



# Los Angeles Port Police Underwater Operations Manual

Revised November 14, 2018

## **Overview**

The Port of Los Angeles is one of the world's largest and busiest Ports. The Los Angeles Port Police Department and other stakeholders continuously take measures to protect it from domestic and foreign threats. As waterborne threats reveal new security challenges, a proactive measure to secure the Port of Los Angeles' waterways and critical infrastructures was the implementation of a specialized Underwater Operations/Dive Team.

The ability to conduct operations without depleting or relying on patrol resources will increase the protection and security of our Port's critical infrastructures. The preparedness level that the Dive Team will provide is critical to the safety of one of the nation's most lucrative resources, the Port of Los Angeles.

## **Mission Statement**

The mission of the Los Angeles Port Police Dive Team is the continuous development of its robust underwater program dedicated to protecting the Port of Los Angeles' supply chain, transportation infrastructure, stakeholders, and community while focusing on synergetic partnerships and information sharing with other public safety agencies

## **Objectives**

1. Perform extensive maritime duties and operational responsibilities
2. Define unit mission
3. Operational deployment plans
4. Formalize policies, procedures and protocols
  - Training
  - Personal equipment list
  - Department issued equipment
  - Physical requirements
  - Selection process

## **Summary**

The Port of Los Angeles is one of the world's largest and busiest Ports. In an effort to maintain a proactive and innovative solution to an evolving underwater theatre, the Los Angeles Port Police Department developed the Maritime Operations Division's Dive Team. The Team was developed to protect the Port of Los Angeles' waterways and critical infrastructures from domestic and foreign threats.

In order to achieve an effective maritime security program, the Los Angeles Port Police Department has trained its divers as competent mariners, possessing advanced diving skills with the ability to perform consistent and continuous route surveys, dive operations, and other mechanically driven underwater apparatus such as remotely operated vehicles and scanning sonar. Its multi-layered underwater detection strategy contains: reliable sonar sensors with sufficient resolution to find objects of minimal size: precise and accurate navigation for localization of individual mine-sized or UIED contacts: and an automated data management. The Dive Team's ability to secure and search large ocean areas efficiently and with minimal resources has increased the region's capabilities tremendously.

## **General Policy**

### **Dive Guidelines**

The purpose of the Los Angeles Port Police Department Diving Guidelines is to ensure that all public safety or departmental diving under the auspices of the Los Angeles Port Police Department is conducted in a manner that maximizes protection of the Los Angeles Port Police divers from accidental injury and/or illness. In addition, this document sets forth guidelines for training and certification which allow a working reciprocity between other teams and/or agencies. Fulfillment of these purposes shall be consistent with the furtherance of safety. **It is the intention of this reference to establish guidelines and not a directory of every conceivable dive operation. It is expected that the manual will be revised periodically.**

### **Public Safety Diving Guideline Development**

This document has been developed and written by adapting the policies set forth in the National Association for Search and Rescue (NASAR) public safety diving guidelines, the Professional Association of Diving Instructors (PADI), the Code of Federal Regulations Title 29 Section 1910.401 through 1910.440, the California Code of Regulations Title 8 Subchapter 7 General Industry Safety Orders Group 26 Diving Operations Article 152, National Firefighters Protection Association (NFFPA) 1006 and 1067, the International Association of Dive Rescue Specialists (IADRS), and the scientific diving standards of the American Academy of Underwater Sciences (AAUS) which originated from the scientific diving program at the Scripps Institution of Oceanography (SIO). Adherence to the SIO standards has proven both feasible and effective in protecting the health and safety of scientific divers since 1954. Additional guidelines which extend these guidelines and standards have been adopted according to Los Angeles Port Police Department's Dive Team experience, local conditions and procedures. The developers of these guidelines are cognizant that diving performed solely for search, rescue or related public safety purposes is not within the purview of OSHA regulations.

### **Public Safety Diving**

Public safety diving is considered to be all diving performed by individuals necessary to and part of a police, fire, or public safety activity conducted in conjunction with any project under the jurisdiction of any public or private institution or similarly recognized organization, department, or group. Los Angeles Port Police dive operations include operations defined as public safety diving.

