

THE PARA-SEA BUOYANCY COMPENSATOR

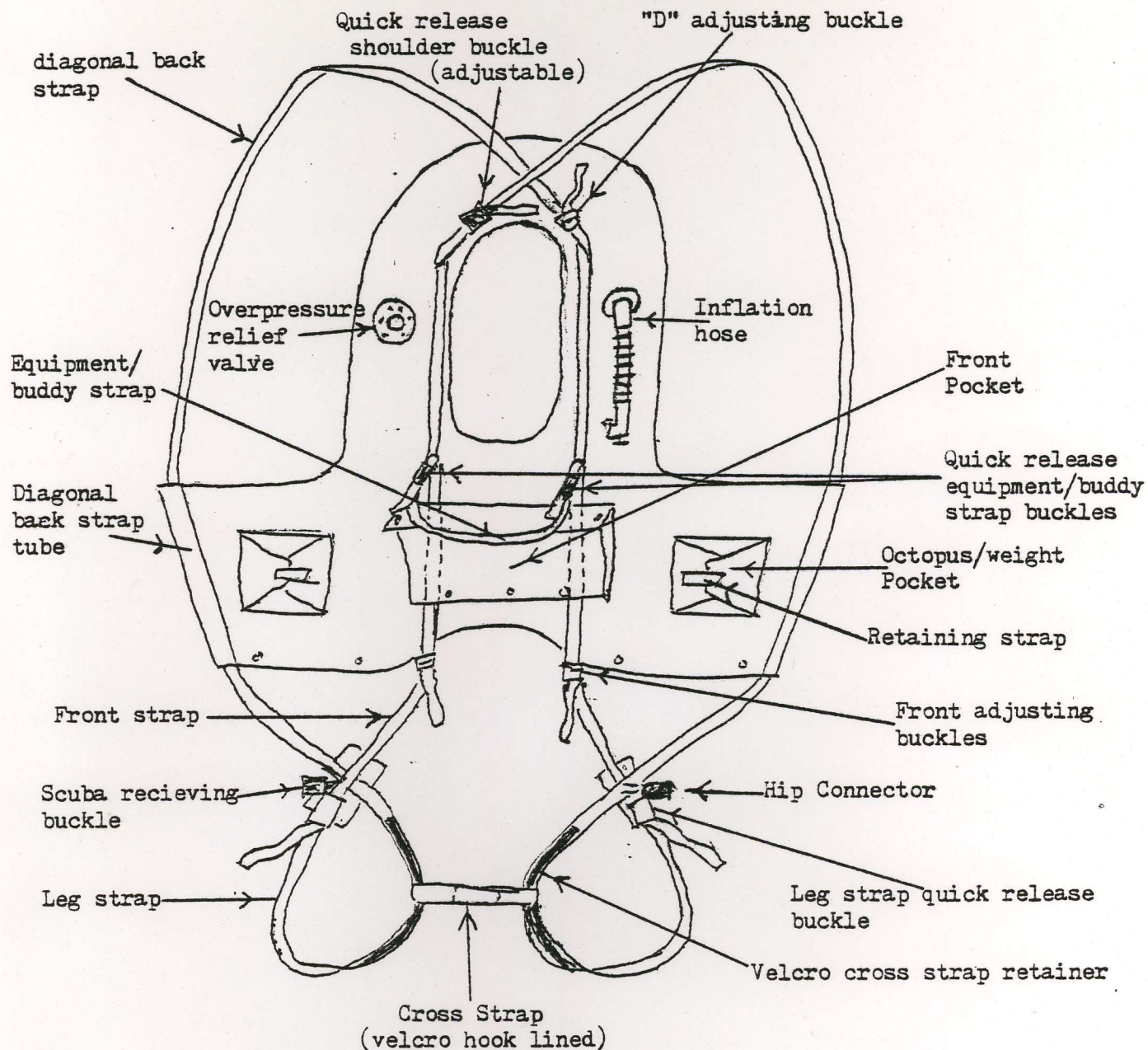


FIGURE 1

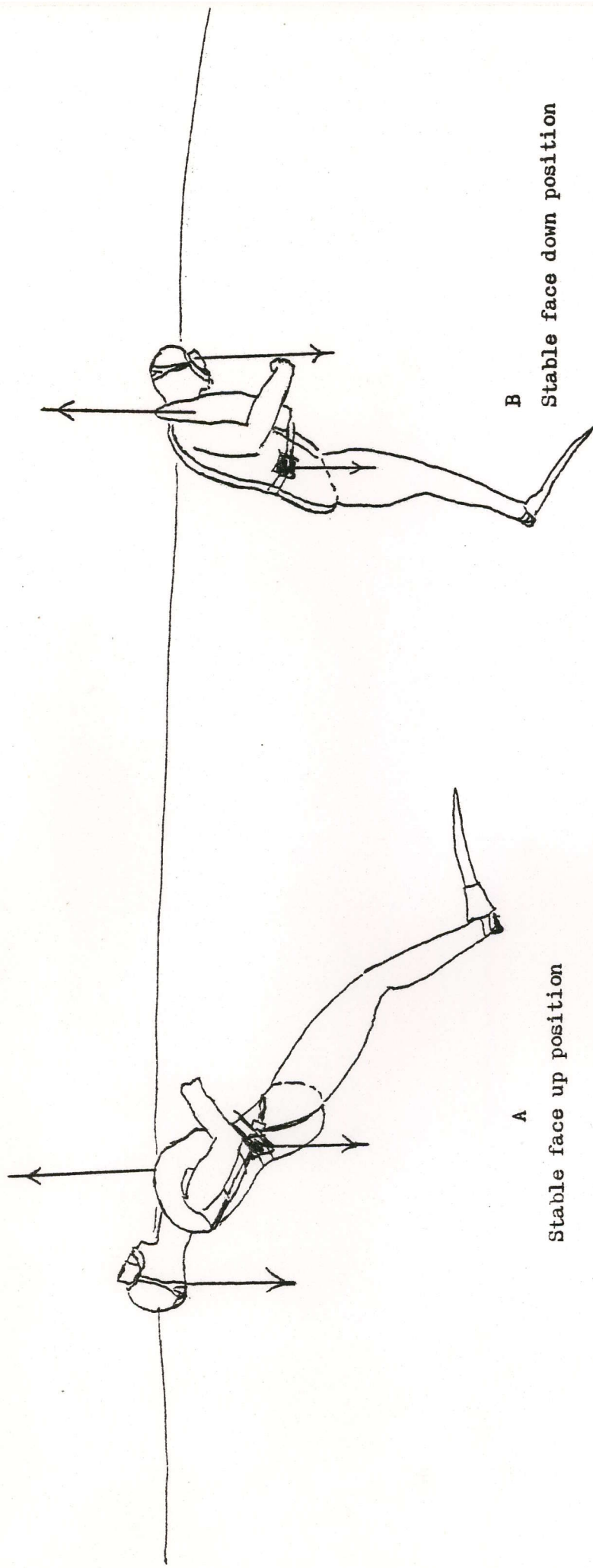


FIGURE 2

Diver "A" is in a stable face up position because the Para-Sea BC pulls from the hips and encourages the head to drop back. The head of diver "A" acts as an "anchor" to secure this position; it is free to do so because the Para-Sea BC is pulled down in back, and because the Para-Sea BC's harness doesn't allow the floatation bag to move out of position.

In contrast, diver "B" is wearing a conventional front-mounted buoyancy compensator. Its harness consists of a crotch strap and a waist strap. With this arrangement the diver is "free" to move inside the harness, and the floatation bag can move out of position. Because of this, the diver's head can actually be encouraged to flop forward, which can result in a stable face down position.

