td>15 lbs.</td>
<td>40 Mph</td>
<td>Mavic Camera</td>
<td>IR/High Res video and photo/mapping</td>
<td>Accessory kit &amp; generator</td>
<td>IOS &amp; Android</td>
</tr>
<tr>
<td>MATRICE PRO</td>
<td>Up to 35 min.</td>
<td>6</td>
<td>45 min.</td>
<td>65 lbs.</td>
<td>40 knots</td>
<td>Zenmuse XT2</td>
<td>IR/High Res video and photo/mapping</td>
<td>Battery box, accessory kit &amp; generator</td>
<td>Android</td>
</tr>
</tbody>
</table>
### FIXED WING ALLOWABLES

<table>
<thead>
<tr>
<th>Type (at 2.5 hours fuel)</th>
<th>Useful Payload</th>
<th>Pax</th>
<th>Cruise Speed (KTS)</th>
<th>Range Miles</th>
<th>Range Hours</th>
<th>Min. Runway Length (ft.)</th>
<th>Fuel type</th>
<th>Useable fuel</th>
<th>Fuel (GPH)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SINGLE-ENGINE FIXED WING at 2.5 hours of fuel</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cessna 185</td>
<td>900</td>
<td>3</td>
<td>120</td>
<td>800</td>
<td>5</td>
<td>1400</td>
<td>AVGAS</td>
<td>62</td>
<td>16</td>
</tr>
<tr>
<td>Cessna 185 w/floats</td>
<td>650</td>
<td>3</td>
<td>110</td>
<td>610</td>
<td>5</td>
<td>1700</td>
<td>AVGAS</td>
<td>62</td>
<td>16</td>
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<tr>
<td>Cessna 206</td>
<td>1100</td>
<td>5</td>
<td>(120) 130</td>
<td>800</td>
<td>5</td>
<td>1500</td>
<td>AVGAS</td>
<td>63</td>
<td>16</td>
</tr>
<tr>
<td>Cessna 207/208</td>
<td>1100</td>
<td>7</td>
<td>(120) 130</td>
<td>800</td>
<td>5</td>
<td>1900</td>
<td>AVGAS</td>
<td>58</td>
<td>16</td>
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<tr>
<td>Cessna Caravan 208</td>
<td>2400</td>
<td>9</td>
<td>(150) 175</td>
<td>900</td>
<td>5</td>
<td>1700</td>
<td>JET</td>
<td>333</td>
<td>53</td>
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<td>Helio Courier</td>
<td>750</td>
<td>3</td>
<td>(115) 100</td>
<td>570</td>
<td>4.6</td>
<td>800</td>
<td>AVGAS</td>
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<td>20</td>
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<td>Piper PA32 Saratoga</td>
<td>1100</td>
<td>5</td>
<td>(150) 145</td>
<td>800</td>
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<td>2000</td>
<td>AVGAS</td>
<td>102</td>
<td>16</td>
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<tr>
<td><strong>MEDIUM MULTI-ENGINE PAX/CARGO at 2.5 hours of fuel</strong></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Aerocommander AC-500</td>
<td>1150</td>
<td>5</td>
<td>(160) 155</td>
<td>800</td>
<td>4.8</td>
<td>2500</td>
<td>AVGAS</td>
<td>156</td>
<td>30</td>
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<tr>
<td>Aerocommander AC-680FL (1500 allowable w. 5 hrs of fuel)</td>
<td>1500</td>
<td>7</td>
<td>(165) 160</td>
<td>1000</td>
<td>5</td>
<td>2500</td>
<td>AVGAS</td>
<td>223</td>
<td>40</td>
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<tr>
<td>Turbocommander AC-690</td>
<td>2000</td>
<td>9</td>
<td>250</td>
<td>1375</td>
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<td>3000</td>
<td>JET</td>
<td>256</td>
<td>85</td>
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</tbody>
</table>

