

**JEFFERSON COUNTY
SPECIAL TACTICS AND RESCUE TEAM**



STANDARD OPERATING PROCEDURES

17-JAN-04

**JEFFERSON COUNTY
SPECIAL TACTICS AND RESCUE TEAM
(S.T.A.R.)**

MISSION STATEMENT

The mission of the S.T.A.R. Team is to support water safety and provide highly trained divers to support all Jefferson County Municipalities. The S.T.A.R. Team shall be available to perform surface and sub-surface search and rescue of victims, search and recovery of remains or evidence, and any other water related service specifically requested by members of the Fire Service or Law Enforcement Community of Jefferson County. The services shall be available year-round, 24 hours a day through Jefferson County Fire Dispatch.

SECTION 1.00 - GENERAL GUIDELINE

1.10 PURPOSE

1.11 THE PUBLIC SAFETY DIVING GUIDELINES

The purpose of these public safety diving guidelines is to ensure that all public safety diving under the auspices of Jefferson County S.T.A.R. is conducted in a manner that maximizes protection of public safety divers from accidental injury and/or illness. In addition, this document sets forth guidelines for training and certification which shall be consistent with the furtherance of safety.

1.12 THE JEFFERSON COUNTY S.T.A.R. TEAM PUBLIC SAFETY DIVING GUIDELINES

The purpose of this document is to set forth the minimum guidelines for the organization and conduct of Jefferson County S.T.A.R. programs, and the basic regulations and guidelines for safety in public safety diving operations. This Jefferson County S.T.A.R. Team document has been developed and written by adapting the guidelines set forth by the National Association of Search and Rescue (NASAR) and in the scientific diving standards of the American Academy of Underwater Sciences (AAUS). Those standards are a compilation of guidelines set forth in the diving manuals of several universities, private, and governmental diving and scientific diving programs. These share a common heritage with 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.

1.13 LIABILITY

In adopting the guidelines set forth in this document, none of the contributing agencies assume any liability not otherwise imposed by law. Each diver is assumed under this guideline to be voluntarily performing activities for which he assumes all risks, consequences, and potential liability. Each diver is responsible for maintaining a level of knowledge and training to enable an informed appraisal of the calculated risks involved in any diving activities undertaken.

1.14 JEFFERSON COUNTY S.T.A.R. TEAM PUBLIC SAFETY DIVING STANDARD OPERATING PROCEDURES MANUAL

The purpose of the Jefferson County S.T.A.R. Teams public safety diving standard operating procedures manual is to provide for the development and implementation of guidelines and standards that will enable each member to meet the dynamics of local environments and conditions as well as to comply with accepted public safety diving guidelines. The diving manual shall include but not be limited to:

1. For each diving mode in which public safety diving is engaged:
 - a. Safety guidelines for the diving operation
 - b. Responsibilities of the dive team members
 - c. Equipment use and maintenance guidelines and
 - d. Emergency guidelines.
2. Emergency evacuation and medical treatment guidelines:

3. For each diving location, an emergency guideline shall be established to locate and transport a diver to an operational hyperbaric chamber or appropriate emergency medical facility.

1.15 REVIEW OF GUIDELINES

An annual review of diving activities shall be performed by the team officers. At this time, any recommendations for modifications of these guidelines should be submitted for consideration.

1.20 CONTROL

1.21 PUBLIC SAFETY DIVING DEFINED

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.

1.22 MEMBERSHIP DEFINED

For the purpose of these guidelines, team member shall be defined as any person accepted into membership in the Jefferson County S.T.A.R. Team regardless of rank or position.

1.23 CERTIFICATION TYPES

Jefferson County S.T.A.R. Team requires that no person should engage in public safety diving unless that person holds a certification issued by the Diving Officer pursuant to the provisions of this manual (see Sections 3.00 and 4.00). Examples of recognized certifications are:

1. Apprentice Public Safety Diver Permit: This permit signifies that a diver has completed and been certified as at least an Open Water Diver through a nationally or internationally recognized certifying agency, public safety diving program, or equivalent (see Section 3.00 for more specific details).
2. Public Safety Diver Certificate: This is a certification to dive as a fully qualified public safety diver within the Jefferson County S.T.A.R. Team diving program. This certificate signifies that a diver has completed and been certified as at least an Advanced Open Water Diver through a nationally or internationally recognized certifying agency, public safety diving program, or equivalent. It is usable only while it is current, and only for the purpose intended (see Section 4.00 for more specific details).
3. Temporary Public Safety Diving Permit: This permit constitutes a temporary waiver of the requirements of Section 4.00 and is issued only following an appropriate demonstration of proficiency in diving skills. The Temporary Diving Permit is valid only for a specified time as determined by the Diving Officer and shall be issued upon evidence of an annual diving physical and statement of the candidate certifying his physical fitness for diving activities (see Section 4.25 for more specific details).

1.24 EQUIPMENT

All diving equipment used by public safety divers, apprentice public safety divers, trainees, or individuals diving on a temporary public safety diving permit, regardless of ownership, shall conform to the standards set forth in this document.

1.25 SITES

The regulations herein should be observed at all locations where public safety diving is conducted.

1.26 REGULAR MEETINGS

Regular monthly meetings and dives shall be scheduled so as to allow the greatest percentage of the general membership to attend.

During any calendar year members will be required to attend at least 50% of scheduled meetings and dives.

Meetings of the Committee of Officers will normally take place one week prior to any regular membership meeting but may be called as needed

1.30 TEAM ORGANIZATION

The Jefferson County S.T.A.R. Team shall appoint a Dive Commander and two Dive Captains, these officers shall constitute the Committee of Officers.

1.31 THE COMMITTEE OF OFFICERS

1. Voting members shall include the Dive Commander, and two Dive Captains. A chairperson and a secretary may be chosen from the membership of the Committee of Officers.
2. Shall be accountable to the Jefferson County Fire Coordinator or his designee and shall act as the official representative of the Fire Coordinator in matters concerning the public safety diving program
3. Shall act as a Board of Appeal to consider diver related problems:
4. Shall recommend the issue, the reissue, or the revocation of diving certificates or permits
5. Shall recommend changes in procedure and amendments to the Jefferson County S.T.A.R. Team's Public Safety Diving Standard Operating Procedures.
6. Shall establish and/or approve training programs through which applicants for certification can satisfy the requirements of the Jefferson County S.T.A.R. Team's Public Safety Diving Standard Operating Procedures
7. Shall direct the diving membership to suspend diving programs which it considers to be unsafe or unwise
8. Shall approve criteria for equipment selection and use as submitted by the Diving Safety/Training Officer
9. Shall approve new equipment or techniques
10. Shall establish standards and approve facilities for the inspection and maintenance of diving and associated equipment
11. Shall ensure that the Jefferson County S.T.A.R. Team's air stations meet air quality standards as described in Section 6.10
12. Shall periodically review the diving program.
13. Shall sit as a Board of Investigation to inquire into the nature and cause of any diving accidents or violations of the Jefferson County S.T.A.R. Team's Public Safety Diving Standard Operating Procedures.

