EQUIPMENT

RAID™

OPEN WATER FREEDIVER + FOUNDATION FREEDIVER

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INTRODUCTION TO THE OPEN WATER FREEDIVER EQUIPMENT COURSE

Welcome to the RAID Open Water Freediver equipment course.

The right gear will greatly enhance your freediving. This manual describes the various kinds of freediving equipment and will help you select and care for it.

MASK

A freediving mask is your window into the world beneath the waves. Your mask should be comfortable, provide good visibility, and have a relatively small internal volume.

In the following sections we'll explore these factors in more detail.

KEY FEATURES

Integrated nose pocket

Having your nose inside the mask enables you to exhale small amounts of air into it as you descend, equalizing the mask as it compresses.

To this end, virtually all freediving masks have a silicone nose pocket as part of their design. This feature keeps your nose in the mask so you can equalize it and allows you to pinch your nose as needed to equalize your ears.

Low volume

A defining feature of most freediving masks is low internal volume. With less space for air inside the mask, less of our precious air store is spent equalizing that space as we go deeper and the air compresses.

For this reason, freediving masks are often quite small - with the added benefits of being streamlined, and of bringing the lenses closer to the eyes for a wider field-of-view.

Lenses

Tinted or non-tinted? A freediving mask should have clear lenses. Mirrored or tinted lenses obscure your eyes, depriving your dive buddy of an important indicator of your well-being.

One or two lenses? Most freediving masks have two lenses. This design allows the mask to fit closer to the face - reducing internal volume.

That said, there are single lens masks with relatively low volume and an excellent field of view. Because there are no issues with aligning two lenses, these masks do not require a rigid frame and are sometimes referred to as 'frameless.

While single lens masks cannot compete with two-lens models for super-low internal volume, they can work well at moderate depths.

Glass or Plastic? Freediving mask lenses are made from either tempered glass - by far the most popular - or polycarbonate plastic.

Advantages of Glass Lenses

Glass lenses are the overwhelming favourite because they and the masks they are in are more durable. Tempered glass does not scratch or break easily, and such lenses are mounted in a rigid frame that will not stretch or leak.

Drawbacks of Glass Lenses

The optical properties of glass require both lenses to be in the same plane to avoid double-vision. Because of this, masks with two glass lenses require a rigid frame.

In some very low volume masks, the top of this frame may press uncomfortably into a diver's brow-ridge - requiring constant equalization to remain tolerable. Glass lenses also have slight magnification underwater, resulting in objects looking a little larger.

Advantages of Polycarbonate (plastic) lenses

Modern Polycarbonate lenses have the same density as water. They do not magnify like glass lenses and do not require a rigid frame to avoid vision problems.

As a result, the mask can flex and compress more as you descend - requiring less equalization before it becomes uncomfortable. Polycarbonate lenses can also be curved for better peripheral vision. For these reasons a few masks with these lenses have a small but dedicated following in the deep freediving community.

Drawbacks of Polycarbonate lenses

Polycarbonate scratches easily, and the flexible frames in these masks can loosen around the lenses over time, resulting in leaks - or even lenses popping out during a dive. Based on the quality of the mask, there may also be slight visual distortion where the lens curves.

Care must be taken when defogging a polycarbonate lens to avoid sand scratching the inside of the lenses (scratches on the outside will vanish underwater as the water fills them in).

Likewise, sand and debris can become lodged in the lens seals and cause leaks. These masks are also much more fragile overall and should always be packed carefully when traveling or transporting your gear.

MASK FOGGING ISSUES

When you buy a mask with a glass lens, unless it says otherwise, you'll need to remove a thin coating of silicone oil that forms during the manufacturing process and will cause your mask to fog. You can do this with a mild abrasive such as toothpaste, or with strong dish soap.

If you are using a mild abrasive or dish soap - rub (without water) firmly on the inside of the lens using a cloth. Repeat a few times.

*(*Cigarette lighters or small torches are sometimes recommended to burn off the silicone deposits. There are obvious drawbacks to heating glass lenses embedded in very melt-able silicone, so this approach is not recommended.)

IMPORTANT: Be advised neither of these techniques is suitable with polycarbonate!!

Once the silicone residue is removed, you'll still need to defog your mask before each dive.

The most common method is to use saliva, but there are a variety of anti-fogging products on the market, some of which may be even more effective (for anti-fog products, follow the manufacturer's instructions if they differ from those below).

1. Spit, or apply anti-fog, on the interior of the lenses before the mask is wet.
2. Gently rub the lens surface to distribute the saliva/anti-fog evenly.

