Introduction to Public Safety Diving – Knowledge Review
Answer Key

1. What is the difference between public safety diving and recreational diving?

   Recreational diving usually involves ideal conditions, clean clear water, ship wrecks, tropical fish, fun and excitement.

   Public safety diving on the other hand is more like military and commercial diving and requires exceptional basic diving skills, advanced training and additional equipment to participate safely and effectively.

2. What is the definition for a Public Safety Diver?

   A Public Safety Diver (PSD) is an individual conducting dives in an environment or condition that may not be suitable for recreational diving for the specific purpose of underwater rescue, recovery or investigative operations and is under the direction of and authorization of a government entity.

3. What personnel make up public safety diving teams?

   The PSD Team can consist of:
   - Law Enforcement personnel only
   - Fire Department personnel only
   - Emergency Medical Services (EMS) only
   - Volunteers only
   - Teams made up with a combination of various public safety agencies, paid and volunteers

4. What are three types of public safety diving missions?

   1. Victim Rescue/Body Recovery
   2. Vehicle Recovery
   3. Evidence Recovery

5. Why is specialized training required for public safety diving?

   Public safety diving can involve conditions and environments beyond those seen and experienced by the average recreational diver.
6. What are five contributing factors to public safety diver injury or death?

1. Divers lacked the appropriate level of training to participate
2. Lack of safety
3. Conducting training dives in environments and conditions the PSD was not properly trained, informed or equipped to handle
4. Entanglements
5. Equipment failure/lack of maintenance

Student statement: I have had explained to me and I understand the questions I missed.

Name ____________________________ Date ________________

Specialty Course Instructor Guide
Public Safety Diver Readiness – Knowledge Review

Answer Key

1. What are the four components of physical fitness for public safety divers?
   1. Nutrition
   2. Aerobic Conditioning
   3. Muscle Strength
   4. Flexibility

2. Why is continuous training and practice important to a public safety diver (PSD)?
   Continuous training and practice helps you maintain a state of readiness. Continuing your dive education is required to not only give you the tools to safely participate, it may also provide a defense for you and your team from liability.

3. What is the order of rescuer priority?
   - You – Your safety comes first. Everyone should be focusing on their own personal safety.
   - Team – Your team members’ safety is your second priority.
   - Victim – Only after all rescue personnel’s safety is assured, should the rescue of a victim be attempted. This sometimes is not understood by other parties. They believe rescuers should sacrifice themselves for others.

4. What is the difference between a rescue and a recovery?
   Rescue diving is an attempt to rescue an individual who has been submerged for a short period of time
   A recovery operation usually involves recovering bodies, vehicles and criminal evidence that has accidently or purposely made its way into the water. During a recovery operation, everything is slowed down. Time is taken to get all the facts and things are done much more systematically.

5. What is an Underwater Criminal Investigator?
   UCI divers are called upon whenever a criminal investigation leads to the water’s edge by allowing the land investigator to continue his criminal investigation underwater. These divers are trained to conduct underwater investigations that involve specialized methodical search patterns, crime scene sketches, underwater photography, evidence packaging techniques, chain of custody procedures, documentation, etc.

6. What are the definitions of a rescue and a recovery “Modes”?
   When in a Rescue Mode, the divers are attempting to save someone’s life. Everything is done quickly but safely. In a Recovery Mode, the operation is slowed down and recovery time is no longer of great concern.
7. What are the five components of a successful rescue?
   1. Training
   2. Practice
   3. Equipment
   4. Experience
   5. Judgment

8. What is psychological stress?
   Psychological stress is pressure that pushes us towards the water’s edge and is caused by situations we feel obliged to handle from our peers, our department or agency, the victim’s family, or the media.

   Quite often psychological stress will go beyond feeling a little anxiety and strain and can result in diminished mental awareness or even inability to think clearly (tunnel vision). When this occurs, new and/or infrequently used skills can be replaced with random/ineffective reactions.

