3.1.14 Documentation Diver

3.1.14.1 Course Outcomes

GUE's Documentation Diver course is designed to introduce divers to sound documentation techniques that are useful in project-based diving. Other course outcomes include: basic training in photography/videography, the use of related equipment, specific team skills needed during documentation diving, specific communication requirements, establishment of clear objectives and work plans, management of team tasks, how to create a report, how to map, survey, and prepare material for media publication.

3.1.14.2 Prerequisites

Applicants for a Documentation Diver course must abide by Training Prerequisites (2.1.4.1), plus:

a. Be a minimum of 16 years of age. Documented parental or legal guardian consent must be submitted to GUE HQ when the participant is a minor.
b. Hold a GUE Open Water Diver, GUE Performance Diver, or GUE Fundamentals certification.
c. Have conducted at least 25 non-training dives following completion of either GUE Open Water Diver, GUE Performance Diver, or GUE Basic Fundamentals[1] certification.
d. Have conducted at least 75 non-training dives following completion of autonomous scuba diver certification.
e. If using doubles during the course, have conducted at least 15 non-training dives in the GUE double tank configuration or have conducted 10 dives utilizing doubles following completion of GUE Doubles Primer certification.
f. If using a drysuit during the course, have conducted at least 15 non-training dives in a drysuit or have conducted 10 non-training dives utilizing a drysuit following completion of GUE Drysuit Primer certification.
g. Students participating in a Documentation Diver course conducted in an overhead environment must hold a GUE Cave Diver Level 2 certification.
h. Students participating in a Documentation Diver course conducted using a rebreather must have conducted at least 25 rebreather dives following completion of GUE Passive Semi-Closed Circuit Rebreather Diver or GUE Closed-Circuit Rebreather Technical Diver Level 1 certification.

3.1.14.3 Course Content

The Documentation Diver course is normally conducted over four days. It requires a minimum of four dives and at least thirty-two hours of instruction, encompassing lectures, land drills, and in-water work.

3.1.14.4 Documentation Diver Specific Training Standards

a. Student-to-instructor ratio is not to exceed 8:1 during land drill or surface exercises; it cannot exceed 4:1 during any in-water training.

[1] Including GUE Fundamentals with Recreational rating issued under past versions of Standards.

b. Maximum depth of 100 ft/30 m or the limit of the student's certification, whichever is shallower.
c. All dives must be within minimum decompression limits (MDLs), i.e., no required stops.
d. No overhead diving except when taught by an Active GUE Cave 2 instructor, plus:
    i. Student-to-instructor ratio is reduced to 6:1 during land drills and surface exercises; it cannot exceed 3:1 during any in-water training.
    ii. Dives must be conducted within Cave 1 limits but may be extended to Cave 2 limits if all students have conducted 25 non-training Cave 2 dives following completion of GUE Cave 2 certification.
e. No rebreather diving except when taught by an Active GUE CCR-T1 or an Active GUE PSCR instructor for the respective unit being used during class, plus:
    i. All students must be GUE certified for the rebreather being used during class.
    ii. No rebreather diving in overhead environments except when all students are GUE CCR Cave certified and the course is taught by an Active GUE CCR Cave instructor.

3.1.14.5 Required Training Materials

GUE training materials and recommended study as determined by the course study packet available online or via download after GUE course registration.

3.1.14.6 Academic Topics

a. Introduction: GUE organization and course overview (objectives, limits, expectations)
b. Project planning and management
c. Photo equipment specifics
d. Video equipment specifics
e. Camera techniques
f. Composition
g. Lighting techniques
h. Survey and mapping tools
i. Mapping and survey skills
j. Dive planning specific for documentation diving
k. Operational planning
l. Support materials
m. Team responsibilities, planning, and diving
n. Building and organizing a media database
o. Basics of editing video and photo material
p. Preparing materials for publishing
q. Publishing and uploading a complete project report

3.1.14.7 Land Drills and Topics

a. Photo camera preparation and maintenance
b. Video camera preparation and maintenance
c. Survey and mapping
d. Composition practice
e. Dive team order and protocols
f. Use of spools and reels

g. Basic navigational skills
h. Visual referencing skills
i. Pre-dive drills
j. Surface marker buoy (SMB) deployment utilizing a spool (if teaching to GUE Performance Divers without GUE Navigation Primer certification)