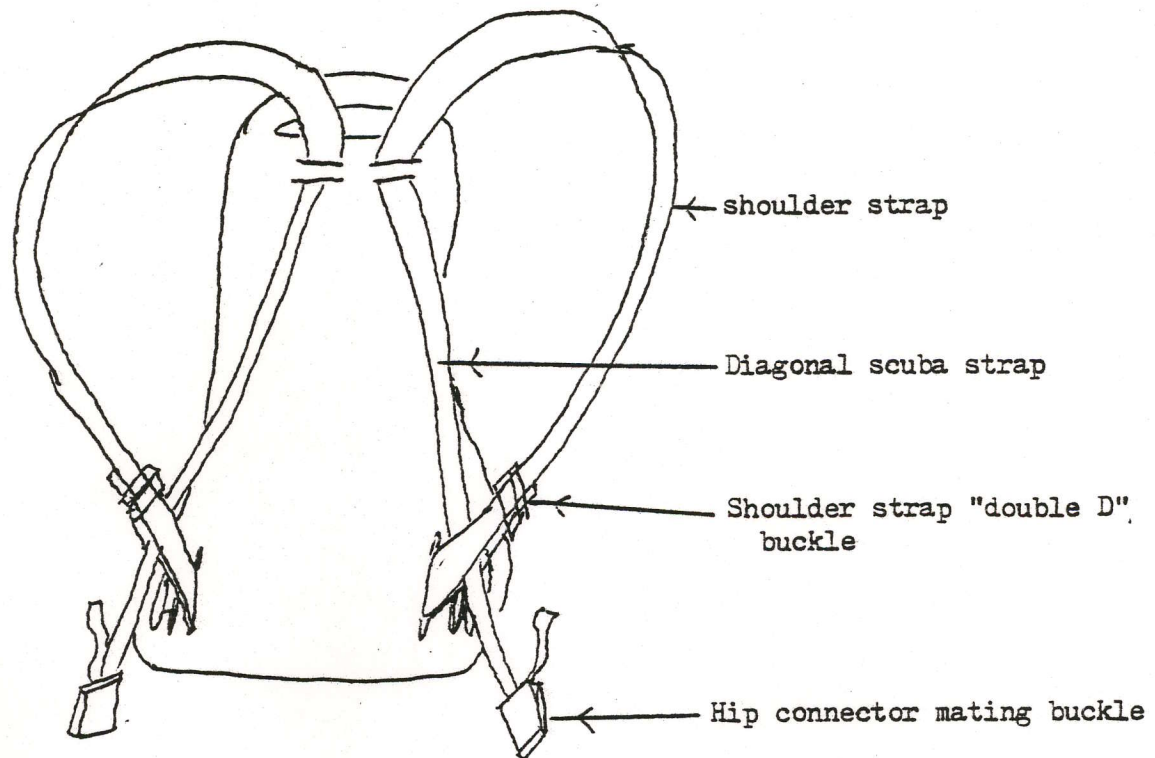
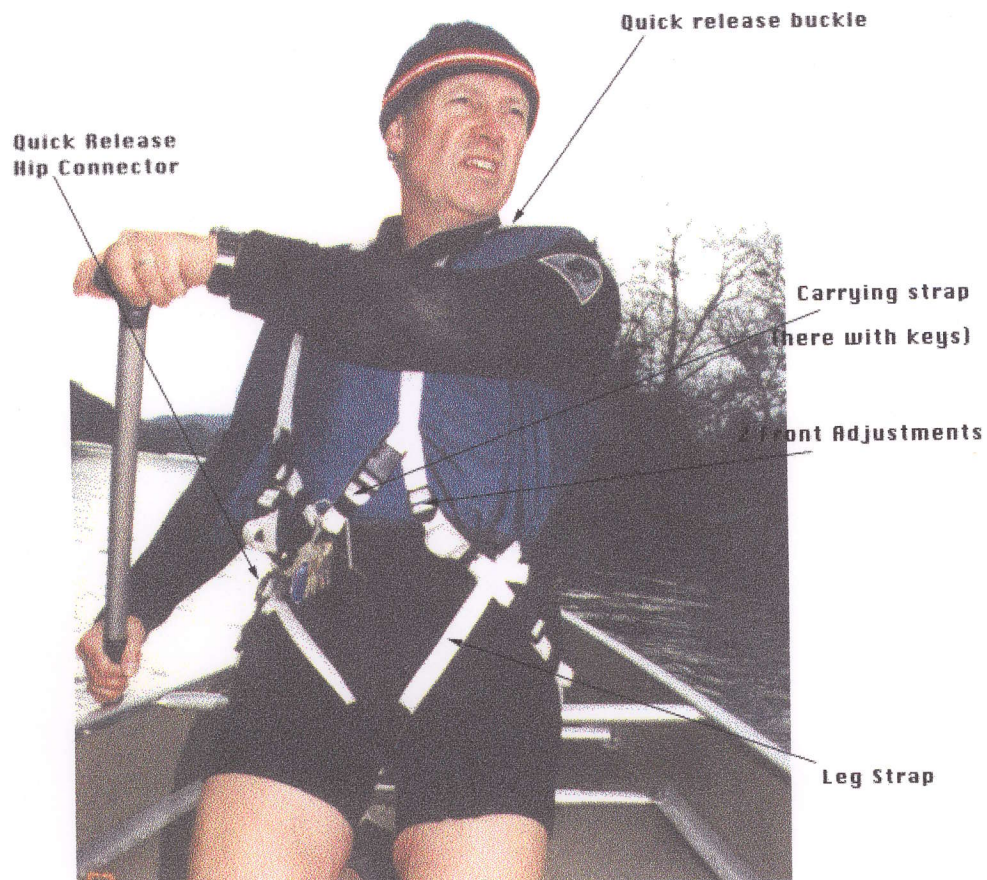