9. What drysuit materials are recommended for public safety diving?
   1. Vulcanized Rubber
   2. Trilaminate

10. What is the difference between a positive pressure and non-positive pressure fullface mask?
    Fullface masks that are not positive pressure have demand regulators that only provide air when the diver inhales. Positive pressure FFM have a constant flow of air (approximately 3 psi). When the mask seal is broken, air escapes out of the mask preventing water from entering the mask.

11. What is the minimum number of recommended cutting tools a public safety diving should have?
    Minimum of two. These tools need to be able to cut through almost anything a PSD may normally encounter very quickly. Example: Knife and EMS shears or knife and seat belt cutter, etc.

12. What is an Emergency Assistance Plan?
    A local emergency assistance plan is based on acquired information on your diving location that will be used in case of an emergency. When an accident happens, this prepared plan can save valuable time and possibly lives.

13. What are SOPs and SOGs and the difference between the two?
    Standard Operating Procedures - SOPs give you and your divers “specific” direction. They are used to describe a specific procedure or set of procedures to handle a situation.

    Standard Operating Guidelines - SOGs are not as “rigid” as SOPs. They provide guidelines or suggested ways to deal with a given situation.

Student statement: I have had explained to me and I understand the questions I missed.

Name ___________________________ Date ____________

Specialty Course Instructor Guide 123
Scene-Size-Up – Knowledge Review
Answer Key

1. What is the definition of scene-size-up?
   
   The ongoing observation and evaluation of factors that are used to develop strategic goals and tactical objectives.

2. What are the key components of a scene-size-up?
   
   - Scene safety/security
   - Locating and interviewing witnesses
   - Cause of the accident/situation
   - Number of victims and their possible location
   - Scene and environmental hazards
   - Risk/benefit analysis
   - Rescue or recovery
   - Available Resources

3. What duties need to be assigned in a public safety diving operation?
   
   - IC – Incident Commander
   - Water Ops Commander/ PSD Dive Commander
   - Primary/lead divers
   - Line tenders and surface support personnel
   - Safety Divers
   - Back-up Divers - if needed; is a back-up for the safety diver
   - Documenter – Person doing documentation such as note taker, crime scene sketcher and photographer
   - Interviewers
   - Boat operators
   - Upstream spotters (needed for operations in current). Looking for floating debris and hazards coming downstream that might harm divers. Need some way to communicate to those in charge at the dive site.
   - Down-stream safety (needed for operations in current). In a ready position with rescue throw [rope] bags in case a diver gets swept away in current or just needs some assistance. Need some way to communicate to those in charge at the dive site.

4. Why is witness interviewing so important?

   Establishing the exact spot where a victim went under can mean the difference between life or death and success or failure. With the point of someone’s finger you can take a large search area, which could take you hours or even days to search, and turn it into a small search area, which might only take minutes.
5. What are the steps involved when interviewing witnesses?
   - Have the witness stand exactly where they were standing and with the aid of a trained team member/interviewer, help direct a snorkeler or boat personnel to the spot they last saw the victim and then mark that spot with a marker buoy. The divers would then use the marker buoy as a reference for their search area.
   - If you have more than one witness and their LPSs are relatively close, mark the general location.
   - If witnesses were in a boat at the time, have them get in a boat similar in size with team personnel and drop a buoy where they think the victim went under.
   - Have the witnesses use objects on the other shore for references like trees, buildings, poles, etc.
   - Document and record who the witnesses are and what they saw. You can use the PSD Witness Interview Worksheet.

6. What does LPS and LKP mean?
   - LPS stands for Last Point Seen and LKP stands for Last Known Point (LPS or LKP). "Seen" means the last point someone actually saw the victim and "known" means last location they were known to be.

7. Where can contamination be found in the water column?
   - On the surface, in mid-water and can be found in the bottom sediment.

8. What current speed is considered dangerous for public safety diving?
   - One or more knots can be hazardous to divers.

9. Why is it important for a PSD to check the entry and exit point prior to entering the water?
   - The exit and entry points may not be the same location and they may require special equipment like ladders, ropes, etc. Divers may require help from other team members getting in and getting out of the water.