3.1.14.8 Required Dive Skills and Drills

Students must demonstrate competence in the following skills to attain GUE Documentation Diver certification:

a. Must be able to swim at least 300 yds/275 m in less than 14 minutes without stopping. This test should be conducted in a swimsuit and, where necessary, appropriate thermal protection.
b. Must be able to swim a distance of at least 50 ft/15 m on a breath hold while submerged.
c. Demonstrate a safe and responsible demeanor throughout all training.
d. Demonstrate basic equipment proficiency and an understanding of the GUE equipment configuration.
e. Demonstrate proficiency in safe diving techniques, including pre-dive preparation, in-water activity, and post-dive assessment.
f. Demonstrate awareness of team member location and a concern for safety, responding quickly to visual indications and dive partner needs.
g. Demonstrate proficiency in underwater communication.
h. Demonstrate safe ascent and descent procedures.
i. Demonstrate good buoyancy and trim, i.e., approximate reference is a maximum of 30 degrees off horizontal while remaining within a range of 5 ft/1.5 m from target depth.
j. Demonstrate proficiency adjusting buoyancy while managing camera equipment.
k. Demonstrate effective use of compass and navigation.
l. Demonstrate familiarity with required course equipment.
m. Demonstrate the ability to capture predetermined imagery underwater.
n. Demonstrate the ability to draw a map underwater.
o. Demonstrate the ability to accurately record data underwater.
p. Demonstrate proficiency in the ability to deploy a surface marker buoy (SMB) while using a spool.
q. Demonstrate proficiency in reel, spool, and guideline use.

3.1.14.9 Equipment Requirements

GUE base equipment configuration as outlined in Appendix A, plus:

a. Photographic equipment: any digital photo camera suitable for underwater photography, preferably in a housing and able to sustain a minimum water pressure of 100 ft/30 m. An underwater flash is highly recommended (if not available, underwater video lights may be suitable). Manual adjustment (aperture/shutter) on the camera is preferred.
b. Video equipment: any digital video camera suitable for underwater videography, preferably in a housing and able to sustain a minimum water pressure of 100 ft/30 m. An underwater video lighting system is highly recommended. Manual adjustment (aperture/shutter) on the video camera and a wide-angle lens with adapter is preferred.

c. Computer system: any Windows or Mac-based computer (preferably a laptop) with software designed for video and photo editing, an internet connection, and word-processing software installed.
d. One primary reel per team
e. For classes conducted using rebreathers, a GUE CCR or GUE PSCR configuration must be used.
f. For classes conducted in a cave environment, exclude:

    i. Surface marker buoy with spool

    and students must utilize the GUE double tank configuration (except when conducted using GUE CCR or GUE PSCR configurations) and must additionally carry:

    i. One primary and two backup lights
    ii. One safety spool
    iii. At least six line markers; three directional and three non-directional

Prior to the commencement of the class, students should consult with a GUE representative to verify equipment requirements and the appropriateness of any selected equipment.

Appendix A - GUE Equipment Configuration

The GUE base equipment configuration is comprised of:

a. Tanks/cylinders: Students may use a single tank/cylinder with a single- or dual-outlet valve. Students may also use dual tanks/cylinders connected with a dual-outlet isolator manifold, which allows for the use of two first stages. Dual tanks/cylinders connected with a dual-outlet, non-isolator manifold can be used, but only in recreational (minimum decompression) diving, and are considered an alternative for a single tank/cylinder. Consult course-specific standards and your instructor to verify size requirements.
b. Regulators:
    i. Single tank: The first stage must supply a primary second stage via a 5 to 7 ft/1.5 to 2 m hose. A backup second stage must be necklaced and supplied via a short hose. The first stage must also supply an analog pressure gauge, inflation for the buoyancy compensator (BC), and (when applicable) inflation for a drysuit.
    ii. Double tank: One first stage must supply a primary second stage via a 5 to 7 ft/1.5 to 2 m hose (7 ft/2 m hose is required for all cave classes), and inflation for the buoyancy compensator (BC). The other first stage must supply a necklaced backup second stage via a short hose, an analog pressure gauge, and (when applicable) inflation for a drysuit.
c. Backplate system:
    i. Is held to the diver by one continuous piece of webbing. This webbing is adjustable and uses a buckle to secure the system at the waist.
    ii. A crotch strap is attached and looped through the waistband to prevent the system from riding up a diver's back.
    iii. The continuous webbing must support five D-rings;
        1. The first placed at the left hip

2. The second placed in line with a diver's right collarbone
3. The third placed in line with the diver's left collarbone
4. The fourth and fifth are placed on the front and back of the crotch strap when divers plan to use advanced equipment such as DPVs.

iv. The harness below the diver's arms has small restrictive bands to allow for the placement of backup lights. The webbing and system retains a minimalist approach.

d. Buoyancy compensation device (BC):
   i. A diver's BC is back-mounted and minimalist in nature.
   ii. It is free of extraneous strings, tabs, or other material.
   iii. There are no restrictive bands or restrictive elastic affixed to the buoyancy cell.
   iv. Wing size and shape is appropriate to the cylinder size(s) employed for training.
e. At least one time/depth measuring device
f. Wrist-mounted compass
g. Mask and fins: Mask is low-volume; fins are rigid, non-split.
h. Backup mask
i. At least one cutting device
j. Wetnotes with at least one pencil
k. Exposure suit appropriate for the duration of exposure
l. Surface marker buoy (SMB) with spool: Where required, the SMB should be appropriate for environmental conditions and deployed using a spool with at least 100 ft/30 m of line.

