

Jamaica Scuba Diving Club

EQUIPMENT CARE AND MAINTENANCE

How would you like it if your B.C. was punctured by sand trapped in the bag, or your regulator had salt and sand in the mouthpiece and on all the joints after you had loaned it to a friend? You would be justifiably mad and would probably stop lending him anything else. So too with club equipment. The care you take with the equipment will determine whether it will fail when you or someone else uses it next and whether it will last six months or six years. The following are some hints on equipment care, for your own personal equipment as well as club equipment.

TRANSPORTATION OF EQUIPMENT

When you are transporting equipment you need to take great care that the regulators and B.C.'s are not crushed or squeezed by heavy objects. Do not use a B.C. to cushion tanks or to stop them from rattling - that is a sure way of puncturing the bladder. Do not allow gauges to get underneath tanks since they can easily be damaged. A cracked high pressure gauge or a hose with a small nick in it can have disastrous consequences when pressurized.

GENERAL

The best way to wash scuba equipment is to soak it in fresh water and agitate it for 5 minutes. A longer soak may be necessary if salt water has been allowed to dry on it and therefore needs to be re-dissolved. Rinsing with a hose needs to be done very diligently if it is to achieve results as good. Fresh water is necessary; salt water, chlorine and chemicals used in swimming pools will affect rubber and some plastic parts, aid corrosion of metal parts and quickly break down lubricants used in regulators. If you rinse in brackish water on site you should wash or re-soak in fresh water afterwards. All equipment should be dried thoroughly, as once it is packed away drying is unlikely to continue, causing corrosion and bacterial growth. When dry, equipment should be stored out of direct sunlight in a cool, dry, well ventilated area to prevent mildew and corrosion.

MASKS, FINS, KNIVES, COMPASSES, BACKPACKS & WEIGHTBELTS

These should be rinsed after every use and dried thoroughly. Masks should obviously be kept far away from heavy items that could break the glass. Check the mask and the fin-heel straps for perishing rubber when tightly bent. Knives should be kept sharp and lightly greased to prevent corrosion (Vaseline works well). Compasses should be stored away from steel/iron and strong magnetic fields. The bolts on the metal backpacks are subject to corrosion, and accumulated salt can fray the belts eventually.

NEOPRENE BOOTIES & WETSUITS

Both need to be thoroughly rinsed and dried promptly after each use. If odours develop rinse in a dilute solution of baking soda and water. Wetsuits should be set out to dry in a way that does not stretch or stress the material e.g. they can be draped over the back of a patio chair. They should be stored on a padded hanger so that they do not get permanent creases, as this weakens the material. After a few months some of the threads may start to unravel. They should be immediately tied off to prevent further unraveling and weakening of the seams. Some darning with dacron thread or gluing over the seam may be necessary. Lubricate zips with beeswax, not

silicone spray. Avoid contact with hydrocarbons/solvents which will rapidly attack neoprene.

BUOYANCY COMPENSATORS (B.C.s & A.B.L.J.s)

Most B.C.'s consist of an inner plastic bag (bladder) covered with an outer shell. Any salt water remaining on or inside the bladder will form salt crystals. The sharp edges of these and of any grains of sand will cut the bladder when it is flexed, and especially if it is pinched or pressed between heavy or sharp objects. It is therefore very important to thoroughly wash the outside and the inside of the B.C. before the salt can crystallize. The inside can be rinsed by introducing water through the oral inflator or by unscrewing the inflator hose at the shoulder connection taking care not to put any strain on the bladder itself. The water inside should be swilled around until all the area inside the bladder has been cleaned.

B.C.'s should be stored partially inflated to prevent creases in the bladder and should be as dry as possible inside. You will find it convenient to hang the B.C. for half an hour fully inflated with the bladder hose/shoulder area at the lowest point to allow all the water to slowly collect so that it can be flushed out. With the slim-line jacket B.C.'s, with baffles inside the bladder, it can take up to an hour for all the water to drain out of the baffles. Periodically operate the zip and lubricate with silicone or beeswax, especially the end that clips together. Periodically unscrew the CO₂ cartridge to ensure that it has not been punctured or rusted, that the pin is working freely and that it is not corroded into the detonator assembly.

