MYSTERIES OF THE DEEP

Deep-sea divers with a condition known as “nitrogen narcosis” can develop life-threatening symptoms. This image—by RexxS—depicts how a diver with “tunnel vision,” as a result of the condition, could have difficulty seeing multiple gauges.

On his journey to become a U.S. Navy Master Diver, Carl Brashear had to learn about the "mysteries of the deep."

He had to understand much more than his 8th-grade education provided and had to earn a high school equivalency diploma. Before he could qualify as a first-class deep-sea diver, Carl had to study math, science and medicine. (Navy divers assist with sophisticated tasks like the recovery of TWA Flight 800 and the search for Air France Flight 447.)

Water is more dense than air. Carl experienced the effects of that increased weight (density) first-hand when he began his deep-sea diving career.

Whenever a human being dives underwater, pressure on the body intensifies. Increased pressure causes changes to the air gases (oxygen and nitrogen) a person inhaled at the surface. The deeper the dive, the greater the changes in the inhaled air gases and the potential for problems.

A common ailment is "the bends" - named for the way people bend due to pain. But a diver can also sustain fatal injuries from conditions much worse than the bends.

Although oxygen is necessary to sustain human life, people actually breathe-in a much greater percentage of nitrogen (78% compared to 21% oxygen) from the surrounding air.

Nitrogen (the culprit behind the bends) is inert (it doesn’t do anything) in a non-diving body. But during a deep-dive, nitrogen causes bubbles to form in a body under pressure in the same way as carbon dioxide causes bubbles to form in Coca Cola when *it* is under pressure.

Nitrogen, under deep-sea pressure, can also impair a diver’s judgment in a condition called nitrogen narcosis (or "rapture of the deep"). A person who has nitrogen narcosis often acts like a person who is intoxicated.

"Rapture of the deep" can cause a diver to do completely unexpected and unsafe things. And, although we don’t think about it unless we’re deep-sea divers, oxygen at depth can actually poison a human body if it isn’t diluted with other gases. That potentially fatal condition is called oxygen toxicity.

Fortunately, Carl Brashear never sustained any of these injuries in his quest to become the Navy’s first black master diver.

See Alignments to State and Common Core standards for this story online at:
http://www.awesomestories.com/asset/AcademicAlignment/MYSTERIES-OF-THE-DEEP-Men-of-Honor-Story-of-Carl-Brashear

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Questions 2 Ponder

How Frightening Are the Mysteries of the Deep?

Although deep-sea diving poses risks like “the bends,” nitrogen narcosis (“rapture of the deep”), oxygen toxicity and other potentially fatal events, Carl Brashear was set-on becoming a deep-sea diver.

Throughout his years of training, Brashear never personally experienced any of those frightening events.

What are the possible reasons that Carl Brashear never experienced “the bends,” “rapture of the deep” or oxygen toxicity while he was learning to become a master diver?

Media Stream

Recovery Operation
Image online, courtesy the U.S. Naval Institute website.
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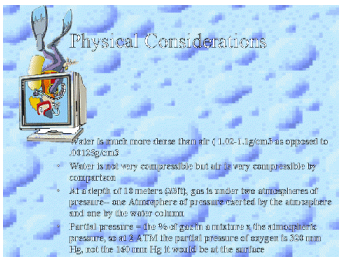

Physical Considerations in the Underwater Environment
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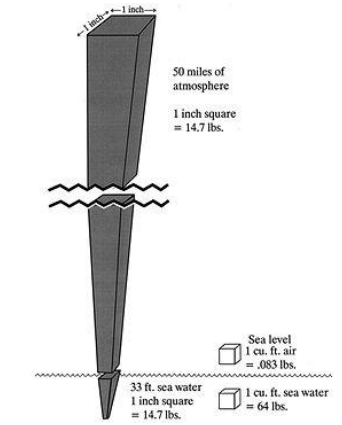

Air-Water Relationship - Scale
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Problems Faced by Divers
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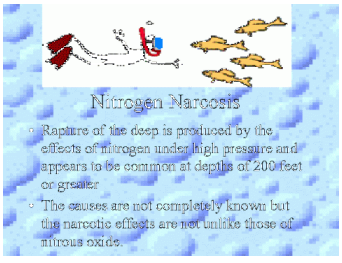

Nitrogen Narcosis
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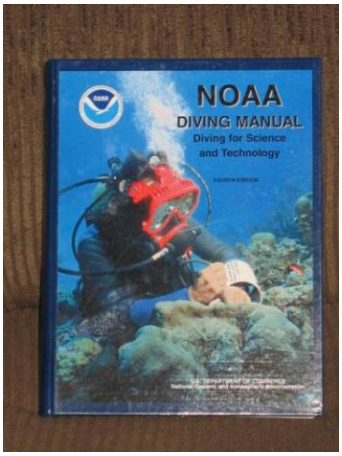

The NOAA Diving Manual

Image online, courtesy amazon.com website.

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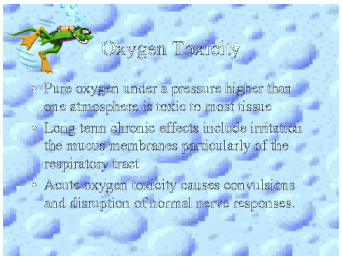

Oxygen Toxicity

Image online, courtesy Wikimedia Commons.

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MYSTERIES OF THE DEEP

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