The GUE PSCR configuration is comprised of:

a. GUE base equipment configuration (except Tanks/Cylinder)
b. One primary and two backup lights
c. A GUE-approved passive semi-closed circuit rebreather
d. Modified tank configuration as appropriate for use with a GUE-approved passive semi-closed circuit rebreather
e. Modified regulator configuration as appropriate for use with a GUE-approved passive semi-closed circuit rebreather

The GUE CCR configurations are comprised of:

a. GUE base equipment configuration (except Tanks/Cylinder, where relevant)
b. One primary and two backup lights
c. A GUE-approved closed-circuit rebreather
   i. Where required, students must own a GUE-approved closed-circuit rebreather before attending the course; they can, however, use a rented or borrowed unit during the course.
   ii. The closed-circuit rebreather used by the student, with all associated components, must be fully functional (pass all tests on the rebreather pre-dive checklist) and serviced according to manufacturer specifications.
   iii. All analog oxygen sensors must be less than one year from manufacturing date.
   iv. All electronic components, including but not limited to the rebreather controller unit and monitoring systems, must be updated with the latest software and firmware versions published by the manufacturer.

d. Modified tank configuration as appropriate for use with a GUE-approved closed-circuit rebreather
e. Modified regulator configuration as appropriate for use with a GUE-approved closed-circuit rebreather
f. Spare parts and consumables, including one set of appropriate batteries; one oxygen sensor; and one DSV/BOV mouthpiece.
g. If using a drysuit inflation cylinder attached to the backplate, extended inflation cylinder straps need to be used to ensure that it does not interfere with or restrict the counterlung's function.

The GUE Sidemount configuration is comprised of:

a. GUE base equipment configuration (except Tank/cylinders, Regulators, Backplate, BC)
b. One primary and two backup lights
c. Tanks/cylinders: Students are required to use independent cylinders with single valves and without manifolds, which allow for the use of one first stage each. Stage cylinders with proper cylinder marking (2.2, e) will also be utilized.
d. Regulators: One of the second stages must be on a 7 ft/2 m hose. Both first stages must supply a pressure gauge and provide inflation for a drysuit (where applicable) and a wing.
e. Sidemount harness: A diver's sidemount setup should be back-mounted and minimalist in nature. Wing size and shape should be appropriate to the cylinder size(s) employed for training.

Additional Course-Specific Equipment

a. Where required, back gas and stage cylinders with proper cylinder marking (2.2, e) will also be utilized in accordance with the GUE General Training Standards, Policies, and Procedures document and configured in line with GUE protocols.
b. When drysuit inflation systems are applicable, they should be sized appropriately for the environment; small tanks are placed on the left side of the backplate with larger supplies affixed to the diver's left back gas tank.
c. Underwater lights:
    i. When required, backup lights should be powered by alkaline batteries (not rechargeable) and stowed on the D-rings at a diver's chest (except when diving sidemount).
    ii. Backup lights should have a minimal amount of protrusions and a single attachment at the rear.
    iii. Backup lights should feature a twist-on/off switch for operation
    iv. The primary light should consist of a rechargeable battery pack and be fitted with a Goodman-style light handle.
    v. When burn time requirements create the need for an external battery pack, it should reside in a canister mounted on the diver's right hip.
d. Guideline devices, as required during cave diving activities:
    i. A primary reel is required for all cave diving and provides a minimalist form factor with a handle designed to support a Goodman or "hands free" handle operation. The primary reel must contain at least 150 ft/45 m of line.
    ii. A safety spool is required for each diver while cave diving and must contain at least 150 ft/45 m of line.

iii. A jump or gap spool is required during Cave 2 diving and must contain at least 75 ft/23 m of line.

e. Where required, GUE-approved DPV must:
   i. Be a tow-behind style with adjustable speed and clutch mechanism.
   ii. Include an attached cord at the back with bolt snap to be clipped on the front crotch strap D-ring.
   iii. Include a leash attached to the front to be used for towing.