(Continued on next page)
<table>
<thead>
<tr>
<th>Type (at 2.5 hours fuel)</th>
<th>Useful Payload</th>
<th>Pax</th>
<th>Cruise Speed (KTS)</th>
<th>Range Miles</th>
<th>Range Hours</th>
<th>Min. Runway Length (ft.)</th>
<th>Fuel type</th>
<th>Useable fuel</th>
<th>Fuel (GPH)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MEDIUM MULTI-ENGINE PAX/CARGO at 2.5 hours of fuel</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piper PA-31-310 Navajo</td>
<td>1800</td>
<td>9</td>
<td>(175) 165</td>
<td>1080</td>
<td>6</td>
<td>2200</td>
<td>AVGAS</td>
<td>210</td>
<td>35</td>
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<tr>
<td>PA-31-350 Chieftan</td>
<td>1800</td>
<td>9</td>
<td>175</td>
<td>1000</td>
<td>5</td>
<td>2500</td>
<td>AVGAS</td>
<td>182</td>
<td>34</td>
</tr>
<tr>
<td>Twin Otter 200 DHC-6</td>
<td>2500</td>
<td>15</td>
<td>140</td>
<td>600</td>
<td>4.5</td>
<td>1500</td>
<td>JET</td>
<td>381</td>
<td>85</td>
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<tr>
<td>Twin Otter 300 DHC-6</td>
<td>3000</td>
<td>17</td>
<td>(140) 150</td>
<td>675</td>
<td>4.5</td>
<td>1500</td>
<td>JET</td>
<td>381</td>
<td>90</td>
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<tr>
<td>C23A Sherpa</td>
<td>4400</td>
<td>20</td>
<td>(180) 165</td>
<td>840</td>
<td>4</td>
<td>3000</td>
<td>JET</td>
<td>600</td>
<td>128</td>
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<tr>
<td>Casa 212</td>
<td>4048 w/ 3.5 hrs fuel</td>
<td>9</td>
<td>(170) 165</td>
<td>510</td>
<td>4.5</td>
<td>3000</td>
<td>JET</td>
<td>520</td>
<td>110</td>
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<tr>
<td>BE-99 (Beech)</td>
<td>3250</td>
<td>15</td>
<td>230</td>
<td>1048</td>
<td>3.5</td>
<td>3200</td>
<td>JET</td>
<td>368</td>
<td>85</td>
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<tr>
<td>DO-228 Dornier</td>
<td>3500</td>
<td>9</td>
<td>(200) 190</td>
<td>621</td>
<td>(full) 6</td>
<td>3000</td>
<td>JET</td>
<td>627</td>
<td>100</td>
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<tr>
<td>BE-1900 (Beech)</td>
<td>4000</td>
<td>19</td>
<td>(220) 240</td>
<td></td>
<td></td>
<td>4000</td>
<td>JET</td>
<td></td>
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<tr>
<td><strong>LARGE MULTI-ENGINE PAX/CARGO at 2.5 hours of fuel</strong></td>
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<tr>
<td>Curtiss Wrights C-46</td>
<td>12000</td>
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<td>183</td>
<td>2300</td>
<td>7.5</td>
<td>3500</td>
<td>AVGAS</td>
<td>2200</td>
<td>290</td>
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<td>Douglas DC-6</td>
<td>28000</td>
<td>N/A</td>
<td>311</td>
<td>3983</td>
<td>9.5</td>
<td>3500</td>
<td>AVGAS</td>
<td>5525</td>
<td>580</td>
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<tr>
<td>De Havilland Dash-8</td>
<td>7800</td>
<td>36</td>
<td>(268) 308</td>
<td>1174</td>
<td>5</td>
<td>3000</td>
<td>JET</td>
<td>865</td>
<td>290</td>
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<tr>
<td>C-130 Hercules (L-100)</td>
<td>30000</td>
<td>N/A</td>
<td>300</td>
<td>3000</td>
<td>5</td>
<td>4000</td>
<td>JET</td>
<td>2750</td>
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## HELICOPTER ALLOWABLES

<table>
<thead>
<tr>
<th>ROTORWING</th>
<th>HIGE</th>
<th>HOGE</th>
<th>JET</th>
<th>Cruise</th>
<th>Max Fuel</th>
<th>Range</th>
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<tbody>
<tr>
<td><strong>Type 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>AS-350 BA</td>
<td>514</td>
<td>414</td>
<td>544</td>
<td>100</td>
<td>143 gal</td>
<td>340</td>
</tr>
<tr>
<td>AS-350 B2</td>
<td>751</td>
<td>911</td>
<td>1462</td>
<td>122</td>
<td>143 gal</td>
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<tr>
<td>AS-350 B3</td>
<td>899</td>
<td>1074</td>
<td>2063</td>
<td>130</td>
<td>143 gal</td>
<td>340</td>
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<tr>
<td>Augusta 119 (Koala)</td>
<td>1000</td>
<td>1000</td>
<td>1900</td>
<td>140</td>
<td>184 gal</td>
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<tr>
<td>Bell 206 B-3 Jet Ranger</td>
<td>558</td>
<td>496</td>
<td>690</td>
<td>110</td>
<td>94 gal</td>
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<tr>
<td>Bell 206 L-3 Long Ranger</td>
<td>722</td>
<td>604</td>
<td>784</td>
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<tr>
<td>Bell 407</td>
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<td>1137</td>
<td>1587</td>
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<td>Hughes 500 C/D</td>
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<td>580</td>
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<td>Lama SA-315B</td>
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<td><strong>Type 2</strong></td>
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<tr>
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<td>UH-1B</td>
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<td>Bell 205++</td>
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<td>1855</td>
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<td>Bell 212 HP</td>
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<td>1700</td>
<td>2090</td>
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<td>Bell 214B1</td>
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<td>3175</td>
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<td>320</td>
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<td><strong>Type 1</strong></td>
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<tr>
<td>Blackhawk UH-60A</td>
<td>9483</td>
<td>8074</td>
<td>8604</td>
<td>150</td>
<td>600 gal</td>
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<tr>
<td>Boeing/Kaw Vertol</td>
<td>4440</td>
<td>44</td>
<td>8440</td>
<td>120</td>
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<td>360</td>
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<tr>
<td>Chinook CH-47</td>
<td>11100</td>
<td>11100</td>
<td>16100</td>
<td>130</td>
<td>2000 gal</td>
<td>1000</td>
</tr>
</tbody>
</table>

All allowables are approximate (based on 2000 ft and 25 degrees with 2.5 hours of fuel)
HELICOPTER CARGO FREEFALL

When and Why

Cargo freefall from a helicopter is a method of delivering cargo to an area where conventional delivery methods will not work and/or landing is impossible. Rations, hand tools, cubitainers of water (cubies), and other items can be dropped by freefall when properly packaged. Larger loads can be delivered by releasing the cargo net from the cargo hook at a minimum safe altitude and air speed. Drops must be made a safe distance from personnel on the ground.

PMS 510 ([NWCG Standards for Helicopter Operations](https://nwcg.gov/policy/policy-510)) is guiding policy on cargo free fall.

Required Personnel

All helicopters: Minimum aircrew consists of pilot and spotter (spotter will conduct dropping operations). The spotter should be a qualified Helicopter Manager (HMGB). Some missions may require additional personnel with designated droppers, etc.

Equipment Required

An approved restraint harness fastened to a hard point on the helicopter must be worn by any individual who will not be restrained by seatbelt and shoulder harness. The restraint harness shall be fastened to an approved hard point and the tether adjusted so that the individual cannot break the plane of the door.

