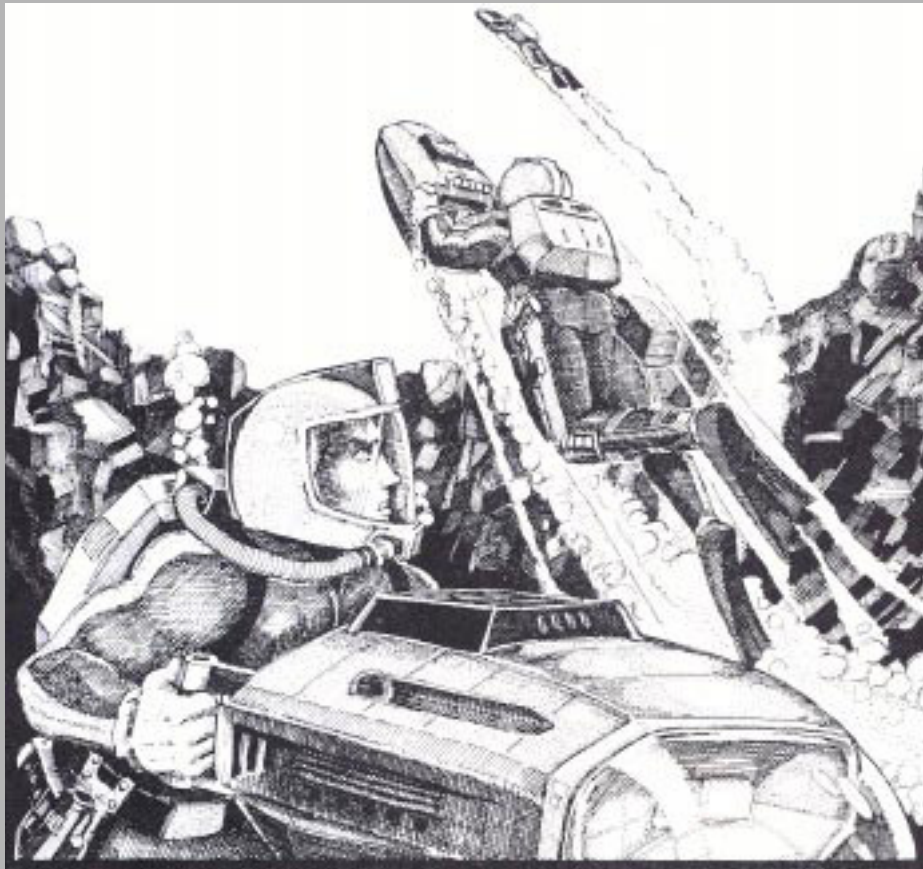


# Going for a swim?



## *Underwater action in STAR FRONTIERS<sup>®</sup> gaming*

by William Tracy

During the course of a STAR FRONTIERS<sup>®</sup> campaign, a group of adventurers might want or need to enter an underwater environment. Unfortunately, the rule books contain no rules for underwater play. This article attempts to rectify that situation, and some additional equipment usable in undersea environments is also presented.

Using these rules, adventures could be created in which characters must reach an underwater city covered by a pressurized dome, escape from a damaged submarine, or swim in search of a sunken ship or

crashed spacecraft. They might also encounter a sentient race that lives underwater, and they could trade, fight, or otherwise interact with that race.

### Artificial gill suits

To survive underwater for long periods, characters must employ a breathing apparatus known as an artificial gill suit (AGS), which covers the wearer's entire body. It is made of a material that is similar to that used in skeinsuits, and it may be left transparent or colored as the manufacturer desires. Normal goggles may be worn by Humans, Vrusk, and Yazirian divers. The AGS will absorb one-fourth of all damage caused by projectile and gyrojet weapons,

fragmentation grenades, explosives, and melee weapons. It cannot be worn with any other suit of armor, but a screen may be used with it. When the AGS has taken 35 points of damage, it will be ruined and useless as armor.

The AGS for Humans, Yazirians, and Vrusks conforms to their basic physical shape. The AGS for Dralasites will stretch to accommodate their shape-changing abilities. A Yazirian AGS covers the glide-wing membranes without hampering their use in swimming (see below).

