

# NOAA Aviation Life Support Equipment Program

## BACKGROUND

The National Oceanic and Atmospheric Administration (NOAA) has a responsibility to provide a safe working environment for its workforce, and for partners who are exposed to the risks associated with flying on aircraft owned or operated by NOAA. Aviation safety is the number one priority for all aviation operations. The NOAA Aviation Life Support Equipment (ALSE) Program's primary mission is to provide personnel with ALSE that protects crewmembers and others aboard an aircraft, or assists in their safe escape, survival, and recovery during an accident or other emergency. The goal of the program is to procure, distribute, maintain, integrate, and standardize all of NOAA's ALSE.

NOAA sponsored personnel flying *Mission Operations* over water beyond glide distance to land on any NOAA or non-NOAA aircraft (contracted, chartered, leased, rented, or provided by other entities) are required to be issued or have access to a flotation vest with a personal locator beacon, and each aircraft must carry a life raft of sufficient capacity for all aircraft occupants.

**Mission Operations** is defined as all operations other than transportation. Mission operations include, but are not limited to: aerial surveys, airborne data collection, forecaster training, and aerial photography. Mission Operations include transportation of personnel where an aircraft departs from or lands at a location other than a published airport. Accordingly, transportation of personnel on aircraft that either depart from or land on a ship, oil rig, open field, beach, ice, or open water is considered mission operations.

## AVIATION LIFE SUPPORT EQUIPMENT

ALSE will be provided to personnel flying on board NOAA aircraft as standard equipment. ALSE meeting the specifications of the following equipment will be issued for use on non-NOAA aircraft contracted, chartered, leased, rented, or provided by other entities for NOAA personnel conducting official business.



### **Personal Flotation Vest (annual inspection required)**

- 3-layer NOMEX cover with neck gusset for chafe protection
- FAA/TSO approved
- Fully adjustable sizing 42 in.-68 in.
- Pockets to hold personal locator transmitter (approx 5"x3"x1.75"), knife, whistle, signal mirror, signal streamer, and strobe
- 38 lbs of buoyancy provided by two independent cells
- Inflation by two 18-gram CO2 cartridges or oral inflation tubes
- Water-activated TSO locator light
- Signal mirror, whistle, and knife with can opener.



### Personal Locator Beacon (PLB) (inside flotation vest pocket)

- Built in GPS, 406 MHz transmitter and 121.5 homing frequency
- Alert time to Rescue Services within 3 minutes
- Operates for 24 hours w/positional updates every 20 min.
- Global alert via COSPAS SARSAT satellites
- Easy to operate, compact, and fits in flotation vest pocket
- Positional accuracy to 30 meters



Register each beacon via NOAA SARSAT Beacon Registration:  
[www.sarsat.noaa.gov](http://www.sarsat.noaa.gov).



### Rescue Strobe Light (inside flotation vest pocket)

- 8-hour minimum continuous operating life
- Waterproof to 10 m (33 ft.)
- Visible up to 2 miles (5 km)
- 1.5v lithium battery (5 year replacement life)



### Signal Mirror (inside flotation vest pocket)

2 in. by 3 in. size, ¼ in. laminated glass that is shatter resistant, center-viewing hole and sight targeting retro reflective grid. In normal sunlight, the flash from a good Signal Mirror can easily be seen for 10 miles and generally the flash will be visible up to 50 miles, depending upon atmospheric conditions. The record rescue from one is 105 miles at sea. Direct up to 6 million candlepower of reflected sunlight onto the rescue target with pinpoint accuracy. A mirror will even work on bright overcast days and with moonlight, though with much reduced range. (Signal mirror will be inside the flotation vest stowage pocket.)