Cargo Freefall Use Criteria and Situations

Cargo freefall should only be done after the following criteria are met and in the following situations:

- The helicopter cannot land safely, and the mission is tactically essential.
- Other methods of cargo delivery were considered, and cargo freefall is the most efficient and economical method.
• A helicopter load calculation is completed using the helicopter hovering out of ground effect (HOGE) chart. Consideration must be given to weight of cargo and center of gravity limits.

• There is adequate clearance from obstructions in the flight path and at the drop zone.

• All personnel involved are thoroughly briefed. This will include the pilot, spotter, dropper, and all ground personnel.

• Positive air-to-ground communications are established.

**Planning for the Drop**

The operation is conducted in two phases: 1) planning phase, and 2) drop phase. The planning phase includes:

1. **Compliance with Aircraft Flight Manual** – All procedures will comply with the aircraft manual (for example, door removal).

2. **Line of Authority** – The pilot and spotter must establish a contact at the drop zone. The person at the drop zone must be aware of the mission and have established a drop zone.

3. **Selection and Packing of Cargo** – Packing will depend largely on what materials are available. Cargo must be selected and packed to prevent undue damage.

4. **Little or No Packing Required** – Items that require little or no packing include:

   • Fire hose and sleeping bags – These must be banded with rubber bands, straps, or filament tape. Ends of the hose should be coupled to prevent damage.

   • Hand tools – These should be taped together with heads protected and appropriately packaged (for example, padded with several layers of cardboard).

   • Rations
5. **Packing of Fragile Items** – Without access to large quantities of packing material, the only fragile items that are practical to drop are water, batteries, and other inexpensive items. Fragile items will have to be appropriately packaged to prevent damage.

6. **Selecting the Drop Site** – When selecting the drop site, consider the items you are delivering and at what height you will have to release them. Site selection is not as critical for items such as tools or sleeping bags which can withstand more impact.

- Fragile and breakable items such as radios and power saws require special consideration.
- Look for areas where a lower drop can be accomplished. If available, a patch of brush serves as a good cushion.
- Most items from the AFS warehouse are packed for use in paracargo operations.

**Drop Procedure.**

The following procedures must be followed:

1. Air-to-ground communications shall be established before drop zone is selected.

2. The drop zone shall be identified on the ground (marker, ribbon, flagging).

3. Two reconnaissance runs, one high-level and one low-level, shall be made over the drop zone.

4. **A high-level reconnaissance** of the drop zone shall be made to determine:

   - If the drop is feasible at the selected site.
   - Wind condition and direction
   - Location and nature of ground and aerial hazards.
• That ground personnel have been moved a safe distance away from the drop zone.

5. **A low-level reconnaissance** of the drop zone shall be made. At this time, the pilot and dropper shall:
   • Reconfirm hazards in the drop zone.
   • Determine approach and departure routes.
   • Check for personnel too close to the drop zone and/or approach-departure path.
   • Confirm with the ground contact that the area is clear.
   • Make final check of cargo to be delivered.
   • Pilot and dropper must both agree to proceed.

6. During the drop:
   • On the drop pass, the cargo will be dropped if all conditions remain as planned.
   • Remember to anticipate forward speed of the helicopter.
   • Drop cargo laterally – that is, out and away – from the helicopter and not toward the tail rotor or skid.

**HELIICOPTER LOADING TIPS**

**Passengers (PAX)**
• Review passenger briefing before every flight. Pay special attention to emergency procedures.
• Never load tools or sharp objects under the seats. Put soft cargo under seats, i.e. hose, trash bags, burlap bags etc.
• Log decks can shift during loading. Don’t get your foot crushed between logs or skids.
Internal Loads

- Cargo wells – build a large stable base so that cargo leans in and away from the window.
- No heavy items on top of the cargo pile.
- When opening the sliding door of 205/212, make sure that windows are not pushed out by cargo. If you encounter resistance, STOP and find the problem.
- Tundra pads are fragile and easy to trip on – watch your footing!
- Fresh food – Carry right side up. If you have food and fuel on the same load, carry in different compartments.
- Garbage is double bagged and tagged with fire name or number! When possible, burn empty cardboard boxes rather than backhauling because they take up a lot of room.
- Place chainsaw boxes between rear facing seat and door.
- Pump kit – Fold ½ of rear seat to ride with pax.
- Tail compartment (only with pilot’s permission) is a good place for hazardous materials. Do not exceed 200 pounds.
- Always ask for backhaul when at a landing site. Never let a helicopter fly away empty.
HELICOPTER LOG DECKS

Log-Deck Landing Pad for Use in Tundra and Boggy Areas.

NWCG Standards for Helicopter Operations (NSHO) reference: Chapter 8, page 76

- Try to use logs that are 6-8 inches in diameter. Limb the logs and get rid of knobs, etc. that could catch the helicopter’s skids or tundra pads.
- Cut logs equal length.
- Take the time to build the log deck.
- Log decks should be:
  > Type 3 helicopters: 2-3 feet wider and longer than 15x15 landing pad
  > Type 2 helicopters: 2-3 feet wider and longer than 20x20 landing pad

Go LONGER and WIDER than you think you need

- Decks should be built to so that a Bell 212 can land on them.
- Keep in mind, that due to center of gravity, the back end of the log deck will tend to settle more.
- Flag the log deck. Make sure flagging is secure.