10. What is a risk/benefit analysis?
    - A risk/benefit analysis is a comparison of the risks involved in a rescue/recovery operation to its related benefits.
    - The PSD must assure that the amount of benefit clearly outweighs the amount of risk.

11. When should a public safety diver not dive?
    - If the risks outweigh the benefits
    - If you are not properly trained to handle the conditions or mission
    - If you are not properly equipped to handle the conditions or mission
    - If you are not physically or mentally capable of handling the conditions or mission
12. Who has final say over whether or not a PSD makes a dive?

Each individual diver has the responsibility to advise the team leadership whether or not they are prepared to dive.

The individual diver has the right to say "No" to any dive at any time without penalty.

Student statement: I have had explained to me and I understand the questions I missed.

Name ____________________________ Date ____________________________

126 Specialty Course Instructor Guide
Before Starting the Dive Operation – Knowledge Review

Answer Key

1. What is a dive operations plan?

   The Dive Operation Plan (DOP) is a plan of action based on the totality of all gathered information including, but not limited to, your scene-size-up, evaluation of the scene and conditions, witness statements, clues, physical evidence, investigators beliefs, etc.

2. What safety can be incorporated into a public safety diving operation?

   - Redundant equipment
   - PFD's (Personal Floatation Devices)
   - Safety Divers
   - Back-up Divers
   - Tethering divers
   - Using a dive harness
   - Back-up tanks
   - Using locking carabiners
   - Using quick-release snap shackles
   - Search time limits (15-20 minutes)
   - Fullface mask and vulcanized rubber drysuits with mating dry gloves
   - Using a bailout system and manifold block
   - Surface supplied air
   - Establishing decontamination and wash-down station and procedures
   - Water samples
   - Medical personnel
   - Medical facilities and recompression chambers

   The safety you choose are limited only to team requirements, established policies, SOPs, SOGs, rules and regulations, your training, your comfort level, your conditions, environment and to your experience.

3. How can a PSD check his gauges in limited visibility?

   The public safety diver should be able to read the needle position like a clock.

   Prior to getting in the water; become familiar with your submersible pressure gauge's face and where the mark is for 3000 psi, 2000 psi, 1000 psi and 500 psi.

   Depth gauge monitoring can be done using the same techniques.

   If diving with a computer, put it directly up against your mask and turn on your display.

   If diving with a fullface mask, sometimes you can put the gauges flat up against the lens and take a small dive light and shine it in from the side of the face plate to illuminate the gauges.

   If the zero visibility is caused by the muck cloud the diver caused while searching on the bottom, if possible, they can rise off the bottom over the cloud until they can see the gauge.
Some public safety divers will carry a small dive light tucked away in a BC pocket so when they are diving in dark water, they can use the light to check their gauges.

If you are just diving in zero visibility, you will have to ascend until you can see your gauges.

4. Why is complacency dangerous to a PSD?

Complacency can cause you to lower your guard. Dive teams may run the risk of becoming lax when the operation seems routine or less challenging; when divers are on the surface, when the target has been located, when training, etc. Discipline and focus needs to be maintained until everyone is out of the water.

5. What are the key components of a dive briefing and debriefing?

The briefing should include, but not be limited to:
- Scene safety considerations and requirements
- Incident overview
- Chain-of-command
- General site characteristics
- Buddy teams and diver positions
- Order of divers
- Surface support positions
- Entry and exit points and methods
- Safeties
- Search area
- Search pattern
- Rescue/Recovery procedures
- Communications
- Jobs and responsibilities
- Emergency procedures
- Special sites
- Pre-dive safety checks

Task debriefing should consist of:
- Areas searched
- Dive conditions
- Hazards encountered
- Probability of Detection (POD)
- Recommended improvements
- Any information on the operation that should be known

Post Dive Operations Debriefing should consist of:
- Incident information
- Operational approach
- Search patterns used
- Conditions faced
• Overall effectiveness
• Equipment performance and needs
• Training needs
• Ideas, suggestions and recommendations

6. What is a low-head dam (or Drowning Machine) and why is it dangerous to the PSD?

A man-made dam that causes water to flow over and drop to the downstream side creating a hole. The water downstream of the dam rushes in to fill the hole, creating a hydraulic which is a backwash (reverse current) that traps and re-circulates anything floating.