Please clip all the straps back into their correct rings after you have used the B.C. as this makes it easier to transport and to store it.

REGULATORS & GAUGES

The ideal method is to rinse these thoroughly while still connected to the tank and under pressure, so that water cannot enter the system. The next choice is to soak and agitate them in fresh water for a few minutes, but you **must** make sure that the "dust cap" on the first stage is securely fastened and has an O-ring inside. Its main function is keeping out water rather than dust. Water (fresh or salt) in the first stage is particularly harmful. Taking care not to blow any drops of water through the wire-like (sinter) filter in the first stage, dry off the inside of the dust cap with a blast of air as soon as you disconnect it from the tank. **Do not** press the purge button when the system is not under pressure and there is any chance of water getting through the (now open) second stage valve and into the hoses and first stage. Ensure that the holes or slits in the first stage body which are open to seawater are thoroughly rinsed out with fresh water. When laying out the regulator to dry, place the first stage higher than the other parts of the reg. Do not allow the hose to be bent tightly or hang awkwardly since this will cause them to leak and to break at that point eventually. Hose protectors should always be used to prevent strain at the first stage.

Rinse behind the pressure gauge by bending the rubber housing slightly away from the gauge itself, and the swivel joint between the hose and the gauge. This is where leaks occur most frequently since the accumulated salt and corrosion scratch and roughen the O-ring seals inside.

Before and after a dive inspect the sinter filter on the first stage to see whether there is either an accumulation of rust (which would indicate a problem in a tank that has been used on that regulator) or any white or green discolouration (which would indicate some water has probably gotten into the regulator in the past and that it requires servicing). Regulators should be serviced each year and the seals and O-rings changed.

TANKS

Never store tanks in direct sunlight or in locked cars in the sun since this greatly increases the risk of over pressurization rupturing the burst disk or the tank itself.

Always leave a few hundred PSI /BAR in your tank to prevent water (fresh or salt) being sucked into it. Never open a tank long enough to cause condensation on the pillar valve; this will also cause some condensation inside the tank. Do not over-tighten cylinder valves, finger tight is enough. It is important to rinse the pillar valve handle, the burst valve assembly and underneath the boot of the tank to prevent corrosion. After rinsing the pillar valve open the valve briefly to flush out the few drops of water remaining in the small hole. If not, these are likely to be pumped back into the tank when it is next filled. If you detect any solid particles or liquid inside a tank, inform the E.O. and take that tank out of service. Tanks should be hydro tested every four years and every year they should be visually inspected and the valve serviced.

Tanks should be taken to Norman's for filling as soon as possible after a dive/training. After being filled, the same tank you were issued must be signed out at Norman's for return to the club, not for use, and the following information recorded: date, member's name (legible signatures please), tank number or "P" if a private tank, and the pressure should be checked. All of this information is important, both for billing and for the E.O. to keep track of which tanks are being used or are missing. Tanks should be returned to the club filled on the following Thursday. If the diver cannot return them that day he should arrange for someone else to return them. You are responsible for returning the same tank you were issued to the club, filled.

EQUIPMENT MALFUNCTIONS & REPAIRS

It is very important to note any malfunction or possible damage to the E.O. promptly. Note the number of the item and the nature of the problem on the Dive Details Form; report the problem when the equipment is returned - it should be noted on the Requisition Form and, if possible, described to the E.O. personally. If the defect is serious or deceptive the equipment should not be placed where it can be used inadvertently by someone else but should be given directly to the E.O. **Do not** attempt any repairs yourself. You need specialized tools, access to the manufacturer's repair manuals, and a supply of seals and O-rings that have to be replaced whenever equipment is serviced. The E.O. is the only person authorized to carry out repairs. He can also advise you on what type of repairs are necessary for your private equipment and may have relevant parts in stock.