1. Cut and limb poles 6-8” diameter
2. Place under skids at 90° angle
3. Pad area at least 15’x15’
4. Departure path of 300’
   Approach path of 150’.
HELICOPTER LONGLINE OPERATIONS

• Never stand under any external cargo loads.
• Ensure approach and departure paths are clear of obstacles.
• Obtain allowable payload from current load calculation.
• Weigh your load and configure not to exceed current allowable. It is acceptable to use fuel burn, so plan heavier loads for later in the fuel cycle. Remember that wet items being backhauled weigh more than when they arrived.
• Don’t forget the weight of the hook and net kit on your manifest.
• Inspect nets, swivels, and lead lines prior to use. Flag any damaged equipment and label with an explanation.
• Paracargo (A-22) – just unhook parachutes and attach a swivel to the top where the clevis is. You now have a sling load.
• Place heavier items in the center of the net and secure small items that could work their way through the net.
• Visqueen and cargo chutes should be transported internally or securely packed into boxes to minimize risk of in-flight deployment.
• Do not mix personal items or food and water with hazardous materials. If in a daisy configuration, the lowest net should contain the Hazmat.
• Tag each load with actual weight and destination. Communicate this information to the pilot and notify of any hazardous materials being transported.
• On longline jobs, EVERY load gets a swivel to avoid line twisting. Multiple loads on the same longline require multiple swivels. Refer to daisy chain diagram.
• When flying awkward loads such as UTV, ATV, plywood, structures or choked items, consult a helicopter manager or pilot for best packaging options.

• Remember, we are in Alaska where items get wet, thus get heavier. Take that into account when putting loads together on the lines. Don’t just go by weights in the IRPG. Those figures may have to be doubled.

Daisy Chain Configuration
## PILOT DUTY LIMITATIONS

<table>
<thead>
<tr>
<th>Single Pilot Crew*</th>
<th>Two-Pilot Crew**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maximum 8 hours flight time during any assigned duty period.</td>
<td>1. Maximum 10 hours flight time during any assigned duty period.</td>
</tr>
<tr>
<td>2. Maximum 14 consecutive duty hours during any duty period.</td>
<td>2. Maximum 14 consecutive duty hours during any duty period.</td>
</tr>
<tr>
<td>3. Maximum 42 hours flight time in any 6 consecutive duty days.</td>
<td>3. Maximum 50 hours flight time in any 6 consecutive duty days.</td>
</tr>
<tr>
<td>4. When 36 to 42 hours are flown in 6 days, the next 24 hours must be taken off. A new 6-day cycle begins after the day off.</td>
<td>4. When 40 to 50 hours are flown in 6 days, the next 24 hours must be taken off. A new 6-day cycle begins after the day off.</td>
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Note: Retardant/Smokejumper pilots follow limits for single crew.
*For Lower 48 = calendar day
**Single pilot rules apply during mission flights. Ten hours may be permitted when flights are point to point only.
This section provides general information regarding the transportation of hazardous materials (hazmat) aboard aircraft. The Interagency Transport of Hazardous Materials Guide (PMS 513) and DOT Special Permit Authorization DOT-SP-9198 must be onboard any aircraft transporting hazmat and used by the pilot and trained employees (those who have attended Interagency Aviation Training module A-110) when loading and packaging hazmat for air transport. Only trained employees or the pilot may load hazmat on an aircraft.

**General Aviation Transport of Hazmat Guidelines**

- Qualified non-crewmembers whose presence is required to perform or is associated with performance of a governmental function are permitted aboard an aircraft performing public aircraft operations while transporting hazmat.

- The pilot and all persons onboard must be made aware of the location and type of hazmat being transported (use the manifest and radio when appropriate).

- The pilot in command is the final authority on acceptance of the hazmat.

- Each person who loads/unloads aircraft and handles hazmat must receive training per agency requirements.

The following is a list of common hazardous materials used in Alaska wildland firefighting, with control measures excerpted from the PMS 513 Handbook. See full handbook for items not listed in this section.

**Flammable/Combustible**

**General Information** – Includes all flammable and combustible liquids except those under compression (propane, butane, etc.). These materials may include, but are not limited to gasoline, diesel, kerosene, alcohol, white gas (stove fuel), paint, and thinners/solvents.
Control Measures
Non-Bulk – To transport flammable and combustible liquids in non-bulk containers of 119-gallon capacity or less, the following conditions must be met:

- Containers must be specifically designed to carry flammable and combustible liquids and be of sufficient strength to prevent leakage during transportation/handling.
- All closures on the containers should be tight. The outside of the container should be free of any residue.
- Containers shall be filled to a level that allows for expansion due to temperature or altitude and never filled beyond rated capacity.
- Containers must be secured in the upright position by tie-down straps or shipped in an outside container that will keep the inner container upright.
- Containers that may release vapors must not be transported in unvented aircraft compartments.

Baggage compartments in unpressurized aircraft are considered vented compartments (an unpressurized cabin may also be used when it is ventilated to prevent accumulation of harmful vapors). Flammable and combustible liquids shall not be transported in plastic or glass containers unless they are specifically designed for that purpose.

Additional requirements apply to the following containers:
Safety Cans – Must be transported in vented compartments, secured in the upright position, and filled to a level that prevents spillage (no more than 90% capacity).

Military Jeep Cans (3A1 Jerrycans) – Must be secured in the upright position and have two inches of air space below the container opening.
Drip Torches – Must be transported with the igniter nozzle assembly in the tank, air breather valve closed, tank lock-ring sealed, and fuel spout plug closed and (2) must be secured in the upright position. Leave a minimum of 2 inches of air space below the container opening when filling.

Chainsaw Fuel/Oil Plastic Container (Dolmars) – Must be transported with the pourer spouts enclosed within the container and caps sealed. Ensure seal gaskets or O-rings are intact. The fuel air breather cap must be closed during transportation. Secure in an upright position. Leave at least 2 inches of air space below the fuel compartment opening when filling.

