

Quick Reference Damage Control

ASSESS THE DAMAGE

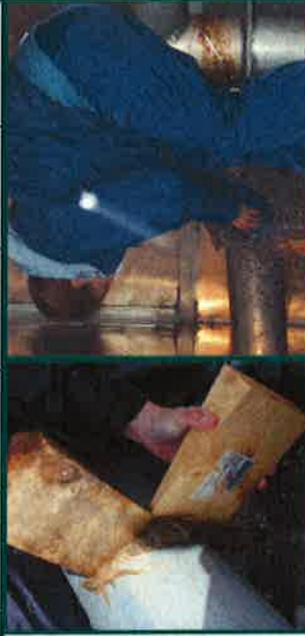
- Determine if it is leaking or flooding
- Determine whether or not available pumps can keep up
- Alert crew to situation and see that they are prepared to abandon ship if it becomes necessary
- Ensure that all crew are prepared to assist as needed
- Alert the Coast Guard of the situation
- Determine if it is safe to enter the flooded compartment and attempt damage control
- If so, trace the source of the flooding

TABLE OF FLOODING RATES (Gallons Per Minute)

Distance below waterline	Diameter of Opening in Hull (Inches)									
	1"	1.5"	2"	2.5"	3"	3.5"	4"	6"		
1'	20	44	79	123	177	241	314	707		
2'	28	62	111	174	250	340	444	1000		
3'	34	77	136	213	306	417	544	1,224		
4'	39	88	157	245	353	481	628	1,414		
5'	44	99	176	274	395	538	702	1,581		
6'	48	108	192	301	433	589	770	1,731		
7'	52	117	208	325	468	636	831	1,870		
8'	56	125	222	347	500	680	889	1,999		
9'	59	133	236	368	530	722	942	2,121		
10'	62	140	248	388	559	761	993	2,235		

CONTROL THE DAMAGE

- If possible, isolate flooding by closing watertight doors and hatches
- Shut down generator and inverters to reduce electrocution risk
- Disengage machinery that may make working in flooding area hazardous
- Jam materials into the breach to slow the flow of water
- Wrap cloth or other material around wedges and plugs for a tight fit



- Bolster patches or plugs with shoring or nail-on patching
- Lay a tarp against outside hull and secure over the breach
- Use pumps to remove as much incoming water as possible
- Water may come from more than one source. Identify and stop all sources of flooding
- Remember to give the Coast Guard regular updates as the situation progresses
- Close off above-the-waterline holes, such as drains and discharges that can siphon water into the boat should it sink below their levels
- Ensure that patches are secure before attempting to get underway
- If grounded, ensure hull is watertight before refloating
- Maintain a watch at the source(s) of the flooding

Fire Prevention and Fire Fighting

Fire is even more dreaded at sea than it is ashore. Fishermen faced with a fire at sea can neither call for professional help nor run away from the danger. Short of abandoning ship in favor of a tiny life raft, they must stay onboard and fight the fire themselves whether or not they have any training.

I hope this training program encourages further fire-fighting training, as the time spent today is minimal. I would encourage all participants to contact your local fire department and ask to attend/participate in their portable fire extinguisher training.

Coast Guard statistics reveal that most fires aboard fishing vessels occur in UNATTENDED MACHINERY SPACES. Typical causes include broken fuel or lube oil lines that spray fuel on hot engine parts, faulty electrical systems, uninsulated exhaust in contact with flammable materials, rags or other combustibles in the vicinity of hot engines, and spontaneous combustion of oil soaked rags. Other potentially high fire danger areas are accommodation spaces and galleys.

Prevention

- Constant awareness of the danger of fire is the responsibility of each and every crewman. Carelessness is a chief cause of fire aboard vessels.
- Each crewman should be:
 - Alerted to common fire hazards and taught how to eliminate them.
 - Advised of his duties in the event of fire.
 - Aware of all means of escape from interior spaces.
- Restrict the use of combustible materials when building, repairing and/or maintaining the vessel.
- Ensure the proper installation of fuel, lube and hydraulic oil lines.
- Exhaust systems are to be properly wrapped and engine rooms, cargo spaces and fuel tanks adequately vented.
- Unattended spaces should be equipped with fire and smoke detectors and alarm systems.
- Vessels must have adequate fixed fire extinguishing systems and/or portable fire extinguishers.

Causes

Spontaneous Ignition

Placing an oil-soaked rag in a storage area or engine room is an excellent candidate for spontaneous ignition. The oil rag begins to "oxidize" — to react chemically with the oxygen in the warm air around it — which in turn produces still more heat. The heat causes the oil to oxidize faster and produce still more heat. Since the heat is not drawn away by ventilation, it builds up around the rag.

Finally, the rag gets hot enough to burst into flames. All this can and does occur without any source of heat.

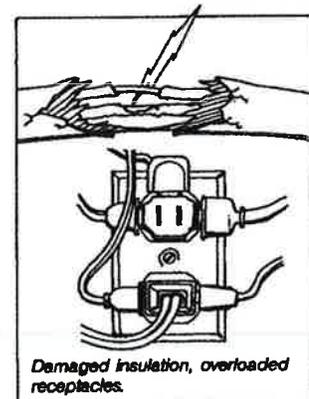


Faulty Electrical Equipment

When electrical equipment wears out, is misused or is poorly wired, electrical energy can turn to heat and a fire may be the result. Standard home or industrial electrical equipment has no place on the ocean. The salt air causes corrosion and a steel hull can cause erratic operation or short-circuiting. The result may be overheating or arcing in equipment or wiring and the ignition of flammable materials nearby.

