



# Tonto Rim Search and Rescue (TRSAR) Swift Water Rescue Team Standard Operational Guideline

P.O. Box 357 Pine, AZ. 85544

Approved Date: 06/07/16	7 Pages
Effective Date: 07/01/16	Revision Date:

## I. Scope:

This procedure applies to all members of the TRSAR that are responsible for response to water rescue/recover incidents.

## II. Purpose:

- A. The purpose of this procedure is to identify considerations and provide guidelines for conducting water rescue/recovery operations.
  1. Water rescue incidents generally occur because victims either knowingly enter the water or otherwise find themselves in the water and are unable to remove themselves.
  2. Water rescue operations present a significant danger to rescue personnel.
  3. The safe and effective management of these operations may require basic to very specialized considerations.

## III. Definitions:

- A. **Horizon:** The apparent intersection of the earth and sky as seen by an observer. Personnel in the water must constantly watch the horizon line downstream. If it appears to disappear, it is certain there is a drop-off ahead. Personnel in the water must exit immediately.
- B. **Hypothermia:** Abnormally low body temperature. Hypothermia is considered to be a hazard, especially considering that most flood problems occur during the winter and spring months when ambient temperatures are low and water temperatures are even lower because of melting snow.
- C. **Water Temperature:** Time from Useful work to Unconsciousness:
  1. 40 degrees Fahrenheit – 7.5 minutes/30 minutes.
  2. 50 degrees Fahrenheit – 15 minutes/60 minutes.
  3. 60 degrees Fahrenheit – 30 minutes/120 minute.
- D. **River Right / River Left:** As one faces downstream, the side on the left is

considered “River Left,” and the side on the right is considered “River Right.”

**E. Levels of Functional Capability:** National Fire Protection Association (NFPA) 1670, Standard on operations and training for technical search and rescue incidents (revised 2009), identifies three (3) levels of functional capability for technical rescue. It is the responsibility of the Authority Having Jurisdiction (AHJ) to decide the level or levels at which it wishes to safely and effectively conduct operations at technical rescue incidents. The three levels are:

1. **Awareness:** Minimum capability of responders who, in the course of their regular job duties, could be called to respond or could be first on the scene at a technical rescue incident. At this level the responder is generally not considered a rescuer.
2. **Operations:** The responder at this level should be capable of hazard recognition, equipment use, shore and boat-based rescues, and participation in a technical rescue under the supervision of technician level personnel.
3. **Technician:** A rescuer capable of hazard recognition, equipment use, and co-ordination, performance and supervision of a technical rescue. This may involve search, rescue and/or recovery operations.

**F. Rescue Priorities:**

1. Self
2. Team
3. Public
4. Victim

#### **IV. Water Characteristics:**

A. Hydrology is the study of water flow and the natural forces associated with its movement. Three characteristics of “swift water” are:

1. It is powerful; it is relentless; it is predictable.
2. Water is relentless because, unlike ocean waves that break and give the swimmer a breather, river waves offer no break.
3. Once the pressure is applied to the body, it stays until the victim is freed or the flow stops.

B. Water is predictable to a trained and experienced person and it is this predictability that gives rescuers the edge.

C. Common hazards associated with water rescue/recovery operations include:

1. Water volume and Velocity
2. Depth of water
3. Temperature
4. Floating debris

5. Unusual drop-offs
  6. Hydraulic effects
- D. **Strainers:** A buildup of debris such as trees and logs which restrict the downstream flow. It is dangerous due to the undertow which may cause entrapment and drowning (fallen and submerged trees are primary killers during floods).
- E. **Rivers:** Rescuers should have knowledge of rivers and streams that flow through their jurisdiction. Rescuers should have pre-planned staging, upstream, downstream, river right and river left areas. Tactical options should be planned so that a minimum amount of time is spent setting up during emergencies.
- F. **Washes:** Washes should be pre-planned when they are dry. This is especially true where roads cross them. During heavy rains, there is always a possibility for flash floods. This presents a challenge because citizens will ignore warning barricades and drive across flooded roads. When this occurs, victims become stranded in the middle of the wash. If the current is deep enough and strong enough, the vehicle could be turned upside down and the victim swept downstream.

