Recreational Entry-Level Diving Courses
Specific Skills and Drills Directory
Version 2.0

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This directory is a register of skill sequences that are specific to the GUE Recreational Diver Level 1 program. This directory should be used in combination with the latest version of the GUE Standard Operating Procedures document (GUE SOP) and latest version of instructor guidelines for this specific course. Visit www.divegue.tv for video references.

Runaway Drysuit Inflation Management

Drysuit orientation session

Value

There is a possibility that the inflation valve can get stuck, creating a constant gas addition to the drysuit and excess buoyancy. Gas leaking into the suit often starts with the inflation valve not responding properly (delayed closing of the valve), allowing the diver to recognize the signs early. In a case of over pressurizing or freezing of the first stage, the effect can be more dynamic and quick action will be needed. A fast reaction can prevent an uncontrolled ascent to the surface. Good awareness, practice, and proper procedures will allow divers to manage excess buoyancy should over-inflation occur, if not prevent it entirely.

NOTE: Disconnecting the drysuit inflation hose may allow some water to leak into the suit, which may be problematic in very cold water.

Skill mastery

GUE standards define that students must meet the minimum standard for a set of skills to be certified to pursue the type of diving for which they sought training. Minimum requirements are listed in the performance requirements section of each course.

What is meant by a minimum standard?

It is a skill mastery level at which the diver maintains confidence while repeatedly performing the skill in a real open water environment, at any depth, while maintaining the required buoyancy/trim requirements and situational awareness of themselves and their team.

Minimum mastery of a skill requires time and practice: sequencing of the procedure, progressive learning, repetition with increasing level of difficulty, and staged challenge.

You should take the time needed to develop proper skill mastery in all students, as it is our responsibility as educators to prepare them to independently plan and execute safe and enjoyable dives.

Prevention

- Clean the drysuit valves after every dive with fresh water; maintain them regularly and do not ignore early signs of malfunction.
- Run the drysuit inflation hose from a separate drysuit inflation system to prevent freezing of the first stages on breathing gas regulators, especially if diving in cold environments.
- Use a proper regulator (with tuned down IP and OPV) with the drysuit inflation system.
- Master proper body positioning while venting the drysuit: left upper arm position, left elbow flexed, extended knees, and, if needed, slight overall negative trim (head up, legs down).
- Don't dive with habitual positive trim (head down, legs up)—stay in neutral trim.
- Dive with the drysuit dump valve open (in an automatic dump position).
- When becoming positively buoyant, re-establish proper buoyancy quickly. Consider which position is most effective in a given situation. Usually, head-up allows for dumping gas from the drysuit and wing at the same time via the inflator; some gas can also escape via the neck seal when in a head-up position.

Problem Management

To manage runaway drysuit inflation if the diver is using back gas as drysuit inflation:

- Position yourself so the gas can vent from the exhaust valve of the drysuit and disconnect the LP drysuit inflation hose. Be ready to deflate your wing if necessary.

- Re-establish stability, buoyancy, and control. Rejoin the team and communicate the problem.
- Try to fix the problem. Reconnect the LP hose cautiously and check for proper function. If the drysuit is self-inflating, disconnect the drysuit LP hose, signal team "valve broken", and safely terminate the dive.

To manage runaway drysuit inflation if the diver is using a separate drysuit inflation system:

1. Position yourself so the gas can vent from the exhaust valve. Be ready to deflate your wing if necessary.
2. Reach down and close the drysuit inflation tank, which is on the left hip.

   NOTE: Recommend students not to dive with this tank fully open, as it is not necessary, and having it only one turn open will shorten the closing of the valve.
3. Re-establish stability, buoyancy, and control. Rejoin the team and communicate the problem.
4. Try to fix the problem. Re-open the drysuit inflation cylinder cautiously and check for proper function. When the drysuit is self-inflating, close the valve, signal team "valve broken", and safely terminate the dive.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Position yourself towards students, expose your chest with drysuit valve, indicate and add gas to the drysuit.
- Manage gas entrapment through the steps described above, depending on the suit inflation method you and your students are using.