3. Rinse briefly in water.

4. Put the mask on.

If you need to take your mask off repeatedly during a dive, you may have to repeat the above procedure to prevent re-fogging.

Polycarbonate masks sometimes come with an anti-fog coating pre-applied. Be sure and check if this is the case or you may inadvertently remove it.

FLEXIBLE SILICONE SKIRT

The silicone body of a dive mask, which supports the lens frame and forms a seal with your face, is called the 'skirt'.

Finding a mask with a skirt that is comfortable and seals well can be challenging, so it's best to try a few before buying one.

SELECTING A MASK

To check the seal and fit of a dive mask, lightly place it on your face (without using the strap), inhale slightly through your nose to create a little suction, then hold your breath.

The mask should stay on, with no need to inhale more, while you look down, turn your head, and make minor facial movements. If you try hard enough, you'll eventually break the seal, but the mask should tolerate small changes in facial expression - such as opening your mouth or raising your eyebrows.

Colours and Clear Silicone

Masks come in a variety of colours or may be completely transparent. A light-coloured mask is easier to see if you drop it and can help your buddy keep track of you in darker waters. A clear skirt provides more light and helps if dive masks make you feel claustrophobic.

However, both light coloured and transparent masks can cause reflections on the lenses which interfere with vision. This is particularly true of masks made with clear silicone, because sunlight can enter through the sides of the mask and reflect off the lenses. For this reason, many divers prefer an opaque, dark-coloured mask.

WEARING YOUR MASK

A mask that fits well should seal comfortably on your face, without the need to tighten the strap excessively. The mask strap should be worn with the back of the strap resting at the middle of the back of your head - exerting a straight back pull on the mask.

To put the mask on, place it on your face first, then pull the strap up over the top of your head. Once the mask is on you can adjust the tension of the strap using the buckles on either side of the mask body.

Common causes of leaks

Making big facial movements during a dive can break the face seal and cause your mask to leak. The most common times for this to occur are when you take out your snorkel and during equalization. Dedicate some time to practicing these procedures while keeping your face relaxed.

Facial hair can also make your mask leak. Soft, flexible skirts will sometimes form a seal regardless, and very small masks sometimes seal above the hairline. But generally speaking, you'll need to use small amounts of Vaseline or silicone grease to ensure your mask remains watertight. Several dive gear manufacturers market silicone-based products specifically for this issue.

SNORKEL

SAFETY

Simple as they are, snorkels are a brilliant invention. A snorkel lets you relax on the surface while observing the water below you, monitoring your dive buddy, or checking out the bottom before your next dive.

When you're tired, a snorkel enables you to rest and, if need be, swim for shore without the tremendous effort needed to lift your head out of the water. As it enables you to breathe and rest at the same time, a snorkel is a tremendously important piece of safety equipment.

Why Freedivers dive with the snorkel out

Once you've taken a breath and are prepared to begin your dive, remove the snorkel from your mouth. The reason for this is to seal your airway. In the event of a blackout, loss of motor control, or even strong contractions, your lips are the first barrier to water entering your lungs.

For these reasons taking the snorkel out after the final breath before you dive is a critical part of pre-dive surface protocol.

FEATURES

There are many snorkels on the market with purge valves to help them drain and splash guards to help prevent water entering the top of the snorkel in choppy conditions.

Splash Guards

Splash guards are enclosures, extensions, or valves on the top of the snorkel.

Some do help a little with water entry, but they are often quite bulky - producing significant drag as you swim and, since your snorkel is attached to the mask strap, even pulling on your mask enough to make it leak.

It's best to go without the added drag and learn to deal with water entry by being aware when it occurs and adjusting your breathing. With practice this skill becomes instinctive.

Purge valves

Purge valves on snorkels are most often counterproductive. A purge valve is a one way valve on the bottom of the snorkel that in theory allows water that has entered the snorkel to be blown with a forceful exhalation from the bottom of the snorkel; however, the one way valve keeps water from entering the snorkel through this same valve. These snorkels contribute little or nothing to ease of clearing water from the snorkel, and quite often leak. They also create some drag as the snorkel is larger and more rigid than a simple freediving snorkel.

Flexible sections

Snorkels with a flexible corrugated section that allows the mouthpiece to fit at various angles are generally a little more difficult to clear but may be a good option if you have problems with tension or alignment in your jaw.

ATTACHMENT

Snorkels are attached to your mask strap on the left side of your head* using a small clip or silicone snorkel keeper. A snorkel keeper is probably the tiniest item of equipment that can ruin your day if it goes missing or breaks. Best to have an extra one!

