


# East Lake Tarpon Special Fire Control District

	<b><i>SOP 609 Marine Operations</i></b>	
	<b>Implementation Date: 08/28/2017</b>	<b>Revision Date(s): 08/28/2017</b>
		<b>Reviewed Date(s):</b>
	<b>Forms or Attachments: None</b>	

## PURPOSE

The purpose of the manual is to provide policies, procedures, and operating guidelines for conducting fire department marine operations for water rescues. It also provides guidelines for certification, training, and maintenance schedules.

## COMPONENTS

Boat operations consist of three major components:

1. Vessel Assistance
  - A. Assist vessels in distress (taking on water, disabled boats, etc.)
  - B. Transport of sick or injured occupants from a vessel to a shore location for disposition.
2. Search, Rescue and Recovery
  - A. Search, Rescue and Recovery for persons (swimmers, divers, etc.)
  - B. Search, Rescue and Recovery for vessels (boats, kayaks, PWC, etc.)
  - C. Serve as a platform for dive operations
  - D. Search and recovery of evidence at potential crime scene
  - E. Assist other agencies (i.e. police, public works, etc.) with recovery of vehicles, vessels or other items under the water that pose a potential threat to public safety.
  - F. Fire Suppression / Large building ventilation
  - G. Deployment to flood areas for search and rescue

## EAST LAKE FIRE RESCUE MARINE UNIT

<b>Vessel</b>	<b>Description</b>	<b>Equipment</b>	<b>Purpose(s)</b>
<b>Marine 57</b>	<b>20Ft Midwest Recue Airboat</b>	<ul style="list-style-type: none"> <li>• <b>Gasoline LS3 615 HP engine</b></li> <li>• <b>Side scan sonar</b></li> </ul>	<b>Vessel Assistance</b>  <b>Search, Rescue &amp; Recovery</b>  <b>Dive Operations</b>  <b>Future Fire Suppression</b>

**TRAINING AND CERTIFICATION**

East Lake Fire Rescue, as well as all Pinellas County Departments, will recognize three distinct Training and certification levels.

- Awareness Level- All personnel will be trained to this level. Training will include but not limited to: basic risk vs. benefit decision making, basic safety, donning and use of PFD’, using throwable devices, and FF survival techniques.
- Operations Level- All Marine Rescue Team Members will be trained to this level. PWC, and small boat operations.
- Technician Level – All Boat Operators will be trained to this level and certified. This will include proficiency in the operation of Marine 57

**Training and Certification Requirements**

**Marine Rescue Team (MRT) Member**

\*\*\* The crew of Marine 57 should consist of 2- WET members excluding the Operator

Marine Rescue Team (MRT) Member

- Usual duty is to deploy the Departments rescue boat. Must pass the Departments annual swim test, have a Florida safe boating card, and show proficiency in operating the boat under rescue conditions. The department's PWC task book must also be on file.
- Usual duty is the operation of the rescue boat. Must be able to demonstrate proficiency in boat handling skills and close quarter maneuvering, and be familiar with inland and offshore waters, nighttime and limited visibility navigation, GPS operation, and use of safety equipment on the vessel. A basic knowledge of troubleshooting, boat maintenance, as well as all the equipment on the boat is also required. Must have a thorough knowledge of the boat's limitations. Must have a Florida safe boating card. The Department's Boat Operator task book must be completed and on file.
- **Navigator**  
Duties to include assisting Captain/Operator with operations of vessel to include Detailed use of side scan sonar, GPS, Flir, Radio systems. Highly recommended that the Navigator is a Lieutenant.

### **Rescue Swimmer 1 & Rescue Swimmer 2**

- With the operational and handling characteristics of M-57 it will often be likely to deploy rescue swimmers (Paramedics) into the water to reach victims/vessels and aid in the safe landing of M-57. Must complete and maintain annual interdepartmental Rescue Swimmer status. Must be able to demonstrate proficiency in assisting the boat operator in all areas other than piloting the boat. These includes mooring, operating the deck gun and hand lines during a fire, basic navigation skills, operating all the equipment on the boat, basic troubleshooting of all boat systems, deploying fenders and rafting up to other craft when needed, anchoring, as well as helping sick and injured onto the boat. He/she will act as the surface swimmer for rescues. To be qualified as a Rescue Swimmer you must have a Florida safe boating card. The departments Rescue Swimmer task book must also be completed and on file.

### **Training Time Frames**

Training should be conducted on week days between the hours of 0900 and 1600hrs. Occasional night operations will be conducted annually. Special consideration should be given to minimize disturbing private vessel owners or home owners close to shore with the noise of the engine.