Much of the exterior of the AGS is covered by a series of microfilters, all made of tough, translucent plastic. These microfilters draw oxygen from the water, pumping the gas mixture through small tubes to the area of the body where the wearer inhales air. The waste gases produced are released directly from the suit. The whole system is regulated by a computer chip and powered by a small energy cell good for five hours before it needs to be recharged.

The AGS also has a small digital display which can easily be seen by the wearer. The display shows the diver's depth, time in the water, and the amount of power left in the suit's energy cell. The suit also has a built-in low-frequency radio system, which has a range of one kilometer.

The AGS weighs five kilograms and costs 800 Credits. The suit can be safely used at a maximum depth of 110 meters on Earth-like planets. If a deeper dive is attempted, there is a cumulative 5% chance per 10 meters below the safe limit that the AGS will malfunction. This chance must be rolled for every five minutes, with an additional 1% chance of failure added for every additional five-minute period spent beyond the first.

The wearer will also take one point of damage for every 10 meters he dives past the maximum safe depth. This damage will be taken every minute and is caused by increased pressure. Dralasites will not start taking pressure damage until they reach a depth of 160 meters, due to their elastic abilities.

There is also a 10% cumulative chance per 10 meters of depth beyond the maximum safe limit, checked for every 10 minutes, that a Human or Yazirian character will have vivid hallucinations for five minutes as a result of nitrogen narcosis. A check against the character's Logic score lets him disbelieve the hallucinations.

If the AGS malfunctions, the character wearing it must hold his breath until he can reach the water's surface. A character can hold his breath for a number of turns equal to the character's Stamina score divided by five. If the character is still underwater after running out of breath, the character will take 2d10 damage for every turn spent under water until death occurs from drowning.

If a character dives deeper than 10

meters, the character must ascend slowly (at a rate of five meters per turn) or risk getting a case of the bends. Rends are caused by nitrogen bubbles forming in the bloodstream, due to the quick change in pressure. This can cause intense pain, doing one point of damage per round until the character is placed in a freeze field or a decompression chamber to stop the loss of Stamina points. The damage from decompression will never exceed 40 points, though death can still occur as a result of it. Note that there is a chance of dying as a result of the bends, independent of the amount of damage taken, as per the table below. Dralasites do not get the bends.

### Chances for contracting the bends

Rate of ascent	Chance to get bends	Chance of death
6 m/turn	10%	8%
7 m/turn	40%	16%
8 m/turn	60%	24%
9 m/turn	80%	32%
10+ m/turn	100%	40%

If death is indicated, it will occur in 10 minutes. During these 10 minutes, the character will lose one-tenth of his current hit point value (rounded up) every minute. This procedure can be stopped by a freeze field or a decompression chamber.

A character must stay in a decompression chamber for a number of minutes equal to the lowest depth in meters that the character reached. If a character dives below 60 meters, even if he did not contract the bends, he must spend some time in a decompression chamber. If the character does not do this, he will get a case of the bends, like that described above, within 1d5 hours.

Dralasite characters will never contract the bends due to their unique physiology. If characters need to dive deeper than their limits, they will have to use a submarine or an AGS designed for greater depths.

### Movement

Characters can swim at a rate of 10 meters per turn (or one kilometer per hour). If a character swims longer than one hour, he will lose five Stamina points for every 30 minutes he continues swimming. These movement rates can be affected by obstacles such as seaweed or coral (or alien equivalents thereof).

If a character swims through seaweed, he must move at a rate of four meters per turn. If a character tries to move faster than that, he may become entangled (a cumulative 10% per every turn of movement). This should be checked for every third turn. The character will be entangled for 1d10 turns (1d5 if the character

has a sharp instrument with which to free himself).

If a character swims through areas containing coral reefs, he must swim at a reduced rate of five meters per turn. Faster speeds allow for a 10% chance per turn traveled that the character will be cut by the sharp edges of the coral, causing 1d10 damage (half of which can be absorbed by an AGS suit).