Approved marine electrical equipment is specially made for shipboard use.

You can avoid this type of fire by making frequent inspections, replacing wires that are obviously defective and by using only fuses and circuit breakers of the proper size for the circuit.



Exposed Light Bulbs

An exposed light bulb can ignite combustible material by direct contact. Numerous vessel fires have started when a crewmember left a lamp lit in unoccupied quarters. As the ship rolled, curtains or other combustible material came in direct contact with the hot bulb and ignited.

Engine Rooms

Engine rooms are full of fire hazards. Water dripping from ruptured sea water lines can cause severe short-circuiting and arcing in electric motors, switchboards, and other exposed electrical equipment. Hot engine exhausts can also cause vessel fires.

Drip trays should be emptied frequently and oil accumulation in the bilges should be kept to a minimum. A safety fuel shut-off should be installed outside the engine compartment to allow the operator to stop the flow of fuel without entering a fire area.

Foam Insulation

Many vessels use rigid polyurethane or other organic foam insulation because of their excellent insulation properties. Such foams should be covered with a suitable flame barrier.

Should a fire occur in areas filled with foam, after the fire is extinguished, the foam must be completely removed to ensure that the fire is not smoldering in concealed spaces.

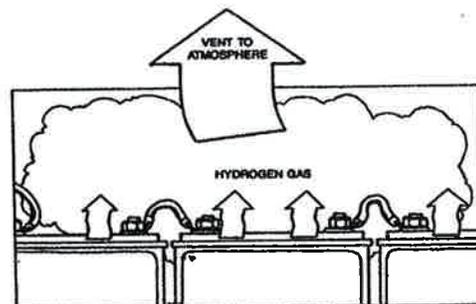
All foams can burn, and they give off toxic gases and black smoke.

Electric Motors

Faulty electric motors are prime causes of fire. Problems may result when a motor is overloaded, isn't properly maintained or is used beyond its safe working life. Motors require regular inspection, testing, lubrication, cleaning and ultimately replacement.

Charging Storage Batteries

When storage batteries are being charged, they emit hydrogen, a highly flammable gas. A mixture of air and hydrogen can be explosive. Hydrogen is lighter than air and will rise as it is produced. If ventilation is not provided at the highest point in the battery charging space, the hydrogen will collect. Then, any source of ignition can cause an explosion and fire.



Galley Operation

A ship's galley is a busy, potentially dangerous place. The intense activity, the many people, the long hours of operation and the basic hazards — open flames, fuel lines, rubbish, and grease or soot build up and general poor housekeeping — all add to the danger of a fire.

When liquid fuels are used for cooking, extreme care should be taken to avoid damage to fuel lines. You should be constantly alert to leaks in fuel lines and fittings. Everyone who uses the galley should know where the fuel line shut-off valves are and the valves must be easy to get at.

Good housekeeping and cleanliness is a must and it doesn't mean just cleaning the stovetop.

Smoking

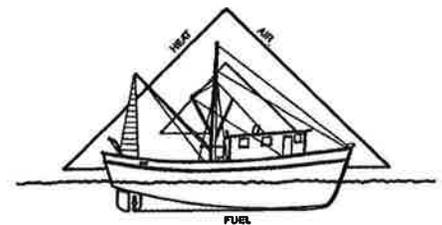
Careless smoking is a key fire hazard. Cigarettes and matches must be properly disposed of in noncombustible receptacles. Ashtrays should be emptied into metal containers with lids, not cardboard boxes used as trash containers. In hazardous areas, no smoking warnings should be posted and observed. Smoking in bed should be prohibited.



The Fire Triangle

A fire must have HEAT, FUEL and OXYGEN in order to burn. Remove any leg of this "triangle" and fire cannot occur.

The fuel for a fire can be in the form of flammable solids, liquids or gases. Liquid fuels burn more intensely than solids because they are more easily vaporized. The vapor from a liquid fuel is also heavier than air. It is extremely dangerous because it will seek low places, dissipate slowly and travel to distant sources of ignition.



A boat is full of fuel sources for fire.

Air contains the oxygen necessary for burning and ignition heat is present in many forms aboard vessels, including flames, spark, friction and spontaneous or internal combustion.

Removing the Fuel

Theoretically, you could put out a fire by physically dragging the fuel away from the source of heat, like someone pulling a log out of a campfire. While this may be rarely practical, it is often possible to move nearby sources of fuel so the fire cannot expand beyond what is already being consumed.

In fire fueled by liquids or gases, it may be possible to extinguish the fire by cutting off the fuel supply. When a fire is being fed by a leaky hydraulic or diesel line, for example, it can be put out by closing the proper valve. If a pump is supplying liquid fuel to a fire in the engine room, the pump can be shut down. Either way, the source of the fuel is removed and the fire is extinguished.

Removing the Oxygen

A fire can be put out by removing its oxygen, or by lowering the oxygen level in the air to less than 16 percent. In open areas, smothering a fire is difficult but not impossible. In smaller open areas, *i.e.*, fire in a galley trashcan, it may be snuffed out simply by placing a cover tightly over the can blocking the flow of air to the fire.