FIGURE 3

Any scuba harness can be adapted to the Para-Sea Buoyancy Compensator concept. The above figure shows that the waist strap has been rerouted to go back up the shoulder strap. A "D" ring buckle then secures the harness, forming a loop for the diagonal scuba strap to go through. At the end of this strap is the hip connector mating buckle, which connects the scuba backpack to the hip connector of the Para-Sea Buoyancy Compensator.

Para-Sea PFD #1



The Para-Sea PFD prototype.

This is the Para-Sea Personal Floatation Device. It has a parachute-style harness assembly which has six different adjustment points in three locations. This PFD design cannot come off over the wearer's head, like so many other designs, in an emergency. It tends to float a person face-up to a greater extent than many other designs too.

Fitting Instructions



Photo #1: Grasp the BC from behind, ensuring that both hands are placed under the diagonal back straps and that the "X" is above the hands.

Photo #2: Place the BC over the head through the neck hole.





Photo #3: Release hands and straighten the BC. Position the cross strap so that it is slightly below the crotch.

Photo #4: Reach with both hands above the head, pulling back on the buckle and pulling on the excess of the diagonal back strap, take up the excess and position the hip connector on the head of the femur (leg bone).





Photo #5: Adjust the other diagonal back strap as described in Photo #4.

Photo #6: Check the position of both hip connectors. They should just touch the head of the diver's femur (leg bone--this is where the motion of the leg hinges on the hip).





Photo #7: Connect the leg strap quick release buckle and pull out excess slack.

Photo #8: Connect the other side, then recheck the position of the cross strap. If the position is not under the buttocks and slightly behind, reposition until a comfortable position is found.





Photo #9: Pull down on the excess of the front strap until snug. It's a good idea to do this when the BC is partially inflated to ideal positioning.

Photo #10: The Para-Sea BC is now positioned correctly for diving. Remember that the leg straps and front straps can be adjusted underwater. This is important in case, after inflation, the leg strap(s) are too tight, as this could cut blood circulation to the leg(s). NOTE: The diver's abdomen is clear. This makes access to the weight belt very easy.





Photo #11: When scuba is desired, simply don in the normal fashion. Instead of using a waist strap, snap the hip connector mating buckle into the scuba receiving buckle on the Para-Sea BC's harness.

Photo #12: When both sides are connected, the weight belt can be donned and the diver is ready for diving.



The Para-Sea Buoyancy Compensator is now fitted. It can now be easily used without going through this process again unless the diver is differently configured. Wearing or not wearing a wet suit will change the dimensions slightly, and the fitting of the Para-Sea BC harness will need to be changed accordingly.

In addition, the Para-Sea Scuba Harness needs to be fitted. The shoulder straps need adjusting to be most comfortable for each diver. To do this, undo the outside of the bite formed when the shoulder strap is routed first through the shoulder strap "double D" buckle, then through the backpack and back through the shoulder strap "double D" buckle. Slide the shoulder strap "double D" buckle to the desired position, then slide the shoulder strap through the backpack until the desired length is attained. Secure the shoulder strap by again threading the bite through the shoulder strap "double D" buckle. Be sure that the diagonal scuba strap goes through the loop formed above. The backpack is now adjusted and needs no further adjustment until another diver uses it.



Photo #13: The Octopus/weight pocket can be used for an octopus second stage of a diving regulator in the following manner. First, open the pocket up and insert the second stage. Note that if the regulator is on a long hose, it is recommended that it go in upside down. This prevents free flow and allows easy use by a distressed diver. On the long hose it can still be used by the donor diver in case the recipient diver uses the primary second stage out of the donor's mouth.



Photo #14: Fit the top and bottom flaps of the pocket over the regulator second stage.



