

East Lake Tarpon Special Fire Control District		
	<i>SOP 608 Rapid Diver Water Extrication Team (WET)</i>	
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		Reviewed Date(s):
	Forms or Attachments: None	

PURPOSE:

It is the goal of the East Lake Tarpon Special Fire Control District to provide our community with state of the art sub-surface rescue service. With the implementation of a Water Extrication Team (WET), we strive to reduce the incidence of injury and mortality to community members involved in water submersion.

Through extensive research, rigorous training of employees (WET), and recent availability to newly developed sub-surface rescue equipment; we have developed this policy to aid our team as a guide.

"Rapid Diver System (RDS) was developed for a rapid extrication of a trapped victim submerged below the surface of water by allowing dive rescue teams to get in the water faster. It was designed for those situations when a quick underwater rescue can be performed. RDS allows the first East Lake Fire Rescue Unit on scene to assess the situation and deploy a diver(s) as needed based on scene information.

This policy defines the functional goals of the East Lake Fire Rescue WET Team, modes of operation, qualifying and continued education training, roles and responsibilities, equipment, and strategies/tactics. This document is written and intended as a guide. As every incident is unique to its nature and resolution, trained technicians *SHALL* have the latitude to make a sound rational decision that may not be included in this guide. The word *SHALL* indicates a mandatory requirement, and the word *SHOULD* indicates a recommendation or that which is advised but not required.

DEFINITIONS:

Aqua Communication Module- The rectangular communications module worn by a WET member enables the diver to communicate to other divers and or the surface communications module

Bottom Time - Total dive time while diver is underwater

Dive Officer (DO) – The diver in charge of dive operations typically from the first arriving engine. Responsible for top side communications records and monitors divers in water, time, PSI, and other needs. The DO reports to the IC. DO should be assigned an assistant for dedicated communications to submerged divers.

NASE- National Academy of Scuba Educators

PADI- Professional Association of Diving Instructors

Primary Diver – The primary diver is the initial diver in the water. Any diver can refuse to make a dive based on safety related concerns.

PSI - Pressure Pounds per Square Inch

RDS - Rapid Diver System (Scuba unit designed for rapid underwater entries)
Includes buoyancy compensator, regulators, face mask, communications mod, and tank.

SCUBA - Self-Contained Underwater Breathing Apparatus

Recovery Mode – This mode is when Rescue Mode has failed to produce a victim when it is highly likely. The victim has not previously exited the water.

Regulator - Regulates air coming from a scuba tank

Rescue Mode - When there is a possibility to save a human life.

Risk/Benefit Factor - Is a subjective evaluation of the merits of an operation

Safety Diver (RID)–The safety diver is the back-up diver to primary diver. The safety diver observes initial diver, can become primary or assistant diver if multiple victims or second dive needed.

Surface Communication Module- Topside communications module allows communications to submerged divers

Life Line- a yellow polypropylene rope tethered to a single diver when there is no standby divers available.

Tender- Non-Diver top side East Lake Firefighters trained in assisting Divers don/doff RDS, Diver entry/exit, and topside operations as needed.

Wet Team Coordinator- Oversees all administrative duties of Team including; training requirements and educational needs of team and new divers, equipment, maintenance, budget management, holds instructor certifications with PADI and/or NASE.

PROCEDURE:

WET Phases

Phase 1

Phase 1 is the initial development of the East Lake Fire Rescue WET. All training and response mode will focus on Rapid Rescue techniques.

Phase 2

Phase 2 will focus on training and responding in the Recovery Mode. This phase involves extended bottom time search techniques and skills. Until the ELFR Wet has implemented this phase, all Recovery needs will be handled by a third party Dive Team (PCSO or CFR).

Operation Modes

Rescue

Units shall respond in the Rescue Mode until proven otherwise. On scene witness accounts are invaluable. If limited information is available the team shall assume a vehicle is occupied and entry will be made. Many victims have been successfully rescued after several hours submerged in a vehicle. Cold water drowning victims have a much better chance of survival when drowning in water less than 60 degrees Fahrenheit. Resuscitation attempts on cold water victims should be aggressive and in accordance with Pinellas County Medical Operations Manual.

Single divers may be utilized in high life hazard suspicion. A single diver will be tethered to a surface tender trained in tethering.

Recovery

All recovery operations will be turned over to PCSO or Clearwater Fire Rescue Dive Teams until ELFR has developed Phase 2 (Recovery Mode) of the WET. WET members may aid in the Recovery Operations as requested by outside agency. In Recovery Mode, WET members will utilize an 80 cubic foot cylinder as the primary air source and the 27 cubic foot front tank, as a backup air supply. WET Members will use dry suit when in Recovery Mode.

When to Respond

The East Lake WET team should be dispatched anytime a vehicle is submerged or a boat is capsized. Today's vehicles are engineered to be more airtight/watertight than in the past. As a result air pockets within the submerged vehicle have allowed victims to survive for several hours after submersion.

Responding to a Submerged Vehicle Incident

When dispatched for a known vehicle submersion incident WET members *shall* rapidly don the RDS prior to boarding the apparatus. If the only Diver is the Driver Engineer, an alternate DE should drive to the incident while the DE/Driver is dressed in RDS, seat belted, and responding ready to deploy upon arrival.