To put out a fire in an enclosed compartment, engine room or cargo hold, the space can be starved of oxygen by completely closing all air-tight hatches, doors, etc. The fire will consume all the available oxygen as long as no air can continue to enter.

Removing the Heat

The most common method of putting out fire is to remove the heat by attacking the fire base with water. An excellent heat absorber, water destroys the ability of a fire to sustain itself by cooling the fuel, by absorbing the fuel and by absorbing radiant heat from flames.

Stability Hazard

The use of large quantities of water to fight fires may jeopardize the stability of the vessel. Dewatering techniques must be commenced immediately when large quantities of water are used.

WARNING: The use of water on electrical fires is not recommended. On electrical fires, water creates a shock hazard. On oil fires, a solid stream will splash the oil, possibly spreading the fire. Water fog may be used on oil fires.

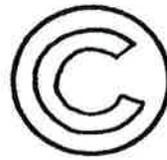
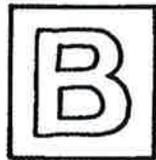
Spread of Fire

If a fire is attacked quickly and effectively, it can usually be contained and extinguished. If it is allowed to burn freely, however, it will generate great amounts of heat that can spread throughout the vessel and ignite new fires wherever fuel and oxygen are present.

Additionally, the heat, flame, smoke and gases associated with fire pose many health hazards. Crewmen fighting a fire should use all available protective clothing and respiratory equipment and should stay low and retreat to fresh air before they are overcome.

Classification of Fire

To put out a fire successfully, you need to use the most suitable type of extinguishing agent — one that will do the job in the least amount of time, cause the least amount of damage and result in the least danger to crew members. The job of picking the proper agent has been made easier by the classification of fires into four types, or classes, lettered A through D. Within each class are all fires involving materials with similar burning properties and requiring similar extinguishing agents. However, most fuels are found in combinations and electrical fires always involve some solid fuel.

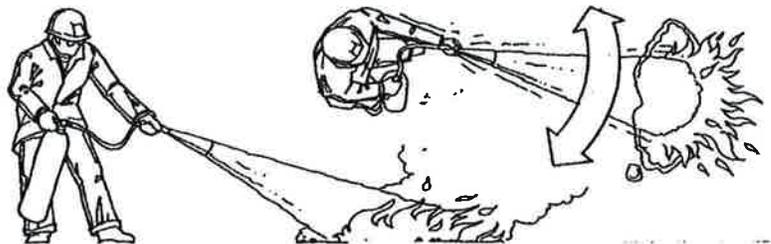


Class A Fires

Fires of common combustible solids such as wood, paper and plastics are best put out by WATER, a cooling agent. Foam and certain dry chemicals, which act mainly as smothering or chain-breaking agents, may also be used.

Class B Fires

For fires involving oil, grease, gas and other substances that give off large amounts of flammable vapors, a smothering agent is best for the job. Dry chemical, foam and carbon dioxide (CO₂) may be used. Water, although appropriate, in most cases



Aim at the base of the fire and sweep the flames away.

with inexperienced personnel will only make the fire worse. If the fire is being supplied with fuel by an open valve or a broken pipe, a valve on the supply side must be shut down to stop the fuel supply. This may put the fire out itself or at least make it easier to put out and allow the use of much less extinguishing agent.

Class C Fires

For fires involving energized electrical equipment, conductors or appliances, non-conducting extinguishing agents (CO₂, Halon, dry chemical) must be used, although dry chemical will ruin electronic equipment. An external generator and main engine shutdown switch should be available to shut off electrical sources. Always try to de-energize the circuit to remove the chances of shock and the source of ignition.

Class D Fires

These fires may involve combustible metals such as potassium, sodium and their alloys, and magnesium, zinc, titanium and powdered aluminum. Water should not be used on Class D fires. It may add to the intensity or cause the molten metal to splatter.

Hand-held Portable Fire Extinguishers

Portable extinguishers can be carried to the fire area for a fast attack, but they contain a limited supply of extinguishing agent. The agent is quickly used up and continuous application can exhaust the extinguisher in as little as 8 seconds. For this reason, it is important to back up the lead extinguisher with additional extinguishers or a hose line. If the first extinguisher fails or does not have enough agent to put out the fire completely, the additional extinguishers can be used to finish the job.



Sound the alarm.

Firefighting Procedures

The first step in fighting a fire is to sound the alarm and alert the captain and crew so the fire can be fought as a team. Vessels have been lost because someone tried to fight a fire by himself without sounding the alarm. By the time the rest of the crew knew what was happening the fire was out of control.

The crewmember that discovers a fire or the indications of fire must sound the alarm immediately. When you sound the alarm, be sure to give the exact location of the fire, including the compartment and deck level. This is important as it confirms the location for the vessel's fire party and gives them information regarding the type of fire to expect. The exact location may indicate the need to shut down certain fuel, electrical and ventilation systems and it indicates what doors and hatches must be closed to isolate the fire.

SIZE UP

Size-up is the evaluation of the fire situation. The fire team leader should determine:

- The class of fire (What combustible materials are burning?).
- The appropriate extinguishing agent.
- The appropriate method of attack.
- How to keep the fire from spreading.
- The required manpower and fire fighting assignments.