**Technically there is no particular reason for your snorkel to be on the left side. The practice began many years ago because single hose scuba regulator mouthpieces attach via a hose over the right shoulder - so scuba divers attach their snorkels on the left side to keep them out of the way. The tradition is now so entrenched that some snorkels are designed with mouthpieces that only work comfortably if the snorkel is worn on the left. Also, as many people scuba as well as free dive, it is good to have consistency across the sports.*

SUMMARY

It's best to keep it simple when it comes to snorkels. A freediving snorkel is curved to fit with minimal drag, has a simple tube for good airflow, and a comfortable silicone mouthpiece. Keep a couple on hand in case you lose one.

FINS

BI-FINS

Bi-fins (two fins) are the primary swimming aid used in recreational freediving. A chief feature of freediving bi-fins is their length, but as you will soon see, that is not the whole story.

Freediving Fins

Snorkeling Fins

Scuba Diving Fins

FIN BLADES

Freediving fin blades are made from three different materials: Polymer (plastic), Fiberglass or Carbon Fiber. In this section we will discuss the advantages and disadvantages of each one:

Polymer

Fins with polymer blades are the least expensive and most durable. While not as efficient as fiberglass or carbon fibre, modern polymer fins have excellent performance.

Fiberglass

Fiberglass fins are a little less durable than polymer, much more efficient, and quite a bit more expensive. A good pair of custom fiberglass fins can approach the performance of carbon fibre, at a significantly lower price.

Fiberglass blades stand up to abuse very well but can be snapped or cracked if enough force is applied.

Carbon Fiber

Carbon Fiber is the state-of-the-art for bi-fin blades. It is a tremendously resilient and flexible material, transforming physical effort into propulsion more efficiently than either polymer or fiberglass. When you see a diver swimming with carbon fibre blades, you'll notice the flexibility and responsiveness of the material gives the fins an almost eel-like rippling motion.

The drawbacks of carbon fibre are that it is very expensive and relatively fragile. This type of fin can be seriously damaged by underwater impacts with rocks, rough boat rides, and any sharp impacts or deep scratches.

FOOT POCKET

Freediving fin foot pockets are made from silicone and fully enclose your feet, without straps or buckles.

Many brands and models of freediving fins come with foot pockets that can be removed from the fin blade. This is helpful for travel, and if you really like your foot pockets and want to upgrade or replace blades.

FIN SOCKS

Fin socks are made from neoprene and help keep your feet warm, ensure a snug fit with the foot pockets, and help prevent chafing. Thickness can vary, from 1mm to 9mm. The most common thickness for recreational freediving in moderate temperatures is 3mm. If you dive in very warm waters and you have foot pockets that are comfortable, you may want to forego socks - but in general it's best to size your fin foot pockets with the idea that you'll be wearing them with socks.

FIN RETAINERS

Fin retainers are rubber straps that go over your foot pockets and around your ankle and heel. They help secure your fins, making it less likely that they'll come off under stress.

MONOFIN

A monofin is a single fin which holds both feet. Used with a specialized dolphin-kick technique, monofins are much more efficient than bi-fins, hence the world records for monofins have always been deeper, or longer than those set with bi-fins.

Developing skill with a monofin requires time and training. They are tremendously fun and efficient, but nowhere near as manoeuvrable as bi-fins. With bi-fins, for example, treading water is easy and natural. In a monofin it becomes very awkward and inefficient.

The best monofins (also known as 'hyperfins') are custom built. The fiberglass or carbon fibre used in the blade is carefully laminated and the foot pockets are built up with reinforced rubber to support the blade and contribute to the efficient transmission of force.

These fins are tuned to the weight and height of the diver and to the type of diving they plan on doing. As with bi-fins, carbon fibre monofins are more efficient, more expensive, and much less durable.

Silicone training monofins, which are used by swimmers to work on the butterfly and dolphin kicks, are not suitable for freediving.

SELECTING A PAIR OF BI-FINS

Blade Angle

Modern freediving bi-fin blades generally have a blade angle of 20-30 degrees measured relative to the flat bottom of the foot pocket. This angle optimizes the transmission of force, makes it easier to swim on the surface, and allows for a more streamlined glide during the free-fall phase of a dive.

Blade Material

For a first set of fins, polymer is a very sound and practical investment. A good set of polymer fin blades will hold up indefinitely, have great performance, and won't break the bank if they get lost with your luggage or ripped off your feet in heavy surf.