7. What are some common entrapment hazards for the PSD?

May include but are not limited to:
• Submerged vehicles
• Underwater obstructions - Trees, rocks, debris, bridge piers, etc.
• Underwater hazards - Open pipes, undercuts, strainers, Delta "Ps", etc.
• Current/ hydraulics - Low head dams, backwash, holes, etc.

8. What is a "Delta P"?

Differential Pressure - Also known as "Delta P" occurs when water moves from an area of high pressure to an area of low pressure. Delta P has caused many diving fatalities and serious injury and can be found around dams, pipelines, boats, etc.

The high pressure flowing into a pipe, crack or intake, for example, can create an inescapable suction pinning a diver and causing serious injury and/or death.

9. What are some common public safety diver reports?

• Public Safety Dive Team Dive Report
• Remarks Continuation Sheet
• Crime Scene Sketch
• Body Recovery Worksheet
• Dive Master Control Sheet
• Witness Interview Worksheet

Student statement: I have had explained to me and I understand the questions I missed.

Name ____________________________________________ Date __________________________

Specialty Course Instructor Guide
Communication – Knowledge Review
Answer Key

1. What are the meanings of the five different rope pull signals between diver and tender?

   From Tender to Diver:
   1. One pull – Stop
   2. Two pulls – O.K. or Go
   3. Three pulls – Take up slack line (keep the rope tight)
   4. Four pulls – Special (Example: news media, family, supervisor, etc. are on site)
   5. Five or more pulls – Come to the surface (recall system)

   From Diver to Tender:
   1. One pull – Stop
   2. Two pulls – O.K.
   3. Three pulls – Give me more line (usually means the diver sees the target)
   4. Four pulls – Target located!
   5. Five or more pulls – Emergency - Help me!

2. What are the five different hand-squeeze signals used between divers?

   Hand-squeeze signals
   1. One squeeze – Stop
   2. Two squeezes – O.K. or Go
   3. Three squeezes – Special (Example: ascend and get body bag, PVC pipe evidence container, etc.)
   4. Four squeezes – Target located!
   5. Five or more squeezes – Emergency - Help me!

3. What are the advantages and disadvantages of underwater wireless communications?

   It provides a clear wireless communication link between divers and surface personnel and does not require being tethered or connected to a communication wire.

   It's only good for “line of site” meaning something in-between the divers and/or surface can block the signal.

4. What is a hardwire system?

   Hardwire systems give divers and the surface a clear communication link through the hardwire connected between the diver and surface personnel. The hardwire systems can also be used as a tether and search line when searching.
5. What are the key components of communicating with the victim's family?
   - Seek out the family
   - Provide a private and secure location for the family
   - Keep the family completely informed
   - Establish rapport. Don't try to predict the outcome
   - Eliminate surprises
   - Be understanding and empathetic

6. What are the key components of communicating with the news media?
   If available, use your agency's Public Information Officer (PIO). If you don't have one, use someone on the team with good communications skills. The publicity you receive keeps the public informed and aware of the operation, potential hazards and your capabilities. If communicated properly, the information could also increase your calls for service.

7. What are the key components of communicating with other public safety diving agencies?
   You need to put aside your ego and attitude and do what needs to be done to establish a well-coordinated relationship with other public safety agencies prior to any operations and being asked to work together. This will help your overall effectiveness and success.

8. What is the Incident Command System?
   ICS is a standardized, on-scene, incident management system that is flexible and can be used for incidents of any type, scope, and complexity.
   It usually involves five major functional areas: Command, Operations, Planning, Logistics, and Finance/Administration.

9. What is the "Unified Command System"?
   Unified command is a command structure in the ICS (Incident Command System) that is made up of other responsible agencies and/or team leaders having responsibility of the area being searched.

10. What is NIMS?
    NIMS stands for the National Incident Management System and is the Federal Emergency Management Agency's (FEMA) template for the management of incidents.

