



Standard Terminology Relating to Underwater Search, Rescue, and Recovery Activities¹

This standard is issued under the fixed designation F 1549; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 The purpose of this terminology is to establish uniformity in terminology used in the field of underwater search, rescue, and recovery.

1.2 The terminology is appropriate to those underwater search, rescue, or recovery activities that use self-contained or surface-supplied underwater breathing apparatuses to provide a breathing gas supply for the searcher(s).

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Significance and Use

2.1 This terminology is not intended to be used as a replacement for proper training and experience in the skills necessary to conduct an underwater search and rescue operation safely.

3. Terminology

3.1 Definitions:

ascent rate, *n*—the speed of vertical movement toward the water's surface.

bail-out bottle, *n*—A diver-carried supply of air or mixed gas (as appropriate) sufficient under standard operating conditions to allow the diver to reach the surface or another source of breathing gas, or to be reached by a safety diver.

bottom time, *n*—the total elapsed time measured in minutes from the time that the diver leaves the surface in descent to the time that the diver begins ascent.

console, *n*—an instrument package that contains one or more instruments used to monitor depth, bottom time, surface intervals, air pressure, compass direction, decompression status, or some combination thereof.

D.A.N., *n*—Divers Alert Network.²

DCS, *n*—decompression sickness, a medical condition with a

variety of symptoms that may result from gas or bubbles in the tissues of divers after pressure reduction.

decompression, *n*—the technique used to allow the controlled removal of excess inert gas from the body during and after a dive to prevent decompression sickness (DCS).

dive computer, *n*—a microprocessor-based electronic instrument that provides data based on a specific decompression model.

dive profile, *n*—the depth/time history of a dive that typically consists of bottom time, maximum depth, and surface interval.

Doppler bubble detector, *n*—a device that uses the Doppler Effect to monitor specific areas of the circulatory system and detect the presence of bubbles as a measure of decompression stress.

hyperbaric chamber, *n*—a chamber in which the internal pressure can be elevated by the introduction of compressed air (or other gasses) that is used primarily for medical treatment (including decompression sickness and arterial gas embolism) and physiological studies.

J-valve, *n*—a manually operated, spring-loaded, SCUBA cylinder check valve that incorporates a low air warning/reserve air mechanism.

K-valve, *n*—a simple, manually operated on-off SCUBA cylinder valve.

line tender, *n*—the individual who controls the diver's search pattern.

nitrogen narcosis, *n*—a distinct anesthetic effect, characterized by loss of judgment and disorientation, caused from breathing nitrogen at increased partial pressures.

repetitive diving, *n*—any dive conducted while the decompression model being followed for the dives indicates that inert gases are still present in the tissues from a previous dive. This is within the context of a fixed time period, usually 12 to 24 h, depending on the model being followed.

repetitive group designation, *n*—an assigned letter on a decompression table that relates directly to the amount of residual inert gas in the diver's tissues following a dive. This group changes with time as the diver's body off-gases.

residual nitrogen, *n*—nitrogen gas that is still dissolved in a diver's tissues after he has surfaced from a dive using compressed air as a breathing gas.

RNT, *n*—residual nitrogen time.

safety diver, *n*—diver who is dressed completely in dive gear and who remains on the surface to go to the immediate aid

¹ This terminology is under the jurisdiction of ASTM Committee F-32 on Search and Rescue and is the direct responsibility of Subcommittee F32.06 on Terminology. Current edition approved August 15, 1994. Published September 1994.

² D.A.N. is an organization that disseminates diving safety information, provides diving medical insurance, and offers telephone assistance for answering questions related to diving medicine and for locating hyperbaric treatment facilities that can provide medical care for barotrauma injuries. It can be contacted by telephone at 919-684-2948 for non-emergency questions, and at 919-684-8111 for emergencies.