## **Los Angeles Port Police Diver**

The Los Angeles Port Police Department requires that no person should engage in dive operations unless that person is assigned to the Dive Team and in accordance with the guidelines set forth in this document. The Los Angeles Port Police diver is a qualified public safety diver for the Department while assigned to the Dive Team in “good standing”.

“Good standing” means the dive team member complies with all Department policies pertaining to special assignments. The team member is not subject to discipline restrictions i.e. suspension, administration leave or any other disciplinary restriction of work performance. The diver passes all medical and physical requirements of the department and dive industry. The diver fulfills the minimum number of dives required of each dive team member.

### **Equipment**

All dive equipment used by the Los Angeles Port Police diver(s), regardless of ownership, shall conform to the standards set forth by Los Angeles Port Police Department within these guidelines. If not addressed by these guidelines, equipment shall be approved by the dive supervisor.

Equipment should be maintained and serviced per the manufacture’s recommended specifications.

#### **Issued Dive Equipment:**

1. Full Face Mask w/communications
2. Dry suit (public safety diver)
  - a. Dry suit or appropriate undergarments
3. Wetsuit 7/8mm & dive boots
4. Buoyancy control device (BCD) with power inflator
5. Dive weights
6. Fins
7. Gloves
8. BCD knife, leg knife & medical sheers
9. Strobe
10. Pelican float
11. harness
12. Tether with (2) locking carabineers
13. (2) flash lights
14. Regulator with 1<sup>st</sup> and 2<sup>nd</sup> stage
15. Dive computer with depth gauge, compass, and air pressure gauge
16. Dive mask & snorkel
17. Large mesh dive bag

## **Los Angeles Port Police Dive Program**

All Los Angeles Port Police Department dive operations are conducted under the purview of the Maritime Operations Division (MOD). Underwater operations shall be the responsibility of the Dive Team. The dive supervisor or designee shall determine the feasibility of the operation, the personnel and equipment to be used, and the most suitable methods of conducting the operation.

## **Los Angeles Port Police Dive Team Dive Board**

The Los Angeles Port Police dive board shall consist of five Los Angeles Port Police officers. The commanding officer responsible for the team's Division, the team's executive officer, the dive supervisor and two dive team members. At least one diver must be assigned to the dive team as their primary duty. A non-Port Police dive industry subject matter expert may be called upon to review and participate in board discussions and decisions. The commanding officer, executive officer and dive supervisor shall appoint the team's two dive team members. The board shall select the non-Port Police matter expert. The purpose of the Board is to insure its divers' safety by following industry protocols and best practices and maintain mission readiness.

All personnel and equipment shall meet the approval and standards as determined by the dive board. All personnel and equipment must comply with the dive guidelines established by the dive board.

### **Board Objectives**

1. Incident Review
2. Training Objectives
3. Research and Development
4. Equipment acquisition

### **Board Members**

Commanding Officer – Captain (vacant)  
Executive Officer – Lieutenant Michael Capodanno  
Dive Supervisor – Sergeant Ralph Edwards  
Board Member – (primary assignment)  
Board Member – (primary/collateral assignment)

## **Instructional Personnel**

All personnel involved in dive instruction under the auspices of the Los Angeles Port Police Department shall be certified for the type of instruction being given. Regardless of the certifications held by a potential instructor, the dive supervisor must evaluate the candidate to ensure instructional skills commensurate with the intended instruction. Instructional personnel will be selected by the dive supervisor working with the MOD executive officer.

## **Dive Mentor**

Each Port Police dive trainee within the Los Angeles Port Police Department shall have a designated dive mentor monitor their dive performance until the trainee transitions to Port Police diver. The mentor should be a certified Port Police diver in "good standing" with documented experience in public safety diving and two years as a Los Angeles Port Police diver.

## **Diving Regulations**

### **General Policy**

No person shall engage in diving operations under the auspices of the Los Angeles Port Police Department unless he/she is a current Dive Team member in "good standing" pursuant to the provisions of this document.