### Rescue Signal Streamer (inside flotation vest pocket)

- 6 in. x 25 ft. deployed
- Visible 1.3 miles away at 1500 ft. altitude
- Bright orange with retro-reflective capability
- Clip to attach to survival vest



**Helicopter Emergency Egress Device (HEED)** (inside flotation vest pocket)

- Air capacity 1.7 cu. ft.
- Approx. 30 breaths & 2-5 min. duration
- Cylinder rating DOT-3AL 3000 TC-3ALM-207
- Refillable
- Single-stage demand breathing regulator

***HEED bottles cannot be issued to personnel who have not received training to use them.***



**Whistle** (inside flotation vest pocket)

- Life-saving rescue whistle sound carries for ½ to 2 miles
- Not affected by water
- Will not adhere to skin in sub-zero temp.



**Knife** (inside flotation vest pocket)

- Knife, with can opener
- Springs manufactured from high-grade stainless steel to resist corrosion
- Lining made of brass



**Anti-Exposure Suit**

- 3-layer NOMEX outer shell
- Lightweight (~4 lbs)
- Zippered ankle gussets
- Insulated thermal protective hood
- Closures at wrists and ankles for hypothermia protection
- Compatible with any life jacket
- 18-21 lbs of buoyancy

### **Near Shore 4-Person Life Raft packed with 406 MHz ELT with GPS**

(Carried on aircraft) (annual inspection required)



- 4-person capacity not overloaded
- CO2/N2 inflation system
- Less than 25 lbs
- 10-foot activation line
- Sea anchor
- Pressure relief valve
- Topping-up valve
- Water-activated Survivor Locator Light

### **Offshore 6-Person Life Raft packed with 406 MHz ELT with GPS**

(Carried on aircraft) (annual inspection required)



- 6-person capacity not overloaded
- CO2/N2 inflation system with twin oversized buoyancy tubes
- Less than 60 lbs
- 10-foot activation line
- Sea anchor
- Pressure relief valves
- Topping-up valves
- Water-activated Survivor Locator Light
- Offshore survival equipment

## **FUNDING**

Operating funds for acquisition, distribution, and maintenance of the standardized NOAA ALSE is derived from NOAA line office (NESDIS, OAR, NMFS, NWS, NOS) budgets based on the average annual equipment cost (similar to the NOAA Dive Standardized Equipment Program). Field offices will not be “buying” specific pieces of equipment for their exclusive use; they will be paying for access to equipment that is maintained by the ALSE Program based on the number and types of equipment they need. A “fund site” will be set up at OMAO headquarters and the line offices will transfer funding to that fund site. OMAO will then purchase the ALSE and issue it to their unit. If the unit already has equipment that meets the standards of the equipment that the program will be distributing, they can turn that equipment over to the ALSE Program for regular maintenance and upgrade, and will only be responsible for funding the maintenance, inspection, and upgrade of that equipment. Annual cost assessment is based on: (current cost of standard equipment + average annual maintenance + repair cost + losses + shipping costs).

## **MAINTENANCE**

All equipment will be labeled, tested, and inspected before issue to ensure that it is within safety specifications. Equipment is either repaired at the Aircraft Operations Center (AOC) or contracted out to qualified vendors.

The ALSE program manager and ALSE field office managers will set up maintenance and inspection cycles for the ALSE. The ALSE program manager will contact ALSE field office managers when the equipment is due for inspection.

ALSE must be stored in a cool dry place inside, hung up in a locker or box, not stored on the floor or in the trunk of a car or handled roughly. If the ALSE gets wet, hang it up to air dry out of direct sun light.

Individuals who are assigned the gear are responsible for visual inspections. Preflight your ALSE before each flight or every 30 days for damage, missing items, operation and, serviceability. Any problems, please contact your ALSE field office manager or the NOAA ALSE program manager.

Loaner equipment for programs that need minimum ALSE to use for a couple of weeks will be available for a fee. Loaner equipment is available for replacement when field office equipment needs to be serviced or inspected.

Beacons will be registered to the flotation vest serial number with the NOAA SARSAT Beacon Registration at [www.sarsat.noaa.gov](http://www.sarsat.noaa.gov) and updated by the ALSE program manager in conjunction with the field office manager.