11. What is an Incident Action Plan (IAP)?
    An IAP is a part of the NIMS and contains the incident objectives and the overall strategies for reaching those objectives.

Student statement: I have had explained to me and I understand the questions I missed.

Name ________________________________ Date _______________________

Specialty Course Instructor Guide 131
Medical Considerations – Knowledge Review

Answer Key

1. What medical training is recommended for public safety divers?

   Everyone on your team should be trained in First Aid and CPR training as well as know how to administer oxygen. Two courses that will establish a solid foundation is: PADI’s Emergency First Response and PADI’s Emergency Oxygen Provider.

2. What is the advantage of having an assigned medical officer?

   Medical Officers are non-divers who ensure that all medical equipment is maintained and on site. They oversee your divers’ wellbeing and provide medical coverage for all aspects of the diving operation.

3. Why should all PSDs be certified rescue divers?

   This ensures that you and your team are properly trained to respond to diving emergencies.

4. What form can a PSD use to document emergency contact information and medical history of public safety dive team members?

   The Diver’s Emergency Information Sheet

5. What medical equipment should be available at a dive site?

   A well-equipped medical bag or kit and oxygen equipment

Student statement: I have had explained to me and I understand the questions I missed.

Name ___________________________________________ Date ____________________

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Specialty Course Instructor Guide
Public Safety Diving Basic Search Techniques – Knowledge Review
Answer Key

1. What four knots are used most often in public safety diving?
   1. Bowline
   2. Sheet bend
   3. Half-hitch
   4. Figure-eight on a bight

2. What is “clearing an area”?
   Clearing an area is the ability to search an area in such a way that based on the search pattern and search technique; you either locate the object of your search or determine the object is not in that area.

3. What is the “search zone”?
   The search zone is the immediate area in front of the diver from one searching arm to the other. This is usually about a 3-4 foot area in front of the diver that he can comfortably and accurately search.

4. What is a “dead zone”?
   A dead zone is an area that has not been searched properly. This could be an area that was not searched, or an area that is hard to search properly such as a creek bed, around submerged trees, etc.

5. What is the “hot spot”?
   Is the "High Probability Area" – The area the person or item most likely is believed to be in. This could be several areas based on the witnesses or totality of your investigations.

6. When should a public safety diver be mechanically tethered?
   To maintain contact with the diver.
   - Overhead environments – Environments like ice diving, etc. require mechanical tethers. This might not apply to cave rescue/recoveries where the victim could be hundreds/thousands of feet in the cave system. This type of operation should only be attempted by highly trained and experienced cave divers.
   - Safety – When you determine based on the conditions and situation that for safety reasons, the diver should be mechanically tethered.
   - SOP – When tethering is mandated by your SOPs.

7. What equipment can be used to establish a “quick-release” while a diver is mechanically tethered?
   A dive harness, locking carabineers and a quick-release snap shackle.

Specialty Course Instructor Guide
8. What knot should a PSD use when tethering a diver?
   Figure-eight on a bight

9. What are some dangerous areas in which to mechanically tether a diver?
   When diving in current and around obstructions

10. What is a “Safety Diver” and what are his responsibilities?
    The Safety Diver is an additional diver incorporated into the search plan and is in a position to respond at a moment's notice to
    an emergency. They can also act as a replacement for the primary diver.

11. What is a “Back-up Diver” and what are his responsibilities?
    The back-up diver is actually a second safety diver. When needed, the diver should be a part of your contingency plan. The
    back-up diver is completely suited up other than his mask and fins so he can respond quickly. If the safety diver is used due to an
    emergency, the back-up diver dresses and becomes the new safety diver.

12. What are the proper ways to secure a marker buoy?
    You should secure the buoy in a BC pocket, exposure suit pocket or even a goody bag. The marker buoy should not be
    attached on the outside of the diver's equipment. This position can create drag, unravel and then cause entanglement. Also, be
    sure the buoy is secured in a location that will allow it to be quickly and easily reached.