Another factor that might affect movement is the presence of underwater currents. Such currents usually have speeds ranging from 1-12 meters per turn, but they can only be found at a depth of 60 meters or less. Characters may enter a current on purpose to increase their

speed. To get out of a current, a character must roll his Strength (minus 2% per meter/turn of speed the current has) or less on percentile dice. The character can attempt to leave the current once every five minutes. After a number of attempts equal to the character's Stamina score divided by five and rounded down, the character must rest 30 minutes before making any more attempts to escape the current.

The characters' movement rates might also be increased with special equipment, such as jet scooters, jet fins, and submarines. A jet scooter is a streamlined cylinder made of light alloys, one meter in width and two meters long. It has a built in jet turbine which enables it to go 20 meters per turn. The character lies on top of the scooter and steers it with a steering rod, which controls small fins on the sides of the scooter. The scooter weighs five kilograms and costs 300 Credits. It is powered by a small rechargeable energy cell, which can power the scooter for five consecutive hours.

Jet fins work on the same principle as the scooter. Jet fins enable a character to move at a rate of 13 meters per turn without requiring rest breaks every hour. A pair of fins weigh .5 kilograms and cost 50 Credits. They are powered by two small, rechargeable energy cells good for two hours of use.

A submarine can also be used by the characters, but it can only be operated by a Technician with a skill level of five or better. This article will describe the most common type of submarine, which can be bought or rented by non-military charac-

ters. If the characters want larger or armed submarines, they must either be working with the government or willing to acquire one illegally. A typical explorer submarine costs 20,000 Credits, but usually rents for 100 Credits, plus a 250-Credit deposit, per day. The submarine has a top speed of 250 kilometers per hour, with an average cruising speed of 20 kilometers per hour. Six passengers may be accommodated aboard it, though in VERY cramped comfort. The sub carries four in relative comfort. The cargo limit is 1000 kilograms, within a space of two cubic meters.

This submarine is powered by a parattery (type II) which has to be recharged every 200 hours of use. The submarine's movement rates are not affected by coral reefs or seaweed, though visibility is affected.

This type of submarine can be used to a maximum depth of 200 meters. If it is used at greater depths, there is a cumulative 10% chance per 10 meters below the maximum depth that the submarine will spring a leak. This chance should be checked for every five minutes spent below the maximum depth. If a leak occurs, a person with Technical skills can repair it, but first the submarine must move to the surface. If the leak is not fixed, the submarine fills with water in 10 minutes. The submarine contains six AGS suits in case of emergencies, but donning one in a cramped, sinking submarine can be tricky.

Structural damage of 100 points or more to one area will cause a leak in the sub, which has a total of 400 structural points. If a submarine is involved in undersea combat, a referee might want to create a modified form of the Vehicle Damage Table, found on page 32 of the Expanded Game Rules book, which would cover the sub's specific shape and details.

### Character effects

The characters will be entering a new type of environment beneath the sea, and will be affected by it mentally and physically. First of all, a character's ability scores change while underwater. A character's Dexterity and Reaction Speed scores are reduced by 25 points; also, a character's Strength score is reduced by 35 points when figuring the effects of melee on the Punching Table (page 25, Expanded Games Rules). A minimum score of 10 applies in all cases.

The STAR FRONTIERS races are each affected differently by the underwater environment. Dralasites do not care for adventuring undersea, because the AGS does not let them use their senses of touch and smell. They are not greatly affected by increases in pressure (and never get the bends). Humans are not bothered by the new environment, but Vrussks are very

nervous underwater. Vrusks swim awkwardly and, when dealing with underwater races, a Vrusk's chance to comprehend social dealings is halved. Yazirians are uneasy at first, but they come to enjoy swimming because it is somewhat like gliding. Their glider membranes grant them great maneuverability while underwater. This will be discussed later.

A character's skills and their results are also affected while underwater. The effects on Weapon skills is discussed later. The Demolitions skills work as long as the timers used are built to work underwater. Blast radii are doubled due to the increased powers of shock waves underwater. The Martial Arts skill will work underwater with a 30% reduction on the success rate. Technician skills work if the equipment and tools are designed to work underwater. Environmental skills work normally underwater if they apply to the situation. There will be a 20% reduction on their success rates while underwater. None of the Medical skills work underwater, except for Diagnosis which has a 30% reduction on the success rate. All Psycho-Social skills work when applicable, with a 30% reduction on success rates due to communications problems.