## LABELING

Use label maker with black on clear or black on white ½-in. tape, 12-pt. font for labeling.

Flotation Vest will be labeled on the back of the vest with the vest serial number, person's first initial and last name, next vest inspection due date, the word "NOAA" and abbreviated line office name and phone number. The inspection card will be marked with vest serial number, person's first name initial and last name.

Personal Locator Beacon (PLB) will be labeled with the person's first name initial and last name, beacon serial number, and the NOAA SARSAT Beacon Registration label.

HEED bottles will be labeled on the bottle head with the person's first name initial and last name, bottle serial number, and the 5-year hydrostatic test next inspection due date.

Life Raft containers will be labeled with raft serial number, next inspection due date, the word "NOAA" and abbreviated line office name and phone number.

## ACCOUNTABILITY

Each NOAA field office that authorizes personnel to fly Mission Operations (as defined by NAO 209-124 NOAA Aviation Safety Policy) shall designate a point of contact to work with the ALSE program manager to determine field office ALSE needs, and to be

responsible for shipping/receiving, inventory control, and local issuance of ALSE for that field office. The field office manager will sign and FAX the initial ALSE issue U.S. Department of Commerce CD-50 Personal Property Control form to the ALSE program manager for accountability. In the case of lost, stolen, destroyed, damaged, or unserviceable ALSE, the individual to whom it was issued is responsible for the replacement cost. Chapter 5 of the Government Accounting Office Law Manual sets forth satisfactory recovery procedures.

## SHIPPING

In order to identify equipment shipments, a completed U.S. Department of Commerce CD-50 Personal Property Control form must accompany all equipment returned to the AOC and vendors. Equipment is to be shipped in rigid cushioned boxes to prevent damage or loss, and secured with strong tape designed for shipping. The ALSE field office manager is requested to provide his/her current return mailing address, 9-digit zip code and phone number in all correspondence.

Special shipping/handling of hazardous materials training (FedEx Ground & Air) may be necessary to ship personal flotation vest (you can remove CO<sub>2</sub> cylinders), life rafts, personal locator beacons (you can remove battery) and HEED bottles.

Transporting ALSE on commercial airlines - one self-inflating life jacket that contains one small carbon dioxide (CO<sub>2</sub>) cylinder is allowed in checked baggage (you can remove CO<sub>2</sub> cylinders) and signal flares are not allowed.

## ADDITIONAL INFORMATION

Life Vest Safety Video

[http://www.mustangsurvival.com/resources/gallery/videos/NSBC\\_-\\_Authorities\\_Speak\\_2.wmv](http://www.mustangsurvival.com/resources/gallery/videos/NSBC_-_Authorities_Speak_2.wmv)

Cold Water Hypothermia Survival Video

<http://www.mustangsurvival.com/resources/gallery/videos/RedCross-Hypothermia.wmv>

For additional survival information, see the weekly television programs on the Science Channel "Survivorman" and "I Shouldn't Be Alive" on the Discovery Channel; check your local listings and [www.science.discovery.com](http://www.science.discovery.com) and [www.Discovery.com](http://www.Discovery.com). Two shows by "Survivorman" are highly recommended: "Winter Plane Crash" and "Lost at Sea." Great survival training information is presented in these programs. Les Stroud survives for 7 days and videotapes it for you to see on Friday nights at 10:00pm.

For additional survival equipment information, see "Equipped to Survive," the online definitive source for independent reviews and information on outdoor gear and survival equipment and techniques at [www.equipped.com](http://www.equipped.com).

A recommended vendor for other personal items such as flight suits, helmets, gloves, jackets, and boots is Gibson & Barnes (Flight Suits) at [www.flightsuits.com](http://www.flightsuits.com).

Any problems or questions, please call or email me. "PLEASE DO THINGS SAFELY"

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