13. What are the advantages and disadvantages of an Arc search pattern?
    The arc pattern is easy to set up, conduct and is designed for medium to large objects. Because of its simplicity, some teams have
    become overly dependent on the arc search and by doing so it has become the only search pattern they can do effectively.

14. List some of the problems that can be encountered while conducting the Arc search patterns and ways to eliminate them.
    Quite often during the arc search, the line gets caught on a submerged obstruction like a stump or rock which disconnects the
    communication between the diver and tender.
    The diver can "jump rope" by lifting the line high as he moves forward.

15. What is a dirt dive and why is it so important?
    A dirt dive is simply practicing the pattern on land prior to going in the water. Each participant gets a chance to work on their
    role in the search pattern, their search technique, communications, etc.

Student statement: I have had explained to me and I understand the questions I missed.
**Body Movement in Water – Knowledge Review**

**Answer Key**

1. What are the five phases of motion?
   1. Phase One – Settling to the bottom
   2. Phase Two – Motion along the bottom
   3. Phase Three – Ascent to the surface
   4. Phase Four – Drift along the surface
   5. Phase Five – Final Descent

2. Describe how a body might settle to the bottom.

   It is estimated that the speed in which the body sinks to the bottom is approximately 1.5 feet per second. The distance the body moves away from the LPS is determined by the velocity of the water (the faster the current, the further downstream the body will go before hitting bottom), the depth of the water and the angle at which the victim descends.

3. What is drowning?

   Drowning is a process resulting in primary respiratory impairment from submersion/immersion in a liquid medium. Implicit in this definition is that a liquid/air interface is present at the entrance of the victim’s airway, preventing the victim from breathing air.

4. What four factors contribute to hypoxia in a drowning victim?
   1. Voluntary apnea – a conscious attempt to avoid inhaling liquid (which decreases oxygen supply)
   2. Panic (which increases oxygen consumption)
   3. Laryngospasm – when liquid hits the larynx (more apnea)
   4. Progressive impairment of oxygenation due to inhaled liquid

5. What are the outcomes of surviving the initial drowning event?
   - Fully recover
   - Appear to recover, then deteriorate again and even die from respiratory or associated events.
6. What factors contribute to a positive outcome for the drowning victim?
   - Cold water (less than or equal to 70 degrees F/21.1°C) – can increase a child’s chances of surviving without significant brain injury. This is frequently attributed to cooling of the brain under these conditions. Cold water may not have a positive effect on an adult’s survivability and may, in fact, make matters worse.
   - Length of submersion – the shorter the better. A long submersion time is considered 4-6 minutes, though cold water can extend this window especially if the victim is young.
   - Early and appropriate CPR and defibrillation
   - Good water quality
   - Minimal struggling – the less struggling the victim does, the better chance for positive outcome.
   - No or minimal injuries – chances for survival reduce when injuries like fractures, burns and open wounds are present.

7. What are nine signs and symptoms of drowning?
   1. Cough, clear to frothy red sputum
   2. Cyanosis (blue skin color)
   3. Shortness of breath or rapid breathing
   4. Vomiting
   5. Confusion to coma
   6. Unconsciousness
   7. Convulsions
   8. Respiratory arrest
   9. Cardiac arrest

8. What early management steps should a PSD apply when assisting a drowning victim and what are two first aid considerations for the rescuer?
   - Quick rescue response
   - Remove from the water
   - Primary assessment (ABC’s of resuscitation), begin CPR and defibrillation, if indicated
   - Administer oxygen
   - Remove wet or constricting clothing, wet suits, etc.
   - Treat for shock and continue primary assessment (ABC’s)
   - A patient requiring resuscitation or experiencing any of the signs/symptoms listed above after a drowning event should be evaluated at the nearest medical facility as soon as possible, even if the patient appears to recover. Evacuation for medical evaluation should be considered even for a patient without symptoms if there is a clear history of loss of airway protection during immersion. A period of unconsciousness during immersion would constitute such a history.
9. What is the "Golden Hour"?