Sigg Bottles – Must not be transported with a pouring spout in lieu of an unvented cap and must have 2 inches of air space below the container opening.

**Control Measures**  
Flammable Fuel in Powered Equipment Tanks – To transport flammable fuel in powered equipment tanks the following conditions must be met:

- Not more than 20 gallons of flammable fuel in powered equipment tanks may be carried on any load.
- Powered equipment is secured in an upright position.
- Each fuel tank is filled in a manner that will not spill fuel during loading and unloading and during transportation.
- The compartment in which the equipment is loaded must be ventilated to prevent the accumulation of fuel vapors and must not contain an exposed battery.
- And powered equipment (chainsaws, pumps, etc.) and fuel containers shall not be transported in plastic bags.
Bulk Fuel Containers – Any fuel container in excess of 119-gallon capacity will be considered a bulk fuel container. Fuel may be carried in bulk fuel tanks if the tanks are installed in accordance with applicable Federal Aviation Regulations approved by DOI or USFS. Seal drums (Rolligons) or bladder tanks of capacity up to 500 gallons are acceptable for carrying fuel in aircraft.

Small Arms Ammunition

General Information – Includes ammunition for pistols, rifles, shotguns, and similar firing devices.

Control Measures
To transport small arms ammunition in aircraft, one of the following conditions must be met:

- A person who is required to carry a firearm while performing official Government business may carry ammunition for small arms in a readily accessible manner.
- Loaded weapons will be transported in aircraft only when the mission dictates their use in flight or soon after landing.
- Small arms ammunition may be carried on aircraft if contained in original package, box, pack, or manufactured container designed for transporting ammunition.
- Hazard communication marking is not required for small arms ammunition. Small arms ammunitions must not be stored with compressed gases, flammable liquids, or corrosives.

Ignition Devices

General Information – Includes fuses, flares, and other flammable solids designed for signaling, fire ignition, or fumigating. This also includes other materials used for aerial ignition activities such as helitorches, helitorch fuel, plastic sphere dispensers, and plastic spheres containing oxidizers such as potassium permanganate.
Control Measures

- All fusees must be packaged in a container, box, or pack.
- Broken fusees and those with protective igniter caps removed shall not be transported in aircraft.
- Fusees prepared for an aerial fusee gun are not required to have protective igniter cover.
- Fusees and flares should be carried in original shipping containers whenever possible. Pistol flare ammunition may be carried on aircraft if contained in original package, box, pack, or manufactured container designed for transporting ammunition.
- Plastic spheres containing oxidizers must be segregated from antifreeze (glycol) containers during transportation; plastic spheres containing oxidizers may be loaded into bags that will be utilized to facilitate the efficient filling of the dispenser in flight during dispensing operations.
- Personnel engaged in fire management activities may transport small quantities of fusees (five or less) inside field gear packs without the hazard communications marking.
- Strike anywhere matches, other than those carried in personal survival kits, must be transported in a container that inhibits movement of matches, thus preventing ignition.

Compatibility Restrictions – Ignition devices shall not be transported in a position that allows them to interact with batteries or battery fluids. Ignition devices shall not be transported with explosives.
Personal Survival Equipment

**General Information** – Personal survival equipment is defined as materials essential to survival such as inflatable flotation devices, spare CO2 cartridges for flotation devices, stove fuel, fire starters, strike anywhere matches, and supplemental breathing air. Many of these survival devices are carried in a pocket, survival vest, or pack.

**Control Measures**
Personal survival equipment and life saving devices may be carried in survival vests/jackets/packs/kits without any further requirements provided they are packed in such a manner to prevent any accidental discharge, activation, or ignition.

Bear Repellent/Irritants

**General Information** – Includes red pepper extract aerosol products (oleoresin capsicum) such as bear repellent spray and personal defense sprays. Irritants such as bear repellent, tear gas, and mace should be transported in an external compartment whenever practical.

**Control Measures**
Except for law enforcement operations conducted under 10.2.B, all bear repellent/irritant spray must be transported in a container that prevents personnel exposure in the event of an inadvertent discharge. Defensive aerosols carried by law enforcement officers may be transported on their person, in a manner designed to prevent accidental discharge; and avoid exposure to ignition sources and temperatures above 120°F.
CASUAL HIRING – SINGLE RESOURCE

Federal casual hires are hired under the authority of the Administratively Determined (AD) Pay Plan for Emergency Workers.

Hiring procedures for single resources:

1. Contact Zone Dispatch or Zone Administrative staff to obtain Incident Order and Request numbers when hiring an AD (Example: AK-GAD-000348, O-52).

2. Position titles and rates of pay are determined using the approved AD Pay Plan (Note: You do not have the authority to establish a position or negotiate pay rates.).

3. Zone and/or Incident finance personnel will ensure that all required hiring documents are completed.

Release Procedures for Single Resource

Employment ends when the casual hire is no longer needed and is returned to their point of hire. Upon completion of work the casual hire must:

• Review the OF-288. Employee signs in block 20.

• Time Officer signs in block 21 and provides a copy to the casual hire.

• Original documentation is submitted to the Zone.

