

Diving a Back Inflate BC

Mike Ault Copyright 2006

I recently purchased a back inflate buoyancy compensator (BC), an Oceanic Flex QLR. A BC is a jacket or vest that contains an inflatable bladder used to offset the weight of equipment (usually the air in the tank on your back if you are properly weighted), the bladder can be mostly in front in the “wings” of the vest/jacket, or, mostly on the back plate area (usually surrounding the tank area) or a combination of both. As many advanced divers utilize a BC known as a back plate with wings (BP/W), which is essentially a steel back plate designed to hold either a single or double tank rig surrounded by an inflatable bladder that is completely on the back of the diver. The advantage of a BP/W is that the steel plate can be made of various thicknesses of steel to allow the back plate to eliminate the need for extra lead weight that most divers have to carry in order to become neutrally buoyant. In addition to the weight benefits of a BP/W they are less encumbering and work well with a dry suit.

The Oceanic model I purchased (used of course) is a vest style with a hard, single tank plastic back plate and an inflation bladder that surrounds it. All-in-all the new BC seems to weigh about 4 pounds more than my old Calypso jacket style that utilized flotation bladders that surrounded you. This last weekend I decided to dive the new BC for the first time.

About an hour's drive from the house is the Dive Haven Quarry in White, Georgia. The Dive Haven operation just started offering dive services to divers this year, previously we had to dive in Lake Lanier or go to quarries out of state in Tennessee or Alabama or lakes equally far away. In the Dive Haven quarry is an old diesel shovel/crane, it is about a 200 yard surface swim across the quarry then a 20-30 foot dive to the top of the crane arm. My dive buddies and I decided to try an underwater navigation at 20 feet deep (swimming underwater in full dive gear is easier than swimming on the surface.) Once at the crane I would do some photographs while they looked around, then, if air supply and time permitted we would look for the old car in about 20 feet of water nearby, after that we would once again do a 20 foot deep return dive utilizing compass and a sonar transponder I had placed on the dock to easily cross the 200 yards back to where we started.

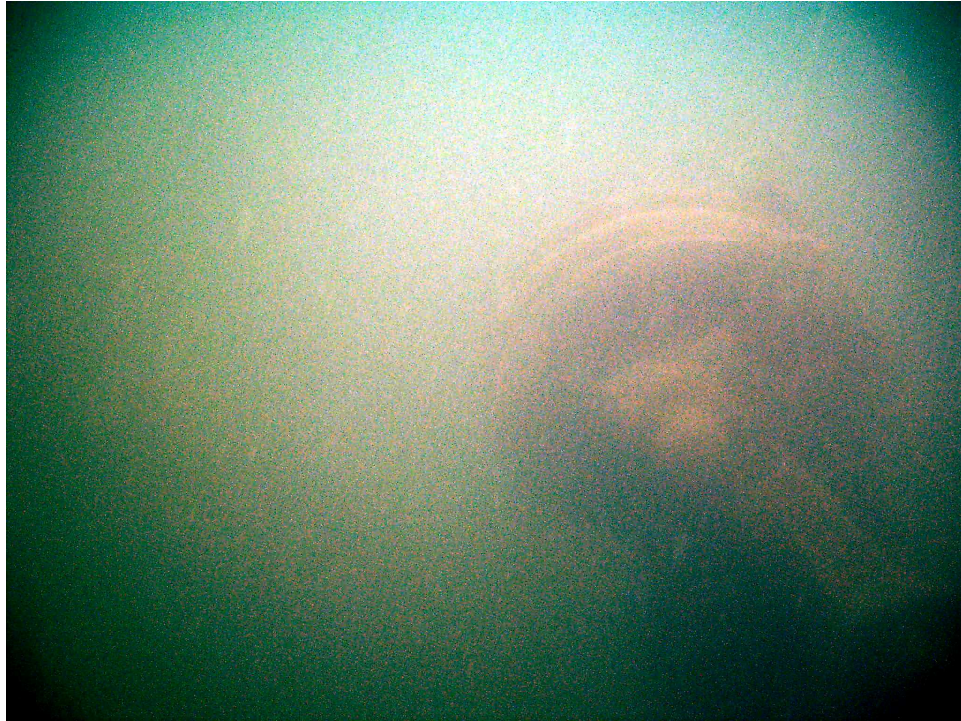
One additional feature of the Oceanic BC is that it has an integrated weight system. In my old Calypso BC you needed a separate weight belt, which acted as a natural air dam to prevent excessive air in the dry suit from flowing to your feet, the new BC eliminated that. I loaded the Oceanic with 22 pounds of lead (this was what I had dove with using the Calypso and my dry suit) putting two 6 pound shot weights in the front, droppable weight pockets and two 3 pound shot weights in the non-releasable rear pockets. I then put two 2 pound weights in the BC pockets to bring me up to 22 pounds. Unfortunately I forgot to account for the additional 4 pounds of weight the Oceanic itself contributed to the overall weight of my gear and for the reduced profile (and hence reduced buoyancy) between the Oceanic and my Calypso. Looking back I figure I was over weighted by around 6 pounds.

As you can guess that 6 pounds made buoyancy control a nightmare. At the start of the dive you vent all of the air from your BC and dry suit and submerge, if you are properly weighted you will be slightly over weighted at the start of the dive because of the weight of the air in the tank or tanks, and, at the end of the dive just neutral with 500 pounds of air left. Unfortunately I sank like a stone and overshot the 20 foot target depth finally gaining control at 30 feet of depth. With the Calypso I was used to just giving a puff or two of air to halt a descent, of course being over weighted I had to give it quite a blast on top of the air I added to the dry suit to eliminate suit squeeze. Of course I over compensated then shot up to 15 feet or less before halting the rise. Finally I got the buoyancy set near right and we started for the crane.

It wasn't long before I discovered one of the other joys being over weighted, my SAC rate (air consumption) was too high and the amount of effort I needed to expend to keep up with my dive partners was large. I was also now having to deal with air collecting in my legs and feet (officially called "having floaty feet") if I put too much in to compensate for dry suit squeeze, it wasn't a major problem, just one additional thing to deal with. Of course the fins I was using didn't help matters much, they were older model stiff Scuba Pro's, non-split, which means they were equivalent to strapping two boards on my feet. So between having to kick like a bee-stung mule and bouncing up and down like a cork because of the dicey buoyancy control I ended up doing the second half of the transit to the crane on the surface doing the back paddle (well, actually the back kick).

We got to the crane and I descended first. Visibility was only about 5 feet so with a descent rate of just under light speed due to being over weighted I nearly crashed into the crane arm having to push off from it as I rocketed past. Arresting my descent 10-15 feet deeper than I planned I then of course over compensated and shot past where I had wanted to stop and begin taking photographs. With reducing oscillations I finally managed to get where I wanted to and take a couple of shots. However, with my limited buoyancy control I was hesitant about going deeper to look over the cab and other parts of the crane since there were still cables and such that would just love to snare an unwary diver.

After taking the shots I felt safe doing I ascended and my dive partners then went down to have a look. By the time they returned we decided to forego the car and just return to the dock. We submerged to 20 feet and began the transit, again with me falling behind (got to replace those darn fins!) and I finished the last third of the transit on the surface once again as I was down to 500 pounds of air by that time.



Shot of the Crane Actuator Pulley

On the second dive I removed 2 pounds of weight, I was still a bit over weighted but nearly as bad as before. We just puttered around at about 20-30 feet working on buoyancy control. Looks like I should pull at least another 2-4 pounds out to get where I need to be. Darn, looks like I might have to go diving again next weekend...