The first crew to arrive might extinguish a small fire. Larger fires require a coordinated attack and efficient use of manpower and equipment. During size-up, communication and a staging area should be set up.

Communications

Communications with the captain should be established by intercom or a messenger. Communications with fire fighting teams must be established and maintained.

Staging Area

The staging area should be established in a smoke-free area, as near as possible to the fire. An open-deck location, windward of the fire is ideal. If the fire is below deck deep within the vessel, the staging area should be a location below deck. A location near an intercom, if feasible, would be helpful in maintaining communications. However, the staging area should not be located where it will be endangered by fire. All supplies needed to support the firefighting effort should be brought to the staging area.

Attack the Fire

The attack should be started as soon as possible to gain immediate control of the fire and to prevent or minimize its spread. The attack will either be DIRECT or INDIRECT, depending on the fire situation, the equipment available and training level of the crewmen. Direct and indirect attacks differ widely in how they achieve extinguishments; both are effective when properly employed.

Direct Attack

In a direct attack, fire fighters advance to the immediate fire area and apply the extinguishing agent directly into the seat of the fire. An indirect attack should be considered if the heat and smoke make it impossible to locate or reach the seat of the fire.

Indirect Attack

An indirect attack is employed when it is impossible for fire fighters to reach the seat of the fire or they are not properly prepared as trained firefighters. Generally this is the case when the fire is in the lower portions of the vessel. The success of an indirect attack depends on the complete containment of the fire.

One technique involves making a small opening low into the fire space, inserting a fire hose nozzle and injecting a water spray. Heat converts the water to steam, which acts as a smothering agent.

Preventing Fire Spread

If a fire can be prevented from spreading beyond the space in which it originated, it can usually be controlled and extinguished without extensive damage. To do this, the fire must be virtually surrounded on all sides: fire fighters with the hose lines or portable extinguishers must be positioned to cover the flanks and the spaces above and below the fire. The possibility of the fire traveling through the venting system must also be considered. Many times in a fire at sea, the life rafts, life rings and PFD's are burned up before it occurs to anyone that the burning vessel might have to be abandoned.

Provisions should be made to safeguard and prepare life saving equipment during fire drills and actual fires.

Overhaul

Overhaul is begun after the main body of the fire is out. It is actually a combination of two procedures: EXAMINATION and CLEANUP. The purpose of the examination is to find and extinguish hidden fire and hot embers and to determine if the fire has spread to other parts of the vessel. At the same time, debris should be cleaned up and free water removed. Any unsafe conditions should be corrected.

When the Fire Is Out

Before a fire can be considered out, the crew must ensure that certain essential steps have been taken. These include:

- A thorough examination of the fire area to ensure that potential paths of fire spread have been examined.
- All smoke and combustion gases have been removed by ventilation.
- A reflash watch has been established. Crewmembers must be assigned to do nothing but check for re-ignition and to sound the alarm if it occurs.
- An examination has been made to see if the fire has damaged the vessel. High temperature can cause decks, bulkheads and other structural members to warp or become structurally unsound.
- Any necessary dewatering procedures have been started.
- A muster has been conducted to account for all personnel.

Tactical Considerations

- Alarm
- Organize and Stage
- Restrict and Confine
- Attack and Extinguish
- Protect Survival Gear
- Overhaul and Restore

Portable Extinguisher Operation

Pull The Pin

Aim Low at Base of Fire

Squeeze the Handle

Sweep from Side to Side

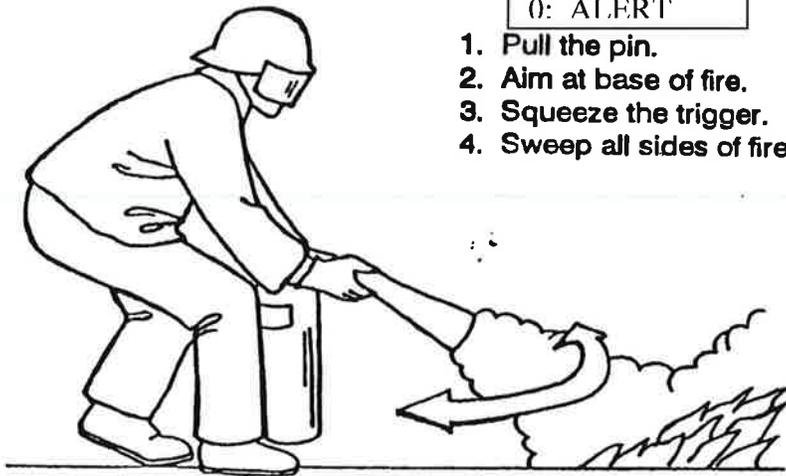
Fire Size-Up

- Where is the Fire?
- Are There People in the Space?
- What is Burning? What Class?
- What is the Best Agent?
- What is the Required Manpower?
- Can We Stop It from Spreading?