Blade length and stiffness

Softer blades, within reason, are more conducive to relaxation, comfort, and the conservation of energy while freediving. A blade that is too hard will be inefficient because of the energy it takes just to make it flex. Likewise, one that is too soft will leave you feeling like you are not getting a good return for your effort.

Body mass can be a useful criterion for fin blade selection, and many manufacturers will provide a body-weight chart to help you determine the blade stiffness that is right for you.

That said, efficient freediving fins can be deceptive. A good pair of fins will propel you through the water with what feels like a small amount of energy expended. If you are unused to them or have poor technique you might think they are too soft.

For these reasons it is best to get some time in with a good pair of durable, comfortable, and inexpensive fins. Once you've developed good technique, you'll have a baseline from which to compare.

FOOT POCKET

Snug enough to stay on through a hard kick, but not so tight that foot pain or circulation becomes an issue. Consider removable foot pockets if you think you'll want to upgrade the blades.

SUMMARY

Modern polymers make excellent performance possible from inexpensive and durable freediving fins. Polymer fins are also less forgiving of poor technique than fins made with exotic materials and will outlast them.

EXPOSURE SUITS

Freedivers usually need to wear some sort of protection against the elements. In hotter climates were staying warm is not an issue, they often wear neutrally buoyant suits made from Lycra and called 'rash guards' - to protect from the sun and jellyfish stings.

In colder climates, a more insulating wetsuit made from neoprene is needed to stay warm. In the pool, and in warmer waters, freedivers often wear thin, smooth wetsuits that are extremely hydrodynamic. A surfing or tri-suit type wetsuit is also fine as long as the temperature isn't too cold.

RECREATIONAL FREEDIVING SUIT

The most common type of recreational freediving wetsuit consists of long pants and a long-sleeved top with an integrated hood. These are made from neoprene and are available in various thicknesses and with a variety of possible interior and exterior linings.

In the following sections we'll discuss the advantages and disadvantages of the various options.

Open Cell on the inside

Most recreational freediving suits have what is called 'open cell' neoprene on the inside. This is neoprene with an unfinished surface and no fabric or other coating. Open cell neoprene has many tiny air pockets along its surface and adheres very well to your skin - providing excellent insulation with very little movement of water within the suit.

Neoprene is easily damaged - so care must be taken to avoid using your fingernails when putting the suit on and taking it off.

Open cell suits require lubricant to put on and remove. The standard for this is diluted hair conditioner, which is applied thoroughly to the interior of the suit. Choose a rapidly biodegradable / organic product to minimize environmental impact.

In warm conditions it is possible to put the suit on in the water without other lubrication. If you do this, just make sure to take it off in the water, or you may damage the suit.

Nylon fabric on the outside

A fabric coating on the outside greatly increases the durability of your suit. It can be grabbed while putting the suit on or taking it off without fear of damage. Fabric exteriors are also much more resistant to tears and damage from brushing up against sharp objects while diving.

Fabric on the exterior comes with a slight drag penalty, but unless you are a competition diver it is unlikely to be noticeable. It also increases the surface area of the suit's exterior and, when wet and exposed to cold air and wind, wicks heat more than smooth neoprene.

Nylon fabric on the inside

Fabric on the inside adds durability to your suit and makes it easier to put on without lube at the expense of being less efficient at keeping you warm.

Interior fabric linings do not adhere to the body like open cell and allow more movement of water within the suit. They can also make the suit very hard to put on if your body and/or the suit is wet.

Smooth skin Neoprene on the outside

This is the most hydrodynamic exterior for a wetsuit. In addition to lower drag, smooth skin does not dissipate heat in air as quickly as a suit with a nylon exterior.

The combination of smooth skin outside / open cell inside is the most thermally and hydrodynamically efficient but is also tremendously fragile - requiring much more care and gentle handling than other suits.

SUMMARY

The most popular wetsuit option for recreational freediving is open cell inside / nylon outside. Suits with this configuration provide the best balance of thermal efficiency and durability.

WEIGHT BELT AND WEIGHTS

WEIGHT BELT

A weight belt is used to counteract the buoyancy of a wetsuit. Freediving weight belts are made from rubber, so they can contract as your wetsuit compresses with depth.

They are stretched tight across the hips in order to avoid interfering with breathing and threaded through lead weights specifically designed for them.

Freediving weight belts have buckles that allow for quick release in the event of an emergency. There are several different designs - all of which qualify as 'quick release'.