1.32 DIVE COMMANDER

1. Dive Commander shall be elected at an annual meeting in the month of February with at least 50% of the membership present.
2. Shall be a certified public safety diver as defined by Jefferson County S.T.A.R. Team's Public Safety Diving Standard Operating Procedures
3. Shall be accountable through the Committee of Officers to the Jefferson County Fire Coordinator or his designee for the conduct of the S.T.A.R. Team's public safety diving program. The operational authority for this program including the conduct of training and certification, approval of dive plans, maintenance of diving records, and ensuring compliance with this document and all relevant regulations rests with the Dive Commander. The
4. May permit portions of this program to be carried out by a qualified delegate, although the Dive Commander may not delegate responsibility for the safe conduct of the Jefferson County S.T.A.R. Team's diving program
5. Shall be guided in the performance of the required duties by the advice of the Committee of Officers.
6. Shall suspend diving operations which he considers to be unsafe or unwise

1.33 DIVE CAPTAINS

1. Dive Captains shall be elected at an annual meeting in the month of February with at least 50% of the membership present. In the event there are no nominations from the membership and the incumbents decline, the Dive Captains may be appointed by the Dive Commander.
2. Shall be a certified public safety diver as defined by Jefferson County S.T.A.R. Team's Public Safety Diving Standard Operating Procedures
3. Shall be equal in rank with the ability to perform any necessary function required by the dive team.
4. For administrative purposes only, the Dive Commander may designate second and third in command.
5. Shall be accountable to the Dive Commander.

6. Shall be guided in the performance of their required duties by the advice of the Dive Commander.
7. Shall suspend diving operations which they consider to be unsafe or unwise

1. 1.34

1.40 AUTHORITY

1.41 ULTIMATE AUTHORITY

1. The Jefferson County Fire Coordinator or his designee has the ultimate authority for the public safety diving program and its related activities. However, only the Dive Officers may make decisions relating to the conduct of actual diving operations.
2. S.T.A.R. Team members are appointed Deputy Fire Coordinators
3. Regarding interpretation and implementation of this document, the decision of the Committee of Officers is final.

1.42 JEFFERSON COUNTY S.T.A.R. TEAM STANDARD OPERATING PROCEDURES

Standard Operating Procedure recommendations shall be made to the Committee of Officers. The development of these recommendations is the joint responsibility of the Committee of Officers and the Fire Coordinator.

1.43 STANDARD OPERATING PROCEDURE ADMINISTRATION

The administration of the Jefferson County S.T.A.R. Team's Public Safety Diving Standard Operating Procedures will reside with the Committee of Officers.

1.44 RED LIGHT AUTHORIZATION

In a memo from Jefferson County Fire Coordinator dated September 23, 1999 it is stated:

As a Deputy Fire Coordinator, STAR Members are only authorized to display red lights when responding to STAR incidents. If you are a member of a fire department or independent rescue squad, you are not allowed to display you red lights when responding to these incidents (unless you are a chief or assistant chief of that department). You may display blue or green lights for non-STAR incidents.

In accordance with New York State Traffic and Motor Vehicle Law: when using red lights for STAR incidents, you must also be using a siren or other appropriate type of audible warning device on you vehicle. Extreme care should always be used when responding to incidents.

In a memo from Jefferson County Fire Coordinator dated January 12, 2004 it is stated that all personnel designate as Deputy Fire Coordinators shall complete an OFPC EVOC course every five years.

1.45 MEMBERS UNAVAILABLE FOR SERVICE

Members shall notify the Committee of Officers of any planned periods of unavailability for service longer than five days. This requirement is to keep the officers aware of team strength at any given time.

1.50 INSTRUCTIONAL PERSONNEL

1.51 QUALIFICATIONS

All personnel involved in diving instruction under the auspices of the Jefferson County S.T.A.R. Team shall be qualified for the type of instruction being given. Regardless of the certifications held by a potential instructor, the

Committee of Officers must evaluate the candidate to ensure instructional skills commensurate with the intended instruction.

1.52 SELECTION

Instructional Personnel will be selected by the Committee of Officers to conduct preliminary screening of applicants for instructional positions. Final selection and appointment of Instructional Personnel shall be made by the Committee of Officers.

1.60 MEDICAL EXAMINATION

All divers shall pass a medical examination as required by the Fire Coordinator.

A medical evaluation by an approved physician to determine fitness to dive may be required at any time by the Committee of Officers.

SECTION 2.00 - DIVING REGULATIONS

2.10 GENERAL GUIDELINE

No person shall engage in diving operations under the auspices of the Jefferson County S.T.A.R. Team's public safety diving program unless he holds a current certificate or permit issued pursuant to the provisions of this document. Public safety diving shall not be conducted unless emergency guidelines have been established to initially treat and transport a divers to an operational hyperbaric chamber or appropriate emergency medical facility.

2.20 DIVING GUIDELINES

2.21 SOLO DIVING PROHIBITION

All diving conducted under the auspices of the Jefferson County S.T.A.R. Team 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, certified public safety diver in the water. This buddy system is based upon mutual assistance, especially in the case of an emergency. Dives should be planned around the competency of the least experienced diver. If loss of effective communication occurs within a buddy team, all divers within that team shall surface and reestablish contact except as specified in Section 2.40. Exceptions may be made on a case-by-case basis in the event of a rescue or other exigent circumstances. The solo, line-tended diver shall be considered an exception to the solo diving prohibition. However, 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 in addition to the line tender shall be utilized.

2.22 ENCLOSED OR PENETRATION DIVE WITH OVERHEAD ENVIRONMENT

Where an enclosed or penetration dive with overhead obstruction is not large enough for two divers, a diver shall be stationed at the underwater point of entry and an orientation line shall be used. Penetration diving shall only be conducted by personnel with appropriate training and certifications.

2.23 DIVER S FLAG

The "diver down" shall be prominently displayed during all public safety diving operations, in addition the International "Alpha Flag shall be displayed during all diving operations in the St. Lawrence River and Lake Ontario as both are "inland navigable waterways" handling a variety of international ship traffic.

2.24 FLOTATION DEVICES

Each diver shall on every dive possess the capability of attaining and maintaining positive buoyancy. An inflatable exposure suit (dry suit) by itself shall not be used as the sole source of buoyancy. Shore based personnel shall also wear U.S. Coast Guard Type III/V devices whenever involved in operations.

2.25 TIMING DEVICES DEPTH GAUGES AND PRESSURE GAUGES

Both members of the diving pair must have an underwater time keeping device, an approved depth indicator, and a submersible tank pressure gauge. Divers may delegate the determination of their depth and dive time to a surface tender or other individual appropriately equipped to perform such functions.