Photo #15: Pull the forward flap (toward the front of the diver) over the top and bottom flaps and secure the velcro. Then pull the rear flap over the others and secure its velcro tabs. Finally, secure the retaining strap over the pocket. The octopus is now secure and is protected from sand and dirt in the water.



Photo #16: To release the octopus second stage, locate the hose in front of the diver, and run your hand down to the pocket. Pull the retaining strap off and the rear flap back in one motion. Grasp the hose near the second stage and push back (toward your dive tank) and down to remove the second stage from the pocket. Practice this maneuver often so that it becomes second nature in an emergency. If any difficulty is noted, pull the whole pocket and vest into view and release the velcro on the flaps (this should not be necessary if you are familiar with the way the pocket functions).



Photo #17: The weight belt is easily used with the Para-Sea Buoyancy Compensator. Note that it is the only belt to completely encircle the diver. It is very easy to locate as it is the only buckle of its kind in the diver's abdominal area.

Photo #18: When using a weight belt, pull the front adjusting strap out from under the belt. This allows in-water adjustment of these straps.





Photo #19: A buddy line can be secured to the equipment/buddy strap.

Photo #20: Most of the diver's miscellaneous equipment can be carried to the dive site on the equipment/buddy strap.





Photo #21: To doff the Para-Sea Buoyancy Compensator, simply reach over the right shoulder with the right hand and press on the sides of the quick release shoulder buckle.



Photo #22: The above maneuver releases the right diagonal back strap. Releasing the leg strap quick release buckles will release the leg straps. Finally, simply pull the Para-Sea BC off over the head. Equipment can be left on the equipment/buddy strap so that all of this gear remains together. The latter can be important on a boat trip with a lot of divers around.



Photo #23: Open water testing of the Para-Sea BC was conducted mainly in the North Umpqua River. Here the Para-Sea BC is being used on an operational dive, the object of which was to locate and photograph salmon and trout.



Photo #24: The Para-Sea BC provides very good buoyancy under the diver for surface swimming.



Photo #25

Underwater the Para-Sea BC offers excellent buoyancy control.

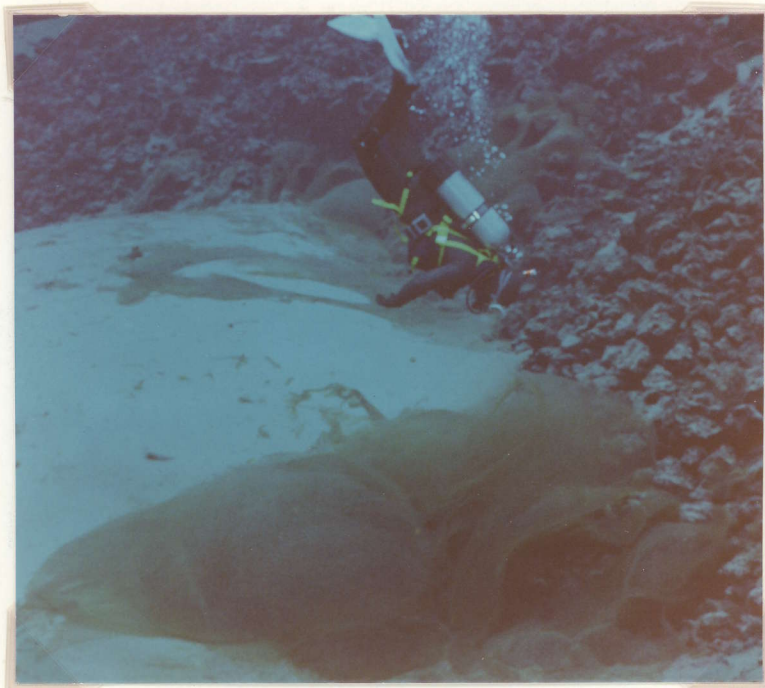


Photo #26

The Para-Sea equipped diver maneuvers to examine algal formations over a spring in Clear Lake, Oregon. Note the scuba diagonal strap and diagonal back strap.