Control

- Students should perform this skill one by one, with the instructor on the practicing student's left side (the buoyancy control side).
- Be ready to intervene early and assist if uncontrolled ascent happens.
- Practice in shallow water with no objects on the way to the surface.
- If valves are manipulated, you must ensure they are in open position and functioning properly before continuing the training/dive.

Gas Entrapment & Drysuit Excess Buoyancy Management

Drysuit orientation session

Value

As we are ascending and venting gas from the drysuit, delays or improper body position can cause gas to be trapped in the drysuit feet/boots. In a case of runaway drysuit inflation, there is additional risk of excessive drysuit buoyancy in feet-up position that will not allow the gas to vent, leading to uncontrolled ascent. Good awareness, practice, and proper procedures will allow divers to manage excess buoyancy should it occur, if not prevent it entirely.

Prevention

- Master proper body positioning while venting drysuit: left upper arm position, left elbow flexed, extended knees, and slight overall negative trim (head up, legs down).
- Do not allow for gas accumulation in the drysuit's feet—anticipate and vent gas early.

- Alternate trim while ascending to accommodate efficient venting from wing and drysuit.
- Don't dive with habitual positive trim (head down, legs up)—stay in neutral trim.
- Dive with the drysuit dump valve open (in an automatic dump position).
- When becoming positively buoyant, re-establish proper buoyancy.

Problem Management

To manage (and vent) excess gas trapped in the drysuit's feet/boots:

1. When starting to ascend feet first, swim down using a proper flutter kick and dump/be prepared to dump gas from the wing using the rear dump valve.
2. While swimming, signal team; disconnect the LP drysuit inflation hose (to prevent potential self-inflation/runaway drysuit valve) or close the drysuit inflation cylinder.
3. Having swum down, decidedly raise the torso and the left arm up, to the point when the gas starts to vent from the drysuit dump valve (some gas may escape from the neck seal as well). Lower the legs, extend knees, and maintain negative trim for a while to allow the excess gas to vent from the feet.
4. Re-establish stability, buoyancy, and control. Rejoin the team and communicate the problem.
5. If the LP hose was disconnected (valve closed), connect (reopen) it cautiously and check for proper function. When the drysuit is self-inflating, disconnect the drysuit LP hose (close valve), signal team "valve broken", and safely terminate the dive.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Position yourself towards students, expose your chest with drysuit valve, indicate and add gas to the drysuit. Turn sideways so the students will clearly see your body position while venting gas.
- Assume positive trim (head down, feet up).
- Add just enough gas to the drysuit so that you start to slightly ascend to the surface. For demonstration purposes, the instructor should over-exaggerate positive trim and clearly have excess gas in drysuit feet.
- Manage gas entrapment through the steps described above.

Control

- Students should perform this skill one by one, with the instructor on the practicing student's left side (the buoyancy control side).
- Brief students not to inflate the drysuit too much, but just enough to feel the movement upwards. Remind them not to hold their breath while ascending!
- Be ready to intervene early and assist if uncontrolled ascent happens.
- Practice in shallow water with no objects on the way to the surface.

Runaway Inflator Management (Self-Inflating BC)

Aquatic Session #7

Value

The inflator of the BC can get stuck in a pressed position, resulting in a continuous addition of gas into the wing and creating a risk of uncontrolled ascent to the surface. Usually, it is a result of improper gear maintenance, such as not rinsing it carefully or mechanical failure due to environmental conditions (e.g.,

freezing). The ability to efficiently disconnect the LP inflation hose and re-establish neutral buoyancy is critical to diver safety.

Additional value is the skill of orally adding gas to the BC in the event the LP inflator hose has been disconnected or during an out-of-gas (OOG) ascent, allowing the OOG diver to establish positive buoyancy after reaching the surface.

Prevention

- Proper gear maintenance (rinsing after dive and regular servicing).
- Proper pre-dive gear integrity check where such malfunctions can be easily identified.
- Build awareness of own buoyancy and trim and stay alert to any unintended changes in buoyancy, especially repeatedly becoming positively buoyant without depth change or gear manipulation.