The "Golden Hour" is actually a medical term that the Public Safety Diving community adopted. The medical field uses it to refer to the first 60 minutes of care from the time of first injury to medical intervention. Public safety divers have used the term in reference to the time we consider a rescue might be possible. That time starts when the person first goes under until the time we arrive on scene and attempt to make a recovery.

10. How does a body descend underwater?

As a body descends to the bottom, its bottom position is directly associated with the victim's body angle during descent, the body's submerged weight, its size, the speed of the current, the depth of the water and other variables as it descends. It can descend straight down from the LPS to the bottom or flare out away from the LPS as it descends.

As a general rule of thumb, when there is no current, the victim can descend in any direction away from the LPS equal to the water's depth. The depth becomes your search radius from the LPS.

11. How does a body descend in current?

When a body descends in current, the current can take the body great distances away from the LPS. The distance downstream away from the LPS depends on the water depth, current speed, weight of victim and other variables.

When someone drowns in a flooded river, the victim can travel miles away from the LPS due to the strength and speed of the current.

12. What factors affect body movement along the bottom?

- Roughness of the bottom
- Snags or debris on the bottom
- The clothing on the body
- Weighted down intentionally

Student statement: I have had explained to me and I understand the questions I missed.

Name ___________________________ Date ____________________

Specialty Course Instructor Guide 137
Public Safety Diver Self-Rescue Techniques – Knowledge Review
Answer Key

1. What are the three components of a preparedness foundation?
   1. Physical preparation
   2. Mental preparation
   3. Equipment preparation

2. What is the best way to self-rescue?
   Stay out of trouble!

3. What are three steps to take to avoid problems as a public safety diver?
   1. Maintain and service your equipment. This requires that you clean your equipment after each use and having it serviced regularly according to the manufacturer recommendations. Also, only let qualified and trained personnel service your equipment.
   2. Always conduct a thorough pre-dive safety check. A pre-dive safety check will catch many potential equipment problems before you get into the water.
   3. Think about potential problems as part of your dive plan. Based on the mission, conditions and environment anticipate what problems you might encounter before entering the water and revise your dive plan to avoid them.

4. What are the proper steps to follow when experiencing a problem?
   The procedure is always:
   - Stop. Stopping all activity prevents you from “reacting” which is a common response to a situation.
   - Breathe. Maintain and/or reestablish and maintain normal breathing patterns.
   - Think. Analyze the problem and plan possible appropriate actions.
   - Act. Take logical action rather than react thoughtlessly. Be prepared to take a different action if the first doesn’t solve the problem.

5. What self-rescue skills should every public safety diver master?
   - Good buoyancy control
   - How to deal with:
     - Entanglement
     - Entrapment
     - Out of air emergencies

Student statement: I have had explained to me and I understand the questions I missed.
1. What are the steps involved in dealing with a PSD experiencing overexertion?

   The focus is having the diver that is overexerted or showing signs of overexertion stop and rest. If he needs to, he can hold onto something stationary on the bottom like a large rock or stump for support. If visibility allows, signal him to relax and get his breathing under control.

   If a diver is overexerted at the surface, make sure they establish positive buoyancy and rest. If they need to, have them swim over to the boat and hold onto a ladder or the side of the boat or they can swim over to shallow water so they can sit and rest.

2. What can be done to help another PSD when he is descending uncontrolled?

   If you notice your dive partner descending too fast, signal him to put more air into his BCD and level off. You can also grab his tank valve or BCD and put more air into his BCD for him if he does not see your signal.

   If the diver is experiencing negative buoyancy due to a flooded dry suit, you might have to drop his weight system to compensate for its added negative weight and assist the diver to the surface.

3. What can be done to assist an excessively buoyant PSD?

   Either stop the diver before descent and have him add more weight or if he's underwater, escort the diver to the surface and get the right amount of weight.

   If you are close enough to a diver ascending too fast, try to make contact and correct the problem. This might involve deflating their BCD using a quick dump or their deflator valve, or disconnecting their inflator hose if the inflator is stuck. You can also grab the diver and dump air from your own BCD in an attempt to create drag and slow the diver's ascent.