## Underwater combat

While underwater, characters will have to deal with various modifications to the combat system. The Ranged Weapon Combat Procedure Table, on page 22 of the Expanded Game Rules book, should have the following additions and modifications when combat occurs underwater.

Swimming target	-5
Dodging target	-8
Dodging Yazirian target	-10
Target using jet fins	-3
Target riding jet scooter	-6
Attacker using jet fins	-2
Attacker riding jet scooter	-5

Sighting distance is also modified while underwater. The AGS is designed to enhance the wearer's vision so that it is not distorted. Even so, a character's vision will not be as good as when on the surface. Visual range can also be affected by the amount of sediment and plankton in the area, the amount of light shining on the surface of the water, the depth, and passing schools of fish or other lifeforms.

It can be assumed that within 10 meters of the surface, a character will have a maximum visual range of 40 meters, if the view is not obstructed and if it is daylight. If it is at night, the character will only be able to see one meter away at best. The referee should use this as a basic foundation when trying to decide a character's visual range underwater. The final visual range is left up to the referee.

For 50 Credits, a wide-beam underwater

flashlight can be found. The flashlight will be attached to the AGS, around the character's chest. The flashlight's energy cell can go for 100 hours before needing a recharge. The flashlight enables the character to always have a minimum visual range of two meters, except in extremely murky water. It illuminates a cone-shaped area, ranging from .5-2 meters at the widest part of the cone.

When fighting underwater, characters must use modified versions of the ranged weapons they usually use. These weapons cost 50 Credits extra for underwater modification. Such weapons act normally above water unless otherwise noted. Laser weapons are not used underwater, as they are too inefficient.

Underwater versions of gyrojet weapons are available. When used underwater, they have the following alterations made in ranges (the rest of the statistics are normal when used underwater).

Weapon	PB	Short	Med.	Long	Extr.
Gyrojet pistol	—	0-3	4-30	31-60	61-90
Gyrojet rifle	—	0-3	4-50	51-90	91-130

Sonic disruptors and sonic stunners are both produced in versions that can be used underwater. These weapons have double normal ranges undersea, because of the effects of the denser medium through which the sound waves pass. The damage for the sonic disruptors is doubled accordingly.

Modified versions of grenades can be used underwater. They can't actually be thrown, but they may be dropped on characters that are at a greater depth than the attacker. Unless surprised, the victim may be able to get out of the grenade's blast radius. The grenades will drop at a rate of six meters per turn. Grenades can also be delivered with grenade rifles modified to work underwater. Such weapons have the following ranges when used underwater: PB — Nil, Short — 0-15, Medium — 16-30, Long — 31-55, Extreme — 56-100. Underwater grenades will not work in air, but the grenade rifle can fire the regular type of grenades when used on land.

Underwater versions of the poison grenade and the doze grenade can be found, but they only have a blast radius of one meter. They release a colorless liquid into the water, which enters the micro-filters of an AGS and then affect the wearer as per normal. For 50 Credits, special filters can be attached to an AGS which will keep poisons from getting to its wearer.

Underwater versions of tangle grenades and smoke grenades can also be found. They work like the regular ones, but they only have a one-meter blast radius. The smoke cloud produced by the

smoke grenade has only a 15-meter blast radius, clouding the water, and it could be broken up by underwater currents.

The underwater version of the fragmentation grenade works just like the regular version, except that it only has a three-meter blast radius.