2.26 DIVE TABLES AND COMPUTERS

An appropriate dive table or dive computer must be available at the dive location:

1. Only those dive computers or dive tables which have been properly studied and approved by the program's Committee of Officers may be utilized within the public safety diving program.
2. The Committee of Officers will ensure that each diver utilizing a dive computer or dive table is trained to understand basic decompression theory and properly and safely operate the dive computer with which he dives. Documentation of this training shall be maintained in the diver's permanent diving record.
3. Each diver relying on a dive computer to plan dives and indicate or determine decompression status must have his own unit. A diver who is not using a personal dive computer is prohibited from relying on a computer used by another diver.
4. On any given dive, both divers in the buddy pair must follow the more conservative dive computer or dive table.
5. If one of the computers fails, the dive will be immediately terminated using appropriate surfacing guidelines.
6. A diver should not dive for 24 hours prior to the initial activation of a dive computer that will be used to control his diving.
7. Once in use, the computer shall not be turned off for 24 hours after the final dive or until computer out gassing is completed, whichever comes first.
8. When using a dive computer or dive table, non-emergency ascents are to be at the rate specified for the system being used.
9. Ascent rates shall not exceed 60 fsw/min.
10. When practical, the diver should make a 5 minute stop between 15 and 25 feet, especially for dives deeper than 60 feet.
11. Diving that results in exceeding the no decompression limits of the dive computer or dive table at any time during the dive is strongly discouraged.
12. Repetitive and multi-level diving guidelines should start the dive or series of dives at the maximum planned depth followed by subsequently shallower exposures.
13. Multiple, deep dives approach the limits of the dive computer's or dive table's capability and require special consideration and planning.
14. During dives in which dive computers are used, the diver shall have the capability for redundant time and depth measurements. Throughout all dives, the diver shall maintain an awareness of maximum depth and bottom time.
15. In the event of omitted decompression, breathing 100% oxygen above water is preferred to in water air guidelines.

2.27 DEPTH LIMITS

1. The public safety diver shall be limited to the maximum depth for which he has been issued a nationally recognized diving certification and evidenced by an annual review of the divers log by the Committee of Officers.

2.28 REFUSAL TO DIVE

1. The decision to dive rests with the individual diver. A diver may refuse to dive without fear of penalty whenever he feels it is unsafe to make the dive (see Section 2.53).
2. Ultimate responsibility for safety rests with the individual diver. It is the diver's responsibility and duty to refuse to dive or continue to dive if, in his judgment, conditions are unsafe, unfavorable, or if diving would violate the precepts of his training or the guidelines of this document.

2.29 TERMINATION OF DIVE

1. Unless it compromises the safety of another diver already in the water, it is the responsibility of the diver to terminate the dive without fear of penalty whenever the diver feels it is unsafe to continue.
2. The dive shall be terminated while there is still sufficient tank pressure to permit the diver:
 - a. To safely reach the surface, including decompression time or
 - b. To safely reach an additional air source at the decompression station.
3. It is suggested that an ascent to the surface from a dive of 100 feet or shallower be initiated when the tank pressure reaches 750 psi.
4. Any Dive Officer may terminate the dive at any time for safety or other operational reasons.
5. Any Diver may terminate the dive at any time for safety or other operational reasons.

2.30 DIVING OPERATIONS

2.31 DIVING SUPERVISOR

For each dive, one individual shall be designated as the Diving Supervisor. He shall be in an appropriate location at the dive site or the dive location during the diving operation. Initially, the Diving Supervisor shall be the first qualified team member to arrive at the scene. At such a time a higher ranking or more qualified member arrives the position of Diving Supervisor can be transferred. The Diving Supervisor shall be responsible for:

1. Coordination: Diving shall be coordinated with the Fire Department Incident Commander or Lead Law Enforcement Agency whichever is in charge of the scene.
2. Interviewing witnesses.
3. Briefing: The dive team members shall be briefed on:
 - a. Dive objectives:
 - b. Any unusual hazards or environmental conditions likely to affect the safety of the diving operation
 - c. Any modifications to diving or emergency guidelines necessitated by the specific diving operation and
 - d. Reporting any physical problems or adverse physiological effects including symptoms of pressure related injuries.
4. Dive Planning: Planning of a diving operation shall include considerations of the safety and health aspects of the following:
 - a. Diving mode i.e. scuba, snorkel, swim, etc.
 - b. Surface and underwater conditions and hazards
 - c. Breathing gas supply
 - d. Thermal protection
 - e. Diving equipment
 - f. Dive team assignments
 - g. Residual inert gas status of dive team members
 - h. Decompression schedules and altitude corrections
 - i. Entry and exit guidelines
 - j. Emergency guidelines

2.32 DIVE PLANS

Before conducting any diving operations under the auspices of the Jefferson County S.T.A.R. Team, the Diving Supervisor for a proposed diving operation should consider the following information:

1. Other divers involved and their qualifications as well as the type of permit 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 as defined by this document.
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 available divers
5. Locations of proposed divers:
6. Estimated depths and bottom times anticipated:
7. Current environmental conditions such as temperature, current, visibility, etc.: and
8. Proposed work, equipment, and boats to be employed, repetitive dives, and details of any hazardous conditions anticipated

2.33 PREDIVE SAFETY CHECKS

1. Divers Responsibility
 - a. Each diver shall conduct a functional check of his diving equipment in the presence of the dive buddy or tender
 - b. It is the diver's responsibility and duty to refuse to dive if in his judgment, conditions are unsafe, unfavorable, or if he would be violating the precepts of his training or the guidelines of this document.
 - c. No diver shall be required to be exposed to hyperbaric conditions against his will except when necessary to prevent or treat a pressure related injury.
 - d. No diver shall be permitted to dive for the duration of any known condition which is likely to adversely affect the safety and health of the diver or other dive team members.
2. Diver's Qualifications

Each public safety diver shall be trained, qualified, and certified for the diving mode being used. Each diver shall have experience or training in the following:

 - a. The use of the instruments and equipment appropriate to the diving activity to be conducted:
 - b. Dive planning and emergency guidelines:
 - c. Diver rescue techniques, cardiopulmonary resuscitation, oxygen administration, and other diving related first aid
 - d. Diving related physics and physiology as well as recognition of pressure related injuries.

2.34 POSTDIVE CHECKS

With the completion of a dive, each diver shall:

1. Report any physical problems or symptoms of decompression sickness or air embolism
2. Perform an equipment check and report any problems or malfunctions to the diving supervisor: and
3. When diving outside the no decompression limits, the divers should remain awake for at least one hour after diving and in the company of a dive team member who is prepared to transport him to a hyperbaric chamber if necessary.