Problem Management

To manage runaway inflator and self-inflating BC (single tank):

- When self-inflating BC has been identified (or suspected), disconnect the LP hose.
- Signal team while venting excess gas from the wing (rear dump valve, as it is faster and will allow you to swim down at the same time).
- If negatively buoyant at that stage, orally inflate the BC until neutrally buoyant.
- Re-establish stability, buoyancy, and control. Rejoin the team and communicate the problem.
- Reconnect the LP inflator hose cautiously and check for proper function. If the BC is still self-inflating, disconnect the LP inflator hose, signal team “inflator broken” and safely terminate the dive.
- Remember to establish positive buoyancy on the surface by oral inflation or ditching weight.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Position yourself facing the students and start the countdown (3-2-1).
- When countdown is over, indicate and add gas to BC until you start to ascend slowly.
- Disconnect LP hose, signal team, and turn your left side toward students so they see your positive trim (head down) while reaching to rear dump valve and venting gas; swim down if needed.
- Turn to face students and demonstrate oral inflation of the BC.
- After establishing natural buoyancy, signal “inflator broken”.
- Indicate “skill over”; reconnect inflator hose and verify proper function.

Control

- Position yourself on the left side of the practicing student, place your hand on the inflator (in a way the student will still be able to operate it), and disconnect the hose.
- Countdown and start to inflate student’s BC in small bursts (do not overinflate).

Inflator operation practice

Before practicing LP inflator hose operation underwater, let students practice on the surface along with orally inflating the wing. It is best to do it with equipment on, as it will teach students how to best position their hands.

Be aware that while attempting to reconnect the hose, students may accidentally press the deflation button on the inflator and lose buoyancy—make them aware and practice optimal hand placement.

Next, practice underwater and give students time to become proficient with establishing neutral buoyancy while orally operating the inflator.

- Be ready to intervene early and assist if uncontrolled ascent happens.
- Don't forget to verify if the inflator hose is properly reconnected after practice.
- Practice in shallow water with no objects above the student.

Cramp Removal (Self or Assisting a Team Member)

Aquatic Session #7

Value

A cramp is a painful involuntary contraction of a muscle or muscles. It is most often caused by overuse of a muscle, dehydration, mineral deficiency, muscle strain, intensity of movement, or simply holding a position for a prolonged period. Divers can experience it both on the surface or underwater, and it mostly happens to the leg (e.g., calves, hamstrings, and feet) due to improper propulsion techniques, wrongly fitted gear, and general muscle strain. Cramps do not pose a risk for divers, but are unpleasant and painful, so learning the techniques to relieve a cramp greatly enhances the self-rescue ability of the diver and increases confidence.

Prevention

Cramps can generally be prevented by:

- Committing to a regular workout program, including swimming (with and without fins) and general fitness conditioning.
- Being well hydrated and ensuring proper balance of minerals by having a balanced diet.
- Using fins of the appropriate size and fit and applying appropriate propulsion techniques.
- Alternating propulsion methods and intensity of kick to avoid straining the same muscle group continuously.

Problem Management

If you are experiencing a cramp:

- Stabilize and signal team "problem" and point to the leg. Team gets ready to assist.
- Turn slightly to one side while trying to maintain trim. If on the surface, ensure positive buoyancy and turn onto your back.
- Stretch the leg out and relax the muscles.
- If cramp persists, grab fin tip and pull it gently to stretch out muscles.
- Look at team members for visual reference.
- Once the cramp has released, signal "OK" and rejoin the team.
- If cramp persists, abort the dive.

To assist a team member in managing a cramp:

- Assist the diver to stabilize them if needed; inform that you are going to help.
- Stretch the affected leg and gently massage the affected muscle.
- If cramp persists, grab fin tip and pull it gently towards the diver's torso to stretch out the muscles.
- Confirm the cramp is relieved and rejoin the remaining team member.
- If cramp persists, abort the dive. After reaching the surface, tow the incapacitated diver to the exit.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Position students in line formation facing the instructor.
- Turn the simulated affected side toward the students.
- Give the distress signal (waving a hand or a light if used) and signal “problem” followed by pointing to the leg.
- Demonstrate the cramp removal technique as per the above steps. Use an assistant or one of the students to demonstrate assisting another diver.