Diving should not be conducted unless emergency procedures have been established to initially treat and transport a diver(s) to an operational hyperbaric chamber or appropriate emergency medical facility.

### **Dive Team Request for Service and Notifications**

When a maritime incident occurs that may require underwater investigation, rescue or recovery operations, the Port Police dive team supervisor should be notified by Port Police communications dispatch, the Watch Commander or the requesting agency/entity.

The dive supervisor or designee will immediately notify the MOD executive officer of the request, action plan and necessary resources. The executive officer or designee will give approval for the team's activation and response.

The dive supervisor will determine the necessary resources and select the appropriate divers for the request. Team members will be contacted by Port

Police dispatch or the dive supervisor/designee. When contacted, responding personnel should be told:

- Reporting location
- What the operation involves
- The approximate location
- The expected duration
- The expected weather
- Any special requirements

For extended or complex operations, additional dive resources should be contacted under the direction of the dive supervisor (typically Port Police communications personnel) and placed on stand-by.

### **Diving Procedures**

All diving conducted under the auspices of the Los Angeles Port Police Department shall be planned and executed in a manner as to ensure that every diver involved maintains constant, effective communication with at least one other comparably equipped diver. This buddy system is based upon mutual assistance, especially in the case of an emergency. Dives should be planned not to exceed the capabilities of the least experienced diver in the buddy system. If loss of effective communication (underwater communication system or hand signals) occurs within a buddy team, all divers within that team shall surface and re-establish contact. Exceptions may be made on a case-by-case basis in the event of a potential rescue or other exigent circumstances.

The solo, line-tended diver shall be considered an exception to the norm when conducting public safety dive operations. Both the diver and the tender shall be sufficiently trained in this technique prior to their operational use of this type of solo diving. During a solo, line-tended diving operation, a standby diver/tender, prepared to immediately enter the water should be utilized.

### **Dive Tables and Computers**

A set of dive tables (PADI and US Navy) should be available at the dive location. Diving conducted at elevations higher than 1500 feet above sea level should use the appropriate altitude corrections. In event dive computers are to be utilized:

1. Each diver relying on a dive computer to plan a dive and indicate/determine decompression status must have his/her own unit. A diver not using his/her assigned dive computer may not rely on another diver's computer.

### **Depth Limits**

The Los Angeles Port Police Department's Dive Team will authorize a Dive Team member to dive to the depth of 165 feet upon demonstrating and completing dive training at the same depth. A Los Angeles Port Police diver under the auspices of the Los Angeles Port Police Department should not exceed his/her trained depth while diving, except under exigent circumstances with the approval of the on-site dive supervisor.

Deep dives are defined as any dive deeper than 90 feet in good visibility and any dive deeper than 60 feet in poor visibility (less than 6 feet).

### **Refusal to Dive**

The decision to dive rests with the individual diver. A diver may refuse to dive whenever he feels it is unsafe to make the dive. **Ultimate responsibility for safety rests with the individual diver. It is the diver's responsibility and duty to refuse to dive if, in his judgment, conditions are unsafe, beyond the diver's capabilities and training, or if diving would violate the precepts of his training or the Los Angeles Port Police Department guidelines.**

### **Termination of Dive**

Unless it compromises the safety of another diver already in the water, it is the responsibility of the diver to terminate the dive whenever the diver feels it is unsafe to continue. The dive supervisor may also terminate a dive. The dive shall be terminated while there is still sufficient tank pressure to permit the diver:

1. To safely reach the surface making necessary safety or decompression stops
2. To safely reach an additional air source at the safety or decompression depth

### **Dive Plans**

Before conducting any dive operations, the dive supervisor for a proposed dive operation should consider the following information.

1. Other divers involved and their qualifications as well as the type of certificate held by each participating diver
2. At least one diver in each buddy team or other underwater operational group shall be a lead diver
3. Name, telephone number, and relationship of the person to be contacted for each diver in the event of an emergency
4. Approximate number of proposed dive(s)
5. Location(s) of proposed dive(s)
6. Estimated depth(s) and bottom time(s) anticipated

7. Environmental conditions such as temperature, current, visibility, etc
8. Proposed work, equipment, and boats to be employed, repetitive dives, and details of any hazardous conditions anticipated.