The belt should be worn to allow the buckle to be released by the right hand. This is known as a right-hand release. This standard has been adopted for both scuba diving and freediving and prevents possible confusion as to how to release a buddy's belt in an emergency.

How to don a weight belt to ensure right-hand release:

1. Pick up the belt with the buckle in your left hand and the other end in your right hand. This ensures a right-hand release.
2. Holding the belt like a jump rope, step over the weight belt.
3. Bend over and pull the belt up to your lower back.
4. Remain bent over as you fasten the buckle. Do not stand upright until the belt is securely fastened.

FLIP BUCKLE

The most common type of buckle, these are made from either metal or Delrin nylon plastic. The belt is threaded through the buckle/lever, which is then pushed down to grip it. Releasing this type of belt involves just lifting the lever.

Due to the fact that the belt is threaded through the buckle it can get caught - particularly if it is too long. For this reason, it is a good idea to trim your weight belt once you've tried it on with the maximum amount of weight you are ever likely to use. Be sure and leave enough to grip and pull through the buckle

THE MARSEILLAISE BUCKLE

This is a very large version of a normal belt buckle. It has a tongue which inserts into holes in the belt. To release it, grip the free end of the belt and pull it in the direction the tongue points.

These belts usually work well, but with time and wear the rubber around the tongue can become stretched or worn - making it more difficult to get the belt free. The buckle is also secured by rivets going through the rubber - which is a point of wear and potential failure over time.

VELCRO

Weight belts secured with Velcro have the advantage of not threading through a buckle.

They are easily and reliably removed by simply gripping the ring on the end of the belt and pulling it back to separate the Velcro.

LEAD WEIGHTS

Freediving weights are lead weights with two slots, designed to be threaded onto a belt. It is best to use weights that are as small as possible - 1lb/.5 kg being ideal.

Smaller weights enable you to fine tune your buoyancy and will not flare out and cause drag on a rubber weight belt. 2lbs/1kg are the heaviest weights you should consider.

Weights can be either uncoated or coated in a special protective plastic coating which protect the wearer from exposed lead, may be easier to find if dropped, and will not damage surfaces so readily as uncoated weights, for example, in a swimming pool.

Distribute your weights evenly on your belt so your body does not tilt to one side as you rest on the surface. The amount of weight worn depends on the thickness of the wetsuit (the thicker the wetsuit, the more buoyant - hence more weight), the body composition of the freediver and the salinity of the water you are diving in. Saltwater makes you much more buoyant than fresh water.

RAID NOTE: Weighting is discussed in detail in the **Rescue** manual

KNIFE OR LINE CUTTER

Unless you are spearfishing, you may never need a knife or line-cutter - but getting snagged by a single section of strong monofilament fishing line can drown a freediver.

An effective and well-maintained line cutter can save your life.

There are a great many varieties available - ranging from stiletto-style spearfishing knives to utility knives to very small, dedicated, line cutters that can be worn on your wrist. (Avoid Titanium dive knives - Titanium is extremely soft and will lose its edge very quickly - sometimes before it even makes it through what is being cut!)

Whatever design you choose, take it with you on every dive and - most importantly - remember it's there. Practice taking it out of its holder when you are in the water, so the procedure becomes muscle memory.

RAID NOTE: - some line cutters have blades that are not made from stainless steel - keep these coated with a silicone lubricant to prevent rust.

FREEDIVING BUOY AND LINE

Buoy/Float

There are two types of Freediving floats.

One is a fixed buoy used for line diving. These are primarily for training, diving through ice, or diving on a fixed object such as a wreck. For both training and ice, the diver is generally attached to the line with a lanyard.

The line serves both as a safety tool and as a focal point to help the diver stay oriented - it is either secured to the bottom or suspended by a weight to maintain tension. The buoy provides a place to rest, a marker, and a warning to any boat traffic in the area.

The second is commonly referred to as a float. This is a buoy attached directly to the diver. It serves as a warning to boaters and as a way to know where your dive buddy is on the surface in the event you become separated.

A float also provides a place to rest and store spare equipment, spearguns and fish if you are spearfishing. It is an essential piece of safety equipment when diving in low visibility. In the event of an emergency, your dive buddy can follow the line down to you or pull you to the surface.

Selecting a buoy or float

Line diving buoys are generally disc shaped - often nylon sleeves fitted over an innertube. They have an attachment point on the bottom in the centre for the dive line and handles around the periphery for divers to hold onto as they rest on the surface. Many also have a zippered compartment in the centre for small pieces of equipment and/or a first-aid kit. Your buoy should have attachments for a dive flag and be buoyant enough to fully support a diver laying across the top of it.