#### **V. Swift Water Technical Rescuer Requirements:**

- A. The NFPA 1006, Standards for technical rescuer professional qualifications, establishes the minimum performance and qualifications for emergency response personnel who perform technical rescue operations.
1. To be compliant to the standards the individual's performance must be assessed against the standard's criteria.
- B. TRSAR Technical Swift water Rescue Team members are divided into three (3) categories, with specific training level, skill sets, abilities and minimum equipment requirements.
1. Technician SRT 1 or 2: Is certified as a SWRT 1 or 2. Have the skills and able to perform all swift water rescue techniques. Can enter water for rescue and must have required Personal Protect Equipment (PPE) for the type of rescue with a minimum of a Personal Flotation Devise (PDF) and Helmet.
  2. Technician Support: Has received training in swift water rescue techniques and safety procedures. Can be utilized to water edge only, including upstream spotters and/or downstream safety. Must have minimum PPE of a PFD and Helmet.
  3. Support: Normally can only come with ten (10) feet of water edge (or as directed by Technical Safety Office (TSO), but never closer then three (3) feet from water edge. Must have minimum PPE of a PFD and

Helmet.

## VI. Tactical Considerations:

A. **Pre-planning:** First responders should be aware of potential water rescue/recovery location and associated problems. This includes times of the year when there is a greater potential for problems/incidents/rescues, specific locations where problems/incidents/rescues have occurred in the past, and locations where problems/incidents/rescues are more likely to occur (recreational site, etc.).

### B. Phase 1 Size-up

#### 1. Primary Assessment:

- a. Command should identify a Reporting Person or witness to the accident, to determine exactly what happened. This will help in identifying and locating the problem.
- b. Assess the need for resources.
- c. Identify immediate hazards and make an assessment of the hazards present to the rescuers.
  - (1) Command should assign a "Safety" member to accomplish this assignment.
- d. Determine victim(s) information:
  - (1) Point last seen
  - (2) Time of accident/injury
  - (3) Time victim was last seen
  - (4) Number of victims
  - (5) Description of vehicle and victim.
- e. Determine an action plan.
  - (1) Based on the rescue or recovery mode of operations, Command should establish an action plan that is communicated to all personnel involved in the rescue.

#### 2. Secondary Assessment:

##### a. On-Scene Personnel:

- (1) Determine if there are an adequate number of trained personnel, on scene, to do the rescue/recovery in a safe manner. Notify additional resources as needed.
- (2) Assign a Technical Safety Officer (TSO) from a Swift water Rescue Team to oversee all of the rescue efforts and to be the technical liaison to Command.
- (3) Consider the effect of temperature extremes on personnel, and consider type of equipment required and early rotation of personnel operating on the scene.

##### b. Equipment:

- (1) Determine if the proper equipment is on scene to complete the operation. This may include: victim

removal systems/equipment, Swift water personnel protective equipment, and throw bags/rescue lines.

**c. Plan:**

- (1) Establish command post.
- (2) Establish a search plan, using a tactical worksheet.
- (3) Prepare information of the rescue area.
- (4) Activate a systematic search.
- (5) Extended operations require transfer of command and search plan, as needed.
- (6) Share learned information with relief personnel.

**C. Phase 2 Pre-rescue Operations:**

**1. General Area:**

- a. Establish accountability.
- b. Secure the area and provide site control.
- c. Assign Rescue Commander (Team Lead) and TSO if not already done.
- d. Brief members on rescue plan.
- e. Assign members as Upstream spotter with a radio to spot and report floating hazards.
- f. Assign members as Downstream safeties with a radio and throw bags for downstream safety and rescuer.
- g. Do final equipment check.