### **Training Locations**

As the possibility exists for deployment within Pinellas County waterways area

familiarization should be conducted in ocean, intercoastal, lake, canal, and island waterways.

## **STAFFING**

Recommended staffing for the Fire Boat will be as follows

-EL Certified Boat Captain /operator\* (Not required to be a promoted Engine DE-May be Lt)

-Navigator\* (Should be Lt)

-Rescue Swimmer 1\*

-Rescue Swimmer 2

- Minimum staffing will be 3 certified members positions as indicated by \*

## **SAFETY**

### **Overview**

Emergency situations can cause people to panic or act before thinking despite the best of training and preparation. Therefore, boat crews must work together as a team to minimize any potential or immediate jeopardy for both civilian casualties and themselves. **Never** enter an emergency without first assessing the risk involved for the boat crew members and the civilian victims. The responsibility for identifying and managing risk lies with every member of a boat crew. Be aware of what is going on around you at all times. The following guidelines apply at all times.

### **General Safety Guidelines**

1. All personnel shall wear Class III personal flotation devices anytime they are operating within 10 ft. of the water. The PFD shall have a whistle and waterproof strobe light attached.
2. The boat operator is solely responsible for the safety of the vessel and crew. Personnel must comply with all instructions issued by the boat operator. The boat

operator will decide if weather or water conditions are too hazardous for safe operations.

3. Marine 57 shall be operated in a safe manner at all times. Emergency situations do not justify unsafe practices. Minimum wakes will be observed in proximity to other vessels or in posted areas unless responding to an emergency (Florida State Statute 327.46 section 3). Use extreme caution in these situations.
4. Marine 57 will follow the daily, weekly, and monthly inspections listed in the vessel logs. Any problems shall be noted and reported to the station Lieutenant. If any required safety equipment is missing the boat will be placed out of service until the proper equipment is obtained.
5. While underway, all crewmembers will be alert for vessels, swimmers and other hazards
6. Anytime the boat is underway to a fire related incident, a minimum of 2 full sets of fire gear, including SCBA will be on board.

### **On Scene Safety Guidelines**

1. The Incident Commander should consider two boats for any incident; the second will be in place to back up the first boat.
2. It is highly recommended that the Incident Commander consult with the Boat Operator, to determine if the rescue operations will be shore base or boat based.
3. It is the responsibility of all on scene personnel to ensure that all personnel operating the Fire Boat at an incident are appropriately qualified as per Department policies.
4. The Incident Commander should consider having a Dive/ WET Team as their RIT during the incident.
5. The Incident Commander should consider assigning a Marine Group Supervisor to coordinate all boats operating in the area in which divers may be working or when multiple boats are operating.
6. It shall be the responsibility of the Marine Group Supervisor to assess any safety issues concerning localized hazards and advise all boat handlers that are operating on the site.
7. In the event other agencies are using boats on site and operating in the area of the divers, it is the responsibility of the Marine Group Supervisor to insure that all other watercraft are briefed on the area of operations and insure that a communication system is in place before the initiation of watercraft operations.
8. In heavy weather conditions command should remain established until all fire vessels have safely returned to shore and have notified command of such.

### **RESPONSE AREAS**

East Lake Fire Rescue will respond routinely with marine 57 within the following response areas:

- Inland waters, lakes within the jurisdictional limits of the East Lake Fire District
- Mutual Aid assistance to surrounding jurisdiction
- In the Gulf of Mexico out to three miles when needed as conditions allow

Marine 57 will also respond when requested by the US Coast Guard or another distant jurisdiction for mutual aid. However the appropriateness and safety of the request must be assessed. For responses outside of the above routine response areas, the response must be approved by the Division Chief.

## **TOWING**

### **Department Responsibilities**

It is the policy of the Fire Department to tow vessels only when there is no other option and/or imminent danger to their occupants and others. The department could be liable for any damages incurred to the vessel being towed. In non-emergency situations the Fire Departments assistance will be limited to any or all of the following:

- Notifying the commercial tow company if available
- Notifying the USCG of the vessels location and problem
- Taking the civilians aboard the Marine 57 and transporting them to shore. (Civilians must wear PFD's while onboard)

### **Criteria for Towing**

Vessels may be towed for the following emergency reason:

- Discretion of the boat operator that there is no commercial option available
- Notify the Incident Commander
- A damage/liability release will be completed by the private vessel owner releasing East Lake Fire Rescue from liability to the vessel during towing operations

### **Towing Guidelines**

The judgment to tow or not tow should always be in favor of the disabled boat. Once the decision to tow a vessel has been made, the following guidelines should be followed

- Remember, if the decision is made to establish a tow, you are now responsible for both vessels and both crews and the Department could be held liable in case of an accident or injury.
- Consider removing the people from the boat prior to towing.
- A crewmember should board the craft if possible to inspect towing points.