2.35 EMERGENCY DEVIATION FROM GUIDELINES

Any public safety diver may deviate from the requirements of this document to the extent necessary to prevent or minimize a situation which is likely to cause death, serious physical harm, or major environmental damage. A

written report of such actions must be submitted to the Committee of Officers by the Diving Supervisor explaining the circumstances and justifications for such action.

2.36 VIOLATION OF REGULATIONS BY PUBLIC SAFETY DIVERS

Failure to comply with the regulations of this diving manual may be cause for the restriction or revocation of the diver's public safety diving certificate Committee of Officers.

2.60 RECORD KEEPING REQUIREMENTS

2.61 TEAM DIVING LOG

The Diving Supervisor shall maintain an appropriate diving log for each diving operation. Upon completion of each operation the Diving Supervisor shall submit the incident log to an officer. A copy of this log will remain on file not less than three years.

2.62 PERSONAL DIVING LOG

1. Each diver shall log every dive made under the auspices of the S.T.A.R. Team's public safety diving program and is encouraged to log all other dives.
2. Standard forms will be provided by the Committee of Officers. Log sheets shall be submitted to any Dive Officer to be placed in the diver's permanent file. Details of the submission guidelines are left to the discretion of the Committee of Officers. The diving log shall be in a form specified by the Committee of Officers and shall include at least the following information:
 - a. Name of diver, partner, and/or lead diver
 - b. Date, time, and location of dive
 - c. Diving modes used
 - d. General nature of diving activities:
 - e. Approximate underwater and surface conditions
 - f. Maximum depths, bottom time, and surface interval times
 - g. Diving tables or dive computers used and
 - h. Details of any accidents or potentially dangerous incidents.
3. If pressure related injuries are suspected or symptoms are evident, the following, additional information shall be recorded and retained by the Fire Coordinator's Office for a period not less than 5 years:
 - a. Description of symptoms, including severity and time of onset and
 - b. Description and results of treatment.
4. The Committee of Officers shall investigate and document any incident of pressure related injury.

2.63 RECORD MAINTENANCE The Committee of Officers or his designee shall maintain permanent records for each individual diving under the auspices of the Jefferson County S.T.A.R. Team. The file shall include evidence of certification, log sheets, results of current physical examinations, waivers, reports of disciplinary actions by the team's Committee of Officers, and other pertinent information deemed necessary.

1. Availability of Records
 - a. Medical records shall be available to the attending physician of a diver or former diver when released in writing by the diver.
 - b. Records and documents required by this document shall be retained by the Fire Coordinator's Office for the following periods:
 1. Physician's written reports of medical examinations for dive team members 5 years

2. Pressure related injury assessment 5 years
 3. Records of hospitalization 5 years.
 4. Records of dive 3 years, except 5 years when there has been an incident of pressure related injury:
 5. Equipment inspection and testing records, until equipment is withdrawn from service
 6. Diving manual current document only
2. In the event the S.T.A.R. Team deactivates, all applicable records maintained under the requirements of this section shall be appropriately maintained by the Fire Coordinator's Office or other suitable agency as determined by the deactivating Committee of Officers until all time requirements have expired.

2.64 REQUIRED ACCIDENT REPORTING

All diving accidents requiring recompression or resulting in an injury shall be reported to the Dive Supervisor. The counties regular guidelines for accident reporting shall be followed. Additional information deemed necessary by either the Committee of Officers or the Dive Supervisor may be required. In addition, the following reporting requirements must be met:

1. The S.T.A.R. Team shall record and report occupational injuries and illnesses in accordance with requirements of the Fire Coordinators Office
2. The S.T.A.R. Team shall record occurrence of any illness or injury requiring hospitalization or after any episode of unconsciousness or any diving related injury: or after treatment in a hyperbaric chamber following a diving accident or other serious illness. This record shall specify the circumstances of the incident, the extent of the injuries or illnesses, and the final outcome of the diver's health and

SECTION 3.00 ENTRY LEVEL TRAINING REQUIREMENTS

3.10 EVALUATION

3.11 MEDICAL EXAMINATION

The public safety diver applicant shall complete an accepted medical questionnaire upon appointment to the team and annually thereafter.

The public safety diver shall submit to any medical examination as required by the County Fire Coordinators Office.

3.12 SWIMMING EVALUATION GUIDELINES

The applicant for training shall successfully perform the following tests or their equivalent in the presence of the Diving Officer or an examiner approved by the Diving Officer:

1. Swim underwater without swim aids for a distance of 50 feet without surfacing
2. Swim 500 feet nonstop without swim aids:
3. Swim underwater without swim aids for a distance of 100 feet, surfacing no more than four times and taking only a single breath each time,
4. Without the use of swim aids, tread water for 5 minutes or tread water for 1 minute without the use of hands: and
5. Without the use of swim aids, transport another person of equal size a distance of 10 yards in the water.

3.20 SCUBA TRAINING

3.21 PRACTICAL TRAINING

At the completion of training, the trainee must satisfy the Committee of Officers or the approved instructor of his ability to perform cardiopulmonary resuscitation. In addition, the following skills must be demonstrated in a pool or other sheltered 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 AI
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 as well as all emergency guidelines deemed necessary by the Committee of Officers.
8. Competency in the use of buoyancy systems
9. Rescue and transport as a diver a passive, simulated victim of a diving accident and
10. Watermanship ability which is acceptable to the instructor.

3.22 WRITTEN EXAMINATION

Before the completion of training, the trainee must pass a written examination that demonstrates knowledge of at least the following:

1. Function, care, use, and maintenance of diving equipment
2. Physics and physiology of diving
3. Diving regulations and precautions
4. Near shore currents and waves
5. Emergency guidelines, including all emergency ascent guidelines
6. Currently accepted no decompression, repetitive decompression, and decompression guidelines, including the proper use of dive computers (see section 2.26)
7. Underwater communications
8. Hazards of breath hold dives and ascents
9. Planning and supervision of diving operations
10. Diving hazards and
11. Prevention, causes, signs, symptoms, and field treatment for near drowning, air embolism and related conditions, "squeezes" associated with diving, respiratory fatigue, motion sickness, hypothermia, hypothermia, decompression sickness, carbon dioxide excess, oxygen toxicity, nitrogen narcosis, exhaustion, panic, hypoxia, and anoxia.

3.23 CPR CERTIFICATION

The trainee must provide proof of CPR certification at the basic life support (BLS) level from either the American Heart Association (AHA) or the American Red Cross (ARC).