Control

- Ensure students are neutrally buoyant and indicate they should maintain proper breathing while managing the skill; changing body position may influence students’ stability and balance.
- Position yourself on the left side or in front of the practicing student, ready to assist with stability and buoyancy control.
- Allow enough space for the student to maneuver.
- Avoid practicing in and around fragile environments to avoid damage and reduction of visibility.

Free-Flowing Regulator

Aquatic Session #10

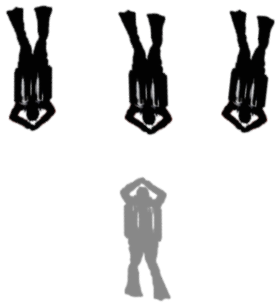
Value

Modern scuba regulators are of a downstream design, meaning the regulator will provide a continuous stream of gas in case of a malfunction, or a “free flow” as it is most widely known. A high-performance regulator can empty a scuba tank fairly quickly due to its high-flow design. Thus, a quick response is required from the diver experiencing a free-flowing regulator. The most common reasons for a regulator free flow are: lack of maintenance, first stage intermediate pressure increase due to a faulty high-pressure seat, icing of the regulator in cold climates, and incorrect settings for the Venturi Effect knob, especially when diving in a current. Learning to effectively manage a free-flowing regulator greatly enhances the self-rescue ability of the diver and increases confidence.

Prevention

Following these tips can greatly reduce the risk of a regulator free flow.

- Follow the regulator manufacturer’s recommendation for the required service interval.
- Avoid purging your regulator on the surface in very cold or icy conditions.
- If diving in a cold or icy climate, use a regulator with anti-icing design properties.
- If diving in high current conditions, reduce (if possible) the Venturi Effect of your second stage.



Line formation

This formation is useful when demonstrating skills for the first time, but it requires relatively good stability and buoyancy control, as it does not allow students to assist each other. You may spend quite some time trying to have students keep a relative distance to each other and to you. Using a line or another stable barrier (edge of a platform, edge in a pool) may be helpful.

You may choose to practice basic skills in this formation and work individually with each student, but utilizing a cross formation is much more effective for both control and stabilization and allows for early introduction of teamwork.

Problem Management

Managing a free-flowing regulator when diving on a single first-stage equipment set up consists of the following steps:

- When the free flow occurs, signal distress to your team members so they are aware of your problem.
- Tilt head to the right so that escaping bubbles do not block your field of view or displace your mask.
- Hold the free-flowing (primary) regulator in place with your right hand.
- Loosen your lips around the regulator so gas can escape easier; breathe cautiously.
- Switch to backup regulator and clip the primary regulator off.
- Inform the team to terminate the dive.
- Be ready to signal OOG and share gas if required.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Position students in line formation facing the instructor.
- Purge backup regulator to ensure its function.
- Indicate tilting the head to the right. You can reinforce tilt by holding up left hand on the left side of your head.
- Press purge button and breath. Signal breathing in and out with left hand and indicate loose lips around regulator mouthpiece.
- Clearly give the distress signal (waving a hand or a light if used).
- Breathe for approximately 20 seconds.
- Signal “switch” and switch to backup regulator.
- Continue distress signal and give OOG signal to initiate S-drill (preferably with an assistant).

Cross (diamond) formation

Beginner divers and/or divers with less stability or an ineffective backwards kick will benefit from practicing in this formation. The students can assist each other with maintaining distance and holding position by extending their arms and using fists to gently push each other into position. You should encourage them to practice backwards kicking on all occasions, emphasizing how practical this positioning technique is. An effective backwards kick is not a performance requirement, but you are strongly encouraged to ask students to use it. With a non-stress approach, they will start to appreciate the value and feel motivated to practice it.

Control

Perform gas check before initiating the drill. You must ensure that the students have enough gas to perform this skill (it is recommended to start with more than 100 bar/1,500 psi in students’ tanks). Practice shallow to reduce gas use and monitor the gas volume.

Let divers perform free flow breathing for approximately 10 seconds, then switch to backup regulator and perform the S-drill, one at a time.