Finally, underwater characters may make use of a new projectile weapon: the spear gun, which uses compressed air to shoot a heavy arrow. A compressed-air clip can fire four arrows before becoming empty. The spear can be fitted with a special head that explodes upon impact like a grenade. A regular spear does 1d10 damage, while a spear with an exploring head does 2d10 damage. The spear gun has the following ranges: PB — 0-5, Short — 6-10, Medium — 11-20, Long — 21-30, Extreme — 31-40. A cost and weight table follows:

Device	Cost (Cr.)	Weight(Kg)
Spear gun	100	4
Spear/arrow	5	1 (for 5 spears)
Compressed air clip	10	1 (for 3 clips)
Exploding warhead	30	1 (for 3 spears with heads)

Melee combat is also greatly affected while underwater. Characters cause no damage with punches, and a character's punching score should not be added to the damage caused by non-powered weapons while underwater. Only sharp melee weapons are useful underwater: short axes, knives, stabbing polearms (spears), sonic knives, sonic swords, short stabbing swords, and vibro-knives. A person using a sonic weapon underwater will not be able to surprise an opponent. The damage done by these weapons is reduced by half because of the friction of the water. These modified versions of melee weapons cost 30 Credits extra and function normally above water. Electrical weapons are not produced for underwater use because water is such a good conductor for electricity. Modified power screens that work above and below water cost 100 Credits extra for the water-proofing.

Final notes: Any combat which draws blood might also draw any nearby predators in the area (like sharks or beings with similar temperaments and appetites). While refereeing underwater combat, a referee should take into account the different altitudes of the combatants; those attacking from above gain a +5 bonus. A referee might wish to use the rules for weightless combat (page 26 of the Expanded Game Rules book) when conducting underwater combat, if high-recoil weapons are used without bracing.

## Underwater equipment

When going underwater, characters can take a variety of equipment modified to

work in that environment. A water-proofed compass can be found for 20 Credits. A special underwater flashlight, which works like the one attached to the AGS, can be bought for 10 Credits. An underwater version of the toxyrad gauge costs 25 Credits; its functions are slightly different from the regular type, and it will not work above water. If the red light shines, it means that there is a chemical in the area that can affect the character through his AGS, but the special filters mentioned earlier can filter them out before they reach the character. A flashing blue light indicates that there is dangerous radiation nearby. A flashing yellow light indicates that there is a chemical in the area that is so powerful that even the special filters mentioned above can not filter them out.

An underwater version of the exoskeleton can be found for 2500 Credits; this version also works above water. While wearing the exoskeleton, a character is able to swim 20 meters per turn without having to rest. While underwater, the character has a +10 bonus to hit in melee, and does five additional points of damage. The exoskeleton is designed to be worn outside the AGS without hampering any of the suit's functions.

Because of the heat-absorbing properties of water, an AGS cannot have built-in

infrared vision capability. Freeze fields cannot work underwater, either.

An underwater radiophone can be bought for 550 Credits, and will work regularly above water. It only has a range of 50 kilometers underwater, and is connected to the communications system of the user's AGS.

Underwater Solva-Way comes in small plastic bulbs which must be crushed by the entangled victim. It then spreads out and dissolve the threads, remaining potent for one turn. A bulb of underwater Solva-Way costs 15 Credits, and it will not work above water.

Regular Tornadium D-19 works underwater, but special waterproofed Variable/Timer Detonators must be used. They cost 7 Credits each and work above water, too.

Finally, special power backpacks (300 Credits) and powerclips (150 Credits) can be bought that work underwater

### Final notes

This article assumes that the area where the characters are diving has a fairly comfortable climate. If the characters dive in water with extremes in temperature, an AGS can be bought with a heating/cooling system. This modification costs 100 Credits extra and adds two kilograms of weight to the AGS. This system is powered

by a small energy cell which works for four hours before needing a recharge. The system protects the character in water with temperatures ranging from -35—C to 70—C.

Special AGSs may be created if the characters are going to dive in waters which contain dangerous chemicals or poison. These AGS must be tailor-made for the body of water in which the characters are going to dive. Such suits cost and average of 1000 Credits.

The modified weapons and equipment mentioned earlier have a tendency to malfunction due to powerful pressure from deep dives, as do AGSs. Weapons and equipment must be further modified if taken into water containing powerful chemicals; this modification will cost a further 50 Credits.

The natural gravity of a planet will also effect the pressure at deeper depths. For every tenth of a gravity less than one, the AGS is able to dive 10 meters deeper before a chance for malfunction occurs. The opposite is true if the gravity is greater than one. This rule applies to the weapons and equipment, too.

This article may be used as the basic foundation for running an adventure underwater. It should not be considered a strict set of rules. The final judgements are up to the individual referee.



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