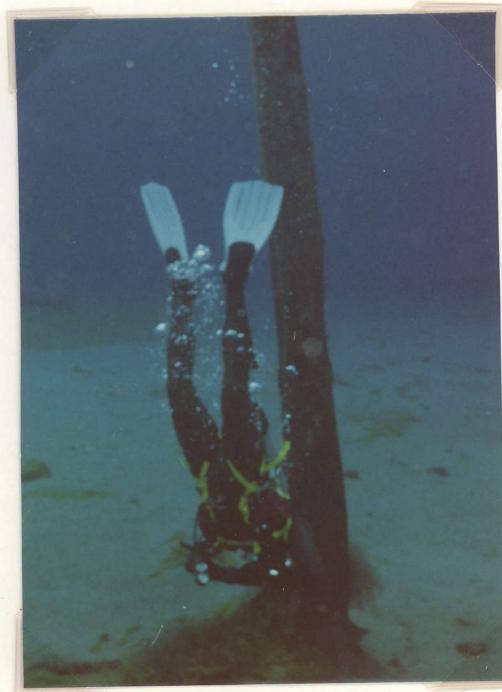


Photo #27

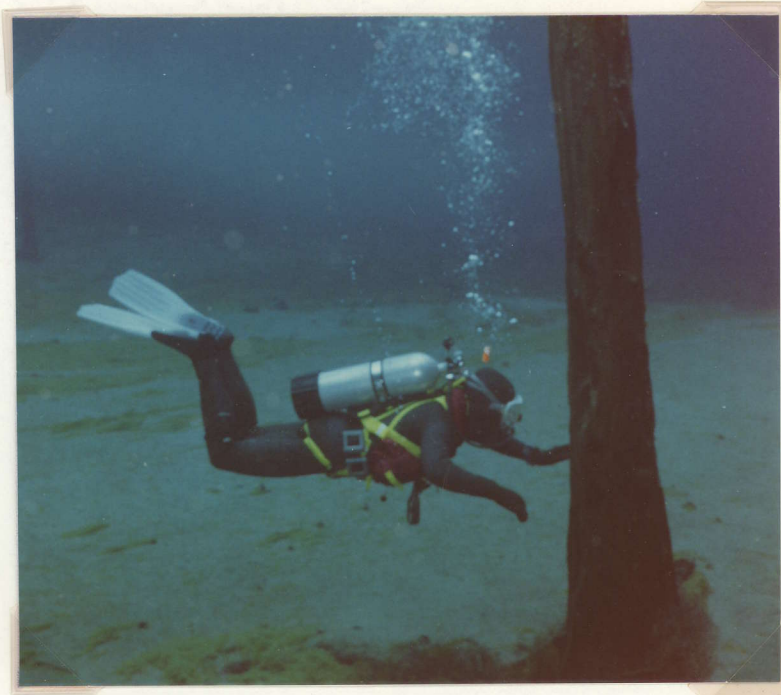
The leg strap design is apparent in this photograph.

Photo #28

The Para-Sea BC is easily deflated, even at shoulder level. This is because water pressure combines with a slight wraparound pressure from the divers body to form higher internal air pressures. These pressures ensure rapid deflation even in a horizontal position. NOTE: the octopus regulator is worn by this diver in the right octopus/weight pocket.

Photo #29

If a diver wearing the Para-Sea BC goes slightly head down, air ~~now~~ moves to the "air entrapment wings" at the sides of the chest. This provides almost perfect buoyancy control by moving the moment arm of buoyant force nearer to the divers weight belt. This diver shows that a perfectly controlled "layout" position is easily maintained wearing the Para-Sea BC.



THE PARA-SEA BUOYANCY COMPENSATOR

(PATENT APPLIED FOR)



Photo by Lynn Herbert

The Para-Sea BC combines all these features:

- Front Mount Wraparound
- Integrates Fully with SCUBA
- Easily used for Snorkeling
- 6-Point Adjustable Harness
- Parachute-Style Leg Straps to ensure unequalled comfort.
- An Equipment / Buddy Strap and Body Harness
- Hypothermia Protection at Depth
- Quick Deflation without Implosion.
- Completely Streamlined
- Allows absolutely no movement or "riding up" of the Buoyancy Chamber
- Eliminates the SCUBA Waist Strap.
- Allows instant location of the Weight Belt
- Allows easy donning from a Wheel Chair
- Has an extremely large Front Pocket.
- Ballast / Octopus Pockets on the side.
- Air Entrapment "Wings" to move center of buoyancy nearer Weight Belt.
- CO₂ & Oral Inflation (SCUBA manual inflation available)

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