### **Dive Report/Log – CFR 29 Section 1910.423(d)**

The dive supervisor or designee shall maintain an appropriate dive report/log for each dive/sonar operation. Dive reports should include the following:

1. Name of divers, support staff, supervisor(s), and assignments
2. Date, time, and location of dive
3. Diving modes used
4. General nature of diving activities
5. Approximate underwater and surface conditions
6. Maximum depths and bottom/surface interval times
7. Diving tables or dive computers used; and
8. Details of any accidents or potentially dangerous incidents

***Any illnesses/injuries or unusual circumstances should be recorded and retained in a debrief summary***

### **Required Accident Reporting**

All dive accidents requiring recompression or resulting in injury should be reported to the dive supervisor. The dive supervisor will notify the MOD executive officer of reported injuries or illnesses. Los Angeles Port Police procedures for accident reporting shall be followed.

### **Scuba Diver Trainee**

Every Los Angeles Port Police dive trainee shall have a thorough scuba evaluation prior to diving without a Dive Team mentor. Scuba evaluations will consist of demonstrating scuba skills and performing underwater tasks during controlled dives, such as hull sweeps, pier sweeps, lift operations and self rescue drills.

### **Scuba Skills – confined water**

1. Enter water with full equipment
2. Understanding of underwater signs and signals
3. Face mask clearing
4. Buddy breathing as both donor and recipient with and without a face mask
5. Ability to alternate between snorkel and scuba while kicking
6. Ability to remove and replace equipment while submerged
7. Competency in emergency ascent techniques

8. Demonstrate proficiency with the use of a pony bottle
9. Competency in the use of buoyancy systems
10. Rescue and transport a passive diver in a simulated diving accident
11. Underwater “blackout” problem solving skills

### **Scuba Skills – open water**

1. Entering and leaving open water from a diving support vessel while wearing scuba gear
2. Clearing of regulator and mask while submerged
3. Buddy breathing (air sharing) as both donor and recipient and use of pony bottle as an alternative air source
4. Ability to achieve and maintain neutral buoyancy while submerged
5. Ability to navigate underwater, with and without a compass
6. Techniques of self-rescue and buddy rescue
7. Line handling underwater, night diving and operating in zero visibility
8. Ability to plan and execute a dive
9. Judgment adequate for safe diving; and
10. Successfully complete 20 open water dives

## **LOS ANGELES PORT POLICE DIVER REQUIREMENTS**

### **GENERAL POLICY AND PREREQUISITES**

The following are considered minimal standards for the Los Angeles Port Police Department’s Dive Team. Officers interested in the Dive Team either as a diver or support personnel should submit an Employee’s Report to the Maritime Operations Division executive officer and/or Dive Team dive supervisor indicating their interest and qualifications. Prior to submitting the Employee Report, it is recommended that the applicant completes and possesses a basic open water scuba certification from a nationally recognized scuba institution. Los Angeles Port Police divers must also pass an annual dive physical, scuba skills evaluation, and stamina evaluation. Support personnel and candidates must also pass a department medical, annual water skills and stamina evaluation.

The diver skills evaluation consists of: equipment assembly, pre-dive safety check, deep water entry, regulator recovery and clearing, doffing and donning mask underwater, controlled emergency ascent, underwater swim without a mask, buddy breathing while moving and stationary. The stamina evaluation consists of a 400 yard swim without stopping in confined water, 800 yard mask, snorkel and fin swim without stopping, 100 yard inert diver swim/rescue, 15 minute tread water, and an object retrieval from a depth of 9ft.

The support personnel water skills evaluation consists of life ring throw and techniques for lifting/snagging objects from the water. The stamina evaluation consists of a 400 yard swim without stopping in confined water, 800 yard mask, snorkel and fin swim without stopping, 100 yard inert diver swim/rescue, 15 minute tread water, and an object retrieval from a depth of 9ft.