3.25 OPEN WATER EVALUATION

At the completion of training, the trainee must satisfy the Diving Officer or the designated instructor of his ability to perform the following minimum skills in open water:

1. Entering and leaving open water or surf (where applicable) wearing scuba gear
2. Entering and leaving open water from a diving support vessel while wearing scuba gear
3. Surface dive to a depth of 10 feet without the aid of scuba:
4. Clearing of regulator and mask while submerged
5. Buddy breathing (air sharing) as both donor and recipient
6. While wearing scuba gear, kick on the surface 1000 feet without breathing compressed gas (snorkel)
7. Maneuver efficiently in aquatic environment
8. A complete, simulated, emergency swimming ascent

9. Ability to achieve and maintain neutral buoyancy while submerged, as well as proper weighting and a controlled ascent including a hovering stop
10. Ability to navigate underwater
11. Techniques of self rescue and buddy rescue
12. Ability to plan and execute a dive
13. Judgment adequate for safe diving; and
14. Successfully complete 15 open water dives for a minimum total time of 12 hours of which 4-1/2 hours of cumulative scuba time must be attained. Not more than three training dives shall be made in any one day.

3.30 APPRENTICE PUBLIC SAFETY DIVER PERMIT LEVEL

This permit signifies that a diver has completed a minimum of 12 hours of training with at least 5 open water dives and possesses a nationally recognized Open Water diving certification.

3.31 ELIGIBILITY

Individuals who are eligible for an apprentice public safety diver permit include:

1. 1. Those who have completed the requirements outlined in Sections 3.10 and 3.20 as part of their diver training program, or
2. 2. Those individuals already certified as divers who meet the following minimum requirements:
 - a. Possess a nationally recognized open water diving certification
 - b. Provide proof of at least 12 hours of diver training with a minimum of 5 open water training dives
 - c. A medical examination as outlined in Section 3.11
 - d. A basic life support certificate as outlined in Section 3.23
 - e. A standard first aid certificate as outlined in Section 3.24 and
 - f. An appropriate sheltered water skills evaluation by the Diving Safety/Training Officer or an approved instructor which would indicate the applicant's ability to perform the skills outlined in Section 3.21.

SECTION 4.00 PUBLIC SAFETY DIVER CERTIFICATION REQUIREMENTS

4.10 GENERAL GUIDELINE AND PREREQUISITES

The following are considered minimal standards for public safety diver certification.

4.11 ELIGIBILITY

Only a person diving under the auspices of the Jefferson County S.T.A.R. Team's Public Safety Diving Program is eligible for public safety diver certification.

4.12 APPLICATION

Application for certification shall be made to the Committee of Officers on the form prescribed.

4.13 MEDICAL EXAMINATION

Each applicant for public safety diver certification shall submit a statement from a licensed physician based upon an approved medical examination which attests to the applicant's fitness for diving (see Section 7.00 and Appendices 1-6). This statement shall be on the form prescribed by the Committee of Officers.

4.14 QUALIFICATIONS

The applicant must hold an Apprentice Public Safety Diver Permit.

4.20 REQUIREMENTS FOR PUBLIC SAFETY DIVER CERTIFICATE

Submission of documents and participation in aptitude examinations does not automatically result in certification. The applicant must convince the Committee of Officers that he is sufficiently skilled and proficient to be certified. This skill will be acknowledged by the signature of the Committee of Officers and the Dive Commander. Any applicant who does not possess the necessary judgment for all diving activities may be denied public safety diving privileges.

4.21 REQUIRED DOCUMENTS

1. Application for certification:
2. Medical certification of fitness to dive
3. Proof of Apprentice Public Safety Diver Permit:
4. Proof of CPR certification at the basic life support (BUS) level from either the American Heart Association (AHA) or the American Red Cross (ARC)

4.22 REQUIRED TRAINING

The diver must complete additional theoretical and practical training beyond the Apprentice Public Safety Diver Permit level

1. Practical training shall include additional dives to ensure a cumulative total of at least 12 supervised open water dives in a variety of dive sites and diving conditions for a cumulative, minimum bottom time of three hours. No more than three of these dives shall be made in any one day.

4.23 REQUIRED EXAMINATIONS

1. Appropriate written examinations for the certificate level will be issued by the Committee of Officers
2. Examination of applicant's diving equipment
3. Sheltered water skills examination including emergency ascent techniques and
4. Open water skills evaluation for certified depths.

4.24 TEMPORARY CERTIFICATION

Requirements of Sections 4.21 and 4.22 may be waived by the diving officer if the person in question has demonstrated proficiency in diving and can measurably contribute to a planned dive. A statement of the temporary diver's qualifications shall be submitted to the Committee of Officers as a part of the dive plan. Temporary certification shall be restricted to the planned diving operation and shall comply with all other policies, regulations, and standards of this manual, including medical requirements.

4.30 DEPTH CERTIFICATION

The public safety diver shall be limited to the maximum depth for which he has been issued a nationally recognized diving certification and evidenced by an annual review of the divers log by the Committee of Officers.

4.35 RESERVED

4.40 CONTINUATION OF CERTIFICATE

4.41 MINIMUM ACTIVITY TO MAINTAIN CERTIFICATION

During any 12 month period, each certified public safety diver must log a minimum of 12 dives. At least one dive must be logged near the maximum depth of the diver's certification during each six month period. Failure to meet these requirements may be cause for revocation or restriction of certification.

4.42 RENEWAL OF DEPTH CERTIFICATION

Depth certifications which have lapsed due to lack of diving activity may be renewed by guidelines adopted by the Committee of Officers.

4.50 REVOCATION OF CERTIFICATION

A diving certificate may be revoked or restricted for cause by the Committee of Officers. Violations of guidelines set forth in this manual or other governmental subdivisions not in conflict with this document may be considered cause for revocation. A Dive Officer shall inform the diver in writing of the reason for revocation. The diver will be given the opportunity to present a rebuttal in writing. All such written statements and requests as identified in this section are formal documents which will remain a part of the diver's file.

4.60 RECERTIFICATION

If a diver's certificate expires or is revoked, he may be recertified after complying with such conditions as the Committee of Officers may impose. The diver shall be given an opportunity to present his case to the Committee of Officers before conditions for recertification are stipulated.

SECTION 5.00 - DIVING EQUIPMENT

5.10 GENERAL GUIDELINE

All equipment used by team members (except wetsuit, ½ mask, snorkel, and fins) while engaged in Public Safety Diving shall be equipment issued and owned by Jefferson County. If circumstances exist that limit the county's ability to supply equipment and a member wishes to use his own equipment, each case will be examined by the Committee of Officers and the equipment shall be subject to the following conditions.

All equipment shall meet standards as determined by the Committee of Officers. Only those makes and models of equipment specifically approved by the Committee of Officers shall be used and by divers with appropriate training. All unit equipment shall be standardized and compatible.

All Inspections, tests, and maintenance must be accomplished by a technician or facility approved by the and/or the Committee of Officers. Equipment that is subjected to extreme usage under adverse conditions should require more frequent testing and maintenance.

The decisions of the Committee of Officers shall be final.

