

Proposed Safety Annex to the ASRC Operations Manual

Topic: Defining minimum safety equipment for various types of field operations

Note: This standard is not intended to replace any standard field operations or uniforming requirements, but instead it is a supplement to other standards. It is intended that this standard supplement all other standards, both internal and external, and any equipment superior to that listed would be acceptable.

Situation: Night field search operations

Minimum special equipment

- **Headlamp:** Headlamp which will allow hands-free activities
- **Glasses:** Safety type lenses to prevent entry of branches into the eyes; can be either safety lenses or prescription lenses. While recommended, side shields are not required.
- **Light Sticks:** Possession of a chemical light stick or equivalent (i.e. krill light), to facilitate navigation at night
- **Reflective Vests:** Vest or band containing retro-reflective material (i.e. Scotchlite, etc) for use when walking or conducting operations along roads. This gear requirement applies to all night operations outside of base, as activity along a roadway cannot be definitely excluded at the start of any nighttime task.

Situation: Operations along roadways

Minimum special equipment:

- **Vest:** Vest with neon-colored material and circumferential retro-reflective material (“florescent” yellow/green preferred, but “florescent” orange also acceptable). This vest **MUST** be the external layer of clothing.

Operations:

- **Walking:** ASRC personnel walking along a road shall walk facing traffic, with as many personnel as possible operating their lights.
- **Traffic Direction:** Whenever possible, ASRC Personnel shall only direct or stop traffic when accompanied by a vehicle with emergency flashers or a warning light operating. The requirement for a vehicle is not applicable when operations are within a parking area.
- **Training:** ASRC personnel shall not attempt to stop or direct traffic unless specifically trained for this operation by appropriate law enforcement personnel, and using whatever additional equipment is recommended by the law enforcement agency.
- **Vehicles on roadways:** Vehicles which are not completely off of a roadway shall operate their flashers and may use a yellow warning light, if available.

Situation: Operations within a cave

Minimum special equipment:

- **Helmet:** Helmet meeting UIAA standards for mountaineering helmets with fixed chin strap
- **Headlight:** Headlight which will allow hands-free operations
- **3 light Sources:** Two additional light sources (total 3) which are capable of being used to exit a cave (preferably with one helmet mountable)
- **Clothing:** Appropriate clothing that will allow prolonged operations when wet at 55°F cave. The insulating layer should be based upon materials that maintain their insulating capabilities when wet, such as polypropylene, wool, or neoprene.
- **Knee Pads and Gloves:** Protective covers for knees and hands that will allow extended crawling
- **Provisions:** Water and food for at least 12 hours activity without resupply
- **Dry Clothing:** A complete set of dry clothing, including footwear, shall be available on scene. This may be left in a vehicle, but must be available for the ASRC member to change into following emergence from a cave.

Operations:

- **General Risks:** Caves are a special environment with unique hazards not found in most wilderness settings, including unending darkness, slippery walking surfaces, small passageways, and water which may nearly fill passageways. In addition to these physical risks, there is the additional biological risk of rabies transmitted by bats who reside in caves, and histoplasmosis, a disease-causing fungus that is found in the soil of most caves in the ASRC area of operations.
- **Buddy System:** The buddy system shall be used at all times during cave operations.
- **Hypothermia:** Caves in the ARSC region are a constant temperature of 52 - 57° F; however most cave passageways are wet and personnel entering caves will quickly become wet. There is frequently significant wind inside caves, resulting much lower wind chill temperatures within the cave.
- **Sumps:** Many caves have “sump” areas which can flood occluding the passageway whenever there is precipitation or the water table level is high. Any ASRC personnel operating in a cave beyond a sump must have sufficient provisions (food, water, and dry clothes) in case they should be trapped beyond a sump while waiting for the water level to go back down.

Situation: Operations near a body of water (River, Lake, Stream, etc)

Minimum Special Equipment:

- **PFDs:** All ASRC personnel working within 10 feet of a body of water deeper than 1 foot shall wear a USCG approved Personal Flotation Device (PFD). For rescue operations along any waterway, or search operations along swiftly moving water, a PFD designed to ensure that the wearer floats in a face-up, head high position (USCG types I, II, and some type V PFDs) shall be used. For search operations

along slow moving or stagnant water this may be a lighter-duty PFD such as a Kayaker's PFD or similar.

- **Boats / Rafts:** ASRC personnel operating in a kayak, boat, or raft should wear the type of PFD that is most appropriate to that activity, and appropriate headgear (usually a helmet)
- **Throw Bags:** For all rescue operations near any body of moving water or non-moving water deeper than 1 foot, there shall be at least 1 water rescue throw bag, with an additional throw bag per 10 ASRC personnel at the scene.

Operations:

- **PFDs:** PFDs shall be worn for ALL operations where there is any interaction with the water or persons in or on the water.
- **Risk Assessment:** Operations along waterways, such as searching along a stream, should be evaluated for the risk of a person being close enough to the water that they could fall in. If this is the case, then a PFD shall be worn.
- **Suspending Unsafe Operations:** Operations should be suspended until appropriate PFDs are available whenever there a change in operations which would put ASRC personnel within risk of entering or falling into the water.
- **Throw Bags:** At a minimum, all operations along water should be accompanied by one throw bag, with an additional throw bag added for each additional 10 rescue personnel along the waterway. These throw bags should be at the waterside, within 25 feet of the operational area.
- **Whitewater travel:** ASRC personnel on a mission traveling in water classified as whitewater class IV or higher must have a trained river guide in each boat who is familiar with that body of water. Additionally, they must be equipped with the additional safety equipment recommended by that guide (PFDs, helmets, wet suits, etc.)
- **Dive operations PROHIBITED:** ASRC personnel SHALL NOT participate in underwater operations (i.e. SCUBA, snorkeling, etc.) operations as a part of the ASRC. Any ASRC member planning to participate in dive operations must sign out of the ASRC operation before engaging in any in-water dive operations. ASRC personnel may assist with the land operations in support of a dive mission.

Situation: Erecting Antenna for Base Operations

During search base setup at night it is very easy to inadvertently place the base antenna too close to power lines. Contact with a power line will likely be fatal for the members holding the mast.

Special Equipment:

- **Non-conductive Mast** (non-metallic) for base station antenna (available from MFJ, US Army Camo netting standoffs, non-conductive poles used by utility companies, and some extendable painting poles, etc.)

Operations:

- **Look UP!:** Prior to erecting the antenna, survey overhead to ensure there are no wires within the planned erection direction or within the fall radius of the antenna. The rule of thumb here to place the antenna base at least twice the overall height of the antenna from the wires.
- **Non-Conductive Pole:** Use only a non-conductive support pole to support the antenna.
- **Don't hold coax:** Leave the coaxial connector lying on the ground until the antenna is secured in place, then attach it to the radio.

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