When the Fire Is Out

- Examine the Area Completely
- Ventilate Smoke and Gases
- Have Reflash Watch
- Damage Check to Vessel
- Dewatering Procedures
- Nose-Count of Personnel

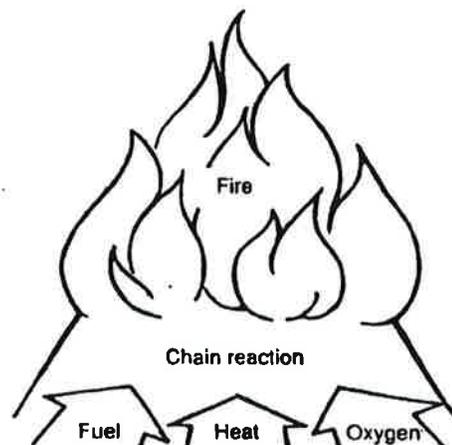
Using Fire Extinguishers



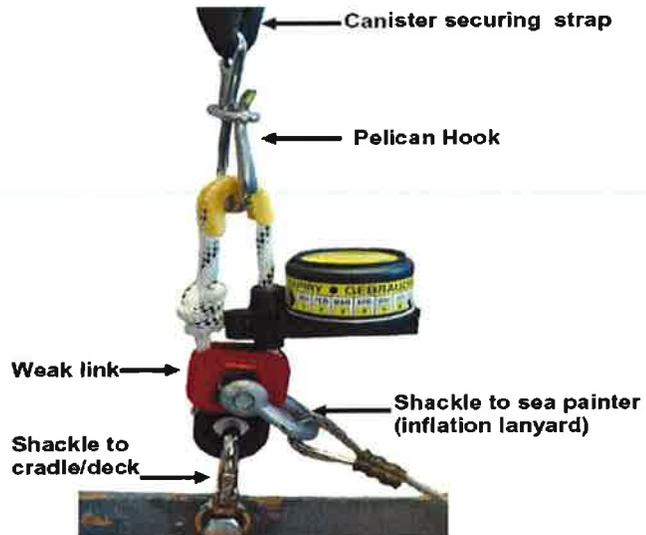
0: ALERT

1. Pull the pin.
2. Aim at base of fire.
3. Squeeze the trigger.
4. Sweep all sides of fire quickly.

Four Steps Leading to a Fire



LIFERAFTS



- 1) Check for proper float free arrangement.
- 2) Check expiration on hydrostatic release.
- 3) Check service date on raft.
- 4) Check for adequate capacity for yourself, captain, and crew.
- 5) Check to see if it is rated for offshore (SOLAS A)
- 6) Familiarize yourself with the location and the steps that would be needed to manually deploy it.

Southeast Fisheries Science Center
75 Virginia Beach Dr
Miami FL. 33149

January 23, 2012

MEMO TO: All POP Observers

MEMO FROM: Kenneth Keene
NOAA/NMFS Southeast Fisheries Science Center
Pelagic Observer Program

RE: POP Valise Life Raft

The POP has purchased a SOLAS A valise (soft pack) life raft with a four-man capacity. This will allow us to deploy on vessels where the observer's presence would exceed the vessel's life raft capacity. The following instructions will guide you in the use of the valise raft.

Equipment:

- Four man USCG approved ocean use valise raft with SOLAS A pack
- Carabiner attached via weak link to raft painter
- Pelican case to store and move raft from vehicle to vessel. (if shipped)
- Foldable aluminum hand truck for moving.
- Laminated copies of raft instructions and USCG approval letter

INSTRUCTIONS:

Receiving the raft:

Verify that the equipment listed above is with the raft (note that the SOLAS A pack is inside the raft, so you cannot access it). When you receive the raft it should be contained inside the case (if shipped) for ease of handling. Laminated copies of these instructions and the USCG approval letter will be zip tied to the exterior of the raft/case; **please remove these**, read, and store with your paperwork, however at the conclusion of your trip you need to re-attach them to the raft. Note that although you should remove the raft from the Pelican case, and you can attach the carabiner to an pertinent location on the vessel, you should NEVER attempt to open the valise pack, or pull the painter out much further than a foot or two. Normally, it will be convenient to keep the raft inside the case until you can load it onto the vessel. Although there may be situations where the vessel has room on board for both raft and case, we assume that generally you will have to separate the two and leave the case in your rental/personal vehicle. Even if there is room for both the case and the raft on the vessel, make sure to remove the raft from the case to facilitate quick deployment.

Storing the raft on board the vessel:

The USCG approval for use of this raft assumes it will be stored in an area that is easily accessible, including inside spaces like the wheelhouse or “ready room” (wet room). In small vessels, the main salon/galley area is also acceptable. The raft cover is NOT weather resistant and must be kept out of the elements as best as possible. Also, when moving the raft to and from the vessel, do NOT drag or pull the life raft on the ground-the cart is provided for this reason. The expected weather may influence where you and the captain choose to stow the raft; however you need to be vigilant regarding changes in conditions. Storage of the raft in an engine room, lazarette, or forepeak is NOT acceptable. Accessibility is key for this important piece of safety equipment.

Deploying the raft:

The steps to deploy the raft are exactly the same as in your safety training, except that because there is no hydrostatic release/cradle, you will not need to undo the hydrostatic release and remove the raft from the cradle. Either tie the painter to the vessel, or use the carabiner to attach the painter to a strong location on the vessel’s deck (In the latter case, should the vessel sink before the liferaft can be deployed, the raft will self deploy and detach from the vessel when weak link breaks). To deploy the raft after securing the painter, throw the raft overboard and pull the painter line out until resistance is felt, then a sharp tug on the painter should inflate the raft.