5.11 RECORD KEEPING

Each equipment modification, repair, test, calibration, or maintenance shall be logged including the date and nature of work performed, serial number of item, and the name of the person performing the work for the following equipment:

1. Cylinder valves
2. Depth Gauges
3. Dive Computers
4. Regulators
5. Scuba Cylinders
6. Submersible breathing masks
7. Submersible pressure gauges
8. Dry Suits

5.12 REGULATORS

Scuba regulators used in the public safety diving program shall be inspected prior to the first use and every 6 months thereafter.

5.13 RESERVED

- 1.

5.14 SCUBA CYLINDERS

Scuba cylinders shall be designed, constructed, and maintained in accordance with the applicable provisions of the Unified Pressure Vessel Safety Orders.

1. Scuba cylinders must be hydrostatically tested at least every 5 years
2. Scuba cylinders must have a visual cylinder inspection (VIP) at intervals not to exceed 12 months and
3. Scuba cylinder valves shall be functionally tested at intervals not to exceed 12 months.

5.15 AUXILIARY EQUIPMENT

1. Approval All auxiliary equipment shall be of a type determined by the Committee of Officers.
2. Backpacks and weight systems shall be regularly examined by the person using them.
3. Gauges shall be inspected, tested, and calibrated prior to their first use and every 6 months thereafter.
4. All weight systems and scuba backpacks worn by the diver shall be equipped with quick release devices designed to permit jettisoning the entire gear. The quick release device must operate easily with a single motion from either hand. The equipment shall allow the jettisoning of just the backpack, just the weight system, or both. All equipment jettisoned while at depth must be able to be re-doned at depth without assistance.
5. All personnel involved in the diving operation should wear personal flotation devices (PFD) appropriate to the task which they are performing. Personal flotation systems, buoyancy compensators, dry suits, or other variable volume buoyancy compensation devices shall be equipped with an exhaust valve. Buoyancy compensation devices should have a reliable, rapid exhaust valve which can be operated in a horizontal swimming position. These devices as well as any associated auto inflation devices shall be functionally inspected and tested prior to their first use and every 6 months thereafter. An inflatable exposure suit by itself shall not be used as the sole source of buoyancy. Dry suits should have a hands free exhaust valve.
6. A first aid kit adequate for the diving operation shall be available at the dive location. This kit will also contain a demand type oxygen system.

Section 6.00 - BREATHING AIR

6.10 MINIMAL STANDARDS

Breathing air for all diving activities shall meet the following:

- a. Minimum oxygen, atmospheric
- b. Oxygen content Special mixtures , at this time OSHA Regulations prohibits the use of mixed gasses in professional diving
- c. Maximum carbon monoxide 0.001 % (10 ppm)
- d. Maximum carbon dioxide 0.10 % (1000 ppm)
- e. Dust, oil and water absent
- f. Odors and vapors absent

6.20 RESERVED

6.30 RESERVED

Section 7.00 MEDICAL STANDARDS

7.10 MEDICAL REQUIREMENTS OF Public SAFETY DIVERS

7.11 GENERAL GUIDELINE

1. The Committee of Officers shall ensure that dive team members have completed the medical questionnaire in the preceding 12 months. And as required by the Fire Coordinators Office a diving physical examination. The individual's level of diving activity shall be determined by the Committee of Officers based upon the examining physician's recommendations.
2. All medical evaluations required by this document shall be performed by or under the direction of a licensed physician.
3. The diver should be free of any chronic disabling disease and conditions as delineated in the list of conditions within Section 7.15. The diver should have a vital capacity of 80% of predicted normal as measured by a Spiro meter, and the physician's report should include gross flow rates. During the medical examination, the applicant diver should demonstrate good ability to perform all gross and minute tasks and exhibit normal reflexes.

7.12 FREQUENCY OF MEDICAL SCREENING

Medical questionnaires shall be completed:

1. Before a diver may dive unless an equivalent medical evaluation has been given within the preceding 12 months, the team has obtained the results of that examination, and those results have been reviewed and found satisfactory
2. At one year intervals from the date of initial evaluation or last equivalent evaluation:
3. After any injury, illness, or surgery requiring hospital admission or debilitation
4. After any episode of unconsciousness or
5. After a diving accident resulting in injury to the diver.

SECTION 8.00 APPENDICES

APPENDIX 1

SELECTED REFERENCES IN DIVING MEDICINE

Bachrach, A.J. and Egstrom, GTH. (1987) 183 pp. STRESS AND PERFORMANCE in DIVING. Best Publishing Company, Box 1978, San Pedro, California 90732.

Bennett, P.B. and Elliott, D.H. (1982) 570 pp. THE Physiology AND MEDICINE OF DIVING. London: Balliere Tindall. (In USA, Best Publishing Company, Box 1978, San Pedro, California 90732).

Davis, J.C. (1989) 68 pp. MEDICAL EXAMINATION OF SPORT SCUBA divers. Medical Seminars, Inc. San Antonio, Texas. Available through: Undersea and Hyperbaric Medical Society, 09650 Rockville Pike, Bethesda, Maryland 20814 or Best Publishing Company, Box 1978, San Pedro, California 90732.

Dueker, C.W. (1984) 224 pp. SCUBA DIVING in SAFETY AND HEALTH. Best Publishing Company, Box 1978, San Pedro, California 90732.

Edmonds, C., Lowry, C. and Pennefather, J. (1981) 571 pp. DIVING AND SUBAQUATIC MEDICINE. Mosman, Australia: Diving Medical Center. (In USA: Best Publishing Company, Box 1978, San Pedro, California 90732.

Linaweaver, P., and Vorosmarti, J. (1987) 115 pp. FITNESS TO DIVE. Undersea and Hyperbaric Medical Society, 9650 Rockville Pike, Bethesda, Maryland 20814.

Roydhouse, N. (1981) 78 pp. UNDERWATER EAR AND NOSE CARE. Best Publishing Company, Box 1978, San Pedro, California 90732.

Shilling, C.W., Carlston C.B., and Mathias, R.A. (1984) 762 pp. THE PHYSICIANS GUIDE TO DIVING MEDICINE. Undersea and Hyperbaric Medical Society, 9650 Rockville Pike, Bethesda, Maryland 20814.