4. What can be done to help a PSD who is experiencing cramps?

   When helping another diver with a cramp, have the diver stop and rest. You can help the diver by stretching and gently massaging the cramp to increase circulation and pull out the cramp.

5. What are the signs of active and passive panic?

   Active panic - An active panic diver underwater is very dangerous and will usually attempt to dart to the surface. Divers tend to either go for the surface or towards the diver trying to help them, which can be very dangerous due to their stressed mental state.

   The signs of an active panicked or near panicked diver include wide eyes, rapid breathing, jerky movement, swimming with their arms (dog paddling, also known as vertical ladder climbing), negatively buoyant while ascending, etc.

   Passive panic - Although rare, a diver experiencing passive panic might appear to be in a trance like state, frozen and unaware of his surroundings and situation. This diver will need help getting to the surface.
6. How can you assist a PSD in distress on the surface?

The first thing you want to do is verbally try to get him to calm down and to inflate his BCD. Due to their stress level, they might not be able to comprehend your commands. You can also attempt a reaching or throwing assist along with your verbal commands. If you have a dive boat nearby, you may be able to quickly respond and allow the diver to grab hold of the side of the boat for support or boat personnel might be able to grab the diver in distress.

7. What are the steps involved when dealing with an entangled/entrapped PSD?

When you encounter a diver entangled or entrapped, signal the diver to stop moving while you work them free. Your focus while assisting him is not to become entangled or entrapped yourself. If he's entangled, cut the diver free only if necessary and be careful when cutting.

If you are unable to untangle or free the diver right away, supply the diver with a back-up air supply if available and get whatever equipment you need to free him.

8. Why is it so important to provide air to an entangled or entrapped PSD underwater?

It helps calm the diver down by knowing he has additional air and ensure that while you are working to free him, he will not run out of air.

Student statement: I have had explained to me and I understand the questions I missed.

Name ___________________________ Date ___________________________

140 Specialty Course Instructor Guide
Attempting a Non-Diver Victim Rescue
- Knowledge Review

Answer Key

1. When attempting to make a rescue, what steps are involved when a PSD makes contact with a submerged victim?

   1. Quickly make a mental note of what you find
   2. Drop a marker buoy near the victim
   3. Get the victim in the "Body Recovery Ascent Position"
   4. Ascend under control and make a slow ascent
   5. As you ascend think about the steps to take once you reach the surface (mental rehearsal)

2. What is the correct body position for the PSD when making an ascent with a victim?

   "Body Recovery Ascent Position - Once contact is made, if possible, position yourself behind the victim. Your right arm should be your primary lifting arm to allow your left hand to control your power inflator. The position you are looking for should allow you to swim and kick relatively freely to the surface while the victim is in a head first ascent position.

3. What is the ascent procedure when surfacing with a submerged victim?

   Ascending with control is of utmost importance. Start the ascent by adding just enough air to your BCD to become slightly buoyant. Make sure you take into consideration the victim's possible negative weight. This can range between 1-20+ pounds depending on the size of the victim, their clothing, etc. Vent your BCD to control your ascent rate. If at any time you cannot handle the ascent due to the weight of the victim, entanglement, etc. abort the rescue, release the victim and you may have to ascend alone.

   Due to the excitement of the situation, divers may have a tendency to ascend faster than they should. Control your buoyancy during ascent — ascent should not exceed 9 meters/30 feet per minute. Determine your ascent rate using your depth gauge and timer or dive computer.

4. What are the procedural steps involved when surfacing with a submerged victim?

   As you ascend think about the steps to take once you reach the surface. Mental rehearsal can save time and make your rescue efforts more effective.

5. What is the first thing the PSD should do when he surfaces with a submerged victim?

   Once you reach the surface, the first thing you should do is to immediately make yourself positively buoyant by putting air into your BCD. This will make your surface rescue efforts easier, safer and more controlled.

   You can also quickly make yourself buoyant by releasing your weight belt if needed.

Student statement: I have had explained to me and I understand the questions I missed.

Name ___________________________ Date ___________________________

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