Upon arrival a scene survey will be conducted and proper vehicle placement should be made. The first arriving engine should position the with rear bumper facing the submerged vehicle in preparation of an emergent tow out. When an Operational Mode decision has been made it shall be communicated to dispatch and dispatch will confirm that additional responding units have been notified of the Mode. At this time Diver(S) may enter the water. In the event there is a single diver present a Life Line shall be attached to the diver and manned by a Tender on shore.

Non-Divers (Tenders) shall assist WET members with donning of RDS including Aqua Communication Module as needed.

First Arriving Engine Responsibilities

1. The first arriving engine should be positioned appropriately with anticipation to perform a rapid removal “tow-out” of the submerged vehicle. This will be accomplished using the rear tow bar of the apparatus and a large diameter rope.
2. A scene size-up to include the number of vehicles, obvious hazards, and number of patients
3. Divers don RDS upon arrival with assistance of Tenders if not dressed prior to response
4. Witness interviews, more than one if possible
5. Placement of marker buoys or should be placed to determine "last seen location" of vehicle and or patients. Also make a mark of the vehicle entry point

Note: The IC may use WET divers as "technical advisors" to aid in decisions concerning the dive rescue operation. However, the IC makes the final decision to allow or refuse dive rescue operations to enter the water based on risk/benefit factor and assessment of the scene. The potential benefit must be considered high to enter the water. In case of multiple victims, both Primary and Safety divers should perform dives at the same time, as long as they have additional back-up enroute. Upon retrieval of submerged victim(s), diver(s) will make the transport to the surface. The fastest resource available should be used to transport patient(s) to the shore.

Second Arriving Engine Responsibilities

1. All WET divers will report to (dressed in RDS) the Dive Officer for assignment as needed.
2. All non-divers (Tenders) should assist the first arriving engine crew with potential vehicle extraction from the water.
3. Assist the first arriving engine in prepare for a possible “tow-out” if needed

Safety Precautions

When a Diver enters or exits the DO *shall* notify dispatch. Dispatch will make a note in the notes of the call and create an accurate time stamp.

When a Diver is tethered to a Life Line a quick disconnect will be in place in the event of entanglement.

Every dive requires the WET Member to take the following safety measures prior to RDS equipment use:

1. Prior to making an entry to any body of water consider the following:
 - Environmental*- weather and water conditions
 - Hazards*- Fuel in the water, hazmat, cargo
 - Create an action plan and be sure the Dive Officer is aware
 - Diver condition*; is the diver mentally and physically fit for the dive. Each diver has the right to refuse entry.
 - d) Proper weighting
2. Inspect Safety Tools; Cutting and window punch on a retractor
3. Perform a quick pre-dive equipment check before entering the water, including the following:
 - a) Minimum tank pressure 2200 PSI
 - b) Regulator is operating normally
 - c) Buoyancy compensator inflation/deflation OK
4. Maximum dive depth of 25 feet, determined by depth-gauge.
5. Tank pressure 2200 PSI, minimum end dive pressure of 500 PSI at the surface
**Note: Equipment must be standardized to allow familiarization between all divers.

Water Quality Testing

Water quality testing will be done prior to training in fresh water environments and post incident entries. Test results will be evaluated by the department Infection Control Officer for any action as necessary.

WET Responsibilities

1. To follow safety procedures at all times
2. Daily/ Weekly inspection of all Rapid Diver Response Dive apparatus, to be conducted and documented by a member of the WET.

- a. Report any parts that need to be replaced, repaired, or restored to Wet Team Coordinator
 - b. Making sure cylinders are stored with air at 3000 PSI
 - c. After each use, equipment must be rinsed thoroughly with fresh water and Dawn dish soap, dried, and properly secured.
 - d. Maintain the charging status of communications batteries as needed
3. A detailed report of all dive incidents will be documented by the Dive Officer and submitted to the WET Coordinator within 5 days.
4. Attend training events in spring, summer, and fall.
5. Any diver can refuse to make a dive based on safety related concerns.
6. A team logbook will be maintained to document all training and calls. All team data will be kept on file and administered by the WET Coordinator. Training and skills development is conducted by a certified Specialty SCUBA Instructor (can be staff member or from qualified outside source). The Dive Rescue Training Officers will have the responsibility of maintaining instructor ratings in accordance with NASE/ PADI or other professional organizations.
7. Individual diver log book will be kept by each diver on Target Solutions. Divers are encouraged to log all dives on or off duty to capture cumulative time spent underwater.

Minimum Diver Training Requirements

WET candidates must successfully complete the following:

1. NASE or PADI Certified Open Water Scuba Diver
2. NASE or PADI Certified Advanced Open Water Diver
3. NASE or PADI Rescue Diver training
4. Full face mask Training
5. NASE Rapid Diver Training
6. Pass a performance test, which includes:
 - a) 800 yard swim with mask, fins and snorkel
 - b.) 100 yard surface swim wearing the RDS equipment
 - c.) RDS equipment donning time of 25 seconds or less.
 - d.) 15 min tread water

Post Incident Review

A post incident analysis shall be conducted with all attending agencies as soon as possible after an incident.