- An appropriate tow rope shall be secured in a safe manner using one of the methods in the Boat Operators certification
- A Deck Person must maintain a watch as the boat is being towed
  - If the vessel has steerage, it shall be towed in the stern to bow method
  - If the vessel has no steerage or is in a heavy traffic area, the side tow will be employed
- The disabled vessel will be towed to the closest destination where the vessel can be safely moored not necessarily its point of departure.
- If possible, the Marine Unit should remain with the disabled vessel until the commercial towing company arrives.
  - Remain in available status to respond to further emergency calls.
  - If you must leave to answer another call, have dispatch check with the commercial towing company to ensure they have responded to the first disabled boat.

## **RESCUES**

### **Routine Rescues**

Under ideal conditions, rescues are fairly simple. The rescue boat is maneuvered in such a way that it comes alongside the disabled victim or vessel. Due to maneuverability characteristics of Marine 57 it is highly likely that Rescue Swimmers will need to enter the water to establish first point of contact and guide the vessel to safe landing.

- Victims
  - It is usually best to approach person in the water against the wind in case there is a loss of power.
- Vessels
  - If pulling alongside of a disabled craft, approach from downwind.
  - If the disabled boat is larger than the rescue boat, then approach from the windward side.

### **Adverse Conditions**

When working in very rough seas, around jetties, or in water full of debris, the rescue boat may not be able to get close to the victim or disabled vessel. The boat operator may still be able to affect a successful rescue by considering one of the following options:

- Using a rescue rope throw bag or Frisbee device
- Floating line
- Deploying a rescue swimmer
- Calling for other resources (helicopter, PWC, etc.)

### **Rescue rope throw bag:**

- Throw the rope at the victim allowing for wind or current
- If using the rope to aid a disabled vessel, throw the line across the boats deck.
- When pulling in the line with a person hanging on to the end, pull the line slow and steady. If the victim can no longer hold the line due to exhaustion or injury, a rescue swimmer should be deployed immediately.
  
- Anytime there are lines in the water, the boat should remain in neutral whenever possible

### **Floating a line:**

- Throw the line into the water upwind of the victim it may actually drift down to the victim.
- The rescue boat runs a wide circle around the victim until he is able to grab the line.

### **Deploying a rescue swimmer:**

- Because deploying a rescue swimmer has potential risk, other methods should be considered first. The disadvantages i.e. one less crewmember and another potential victim in the water should be weighed against the advantages.
- The swimmer should be equipped with some form of flotation, mask, fins, and snorkel.
- Ideally the swimmer should be tethered so he/she can be pulled back to the boat once their objective has been completed.
- Before the rescue swimmer slides in the water from the dive door, make sure they have enough line to reach the victim.

## **NIGHT OPERATIONS AND LIMITED VISIBILITY**

**Speed:** During night operations and at other times when visibility is severely restricted, such as by rain or fog, the boat's speed should not exceed that which would allow it to come to a complete stop in one half the range of visibility. For example, if visibility is 200 ft. then the boat should be able to stop in 100ft.

**Lights:** During nighttime operations the on board spotlight is an excellent tool for spotting boats, markers and jetties. Spotlights should be used only intermittently to spot channel markers or jetties. It is not recommended that spotlights be turned on and left on for long periods as this will discharge the batteries faster than they can charge. Strong lights may actually hamper visibility in foggy conditions.



**Searching:** Extreme caution is recommended during night operations and times of limited visibility since sea conditions are not easily determined and conditions may be unsafe. The engine crew staffing the boat should always bring the thermal imager to assist them in searching for victims on the surface of the water. Helicopters can also be extremely useful for night operations.

## **SEVERE WEATHER**

- If severe weather is forecasted, i.e. hurricanes, large tropical storm, the boat will remain in the fire station until such time the weather emergency has passed.
- Under no circumstances will search and rescue operations be undertaken in severe weather when such operations would place the life safety of the boat crew in imminent danger.

## **Marine 57**

Marine 57 is a 20-foot front cabin Midwest Rescue Airboat equipped with a deck crane. Fire crews may board a vessel to remove passengers and extinguish small fires but the fire suppression role of Marine 57 is limited to any temporary portable fire suppression pumps that are added. It is primarily that of rescuing passengers from a vessel on fire and then assuming a defensive position while attempting extinguishment. Marine 57 can also assist on structure fires that have deep enough water access, can rescue firefighters that may fall into the water, and can easily handle fires on small islands if a fire pump has been added to the inventory.