After your trip:

Remember the raft represents a significant expense to the program. When you leave the vessel, it should leave with you; place raft back inside the case and zip tie the instructions and USCG approval letter back on. In most cases it may be fine to leave the raft locked inside the vessel overnight, but it is never OK to leave the raft on deck overnight in port. Also, the raft CANNOT be shipped regular UPS. Therefore you will most likely need to stay in the area a little longer than usual to arrange for the shipment of the raft back to Miami or its next destination. NEVER leave the raft behind with vessel or fish house personnel for later shipping.

General policy information:

The provision of this raft for your trip should not be interpreted by vessel personnel that NMFS is responsible for providing safety equipment in order to make a vessel suitable for carrying an observer as required by regulation. In fact, NMFS is under no obligation to provide this raft. However, the POP (as well as some other observer programs) has purchased a raft as a courtesy to the industry. If the vessel captain or owner has any concerns about the use of the valise raft, they may read the USCG approval letter; if they have any further concerns they should contact the POP office at 800/858-0624.

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

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Washington, DC 20593-0001
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16711

JUL 15 2008

MEMORANDUM

From: 
M. M. ROSECRANS
(COMDT) CG-5433

Reply to: CG-5433
Attn of: Jack Kemerer
202-372-1249

To: CGD SEVEN (dp)

Thru: CG LANTAREA (Ap)

Subj: NMFS OBSERVERS AND VALISE PACKED LIFERAFTS

Ref: (a) CGD SEVEN (dp) Memorandum 16711 of 3 June 2008
(b) NOAA Fisheries and USCG Memorandum of Agreement on Observer Safety dtd 21 December 2004
(c) Requirements for Commercial Fishing Industry Vessels, 46 CFR Part 28
(d) Implementation of Lifesaving Equipment Requirements for Commercial Fishing Vessels, NVIC 1-92 and Change 1
(e) COMDT (G-MVI-4) Letter 16711.10 of 18 December 1993

1. Issue. The NMFS Observer Program Managers and USCG District Prevention and CFVS Program Managers have requested interpretation and guidance on the use of valise-packed inflatable liferafts by NMFS observers, such as in reference (a). This is particularly applicable when an observer embarks on a fishing vessel that has an installed inflatable liferaft with sufficient capacity to accommodate only the crew of the vessel. The question then is whether or not the carriage of a valise-packed liferaft in addition to the currently installed liferaft provides an acceptable safety equipment level and such carriage is consistent with the intent and letter of the requirements set forth in 46 CFR Part 28.

2. Discussion.

a. References (b) through (e) state and discuss safety and survival equipment requirements regarding commercial fishing vessels. On smaller vessels, the installed liferaft often only has the capacity to accommodate the crew and not the NMFS observer. These may be four-man, non-SOLAS, but Coast Guard-approved liferafts. In these instances, NMFS has provided the observer with a valise-packed liferaft to ensure there is survival craft capacity for the observer. This action has been accepted by the Coast Guard as meeting the equipment requirements. There has been no change to the Coast Guard's acceptance of a NMFS observer bringing aboard a valise-packed liferaft that is Coast Guard-approved to meet the aggregate survival craft capacity to accommodate the total number of individuals on board the vessel.

b. In order for the observer's valise-packed liferaft to be acceptable for use and meet the survival equipment requirements onboard a commercial fishing vessel, the valise liferaft must be Coast Guard approved, as must the vessel's installed liferaft. A valise-packed liferaft will carry a 160.051/...series Coast Guard approval number. A valise-packed liferaft is not a SOLAS-approved liferaft, but is Coast Guard-approved for domestic service. The liferaft must also be fitted with a service pack appropriate to the area in which the vessel will be operating.

- c. Service pack types for non-SOLAS liferafts and valise-packed liferafts include:
- "Ocean Service" or "Ocean Service (A)" – for operating beyond 50 miles of the coastline;
 - "Limited Service" or "Limited Service (B)" – for operating between 20-50 miles of the coastline, cold waters; or
 - "Coastal Service" – for operating between 20-50 miles of the coastline in warm waters, or beyond the Boundary Line between 12-20 miles of the coastline in cold waters.

Note: the above service pack and liferaft requirements apply to documented vessels and undocumented vessels with more than 16 individuals on board.

d. The intent of the regulations and the guidance provide in NVIC 1-92 is that each vessel must have one or more inflatable liferafts of a combined capacity large enough to accommodate every person on board, and its service pack type based on the vessel's operating area. Liferafts placed on a vessel after September 15, 1991 must be of a type approved by the Commandant. Coast Guard-approved SOLAS liferafts are for six persons or greater and will carry approval numbers in the 160.151/...series. Survival equipment packs on SOLAS liferafts are marked "SOLAS A" for Ocean Service and "SOLAS B" for Limited Service. SOLAS liferafts must be stowed so as to float free and automatically inflate in the event the vessel sinks. Coast Guard-approved Non-SOLAS liferafts, including valise-packed liferafts, for domestic service are for four persons or greater and will carry approval numbers in the 160.051/...series. The survival equipment packs installed on Non-SOLAS liferafts are as listed in paragraph 2.c. Non-SOLAS liferafts must be kept readily accessible for launching or be stowed so as to float free in the event the vessel sinks. A valise-packed liferaft that is placed in the wheelhouse or ready room can be considered readily accessible for launching if it is kept where it can be reached immediately without constraint and its access is not blocked in any way.