Be aware of the possibility that a student’s regulator will keep free-flowing and potentially create a risk of gas depletion. Be fast to react to signs of uncontrolled gas flow.

Position the team in cross formation and yourself on the right side of the practicing diver. Stay very close and be observant for:

- Any sign of discomfort.
- Not enough head tilt — bubbles might dislodge the student’s mask and cause mask flooding.
- Students not fully pushing down the purge button.

- Students holding regulator in the mouth as in normal operation.
- Loss of buoyancy control due to student holding breath.
- Students not switching to backup regulator or students not giving the distress and/or OOG signal.
- Too slow response from the other divers in the team.

Basic 5

Value

The basic 5 sequence is a stepping stone in diver training, as it breaks down complex skills into easy-to-learn sub-skills that can be practiced and performed by the students prior to executing more complex skills such as the S-drill, SMB deployment, orally inflating BC, managing free-flowing regulator, or, at a later stage, possibly a valve drill. At the same time, it progressively adds complexity to buoyancy control skills and situational awareness, as it shifts the attention of the diver from solely buoyancy control to performing other actions while maintaining depth and position. It is also the first skill set that involves active participation of the whole team underwater (B5 #3).

Basic 5 #1 (Regulator Clearing by Exhalation or Purging)

Aquatic Sessions #3, 4, 5

Value

Basic 5 #1 is designed to teach new divers one of the most elementary skills of scuba diving: clearing a second stage regulator after it has been flooded with water. It also introduces divers to long hose management skills, as it reinforces the habit of manipulating the regulator by holding the hose and not the second stage itself, so it teaches and prepares divers for the more complex skills that will follow.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Team in line position facing the instructor; establish neutral buoyancy, and signal team.
- Emphasize normal breathing pattern.
- Remove regulator by holding it by the hose and point mouthpiece down when regulator is out of mouth.
- Put regulator back into mouth and clear using the exhale method.
- Repeat the skill and clear the regulator with the purge method.

Control and Active Teaching

Position students in cross formation or line formation facing the instructor; establish neutral buoyancy, good trim, and normal breathing pattern.

- Position yourself on the right side of the diver practicing regulator exchange (the diver is on your left side) or facing the student if in line formation.
- Be observant for students holding a deep breath before removing regulator, resulting in unwanted positive buoyancy.
- Have each student do the skill twice, using both methods for purging.

Basic 5 #2 (Regulator Exchange; Switching to Backup Regulator)

Aquatic Sessions #3, 4, 5

Value

Basic 5 #2 is the next step in building a solid skill base that will allow the student to perform more complex skills in the future. Students will practice both handling the regulator by the hose and clipping and unclipping the long hose. This skill also instills the habit of purging and checking a regulator before switching to it (both primary regulator and backup).

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Team in line position facing the instructor; establish neutral buoyancy and signal team.
- Emphasize normal breathing pattern.
- Purge backup regulator to ensure functionality.
- Remove regulator by holding it by the hose and point mouthpiece down when regulator is out of mouth.
- Switch to backup regulator using left hand (clear the regulator by exhaling or purging).
- Clip primary regulator off to right chest D-ring after switching.
- Signal to stabilize; emphasize normal breathing pattern.
- With right hand, unclip primary regulator from right chest D-ring, hold the primary regulator with mouth piece facing down, and purge it to ensure functionality.
- Remove backup regulator with left hand and switch to primary with right hand, clear the regulator with by exhaling or purging.

Control and Active Teaching

- Position students in cross formation or line formation facing the instructor; establish neutral buoyancy, good trim, and normal breathing pattern.
- Position yourself on the right side of the diver practicing regulator exchange (the diver is on your left side) or facing the student if in line formation.
- Be observant for students holding a deep breath before removing regulator, resulting in unwanted positive buoyancy.
- Be ready to assist and give active feedback, correcting any errors and paying attention to the following:
    - Student not purging the backup before starting the switch.
    - Student delaying the switch to the backup regulator and/or focusing on clipping off the regulator (emphasize proper priority of steps).
    - Student not clipping the primary regulator.
- Allow plenty of time for student to repeatedly practice the skill.