• Zone audits OF-288 and submits to Financial Services for final audit and submission to Casual Pay Center.
## INCIDENT TIME REPORT

**Employee Common Identifier**: 123456
**AK-MD-000099**

### JOSEPH SAMPLE FIREFIGHTER

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<th>Column B</th>
<th>Column C</th>
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<tr>
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<td>B</td>
<td>C</td>
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<th>End Time</th>
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<td>15</td>
<td>0630</td>
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<td>16</td>
<td>1130</td>
<td>1600</td>
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**Total Hours**: 21.5

### Commissary and Travel

For Payment Center use only

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<tr>
<th>Title, Subdepartment, Category</th>
<th>Subdepartment, Category</th>
<th>Code</th>
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</table>

**Total**: $0

**Remarks**: 7/15 Travel to Incident

**Employee Signature**: [Signature]

**Time Officer Signature**: [Signature]

NOTE: The above items are correct and proper for payment from available appropriations.
Zones will verify and validate the following information on the OF-288 prior to submission to Casual Pay Center. Verify as much as possible in the field prior to release:

- **Employee Identifying Number (EIN):** Must be legible. Zone ensures that information matches I-9 and W-4 on file.

- **Hired At** – Unit Identifier Code for the location the individual was hired at and wishes to be returned to at demob. Example: AK-TAD will return the employee to a village in Tanana Zone. AK-AKD will return the employee to Fairbanks.

- **Type of Employment** – Verify that the individual is a casual hire.

- **Name** – Must be legible.

- **Incident Name** – Example: Stuart Creek or Bear Paw.

- **Incident Order/Resource Order No:** Example: AK-GAD-000479, O-49

- **Fire Code** – Actual code issued through Fire Code. Example: B3HC.

- **Position Code** – Example: FFT2, PTRC, RADO, etc. Use only established position codes. Verify with Zone Admin upon hiring.

- **AD Class & Rate** – Ensure AD class and rate is consistent with the Position Code outlined in the AD Pay Plan for Emergency Workers.

- **Home/Hiring Unit Accounting Code** – Zone hiring unit will complete.

- **Month/Day/Start & Stop Times** – Hours must be annotated using 24-hour clock. Note travel time with (T) after hours in row. Leave Gross Amount blank.
• **Remarks** – R&R, medical compensation, and any other unusual events affecting employee hours are documented here noting the month & day.

• **Employee Signature** – Completed by employee.

• **Time Officer Signature** – Completed by Time Officer. Timesheet will not be processed without an original Time Officer Signature.

Information found in the [AD/EFF Single Resource Guide](#) posted on the [Alaska Interagency Coordination Center](#) website.

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**EMERGENCY FIREFIGHTING CREW HIRING PROCESS**

**Initial Checklist**

• Ensure there are minimum 16 crew members for fires in Alaska. For assignments to the Lower 48, ensure there are minimum 19 crew members.

• Obtain Crew Hire Packet from Zone administration (Zone Admin)

• Check “Zone Suspension/Probation List” for individuals that are suspended. This list can be obtained through Zone dispatch or the Zone admin.

• Upon arrival, get all passenger and gear weight and post to the “Passenger/Cargo Manifest.”

  1. As you weigh each crew member, check their red card and ID.

  2. Check their fire boots. **Fit for duty means having good fire boots. Someone expecting to do commissary for boots is not fit for duty.**
After manifesting crew with all personnel weight and gear weight, add up each column displaying total passenger weight and then total gear/cargo weight.

1. Copy stays in Crew Hire Book
2. Copy goes to pilot
3. Copy goes to appropriate dispatch
4. Copy goes to Zone admin

**If crew is getting outfitted through AFS Cache, a copy of the Crew Passenger/Cargo Manifest must go to AFS Cache.**

**COMMISSARY**

Personnel and crews are responsible for being prepared with footwear, clothing, personal hygiene items, prescription medications, and other personal items sufficient for a 14-day assignment, exclusive of travel.

Zones or Incident Management teams may establish an agency-provided commissary to provide personal items such as socks and boots to incident personnel. This includes emergency commissary. All commissary items will be payroll deducted on the individual’s OF-288 by incident finance/administrative personnel.

Emergency Commissary – Items are necessary for the safety and well-being of incident personnel. Emergency commissary must include a justification of necessity, signed by the Incident Commander, and approval from the Zone FMO. Orders for emergency commissary are given priority processing. Each item must list the recipient’s full name and crew name.

- Boots, specify size, width, and preferred sole (logger or Vibram).
- Personal clothing items damaged or destroyed during the incident, e.g., burned gear.
Finance or the official in charge coordinates with the Zone or DOF Area Office to determine:

- Accountability procedures
- Distribution process

Commissary is delivered to the incident with paperwork and directions for completion.

ZONE ADMINISTRATION

It is critical for our firefighters out in the field to obtain approval when hiring any equipment, personnel or services, through the appropriate Zone admin. Most hiring of equipment or services can be initiated through the appropriate Zone admin. We understand communication via landline or satellite phone is not always an option, so please radio into the appropriate Zone dispatch to get in contact with Zone admin.

- **Tanana & Upper Yukon Zone admin** – 907-356-5579
- **Upper Yukon & Tanana Zone dispatch** – 907-356-5553
- **Galena Zone admin** – 907-356-5622
- **Galena Zone dispatch** – 907-356-5626 in Fairbanks / 907-656-9650 in Galena
- **Military Zone admin** – 907-356-5876
- **Military Zone dispatch** – 907-356-5553

When calling into the Zone admin to discuss hiring of equipment, services or personnel, please ensure you have this information readily available:

- Name of vendor or casual hire
- Good contact telephone number
PROCEDURES FOR HIRING EQUIPMENT

Ways of hiring equipment:

1. **Service** – Arrangement between the owner and agency to perform a service not to exceed $2,500 for duration of incident. Zone administration will pay by charge card or check upon receipt of an invoice. Submit General Message (ICS Form 213) to obtain S# for service.

2. **Emergency Equipment Rental Agreement (EERA)** – Agreement for hiring equipment or executed by a warranted contracting officer.