3. Action. The interpretations discussed above regarding carriage of valise-packed inflatable liferafts by NMFS observers whenever they embark on a commercial fishing vessel should be distributed to all units and personnel who are involved with examining commercial fishing vessels and enforcing safety regulations applicable to such vessels. Specifically, examiners and boarding personnel must understand the following:

a. A valise-packed inflatable liferaft may be carried in addition to the vessel's installed liferaft to meet the aggregate capacity to accommodate the total number of individuals on board the vessel when the addition of a NMFS observer on board the vessel causes the number of persons to exceed the capacity of the vessel's liferaft.

b. A valise-packed inflatable liferaft, when carried aboard a vessel by a NMFS observer, must be Coast Guard-approved, have a 160.051/...series approval number, and be fitted with the appropriate survival equipment pack for the area in which the vessel will be operating.

c. A valise-packed inflatable liferaft, when carried aboard a vessel by a NMFS observer, must be placed or stowed where it is unobstructed and readily accessible for launching in an emergency.

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Copy: All District (dpi)
NOAA NMFS Observer Program Manager

Proper Lifting Techniques

1. Plan ahead before lifting.

Knowing what you're doing and where you're going will prevent you from making awkward movements while holding something heavy. Clear a path, and if lifting something with another person, make sure both of you agree on the plan.

2. Lift close to your body.

You will be a stronger, and more stable lifter if the object is held close to your body rather than at the end of your reach. Make sure you have a firm hold on the object you are lifting, and keep it balanced close to your body.

3. Feet shoulder width apart.

A solid base of support is important while lifting. Holding your feet too close together will be unstable, too far apart will hinder movement. Keep the feet about shoulder width apart and take short steps.

4. Bend your knees and keep your back straight.

Practice the lifting motion before you lift the object, and think about your motion before you lift. Focus on keeping your spine straight--raise and lower to the ground by bending your knees.

5. Tighten your stomach muscles.

Tightening your abdominal muscles will hold your back in a good lifting position and will help prevent excessive force on the spine.

6. Lift with your legs.

Your legs are many times stronger than your back muscles--let your strength work in your favor. Again, lower to the ground by bending your knees, not your back. Keeping your eyes focused upwards helps to keep your back straight.

7. If you're straining, get help.

If an object is too heavy, or awkward in shape, make sure you have someone around who can help you lift.

8. Wear a belt or back support. (The POP will provide if asked.)

If you are lifting in your job or often at home a back belt can help you maintain a better lifting posture. For ideas on inexpensive back supports that can help support the low back while lifting, [click here](#).

Lifting

TIPS:

1. *Never bend your back to pick something up.*

It's just not worth the damage that improper lifting technique can cause.

2. *Hold the object close to your body.*

You are a much more stable lifter if you're not reaching for an object.

3. *Don't twist or bend.*

Face in the direction you are walking. If you need to turn, stop, turn in small steps, and then continue walking.

4. *Keep your eyes up.*

Looking slightly upwards will help you maintain a better position of the spine.

DRESS FOR SURVIVAL

Extra clothing will prolong your survival time by reducing loss of body heat and trapping air that will help keep you afloat. Put on plenty of warm clothing, including a watch cap. Wool or polypropylene clothing is best.

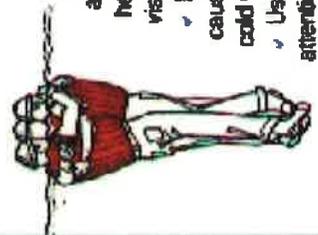
ENTERING THE WATER WITH A PFD

- ✓ If you are wearing a PFD:
 - ✓ Fasten PFD securely.
 - ✓ Cross your arms over your chest to help hold it down.
 - ✓ Block off your nose and mouth with one hand.
 - ✓ Protect your head.
 - ✓ Keep your feet together in case you land on something.
 - ✓ Check the area below before you enter.
 - ✓ Enter feet first.



IN THE WATER WITH A PFD

- ✓ Use the **HELP** (Heat Escape Lessening Posture) technique.
 - ✓ Huddle together as a group to decrease heat loss and increase visibility.
 - ✓ Don't swim! Swimming causes rapid heat loss in cold water.
 - ✓ Use a whistle to attract attention.

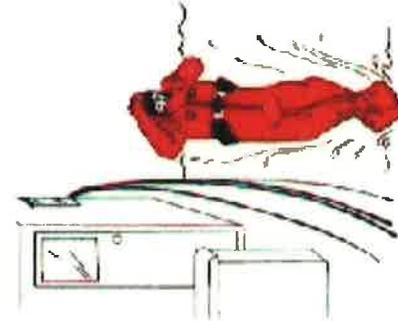


ABANDON SHIP!

- ✓ Give a proper **MAYDAY**: vessel name, position, nature of distress.
- ✓ The Captain gives the order to abandon ship.
- ✓ Stay clear of rigging.
- ✓ Throw buoyant objects over the side, if possible, to increase visibility.

IMMERSION SUITS

Immersion suits are your best protection against the cold and the harsh conditions of the water. Take care of it! Don't wait for an emergency! Regularly air it out and lubricate the zipper. Drill with the suit on so you know how it works.