Permanent divers have a minimum of a two year commitment to the assigned position unless a promotional opportunity is awarded. Permanent divers are responsible for the maintenance of the Dive Team's Dive House, dive equipment, vessels, and vehicles. Routine sonar surveys and critical infrastructure sweeps will be conducted on a regular basis.

Collateral duty divers are Los Angeles Port Police officers assigned to other details within the Department. Any non-probationary officer who fulfills the Dive Team requirements may qualify for this position.

Collateral duty support personnel (non-divers) are Los Angeles Port Police officers assigned to other details within the Department. Their role is to provide surface support during dive operations. Any non-probationary officer who fulfills the Dive Team requirements may qualify for this position.

### **Dive Supervisor**

For each dive operation, one individual shall be designated as the dive supervisor. The dive supervisor shall be in an appropriate location at the dive site during the dive operation. The dive supervisor shall be responsible for:

1. Coordination
2. Briefings
3. Dive Planning

**The dive supervisor has the final decision to suspend any dive operation or dive privileges**

### **MINIMUM ACTIVITY**

During any 12 month period, each Los Angeles Port Police diver must log (dive report) a minimum of 6 training activities and 6 dive operations. Failure to meet these requirements may be cause for revocation or restriction from Dive Team operations.

### **MEDICAL EXAMINATION**

All Los Angeles Port Police divers shall pass a medical examination performed annually by a licensed physician. This physician should be trained in diving/undersea medicine or provided a medical history checklist specific to diving. After each major illness or injury, a diver shall submit to a medical interview or examination before resuming dive activities.

## **DIVING EQUIPMENT**

### **GENERAL POLICY**

All equipment shall meet standards as determined by the dive supervisor and approved by the MOD executive officer and commanding officer. Only those makes and models of equipment approved shall be used. The approved equipment shall be used only by divers with appropriate training. All unit equipment shall conform to team standards.

All inspections, tests, and maintenance must be accomplished by a certified technician or facility approved by the dive supervisor and/or designee.

### **SCUBA CYLINDERS**

Scuba cylinders shall be designed, constructed, and maintained in accordance with the applicable laws. Scuba air cylinders must be hydrostatically tested as least once every 5 years and a visual cylinder inspection (VCI) at intervals not to exceed 12 months.

### **First Aid Equipment**

A first aid kit adequate for the dive operation shall be available at the dive location. The kit should contain an oxygen delivery system with at least 600 liters of available oxygen.

## **Dive/Sonar Operations**

### **Vessel Operator –**

1. Overall responsibility to ensure vessel(s) is operational ready, i.e. fuel, oil, general maintenance, and seaworthiness
2. Monitor sea conditions and weather forecasts
3. Monitor and maintain radio contact via police radio and marine radio
4. Monitor vessel traffic
5. Operation of vessel in accordance to local and federal navigation rules
6. Operate and maintain mechanical and electronic systems

### **Deckhand –**

1. Assist with communications – landside and underwater
2. Assist with equipment preparation, tether/umbilical handling, and retrieval of deployed equipment
3. Assist with anchoring or mooring
4. Assist with deploying and recovering divers

5. Tend mooring lines

**Sonar/ROV Operator –**

1. View and review data
2. Operational awareness of the side scan (towfish) sonar and/or ROV
3. Identify objects of interest

**Sonar /ROV Tender –**

1. Manage equipment tethers and umbilical
2. Monitor and maintain safe equipment operational limits and report potential hazards
3. Deploy and recover apparatus
4. Operate and man winches

**ROV/Sonar (stationary) Operation's Lock out/Tag out Procedures –**

1. Vessel's helm and aft operating stations shall be powered down and marked with a lock out/tag out placard. Placard may be small laminated card indicating not to power or operate the vessel until all divers, sonar equipment, and ROVs are recovered from the water.
2. Once a diver or mechanical device is at the surface it should be recovered from the water immediately
3. One person shall be designated at any given time to a single piece of mechanical equipment; i.e. ROV, sonar, underwater camera, etc.
4. Approval from the on-site dive supervisor and vessel operator should be given prior to vessel movement or powering the propulsion system.