## **Function**

- This vessel is so equipped for the purpose of Search, Rescue, and Recovery operations
- Subsurface search and recovery operations via onboard side scan sonar system
- Vessel Assistance
- Dive Operations

## **Guidelines**

- No personnel will operate the boat without being thoroughly familiar with the vessel and have successfully completed the task book for the position they are assuming

- After the operation, the vessel will be washed with soap and water. All lights and ropes will be cleaned and dried appropriately, Re-fuel as necessary. The vessel will always be left in ship shape with a full fuel tank
- The operation of the engine shall be tested each week and so noted in the log book.
- Any damage to or accident will follow the guidelines set forth in the departments vehicle accident policy.

## **Marine Firefighting**

Marine firefighting is inherently dangerous. Some basic guidelines to adhere to at all times are as follows:

- Have all required equipment tested and ready

Maintain communications between the boat operator and crew members

- Account for all persons
- Always keep command informed
- Approach distressed vessel with your fenders rigged and lines at the ready
- Attempt to keep all lines, rigging, etc. removed from the deck to avoid fouling the propeller
- Approach a vessel on fire from the windward side
- Remove survivors first, then back off, and evaluate the fire
- If the risk of explosion is not known (you cannot determine what cargo is on board), back off and do not attempt to fight the fire.
- On small boats that have Halon systems that have deployed, ventilation must be run on high for minimum of 15 minutes before personnel re-enter that space where Halon was released without a breathing device. On vessels that have no mechanical ventilation, the space must be thoroughly ventilated using natural ventilation.

## **FIREFIGHTER SAFETY**

Firefighting can be very hazardous to anyone involved. Shipboard and waterfront fires frequently involve toxic or chemical hazards for firefighters. These hazards may be a source of fire or may be produced as a by- product or fire.

- The Boat Operator must always stay well clear of the smoke plumes rising from a fire because they greatly reduce visibility and can pose a health hazard
- As a plume expands downwind and outward from a fire, toxic products will be less concentrated
- The more toxic a product is, the larger the unsafe area will be, both downwind and to the sides of a plume.

- The decision to set a perimeter upwind of a toxic smoke or fire plume must be considered and executed when prudent
- Individuals who remain a safe distance upwind should not be affected by unseen dangers of a smoke plume
- Any change in weather conditions could dictate a need to increase the initial size of a perimeter
- If you can see a smoke plume and feel radiant heat, you are considered to be within a danger zone.
- Extreme caution should be used whenever Marine 57 is operating its deck gun where land based units are operating hand lines. These operations should be carefully coordinated by the Marine 57 operators and the incident commander

## **FIRE SUPPRESSION OPERATIONS**

The boat operator must brief crewmembers before arriving at the scene of a fire. The briefing details each crew member's assignments and emphasizes safety. Crew members are responsible for all duties assigned and must request clarification from the operator if they do not clearly understand the tasks assigned. Have bunker gear and SCBA ready to don. Remember RECEO-Rescue, Exposures, Confine, Extinguish, Overhaul. This works for marine fires just as it does for structure fires.

### **Rescue Process**

These steps are to be taken **before** attacking the fire. Remember, **life comes before property**.

- Approach the boat from upwind
- Immediately upon arriving on scene, all crew members should check the surrounding vicinity for persons in the water.
- Recover and/or evacuate all survivors to Marine 57
- Evaluate their physical conditions and render first aid if necessary
- Inform command of the need for ALS care or transport
- Take them to shore, if possible, for further assistance

### **Evaluation Process**

The next step is to stop and evaluate the fire. You must evaluate the following elements of the situation:

- Location and extent of a fire
- Class of fire
- Class and extent of all cargo involved
- Possibility of explosion

- Hazard to your crew
- Maneuverability of your vessel
- Weather forecast
- Risk of a serious pollution incident
- Protect Exposures
  - If a given situation where casting off boats is the best way to prevent fire spread, then cast off the uninvolved boats
  - DO NOT let a burning boat drift off uncontrolled, it may spread fire to other locations
- Control the burning vessel
  - There may be a situation where it is necessary to tow a burning boat away from a fuel dock, covered marina or other fixed structure if the fire can't be extinguished.
  - This is very dangerous as loss of control of a boat on fire can lead to an even worse situation than the original one. A broken tow rope during windy or strong current conditions could mean the boat on fire drifting out of control into any type of unfavorable situation.
  - To do this, use a line with a piece of chain and a grappling hook to tow it. An anchor rope can be used as well
  - When towing, attempt to tow or push the vessel into shallow water. This will prevent it from sinking, blocking a navigation channel, and creating an environmental hazard.