Basic 5 #3 (Long Hose Donation/Deployment)

Aquatic Sessions #4, 5; use video of B5 available on divegue.tv for more visual references

Value

Basic 5 #3 is the next step towards a full S-drill and allows the diver to practice the exact procedure of regulator donation and long hose deployment in a low-stress environment since there is no use of the donated regulator. It introduces teamwork and thus challenges the team to focus on their teammates, have stable buoyancy, and hold position.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Position team in line position facing the instructor; establish neutral buoyancy and signal team.
- Emphasize normal breathing pattern.
- Use your assistant or one of the students to hold the donated regulator.
- Donate primary regulator with right hand and switch to backup regulator with left hand.
    - Tuck the head, and with one decisive movement, remove the primary with your right hand and extend it in front of you; look up.
    - With left hand, switch to backup regulator (as taught in B5 #2).
    - Maintain eye contact with the assisting diver.
- If a corded light is used, clear the long hose from the light cord.
- Free (deploy) complete hose length from under the light canister, long hose retainer, or from under the harness waistband. Pull it gently to ensure it is free and fully deployed.
- Stabilize and signal OK; pause.
- Replace long hose under the light canister, long hose retainer, or under the harness waistband.
- If a canister light is used, clear the light cord from the long hose.
- Recover donated regulator by accepting the long hose from the assisting diver who hands it over in the form of a loop (or question mark) and replace long hose behind neck.
- Purge primary regulator and perform a regulator switch.
- Tidy up long hose slack and check light cord integrity if a canister light is used.

Control and Active Teaching

- Position students in cross formation; establish neutral buoyancy, good trim, and normal breathing pattern.
- Position yourself on the right side of the diver practicing the long hose donation (the diver is on your left side); the diver assisting (holding onto the donated regulator) is on your right side.
- Be observant for students holding a deep breath before removing regulator, resulting in unwanted positive buoyancy.
- Be ready to assist and give active feedback, correcting any errors and paying attention to the following:
    - Diver traps the long hose with the left arm by trying to switch to backup regulator too quickly.
    - Diver switches to backup first, before long hose deployment.
    - Diver does not switch to backup regulator and/or holds breath after donating long hose.
    - Confusion with light cord management if canister light is used.

- Failure to fully deploy/free the long hose.
- Not switching back to primary regulator once the skill is over.

Basic 5 #4 (Clearing a Flooded Mask)

Aquatic Sessions #3, 5

Value

Successful completion of the skill not only allows the diver to clear a partially or a fully flooded mask, but it also teaches them airway control, which greatly increases diver confidence and allows them to feel more comfortable in the water. It enhances buoyancy control and team awareness (team can assist with performance of this skill). It should be considered a sub-skill of a full mask removal and replacement and it is important that divers practice this skill several times before moving to full mask removal and replacement.

Prevention

Following the below tips can reduce mask leaks making diving more comfortable.

- Use a well-fitting mask suitable for the shape and characteristics of your face.
- Properly adjust the mask strap.
- Avoid hair or hood material entrapment between face skin and mask.
- Regularly check the mask seal for small cuts or holes.

Problem Management

A partially or fully flooded mask can be cleared by following the steps below.

- Breathe normally; maintain neutral buoyancy and stabilize.
- Look straight ahead with chin up.
- Slightly push the top part of the mask toward your forehead.
- Inhale through your mouth and exhale through the nose. Pay attention to your buoyancy (do not over-inhale) and maintain contact with your team.
- Repeat if mask is not cleared with the first attempt.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Position team in line position facing the instructor; establish neutral buoyancy and signal team.
- Emphasize normal breathing pattern.
- After stabilizing, cautiously fill your mask with water—preferably below eye level. Indicate to students that your mask is partially filled. Demonstrate mask clearing, following the above steps for problem management.
- Demonstrate a completely flooded mask clearing next.

Control and Active Teaching

- Position students in cross formation; establish neutral buoyancy, good trim, and normal breathing pattern.
- Position yourself on the right side of the practicing diver. The diver should be neutrally buoyant when starting the skill and you must react quickly to any buoyancy changes related to over-inhaling. If you

anticipate buoyancy problems, switch position to the left side of the diver to have access to their dump valve/inflator.