**Side-Scan Sonar route survey –**

1. Divided the Port of Los Angeles into eight geographic areas: Main Channel, Glenn Anderson Shipping Channel, Turning Basin, West Basin, Pier 300 Shipping Channel, East Basin, Outer Harbor, and West Channel
2. The priority and demand for service shall dictate the route survey area.
3. Sonar routes will be conducted in high resolution 75 meters with 60 meters spacing for programmed routes and grids.
4. An altitude of 10 meters +/- 3 meters (25 feet to 35 feet) should be maintained during the route surveys
5. The side-scan sonar should not be towed faster than 5 knots or slower than 4 knots

## Minimum Dive Boat Crews

All dive boat operations must have the appropriate crew for the specified operations. Each dive boat should be staffed with at least an operator and deckhand while underway. However, sworn officers may engage in vessel operations with less than minimum required personnel during an emergency and/or tactical situation.

1. Dive Boat1 – minimum crew of three: (1) USCG licensed captain 50GT and (2) deckhands
2. Boat23 – minimum crew of two: (1) vessel operator and (1) deckhand
3. Boat32 – minimum crew of two: (1) vessel operator and (1) deckhand
4. Boat33 – minimum crew of one: (1) vessel operator
5. PWC 105 – minimum crew of one: (1) vessel operator

**All dive, sonar and large scale operations involving Dive Boat1 shall have a minimum crew of five – (1) USCG licensed captain 50GT, (2) deckhands, (1) safety officer and (1) supervisor or designee**

## Standby Divers

Standby status is part of the department's minimum staffing requirements. Divers assigned to standby positions must be reachable by telephone, answering service or answering machine and upon contact must respond to the required work location within an hour.

As compensation, standby divers shall receive one hour of compensation for every six hours of time he/she is required to standby. Upon responding to a request to report to work or additional work assignments beyond their work schedule, the standby pay ends and overtime pay becomes effective.

Standby diver positions are: (1) supervisor/designee (Police Officer Sergeant/POIII) & (2) POII officers

Dive Team Standby are responsible for staffing CP, prepping vessel(s) & equipment for responding personnel and insuring all dive operations are conducted safely and according to our dive procedures. One officer (typically the designated supervisor) must respond to the CP and liaison with our personnel and involved agencies. The standby supervisor or designee is responsible for assessing the request and if the request can be completed safely with only standby diver resources. If additional divers are required our

dive manual request for service and notifications is referenced below. Our manual is on the "G" drive in the MOD folder.

Boat23 is available and can support small operations. The keys are hanging in the dive house kitchen. If the Dive Boat is required, only authorized dive boat captains, officers assigned to the dive team as their primary duty and collateral dive boat captains, should pilot the vessel.

The assigned standby divers are notified by email and sent an Outlook Office365 calendar appointment with the beginning and end date. Unless specified, standby hours begin at 0000 and end at 2400. The standby bonus is only paid during off hours and when a primary dive officer is not assigned to his/her duty. Standby divers are not compensated during scheduled shifts including overtime shifts.

All standby divers should have their dive equipment accessible and ready to deploy. Assigned dive team equipment should remain at the dive house.

This is the expectation and department policy regarding the standby diver position. Personnel assigned to standby positions must be reachable by telephone, answering service, or answering machine and upon contact must respond to the required work location within one hour.

#### Dive Team Request for Service and Notifications

When a maritime incident occurs that may require underwater investigation, rescue or recovery operations, the Port Police dive team supervisor should be notified by Port Police communications dispatch, the Watch Commander or the requesting agency/entity.

The dive supervisor or designee will immediately notify the MOD executive officer of the request, action plan and necessary resources. The executive officer or designee will give approval for the team's activation and response.

The dive supervisor will determine the necessary resources and select the appropriate divers for the request. Team members will be contacted by Port Police dispatch or the dive supervisor/designee. When contacted, responding personnel should be told:

- \* Reporting location
- \* What the operation involves
- \* The approximate location
- \* The expected duration
- \* The expected weather
- \* Any special requirements

For extended or complex operations, additional dive resources should be contacted under the direction of the dive supervisor (typically conducted by Port Police communications personnel) and placed on stand-by.