**2. Rescue Area:**

- a. The TSO is responsible to:
  - (1) Ensure all personnel working in and/or around the water's edge are qualified and have the proper PPE (minimum PFD and water rescue helmet).
  - (2) Ensure support personal stay ten (1) feet from the water's edge and have proper PPE.
  - (3) Ensure rescue is preformed in a safe matter, maintains communication with upstream spotters and downstream safeties.
- b. The Commander (Team Lead) will:
  - (1) Any adjustments to rescue plan.
  - (2) Assign members their duties and area in the rescue.
  - (3) Monitor rescue operations, issue directions, and communicate with the TSO and Command post.
  - (4) Make call for additional resources' and/or medical personal when and as needed.

**D. Phase 3 Rescue Operations or Victim Removal:**

**1. Responsibilities:**

- a. Complete a risk vs. benefit model on the rescue.
  - (1) When actions are directed towards the rescue of a

victim that has a high probability of survival, rescuers may be subjected to high-risk environments.

- (2) It's reasonable to face calculated risks to save a life.
  - (3) When actions are directed toward the rescue of victims who have a low probability of survival, rescuers should be subjected only to low risk environments.
  - (4) Risk nothing for people and property that have already been lost.
- b. Ensure that properly trained personnel are designated to make the rescue.
  - c. Assure that for every person involved in the rescue, there is at least one rescuer ready as a back-up. Example: two rescuers – two back-ups.
  - d. Rescue options will be considered executed from low to high risk.
  - e. Communicate – Reach – Throw – Row- Go – Helo, shall be the proper order of execution to effect rescue:
    - (1) Communicate – speak to or call out to the victim.
    - (2) Reach – attempt to reach the victim with whatever means possible (pike pole, ladder, stick, rope, inflated fire hose).
    - (3) Throw – utilizing the rope bags, throw the rope to the victim and then pendulum belay the victim to shore.
    - (4) Row – utilizing a boat that may be available at the scene. Personnel familiar with boat operations must be utilized.
    - (5) Go – utilizing a rescuer in the water to complete the rescue.
    - (6) Helo – utilizing a helicopter to accomplish the rescue. Even though helicopters are considered high-risk operations, they are a great way to pull the victim out of the water if they are stranded on a fixed object in the water.

## **2. Downstream Safety Responsibilities:**

- a. Downstream Safety personal must be qualified, each have a throw bag, a PFD on, a helmet on and have at least one (1) radio.
- b. Preferably be both sides (river right and river left).
- c. Be alert and prepared to rescue either victims and/or rescuers that may be swept downstream.
- d. Place themselves in a position that will allow the rescuer to belay the victim into a safe location.
- e. Stay in communication with the TSO.

## **3. Upstream Spotter Responsibilities:**

- a. Upstream Spotter personal must be qualified, each have a PFD

- on, a helmet on, and at least one (1) radio.
- b. Be alert, observe for, and report obstacles and/or hazards that may be floating downstream and may hinder the rescue operation.
- c. Be alert, observe for, and report the water level rising or falling.
- d. Stay in communication with the Commander (team Lead and the TSO).

**4. Assessing the Victim:**

- a. Once the rescuer(s) have reached the victim, they should do an immediate assessment of the victim: physical condition, a quick assessment of consciousness, breathing, bleeding, and the exact method of entrapment.
- b. If the victim is conscious, the rescuer should determine if the victim can assist in their own rescue.
- c. If the victim is unconscious, the rescue must be quick.
- d. If it has been determined to be an underwater or recovery operation, a dive team shall be requested.

**5. Treatment:**

- a. As soon as the victim is brought to safety, treat for any life treating conditions and conduct a detailed assessment should be done by on-scene medical personnel to identify treatment and transportation needs.

**E. Phase IV – Termination and Decommission:**

- 1. Command should begin termination as soon as possible after the victim has been removed from the water.
  - a. This shall include securing all the equipment used for the rescue and personnel accountability.