**CAUTION:**

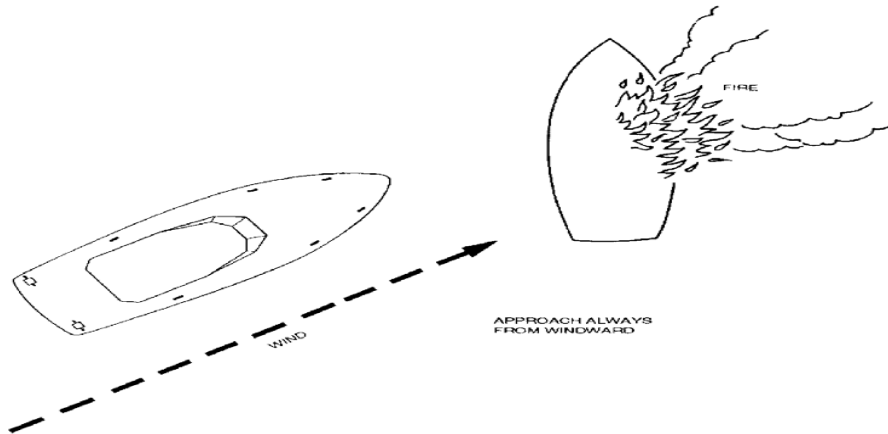
If a fire can be put out with no danger to your crew or your vessel, proceed. If not, back off and maintain a safety zone so that no other vessel comes too close to the fire scene.

After completing your initial size-up, you need to re-evaluate a fire scene/situation frequently. A small fire can rage out of control in minutes and threaten more property or cargo.

**Approaching a Boat on Fire**

If you must approach a fire at any time, remember to always approach from windward (figure 1). If you are not certain what the risk of an explosion is, back off a safe distance and establish a safety zone. Do not attempt to fight the fire.

**Figure 1**



### **Guidelines for Approaching a Boat on Fire**

- While enroute to the scene, establish communications with the distressed vessel
- Advise all persons on board to move to a flame and smoke free area topside
- Attempt to determine the extent and source of the fire. If it is not obvious, ask the personnel aboard the distressed boat where the fire is located
- Evacuate the persons from the distressed boat
- If the fire is small and within the crew members capabilities, they may extinguish the fire
- If the fire is beyond the crew member's firefighting capabilities, call for assistance
- If it becomes necessary to tie up alongside a burning vessel to fight fire or to remove survivors, attach only one line to it and keep a sharp knife accessible for a quick break away.

### **Extinguishing fires**

An attack should be started immediately to gain control and to prevent extension of a fire to other areas of a boat. An attack will be either **direct** or **indirect**, depending on the fire situation. Both methods are efficient when properly employed. Foam is the preferred extinguishing agent; however, a fire attack should not be delayed if foam is unavailable or the supply is exhausted.

#### **Direct attack:**

In a direct attack, crew members advance to the immediate area of a fire and apply extinguishing agent directly on a fire. This is appropriate if a fire is small and has not gained headway. Once a fire has gained headway, an indirect attack should be used.

### **Indirect attack:**

An indirect attack is best when it is impossible for crew members to reach a fire. Generally, this is in the lower portions of a boat, such as the engine room and bilge areas. The success of an indirect attack depends on completely containing a fire.

- Every possible avenue a fire may travel must be cut off by closing doors, hatches, and scuttles and securing all ventilation
- If someone must open a hatch to discharge a portable extinguisher or a hand line, be aware that as the fresh air enters the compartment, it will feed the fire, and cause it to rapidly spread.
- The best method of opening a hatch is to stand to the hinged side of the hatch. Then, while wearing gloves pull the hatch open and apply the extinguishing agent

### **REFERENCES**

1. National Fire Protection Association (NFPA) Standard 1670, *Standard on Operations and Training for Technical Search and Rescue Incidents*. 2014 edition.
2. National Fire Protection Association (NFPA) Standard 1006, *Standard for Technical Rescuer Professional Qualifications*. 2013 edition.
3. Clearwater Fire Rescue, *Special Operations manual – Boat and Marine Operations Manual*. CFR, 2013.
4. Tarpon Springs Fire Rescue Marine Rescue SOP 04-2014