- Be ready to assist and give active feedback, correcting any errors and paying attention to the following:
    - Any sign of difficulties in breathing or airway control while the mask is filled.
    - Students holding a deep breath before removing regulator, resulting in unwanted positive buoyancy. React quickly.
- In case of student difficulties, have students repeatedly practice partially filling a mask prior to continuing with the full mask flood. However, a full fill and clearing of the mask must be accomplished before commencing to Basic 5 #5.

Basic 5 #5 (Removing and Replacing a Mask)

Aquatic Session #7

Value

An accidental mask removal is not an uncommon event in diving. Sometimes the diver might, on purpose, remove a mask to correct an ill-adjusted mask strap, to defog the mask, or to switch to their backup mask. Being able to remove and replace the mask is an important safety skill, but it also greatly enhances diver confidence. It is preparing students to no-mask swim, which is part of their training at a later phase.

Prevention

Following the below tips can reduce mask removal incidences.

- Properly adjust and check the mask strap prior to diving.
- De-fog your mask before diving.
- Avoid diving very close to other divers' fins and anticipate their movements.

Problem Management

Follow the steps below to remove and/or replace a mask underwater.

- Breathe normally; maintain neutral buoyancy and stabilize.
- Signal team for attention and assistance; team should go to touch contact if needed for stabilization and to act as a reference for the diver without the mask.
- If you still have your mask (it is not lost), hold it firmly; if it is lost, reach to your right pocket for your backup mask.
- Push away your hood and/or hair.
- Place the mask on the face, move the mask strap into position, and clear the mask. If more practical, clear the mask first and replace the strap after clearing. Repeat if mask is not cleared with the first attempt.
- Verify buoyancy and stability and signal "OK" to team if the procedure is finished.

Demonstration and Practice Sequence

The instructor first demonstrates the skill and thereafter students practice.

- Position team in line position facing the instructor; establish neutral buoyancy and signal team; if you have an assistant, indicate to them to take over students' control.
- Emphasize normal breathing pattern.

- After stabilizing, cautiously fill your mask with water and remove it, holding it firmly.
- Breathe normally; if assistant is there, brief them to give assistance by touch contact and help with stabilization.
- Commence putting the mask back:
    - With the mask strap in front of the glass of the mask, tactilely identify where the nose pocket is.
    - Demonstrate pushing hood and/or hair back, place the mask back, and continue with the steps outlined in problem management.

Control and Active Teaching

- Position students in cross formation; establish neutral buoyancy, good trim, and normal breathing pattern.
- Position yourself on the right side of the practicing diver. The diver should be neutrally buoyant when starting the skill and you must react quickly to any buoyancy changes related to over-inhaling. If you anticipate buoyancy problems, switch position to the left side of the diver to have access to their dump valve/inflator.
- Demonstrate touch contact to the rest of the team; show how to communicate buoyancy changes to assist the diver without a mask.

Basic Compass Navigation (Straight Line and Reciprocal Headings)

Open Water Dive #4

Value

Navigational skills using a compass allows divers to explore dive sites with more awareness of their location, find underwater objects, and navigate back to the exit point while avoiding unnecessary swimming, increasing efficiency and safety. Compass use allows divers to navigate, irrespective of visibility conditions and bottom contour and composition.

Field drill and Field Lecture

Compass navigation does not require an underwater demonstration, but a detailed field lecture and field drill are critical to students' success.

- Explain compass components, placement, and use; mention team awareness and task distribution, distance estimations, and natural navigation.
- Have students practice on land with heads covered in such a way that direct visual contact with the destination waypoint is not possible and they will need to rely on compass navigation.
- Emphasize teamwork, stabilization, and general awareness (direction of swimming, depth, time, team positioning, and gas consumption).

Control and Practice Sequence

- Ensure students have a basic competence with compass use on the surface before using it underwater. Use a straight-line surface swim for practice; emphasize teamwork.
- Position student dive team at a natural underwater reference point (specific underwater feature or object placed on the bottom). Assign navigator and assistant roles (exposure control, distance, and natural navigation).