All equipment hired through a Service or EERA must adhere to the following:

- Have prior coordination and approval through AFS Zone
- Submit General Message through Zone dispatch to obtain a resource order
- Refer to Geographical Area Supplement for rate guidelines.
- Contact Procurement at (907)356-5773/5774 if vendor does not agree with rates.

**Service**

- Keep it simple.
- Owner’s contact information: Name, address, phone number
- Explain service being rendered, duration and cost.
- DO NOT exceed $2,500 total incident duration.

**Examples of when to use a Service:**

*Example 1* – Hiring a six-wheeler with driver to transport supplies from the runway to camp twice a day for five days.
Example 2 – Smokejumpers needing river transport to/from jump spot (1-2 days).

**Emergency Equipment Rental Agreement (EERA)**

The following information must be provided to Zone administration, Procurement or Incident Management for creation of an EERA:

- Name, address, and phone number of legal owner
- Type of equipment, VIN/serial number, and/or license plate number
- Date, time, and location of hire
- Daily rate for the equipment
- Legal owner’s signature/date. Verify ownership through registration, title, bill of sales, etc.
- Government representative’s printed name, signature and date
- Document the vendor reviewed clauses prior to signing
- Complete and thorough pre-inspection of equipment. Include condition of equipment.
- If you have a camera, take photos and include them with your documented inspection.
- Verify all required safety items are available and in operating conditions (i.e., seat belts, fire extinguisher, properly rated life preservers for all passengers, etc.). **DO NOT HIRE UNSAFE OR UNUSABLE EQUIPMENT**

**Equipment and operators will adhere to national, state and local operating requirements.**

*Boats and heavy equipment will be hired with endorsements and valid licensing*
Equipment Hired

Each piece of equipment must have a separate operator to receive full daily rate. The agreement will be negotiated by Procurement for lower rates if only one operator will be operating multiple pieces of equipment.

*Example 1* – Vendor owns two boats and is operating one of the boats. The second boat could be hired only if the vendor provides another operator.

*Example 2* – Vendor has a dozer and a backhoe hired and the vendor is the operator for both pieces of equipment. Vendor will not be paid full daily rates for both pieces of equipment. Procurement will negotiate a rate.

General guidelines:

- Qualification training and PPE are required prior to operating specialized equipment per Red Book and agency policy.
- All tracked vehicles (ex: Nodwell,) must be hired with operator.
- Canoes, kayaks, Scanoes, and catamarans will not be hired.
- Boats with motors are authorized for hiring. Do not hire a boat without a motor. It is the vendor’s responsibility to provide the motor.
- Contact Procurement at (907)356-5773/5774 for a negotiated rate if the boat motor is less than 35 horsepower.

Tracking & Payment

- First and Last Day of Hire Determination of half/full daily rate will depend on time equipment was hired or released.
  *First & Last day of hire:
  > Half Daily Rate: Hired less than 8 hours (ex: Hired before 0800 or after 1600 hours)
> Full Daily Rate: Hired more than eight hours (ex: Hired after 0800 and before 1600 hours)

> NOTE: BLM DOES NOT HAVE A STANDBY RATE.

• Equipment is either on or off-shift during the operational period. During the Period of Hire Document use on an Emergency Equipment Shift Ticket (OF-297).

• Government representative ensures the shift ticket is completed.

• Vendor/operator and Government representative sign shift ticket and forward to finance unit or Zone admin.

• Record on-shift time for the equipment, not the operator. Record off-shift time for meal breaks, maintenance, repairs any down time.

• Equipment hired without operator will have the shift ticket signed prior to release. Daily rate is based on a 24-hour period (calendar day) of availability. If the vendor uses the hired equipment for personal use (e.g., drives it home after shift), a reduction of up to 30 percent of the daily rate will apply.

**Checklist**

• Pre- and post inspections will be required each time vendor takes equipment home. Note the shift ticket “Equipment removed from the incident for personal use.”

• You are responsible for equipment being inspected, documenting use, and ensuring vendor understands their pay status of the equipment.

• Shift Tickets for all days under hire are complete prior to demob.

• Prior to releasing equipment, perform a thorough post-inspection of the equipment and document the release. If a camera is available, take photos and include them with the equipment package.
Document the following information prior to releasing the equipment:

- Release/withdrawal date and time must match the post-inspection, or a statement included on the inspection form that return travel home is projected (if applicable).
- Post-inspection: list condition and any equipment damage. **DESCRIBE THE DAMAGE OR CONDITION.**
- Document any potential claims (who, what, where, when, and how and any witnesses). Ensure Zone FMO/admin is notified of any potential claims.

**Do Not Solicit Claims.**
If vendor asks you about claims, have them contact Procurement at (907)356-5773/5774

Forward hiring and use documents to Zone admin for completion of the [Emergency Equipment Use Invoice (OF-286)](#)

**MEDICAL TREATMENT FOR FEDERAL GOVERNMENT EMPLOYEES**

- Medical treatment and compensation benefits for regular government employees, casual hires/administratively determined (AD), or official volunteers for job-related injury or illness are provided by the [Office of Workers’ Compensation Programs](#) (OWCP).

**Types of Injury or Illness**

- **Traumatic Injury** (CA-1) – An injury is defined as a wound or other condition of the body caused by external force, including stress or strain, in one specific event or incident, or by a series of events, that occurs during a calendar day or one work shift. You must be able to identify what, when, where, how and why the injury happened.
• **Occupational Disease** (CA-2) – This is defined as an illness, disease or condition that **develops over a period longer than one workday or shift**. Causes of illness may include repeated stress or strain, systemic infection, and exposure to toxins, poisons, fumes, and bloodborne pathogens. If you don’t know what caused a condition, it is classified as an illness.

### Reporting an Injury or Illness

• On-site supervisor must be notified as soon as possible of the injury or illness.