Freediving Floats come in a variety of shapes and sizes. Some are inflatable, others made with rigid polypropylene plastic. A good float is large and buoyant enough for you to rest on, has a place for a flag, and pulls very easily through the water. It may also provide storage for spare equipment and/or a first-aid kit. Some of these floats have an attachment point on the bottom and can double as line-diving buoys.

FLAG

A diver down flag is a legal requirement in most areas. Divers are required to remain within a certain distance from the flag, and boats to stay a certain distance away. Your flag should be large and tall enough to be clearly visible from a good distance away and above any waves.

Diver Down Flag

Alpha Flag

LINE

On a fixed float you'll want a line at least 0.3 in/8mm thick, or thicker (12mm is the most common thickness). In addition to functioning as a safety and orientation tool, a fixed dive line makes it possible to do free immersion dives* and to work on equalization.

RAID NOTE: Please see the Free Immersion' section of the **Diving in General** manual

For all the reasons above and to avoid the risk of entanglement, a fixed dive line should be as taut as possible.

The most common type of line used on a dive float attached directly to a diver is called a 'float line'. Float lines are generally .5 to 1 cm thick and designed to float on the surface, so they do not get waterlogged, sink, snag objects on the bottom, or produce excessive drag. A thicker float line is also much less likely to get tangled with itself.

BOTTOM WEIGHT

If your fixed float is not attached to an anchor or other object on the bottom, the line needs to be held taut by a weight heavy enough that a diver can pull him or herself down without lifting it. It's important to remember that a line attached to a large or heavy object on the bottom cannot be used to pull up an unconscious diver.

LANYARD

A lanyard is a short cable used during line diving that attaches the freediver to the dive line. It ensures the diver does not end up too far away from the line and, in the extremely rare occurrence of a deep water blackout, makes it possible to pull the diver to the surface by pulling up the dive line.

The position of the lanyard on the diver varies depending on the discipline.

Well-designed lanyards are readily available and reasonably priced. Before buying one be sure it has a quick release feature, so it can be removed easily in case of entanglement.

DIVE COMPUTER

Freediving computers come with a variety of features and capabilities. They range from a very basic 'watch' type design dedicated to freediving, to highly sophisticated scuba computers with freediving functions built in.

With that in mind we'll discuss the basic features that make a good freediving computer, and which ones are most important.

SURFACE INTERVAL

A good stay on the surface allows you to recover from the last dive, and to relax fully for the next. It also mitigates the risk of DCS if you are doing many repetitive dives or diving deep. Having a way to track your surface time is the most important single function of a dive computer.

DIVE TIME

Dive time is the basis for calculating how long you need to rest on the surface. It's also great to know how long you were down. Check your dive time after your surface recovery. Focusing on dive time during the dive can distract you from the environment and encourage you to dangerously extend your dive.

DEPTH

Understanding the changes in how your body feels at different depths helps you to become acclimated, and to remain relaxed through those changes.

ACTUAL TIME

It's easy to lose track of time when you're freediving. You don't want to get caught out in the dark or get too cold. Knowing the time can also help you anticipate tides.

WATER TEMPERATURE

Knowing the water temperature over time can help you determine the temperature range of your wetsuit and observe the effect temperature has on your breath holds and overall endurance. Observing changes in the water temperature can also help you understanded how wind, weather and time of day affect the water in the area where you are diving.

SAMPLING RATE

The sample rate is how often the computer takes a depth reading. Because freediving involves rapid changes in depth, this should be at least once every second.

NUMBER OF DIVES

As well as being fun information to have, you can recognise how much diving you have done in a session.

A word about alarms on dive computers

On most freediving computers audible alarms can be set for depth, dive time, and surface time. Unfortunately alarms on dive computers are extremely quiet and, unless you put

the computer inside the hood of your wetsuit, you're likely to miss them.

In very warm waters when no hood is needed, they are still easy to miss if you are focused on equalizing, body alignment and the sensations of descent. The reliable use of dive computer alarms requires that you train yourself to listen for them without losing focus on all the other aspects of your dive.

CARING FOR EQUIPMENT

- Be sure to rinse your dive equipment in fresh water after use.
- Avoid leaving it in the sun and store it in a dry place to help prevent mold and bacteria.
- Fins should be stored horizontally and flat, and not vertically resting on the blade which will cause them to bend.
- Ideally wetsuits should be hung and not folded.
- All gear should ideally be stored in a well-ventilated area.

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