- Give the student navigator compass bearings and a distance of approximately 20 m/60 ft (written in wetnotes); it is the team's responsibility to calculate/find reciprocal heading.
- Before allowing students to swim off, verify buoyancy and stability, proper team formation, and communication within team.
- Follow the team, ensuring that they are swimming in a generally correct direction. Do not allow the team to swim too far off the starting position. Stop the team, correct the mistake, and re-start the skill if they have gone in the wrong direction.
- Check gas often to ensure there is enough gas for all team members to safely practice the skill as navigators.
- Ensure that the navigator communicates reaching destination and indicates return to the team
- Ensure that the navigator sets the compass for the correct reciprocal course, and assist if the team has significant difficulties.
- Follow the team back to origin.
- Give feedback on navigational precision (comparing end result with reference object). Have students rotate roles so everyone gets a turn as navigator.

Balanced Rig Check

Aquatic Sessions #3, 8

Value

Creating and diving a balanced rig is one of the most important concepts a diver must comprehend, as it is not only a contributing factor in buoyancy management, but a paramount element of safety. It allows for enhanced buoyancy control, increased safety in case of BC loss, increased diver stability, and decreased fatigue by carrying only the necessary weight.

Instructors should strive to ensure that students have a firm understanding of the importance of diving a balanced rig and the foundational concepts of creating one.

The two diametrically opposed situations that the diver must accommodate should be thoroughly explained, along with the implications of diving an unbalanced rig and the importance of making informed choices on the equipment used.

The two situations:

1. Being able to ascend with full tanks and a failed wing.
2. Being able to hold shallow stops at the end of the dive with nearly empty tanks.

Practical Application

During the first scuba diving session, you should perform a preliminary weight check. Wearing full equipment, at the beginning of the dive, perform a rough baseline check for the amount of weight needed.

- Position team in line formation or in semi-circle with students facing the instructor; each diver checks the weight as detailed below, one by one. Do not allow the students to do it all at the same time, as you may need to assist them and maintain control.
- In shallow water (chest high, or at maximum 1.5 m /5 ft) and while breathing through the primary regulator, student should stay upright, lift the corrugated inflator hose, and slowly empty the BC, keeping the vertical position. With the BC empty and while exhaling deeply without moving legs or hands, the diver should be slowly sinking. If not, add weight until they start to sink. If the student sinks quickly and/or before the BC wing is empty, remove weight.

After the dive is finished, bring the team back to the surface (to a confined area with bottom not deeper than 3 m/9 ft) and explain the secondary weight check performed to verify the correct amount of weight needed when the tanks are nearly empty. Ensure gas pressure is at or just above minimum gas; dump gas if

required. Perform the same check as above, but ask students to swim down. Remind them it may be harder to descend, as they are lighter compared to the start of the dive.

Control

- While performing the check, be on the left side or in front of the diver and ready to assist with BC deflation (or inflation and support if the diver is too heavy).
- Add enough weight so the student can comfortably descend. **Do not overweight the student,** as it will create problems with their balance and buoyancy control, potentially create discomfort on the surface, and increase stress.
- Allow the team some time to relax and get into a normal breathing pattern (utilizing mid-lung capacity) while performing both checks (before and after the dive).
- At the end of the dive, together with the students, analyze each student's rig in terms of weight; determine detachable and fixed amounts, explaining the reasoning behind your decisions. Take advantage of the opportunity to explain the possible effects the weights' positions can have on their trim. Try to offer possible alternate solutions to weight placement to increase the teaching value.
- Continue to evaluate the amount of weight carried by the students during all aquatic sessions, since it will most likely change due to the diver having a more relaxed breathing pattern as the course progresses.
- Repeat the balanced rig check at the end of Aquatic Session #8 and perform regular weight checks throughout the course, as increasing capacity, less stress, and more control over their body position and breathing may necessitate adjustment of the weight amount and distribution. Perform a full check if students will modify their equipment (undergarment, wetsuits, adding layers) when switching to an open water environment.
- If a student is too heavy at the end of the dive without carrying any weight, change the equipment to a more suitable balanced set (lighter and/or smaller tank; aluminum, carbon, plastic, and/or small backplates).

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