• Before obtaining medical treatment, ask your supervisor to authorize medical treatment by use of form [CA-16, Authorization for Medical Treatment](#). Emergency medical treatment may be obtained without prior authorization.

• The appropriate OWCP form [CA-1](#) or CA-2 should be completed based on the type of injury, listed above. This information will be evaluated by your claims examiner so be thorough. Don’t forget on-site supervisor and witness statements.

• Employee or supervisor should upload their CA-1 or CA-2 into the [Safety Management Information System (SMIS) Employee Module](#) within three working days to document the occurrence.

• Employees who wish to file workers’ compensation claims must report the accident first in SMIS, then file the workers’ compensation claim in [Employees’ Compensation Operations and Management Portal](#) (ECOMP).

  > If computer access is not available, completed forms should be sent to the employee’s supervisor within three days so the injury or illness can be entered into SMIS/ECOMP.

  > For Alaska, BLM casuals/ADs and volunteers, the process is the same and forms will be sent to the employee’s supervisor of record (hiring official).
The SMIS/ECOMP instructions are available in the AFS Employee Handbook.

- For non-Alaska BLM or other agency resources, follow the agency-specific reporting instructions, forms and timeframes for the employee’s agency/unit.

- The Injury Compensation Office (907-356-5798) is the contact during regular business hours.

- Injury/illness claims are submitted to the employee’s home unit.

  > Equipment owner/operators and contract personnel do not have federal or state-provided injury compensation coverage, and are required to provide private coverage.

Find OWCP forms, including fillable forms, online at: https://www.dol.gov/owcp/dfec/regs/compliance/forms.htm
GUIDE TO FEDERAL INJURY AND ILLNESS
FORMS AND RESPONSIBILITIES

Medical Treatment for Government Employees (Federal)

<table>
<thead>
<tr>
<th>Type of Injury or Illness</th>
<th>Form CA-1</th>
<th>Form CA-16</th>
<th>Form CA-2</th>
<th>APMC Form FS-1600-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traumatic Injury No Medical Treatment</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Traumatic Injury Medical Treatment required</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Only if APMC is authorized</td>
</tr>
<tr>
<td>Occupational Illness</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Only if APMC is authorized</td>
</tr>
<tr>
<td>Exposure Incident (BBPO or other)</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Only if APMC is authorized</td>
</tr>
</tbody>
</table>

CA-1 Notice of Traumatic Injury

Use if occurred within one work day or shift. Employee, witness complete Side 1, submit to supervisor within 24 hours. Supervisor completes Side 2. Original is submitted to the individual’s home unit.

CA-16 Authorization for Examination/Treatment

Authorizes payment for initial medical care for Traumatic Injury only, if issued by compensation specialist. DO NOT USE FOR ILLNESS. Original is submitted to the individual’s home unit.

CA-2 Notice of Occupational Disease

Use if occurred over longer than one work shift, or if cause is unknown. Employee and supervisor complete. Original is submitted to the individual’s home unit.
**FS-1600-16  APMC Authorization and Medical Report**

Authorizes initial medical expense, documents initial diagnosis. Use only if authorized by the Zone. Requires Incident Order Number, “M#” and charge code. Submit copy CA-1, CA-2 as soon as possible. The original is submitted to the incident agency for payment.

**CLAIMS**

**Government Property**

All incident personnel, regardless of agency, must manage property and supplies to prevent loss. Clearance procedures will be coordinated by incident personnel to ensure property issued on an incident is returned prior to demobilization.

- **Accountable Property** – If accountable property (e.g., chainsaws, pumps, cameras) is missing, damaged or unserviceable, a report must be made and included in the incident records.
  
  > For federal property, form OF-289, *Property Loss or Damage Report*, must be completed and submitted to the incident or responsible home unit property officer (i.e., AFS Fire Cache Warehouse), within 60 days.

  > For state property, form 02-627, *Lost-Stolen-Damaged Property Review*, must be completed and submitted to the supervisor, Incident Commander, or Area Forester. Find more [Alaska Division of Forestry guidance here](#).

- **Expendable Property** – The incident agency should limit replacement of expendable property (e.g., hose fittings, filters) to those that are used up or acquired by the incident. Expendable property can be replaced at the incident or the incident can approve an [Incident Replacement Requisition OF-315](#) for replacement at the home unit.
Incident personnel cannot authorize replacement of non-expendable or non-standard cache items. The incident submits the documentation to the Zone for review and determination.

**Federal Tort Claims**

A third party may file a claim for personal property damage or loss, personal injury, or wrongful death, caused by the negligent or wrongful acts or omissions of federal government employees while acting within the scope of their employment.

- Incident personnel shall not advise, encourage or discourage the filing of a claim.

- Incident personnel must document and report to the Zone the circumstances of any accident or incident which has, or potentially result, in a claim against or for the government.

**Federal Employee Claims**

A regular government employee (RGE), casual, or volunteer who loses or suffers damage to personal property may file a claim for reimbursement by submitting the following:

- **DI-570 Employee Claim for Loss or Damage to Personal Property.**

- Witness statements (**OF-289** may be used for the witness statement to accompany the claim.)

Claims should be submitted to the claimant’s home unit within 60 days of loss or damage. The claimant’s home unit will adjudicate the claim based on the following:

- Was the property necessary for the performance of duty?

- Did the loss or damage occur incidental to the individual’s service?

- Was the claim submitted according to agency guidelines?
If loss or damage occurs while on incident assignment, report it to the Zone for inclusion in the incident records, and return original claim forms, with witness and/or supervisor signatures, to the claimant’s home unit.

For AFS employees, the current year memorandum on employee claims can be reference upon their return for additional information.