

UNDERWATER *Journal*

A Diving Adventure Magazine



Through the Looking Glass

- Photo collection by Jeff Hartog

Utila Aggressor II

SDI/TDI: Solo Diving

DAN: Ear Pain Management

Mizpah Wreck: West Palm Beach's Lasting Ladies

Blast from the Past: Diving a Navy Mark V Dive Suit

This publication is
underwritten in part by:



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Explore, Discover, Challenge



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Find out what it's like to dive in an actual Navy Mark V diving suit.

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It's important to be familiar with common ear injuries so you can effectively manage them, and so they don't interrupt your diving pleasure. DAN tells us what we need to know.

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It's reputation as a "fish haven" and historic value to the Palm Beaches, makes the Mizpah more than an entertaining wreck to explore.

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Sometimes photographic creativity doesn't end once the shutter is clicked. If you work in raw files as most photographers do, then tools like Photoshop can render everything from the beautiful to the strange.

Cover photo by Jeff Hartog: Nikon D700 and Nikon AF-S 16-35mm f/4G ED VR lens with three Subtronic Novas studio stobes and one a small gelled Inon slave below.

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Navy Mark V Dive Suit



*Story & Photos by
Michael Salvarezza &
Christopher P. Weaver*

The weight of the suit was crushing. With 17.5 lbs. of weight attached to each shoe and a weight belt of 84 pounds, the thought of attaching a brass breastplate and helmet seemed almost too much. And yet, in a few moments, the final fittings were attached and the heavy, almost medieval looking bonnet was lowered onto my head...another 56 pounds of spine-crippling weight! Suddenly, my head was enclosed in brass and I could immediately feel the heat and humidity start to fill around me. As my eyes peered out through the front viewport, I was conscious of the sweet, fresh air that I was quickly sucking in.

In a few moments, the glass faceplate would be closed and screwed tight and my air supply would switch over to that provided by the chugging air compressor some 100 feet away. For now, I concentrated on the weight and also on whether my earlier concerns over claustrophobia would become a reality.

This was a Mark V dive suit, the same worn by US Navy divers in the 1940s.

My dive buddy and I were about to have a unique opportunity to dive and experience a fascinating relic of diving history. Sponsored by the Historical Diving Society, we were taking part in a historical dive rally at Brownstone Quarry in Middletown, Connecticut where invited guests were given the chance to dive in one or more of the antique suits owned and maintained by this organization.

With an opportunity such as this in front of us, and with the 190 pounds of gear now in place, this was no time for second thoughts! With a much needed helping hand from two of the volunteer dive tenders, I lifted my body up off the staging bench and began a slow, clumsy march to the waters edge. There, I met the safety diver who continued to walk with me into the water, the murky fresh water squeezing



Chris Weaver (pictured left) being readied for a dive in the Mark V suit. While in the water, surface support crew are able to speak with the divers with specialized communication equipment, shown here above.

the suit as each inch of material became submerged.

Suddenly, the phenomenon of water pressure took over and the back breaking weight of the suit lifted into a nearly perfectly buoyant situation. Now, it was time to pay attention to the air supply and the mechan-

ics of working with the suit. The loud roar of the compressor-fed air flowing freely into the helmet was deafening and nearly drowned out any sounds coming from the surface through the communication link. By adjusting the hand wheel on the exhaust value, located on the lower right

side of the faceplate, the diver is able to regulate the amount of air pressure inside the dress to avoid a squeeze and to help control buoyancy.

This value has another important function, it guards against over-pressurization of the suit. This exhaust value will

open automatically if the inside pressure of the dress exceeds the outside water pressure by about two pounds per square inch. The exhaust valve has a manual control on the inside of the helmet, which is mushroom-shaped and is called the "chin button". By pushing this button with the chin, a diver can rapidly purge air out of the suit. This button may also be grasped with the lips and pulled inward to seal the valve closed, thus preventing air from escaping from the helmet...a maneuver that took only one try before

feeling natural and comfortable. In addition, there was a metal valve outside the suit that, when turned by hand, would increase or decrease the amount of air coming into the suit.

"Don't worry," said one of the tenders prior to my submersion, "If the air supply cuts out, you have roughly 7 minutes of air trapped in the suit."

Great...

Conventional 3 light helmets had air channels to prevent the viewports from fogging up. Since we were using a 4 light helmet this was a bit of a problem: 2 side



Safety divers assist a diver in a Chinese version of the hard hat dive suit.

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viewports and the top viewport had air channels, but in order to clear the faceplate of moisture, a spitcock valve was available. Located to the left of the faceplate, this small device allows a diver to suck in some water and spit it against the inside of the faceplate to clear it. The spitcock could also be used to "fine tune" suit buoyancy.

Slowly, my weighed feet shuffled along the bottom, and I could feel the pressure of the

water growing as the safety diver and I made our way deeper into the quarry. Thoughts of "Men of Honor" rushed into my head... heck, thoughts of Captain Nemo from Jules Verne's "20,000 Leagues Under the Sea" filled my thoughts as well!

Before long, I felt the familiar tap on my shoulder of the safety diver...time to go back. Despite the weight, the exertion of suiting up, the bulkiness of the suit and my clumsiness in using it, the



Diver fully suited up in the Mark V making his first steps on the sea floor, or in this case, the bottom of the Brownstone Quarry in Connecticut.

introduced by the U.S. Bureau of Construction & Repair in 1917. Largely unchanged throughout the years, the Mark V system was used for most salvage work during World War II and became the standard U.S. Navy Diving equipment. It was used through 1984, when it was finally replaced by the fiberglass Mark XII design. The unit we dove with on this dive was from the 1940s.

The Mark V helmet was manufactured over the years by four different companies: Morse, Schrader, Desco and Miller Dunn. In an interesting piece of local history, some of the earliest field tests of the preliminary Mark V design were done aboard the USS Walke in the Long Island Sound prior to 1915.

In addition to the Navy, many commercial divers have also used this system over the years.

Many of the design features on this type of suit are alien to divers used to traditional SCUBA gear: spitcocks, viewports, faceplates, exhaust valves, chin buttons, banana exhaust, dumbbell locks, breastplates, brales,

time seemed so short! I wanted more!! Now, I was truly a hard-hat diver... something I had always wondered about and secretly desired to do.

The Historical Diving Equipment Society is an organization devoted to the preservation of diving history and to providing educational experiences for the public on the equipment of diving. Operating in several countries, they often appear at dive shows and periodically they will sponsor events

such as the rally in Connecticut where the general public can actually experience the history and equipment of diving from days long passed.

The Mark V dive suit was just one of several pieces of equipment available during this rally. A variation on this suit design from China was also provided, along with a Russian Navy hard hat outfit.

The Mark V design was first employed by the US Navy after being



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Michael Salvarezza & Christopher P. Weaver

Michael and Christopher head the New York based organization, Eco-Photo Explorers. It's mission includes promoting interest in protecting our ocean environment by creating awareness through the use of underwater photography.

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whips and air control valves are just some of the devices and terminology that we quickly became educated on as we experienced this relic from the past. Our experience in the suit was a wonderful way to connect with the past and to learn about a type of diving that we could only previously dream about.

As the Historical Diving Society continues to honor its purpose by providing opportunities like

these to the interested public and to its members, we are grateful for the chance to join in the fun... and we encourage you to do the same!

- MS & CW