US NAVY DIVING MANUAL. Superintendent of Documents, US Government Printing Office, Washington, D. C. (Stock No. 008-046-00094-8)

APPENDIX 2

CERTIFICATION AGENCIES

American HEART ASSOCIATION (AHA) 7320 Greenville Avenue Dallas, Texas 75231
American RED CROSS (ARC) 431 18th Street, NOW. Washington, D. C. 20006
DIVE RESCUE, INC./INTERNATIONAL 201 North Link Lane Fort Collins, Colorado 80524
INTERNATIONAL DIVING EDUCATORS ASSOCIATION (IDEA) P. O. Box 17373 Jacksonville, Florida 32245
LOS ANGELES COUNTY DEPARTMENT OF PARKS AND RECREATION Underwater Unit 419 East 192nd Street Carson, California 90746
Multinational DIVING EDUCATORS Association (MDEA) P. O. Box 3433 Marathon Shores, Florida 33052
National ASSOCIATION FOR CAVE DIVING (NACD) P. O. Box 14492 Gainesville, Florida 32604
NATIONAL ASSOCIATION OF UNDERWATER INSTRUCTORS (NAUI) P. O. Box 14650 Montclair, California 91763
National ASSOCIATION OF SCUBA Diving SCHOOLS (NASDS) P. O. Box 17067 Long Beach, California 90806
National Association of Scuba Educators (NASE) P.O. Box 5366 Lubbock, Texas 79417
National Speleological Society - Cave Diving Section (NSS-CDS) P.O. Box 950 Branford, Florida 32008-0950
Professional Association of Diving Instructors (PADI) 1251 east Dyer Road, Suite 100 Santa Ana, California 92705-5605
Professional Diving Instructor Corporation (PDIC) 1015 River Street, P.O. Box 3633 Scranton, Pennsylvania 18505
Scuba Schools International (SSI) 2619 Canton Court Fort Collins, Colorado 80525
United States Navy (USN) Naval Diving and Salvage Training Center Panama City, Florida 32407
YMCA National Scuba Program (YMCA) Oakbrook Square 6083-A Oakbrook Parkway Norcross, Georgia 30092

APPENDIX 3

DIVING MEDICAL HISTORY QUESTIONNAIRE

(To Be Completed By Applicant • Diver)

Name _____
Sex _____ DOB ____/____/____ Wt. _____ Ht. _____
(Mo/Day/Yr)

Date ____/____/____
(Mo/Day/Yr)

TO THE APPLICANT:

Scuba diving makes considerable demands on your physical and emotional condition. Diving with particular defects amounts to asking for trouble, not only for yourself, but also for anyone coming to your aid if you get into difficulty in the water. Therefore, it is prudent to meet certain medical and physical requirements before beginning a diving career or training program. Your answers to the following questions are more important in many instances in determining your fitness than what the physician may see, hear, or feel when you are examined. Obviously, you should give accurate information, or the medical screening guideline becomes useless. This form shall be kept confidential. If you believe any questions amounts to an inversion of your privacy, you may elect to omit an answer provided you subsequently discuss that matter with the physician. The physician must then indicate in writing that you have done so and that no health hazard exists. Should your answers indicate a condition(s) which might make diving hazardous, you will be asked to review the matter with your physician. In such instances, the physician's written authorization will be required in order for further consideration to be given to your public safety diving application. If your physician concludes that diving would involve undue risk for you, remember that the physician is concerned only with your well being and safety. Please respect this advice and the intent of this medical history form. In your own handwriting (do not type), answer each of the following questions with a yes, no, or maybe answer. Discuss with the examining physician any questions which you do not know or understand .

- _____ 1. Have you ever had epilepsy or seizures?
- _____ 2. Do you ever faint or have blackout spells?
- _____ 3. Have you ever been addicted to drugs?
- _____ 4. Do you have diabetes?
- _____ 5. Do you suffer from motion sickness or sea fair sickness?
- _____ 6. Are you prone to claustrophobia?
- _____ 7. Have you ever had a nervous breakdown?
- _____ 8. Are you pregnant?
- _____ 9. Do you suffer from menstrual problems?
- _____ 10. Do you get anxiety spells or hyperventilation?
- _____ 11. Do you get frequent sour stomachs, nervous stomachs, or vomiting?
- _____ 12. Have you ever had a major operation?
- _____ 13. Are you presently being treated by a physician?
- _____ 14. Are you regularly taking medication?
- _____ 15. Have you ever been rejected or restricted from sports?
- _____ 16. Do you have frequent or severe headaches?
- _____ 17. Do you wear dental plates?
- _____ 18. Do you wear glasses or contact lenses?
- _____ 19. Do you have any bleeding disorders?
- _____ 20. Have you ever had any problem with alcoholism?
- _____ 21. Have you ever had any problems related to diving?
- _____ 22. Do you suffer from nervous tension or emotional problems?

- _____ 23. Do you sometimes take tranquilizers?
- _____ 24. Have you ever had a perforated eardrum?
- _____ 25. Do you have hay fever?
- _____ 26. Do you have frequent sinus trouble, frequent drainage from the nose, postnasal drip, or stuffy nose?
- _____ 27. Do you get frequent earaches?
- _____ 28. Do you have drainage from the ears?
- _____ 29. Do you have difficulty with your ears in airplanes or on mountains?
- _____ 30. Have you had ear surgery?
- _____ 31. Do you get ringing in your ears?
- _____ 32. Do you get frequent dizzy spells?
- _____ 33. Do you have any hearing problems?
- _____ 34. Do you have trouble equalizing pressure in your ears?
- _____ 35. Have you ever had asthma?
- _____ 36. Have you ever had wheezing attacks?
- _____ 37. Do you have a chronic or recurrent cough?
- _____ 38. Do you frequently raise sputum?
- _____ 39. Have you ever had pleurisy?
- _____ 40. Have you ever had a collapsed lung (pneumothorax)?
- _____ 41. Do you have lung cysts?
- _____ 42. Have you ever had pneumonia?
- _____ 43. Have you ever had tuberculosis?
- _____ 44. Do you get shorter of breath than most people?
- _____ 45. Have you ever been told that you have a lung problem or other abnormality?
- _____ 46. Do you ever spit blood?
- _____ 47. Do you ever have breathing difficulty after eating particular foods or after exposure to particular pollens or animals?
- _____ 48. Are you subject to bronchitis?
- _____ 49. Have you ever had subcutaneous emphysema (air under the skin)?
- _____ 50. Have you ever had air embolism after diving?
- _____ 51. Have you ever had rheumatic fever?
- _____ 52. Have you ever had scarlet fever?
- _____ 53. Have you ever been told you have a heart murmur?
- _____ 54. Have you ever been told you have an enlarged heart?
- _____ 55. Have you ever had high blood pressure?
- _____ 56. Have you ever had angina (heart pains or pressure in the chest)?
- _____ 57. Did you ever have a heart attack?
- _____ 58. Do you ever have low blood pressure?
- _____ 59. Do you have recurrent or persistent swelling of the legs?
- _____ 60. Have you ever had pounding, rapid heartbeat, or palpitations?
- _____ 61. Have you ever had dizziness or faint spells?
- _____ 62. Do you get fatigued or short of breath easily?
- _____ 63. Have you ever been told you had an abnormal ECG?
- _____ 64. Do you suffer from joint problems, dislocations, or arthritis?
- _____ 65. Have you ever had back trouble or back injuries?
- _____ 66. Have you had a ruptured or slipped disc?
- _____ 67. Do you have any limiting physical handicaps?
- _____ 68. Do you suffer from muscle cramps?
- _____ 69. Do you have varicose veins?
- _____ 70. Do you have any amputations?
- _____ 71. Have you ever had a head injury causing unconsciousness?
- _____ 72. Have you ever experienced any paralysis?
- _____ 73. Have you ever had an adverse reaction to medication?
- _____ 74. Do you smoke?
- _____ 75. Have you ever had any other medical problems not listed in questions 1-74? if so, please list or describe them below.