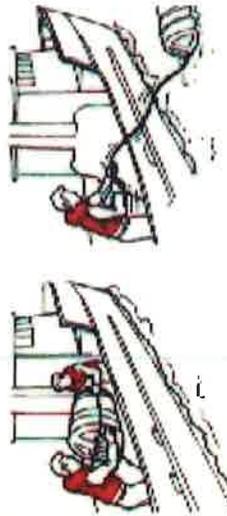
ENTERING THE WATER:

- ✓ Fully zip suit and ensure all closures are snug.
- ✓ Enter water feet first, as slowly as possible; feet together, protect your head.
- ✓ Inflate external flotation bladder after entering the water.

RAFT STOWAGE

- ✓ Stow raft in a readily accessible location where it will float free.
- ✓ Secure raft canister to cradle or bed with a properly installed hydrostatic release.
- ✓ Secure painter firmly to vessel, with a weak link incorporated into the line.
- ✓ Install lateral canister carefully, ensuring it is not punctured and watertight gaskets are intact.

RAFT LAUNCHING



- ✓ Ensure launching area in water is free of debris.
- ✓ 2 orientation should grab the canister at the ends and toss it into the water on the lee side of the vessel. Do not cut bands.
- ✓ After launching, pull painter **until** raft inflates. (The painter may be as long as 250 feet.)
- ✓ Wait for full inflation - with the canopy erected - before boarding.
- ✓ Ensure raft is tied to vessel.
- ✓ Keep the raft tied to vessel as long as it is safe; the vessel is easier for rescuers to see.

HOW TO RIGHT A CAPSIZED RAFT

Grab the righting strap and pull. When it begins to right, spring backward and to the side.





June 2006

Issue 9E

UNITED STATES COAST GUARD COMMERCIAL FISHING VESSEL SAFETY PROGRAM

New Requirements for Chemical Testing Following Serious Marine Incidents

On December 22, 2005, the Coast Guard published a Final Rule in the Federal Register (Vol. 70, No. 245, Pages 75954-75961) that revises requirements for mandatory chemical testing following serious marine incidents involving vessels in commercial service, including commercial fishing industry vessels. The new requirements change or add to the regulations found in Title 46 Code of Federal Regulations (CFR) Part 4, Subpart 4.06. **The Final Rule is effective June 20, 2006.**

A serious marine incident (SMI) is any reportable marine casualty or accident involving a vessel in commercial service which results in:

- One or more deaths;
- An injury to a non-crewmember which requires professional medical treatment beyond first aid;
- An injury to a crewmember which requires professional medical treatment beyond first aid, and renders the individual unfit to perform routine duties;
- Damage to property in excess of \$100,000;
- Actual or constructive loss of any inspected vessel;
- Actual or constructive total loss of any uninspected self-propelled vessel of 100 gross tons or more;
- A discharge of oil of 10,000 gallons or more into the navigable waters of the United States; or
- A discharge of a reportable quantity of a hazardous substance into the navigable waters of the U.S., or a release of a reportable quantity of a hazardous substance into the environment of the U.S.

The changes to the regulations set time limits for marine employers to ensure individuals are tested for alcohol use, and specimens for drug testing are collected from individuals following a SMI, when it is determined those individuals were directly involved in the SMI. The rule also requires that most commercial vessels have alcohol testing devices on board, and authorizes the use of saliva as an acceptable specimen for alcohol testing.

Failure to comply with the chemical testing requirements may result in the assessment of a civil penalty of up to \$5,500 for each violation. Also, mariners holding credentials issued by the U.S. Coast Guard may face suspension or revocation proceedings if they do not comply with the testing requirements.

The following is a summary of the new requirements:

1. **Alcohol testing** must be conducted on each individual engaged or employed on board the vessel who is directly involved in the SMI. The testing must be conducted **within 2 hours** of when the SMI occurred, unless precluded by safety concerns directly related to the incident. If safety concerns cannot be addressed and testing conducted within 8 hours after the occurrence of the SMI, it is not required. In this situation, the marine employer must document on form CG-2692B the reason why testing was not conducted.

2. **Drug testing** must be conducted on each individual engaged or employed on board the vessel who is directly involved in the SMI. Collection of drug-test specimens must be conducted **within 32 hours** of when the SMI occurred, unless precluded by safety concerns directly related to the incident. If safety concerns prevent the collection of specimens within 32 hours, then specimens must be collected as soon as possible thereafter. If drug-test specimens are not collected, or the individual refuses to provide a specimen, the marine employer must document the reasons why on form CG-2692B. Individuals refusing to provide a specimen must be removed as soon as practical from duties that affect the safe operation of the vessel.

3. **Alcohol testing devices** must be readily available on board the vessel unless obtaining the devices and conducting the required testing can be accomplished within 2 hours from the time of occurrence of the SMI. **Saliva** is an acceptable specimen for alcohol testing.

Approved Evidential Breath Testing devices or Alcohol Screening Devices are on the National Highway Traffic Safety Administration's Conforming Products List. The lists can be viewed or downloaded from NHTSA's website at: <http://www.nhtsa.dot.gov/people/injury/alcohol/blood.htm>

Relatively inexpensive saliva Alcohol Screening Devices that meet minimum requirements are available in packages that could be separated to accommodate several vessels. Packages of 25 testing devices of some brands can be purchased for approximately \$125.

Become familiar with the new requirements. Contact your local Coast Guard office if you have questions.

www.FishSafe.info