Appendix 4

MEDICAL HISTORY QUESTIONS EVALUATION FORM

(Screening Aid)

- 1 - A 21 - B 41 - A 61 - B
- 2 - B 22 - B 42 - B 62 - B
- 3 - B 23 - B 43 - B 63 - B
- 4 - B 24 - C 44 - B 64 - B
- 5 - C 25 - B 45 - B 65 - B
- 6 - B 26 - B 46 - B 66 - B
- 7 - B 27 - B 47 - B 67 - B
- 8 - A 28 - B 48 - B 68 - B
- 9 - B 29 - B 49 - B 69 - B
- 10 - B 30 - B 50 - B 70 - B
- 11 - B 31 - B 51 - B 71 - B
- 12 - B 32 - B 52 - B 72 - B
- 13 - B 33 - B 53 - B 73 - C
- 14 - B 34 - C 54 - B 74 - C
- 15 - B 35 - B 55 - B 75 - B
- 16 - B 36 - B 56 - A
- 17 - C 37 - B 57 - B
- 18 - B 38 - B 58 - B
- 19 - B 39 - B 59 - B
- 20 - B 40 - B 60 - B

When a "yes" answer is checked:

A - Absolute contraindication to diving: B = Relative contraindication to diving requires careful review by physician
C = Of interest, not a contraindication

APPENDIX 5

EMERGENCY CONTACT LIST

Diving Medical Emergencies
DIVERS ALERT NETWORK (DAN)
(919) 684-8111 (24 hours)
Cave Diving Emergencies
NATIONAL CRIME
INFORMATION CENTER
(904) 633-4159 (24 hours)
AMBULANCE, fire, Police
911(24 hours)
DIVING OFFICER

APPENDIX 6

DEFINITION OF TERMS

Apprentice diver - An Individuals gaining experience and training in additional diving activities under the supervision of a dive team member experienced in those activities See Section 3.30).

Bounce dive - A dive of relatively short duration usually less than 10 minutes.

Bottom time - The total elapsed time measured in minutes from the time a diver leaves the surface in descent until the time that the diver begins a direct ascent to the surface.

Breath-hold diving - A diving mode in which the diver uses no self contained or surface supplied breathing gas supply.

Buddy breathing - The sharing of a single air source between divers.

Buddy diver - Second member of the dive pair which is diving.

Buoyant ascent - An ascent made using some form of positive buoyancy such as: a wet suit without weight belt with vest or buoyancy compensator inflated and usually done more rapidly than a normal ascent.

Burst pressure - The pressure at which a pressure containment device would structurally fail.

Certified diver - A diver who holds a recognized valid certificate in one of the following categories: .

1. Apprentice Public Safety Diver (See Section 3.30)
2. Public Safety Diver (See Section 4.20) or
3. Temporary Public Safety Diver (See Section 4.24).

Compression chamber - A pressure vessel for human occupancy which may also be called a hyperbaric chamber (see Recompression chamber).

Controlled ascent - Any one of several kinds of ascents including normal, swimming, and buddy breathing ascents where the divers) maintain control such that a pause or stop can be made during the ascent.

Cylinder - A pressure vessel for the storage of gases (see Tank).

Decompression sickness - A condition with a variety of symptoms which has its origin n the formation of bubbles in the tissues of divers aver pressure reduction.

Decompression table - A profile or set of profiles of depth time relationships for ascent rates and breathing mixtures to be followed aver a specific depth time exposure or exposures (see Dive table).

Dive - A descent into the water, an underwater diving activity utilizing compressed gas, an ascent, and a return to the surface.

Dive location - A surface area or vessel from which a diving operation is conducted.

Dive location reserve breathing gas - A supply system of air at the dive location which is independent of the primary system and sufficient to support divers during any planned decompression dive.

Dive table - A profile or set of profiles of depth time relationships for ascent rates and breathing mixtures to be followed over a specific depth time exposure or exposures.

Diving Supervisor - The certified public safety diver with experience and training to conduct the diving operation and who has been designated to be in charge of the diving operation. This individual shall as a minimum be a current, certified dive master with one of the rationally recognized diving certification agencies (See Section 2.51).

Diver - An individual in the water who uses apparatus including snorkels which supplies breathing gas at ambient pressure.

Diver carried reserve breathing gas - A diver carried, independent supply of air sufficient under standard operating conditions to allow the diver to reach the surface, another source of breathing gas, or be reached by another diver.

Dive site - The physical location of a diver during a dive.

Dive team - Divers and support individuals who are exposed to or control the exposure of others to hyperbaric conditions.

Diving mode - A type of diving requiring guidelines, techniques, and specific equipment (snorkel, scuba, surface supplied air).

Committee of Officers - The group of individuals who act as the official representative of the STAR Team and establish guideline concerning the public safety diving

Emergency ascent - An ascent made under anything other than normal conditions.

FSW - Feet of seawater or equivalent static pressure head.

Hyperbaric chamber - A pressure vessel for human occupancy (see Compression chamber, Recompression chamber).

Hyperbaric conditions - Pressure conditions in excess of normal atmospheric pressure at the dive site.

Lead diver - The certified Public Safety Diver who has the experience and training to be the responsible member of the buddy team or other underwater operational group (See Section 2.52).

Maximum working pressure - The maximum pressure to which a pressure vessel or other pressure bearing device may be exposed under standard operating conditions.

MSW - meters of seawater or equivalent static pressure head

No-decompression limits - The depth time limits of the "no-decompression limits and repetitive dive group designations table for no-decompression air dives" of the US Navy Diving Manual or equivalent limits.

Normal ascent - An ascent made with an adequate air supply at a rate of 60 feet per minute or less.

Penetration dive - A penetration dive site is an enclosed body of water (usually a cave or similar) containing silt darkness zones, passages that at times are not large enough for two divers to buddy alongside, and most importantly have restricted access to the surface.

Pressure related injury - Any injury resulting from pressure disequilibrium within the body as the result of hyperbaric exposure such as decompression sickness, pneumothorax, mediastinal emphysema, air embolism, or subcutaneous emphysema.

Pressure vessel - See cylinder or tank.

PSIG - Pounds per square inch gauge.

