

# Pipin Makes Record-Breaking Breath-hold Dive

If you seek Aquaman, forget about the comic books — try Key Largo, Florida. Look for Francisco "Pipin," Ferreras-Rodriguez, a quiet unassuming 32-year-old Cuban in his dive shop, the amazing human who holds the world record for breath-hold diving. On December 17, 1994, Pipin (pronounced peh-peen) took one long breath, wrapped his legs around the crossbar of a weighted sled and plunged to 417 feet, where pressures crushed his size-50 chest to 20 inches and the squeeze of 185 psi would collapse an airtight car.

Pipin is the current world record holder in no-limits breath-hold diving. No-limits means competitors descend on "sleds" weighted with unlimited ballast and ascend with liftbags that rocket divers to the surface.

"I am not a crazy guy who goes down and risks my life," Pipin says. "I just do it because I really want to know how deep a human being can go."

The International Underwater and Fishing Federation is the only worldwide organization that recognizes no-limits breath-hold diving. In 1970, the World Underwater Federation refused to ratify no-limits records, citing the danger. The WUF calls no-limits "applied experimentation," not "sport."

Dr. James Loewenherz of Miami's Mercy Hospital has studied Pipin. He explained that both Pipin and marine mammals survive at extreme depths by slowing their heart rates. They also shunt supplies of oxygen-carrying blood from limbs and non-vital organs to the brain, heart and lungs. Like marine mammals, Pipin possesses amazing lung capacity. The average human can gulp three to four liters of air; the best athletes, five to seven. Pipin inhales 8.2 liters of air.

While Pipin's physiological responses mimic marine mammals, he's no dolphin. The human body was not designed to withstand the crush of 13 atmospheres. "The marine mammal chest wall is completely collapsible, except for a very small volume; tracheas (windpipes) are short," Dr. Loewenherz explained. Humans "have an additional 12 to 14 inches of trachea filled with gas that cannot be compressed. This space — at the depths that Pipin is experiencing — fills entirely with fluids from the body.

Where it's most dangerous for him physiologically is not on the way down, but on the way up," when he reexpands his lungs. "The fluid that lines our lungs and permits us to

breathe gets completely washed out. Were he to have a dangerous event at depths greater than 300 feet, it would be very difficult to get him breathing."

Pipin developed his ability to survive at crushing depths over a lifetime of training and conditioning. At seven, he began freediving in Cuba: Pipin and his father speared fish for the family table. Pipin was also a member of the Cuban national swimming and spearfishing teams.

He learned to control his body and mind with three techniques. From the Chinese in Cuba he mastered "mind-body," which allows him to concentrate in the unity of the motor system and psyche. From yogis in India he learned a deep meditation technique to control his heart. He learned "body breathing," which he describes as using the stomach, chest and shoulders to breathe. With these techniques Pipin can slow his heart to about 18 beats per minute — which allows him to conserve his most valuable commodity, oxygen. Sitting still,

Pipin can hold his breath for nine to 10 minutes.



Pipin — World Record Freediver.  
 Photo courtesy of Dixie Divers.

## December 17, 1994

In the waters 13 miles off Key Largo, a manic flotilla swarms around the *Eso*, the 80-foot ship that's the platform for Pipin's record attempt. A dozen boats buzz the *Eso*, jockeying for the one ideal viewing position. Amidst the deafening roar of revving engines and shouts and curses in English and Spanish, deranged captains rush the same piece of aquatic real estate, producing near-collisions and giant wakes. Diesels and outboards spew fumes into Pipin's pure air.

A nylon-covered steel cable dangles in the water from the *Eso's* starboard. A knot on the cable marks the 417-foot goal. Poised on the cable is Pipin's "sled" — a tube fitted with a crossbar perch, tiny tank of compressed air, liftbag and video camera.

Amidst the noise, fumes and confusion, Pipin sits cross-legged on the *Eso's* deck, meditating. Pipin enters the water in a brilliant neon-orange dive suit. The team of safety

divers/judges follow. As the scuba divers deploy along the cable, Pipin warms up with three breath-hold dives to 180 to 200 feet, to reset his biorhythms and make his lungs elastic.

Pipin drops into a deep trance. He wraps his knees around the crossbar of the sled and grips the pipe with his hands. The last minute he breathes four times. An assistant snatches the release and the sled smashes into the water. Knees first and fins flat against his back, Pipin disappears in the darkness. He holds his nose to keep water from flooding his sinuses. Descending at nine feet per second, he clears his ears constantly to combat the rising pressures.

The pressure squeezes blood from his limbs into his chest and brain. His heart beats once every three seconds. Physiologically, Pipin's close to death.

At 417 feet, the sled slams into the stop knot on the line. Drugged by the nitrogen narcosis equivalent of a half-case of beer, Pipin works the tank valve that blows 2,500 pounds of compressed air into the lift balloon. Grasping the balloon, he rockets toward the surface in a storm of bubbles.

And the most dangerous part of the dive — the fast ascent — has just begun. If he loses consciousness and releases the balloon, he dies. He does not have enough oxygen to kick to the top. A regulator administered by a safety diver would not save his life.

As he rockets toward the top, Pipin must reexpand his collapsed lungs, but the fluid liner that permits him to breathe easily has been completely washed out. Closer to the surface, Pipin risks shallow-water blackout as oxygen-deprived blood flows into his cerebral cortex.

Home is in sight. The balloon launches Pipin out of the water like a missile. As he gasps for air, six fans hug their hero, dragging him back underwater. After surviving the two-minute, 22-second dive, the ultimate irony would be Pipin's death by drowning at the hands of a crowd of well-wishing snorkelers.

Fifteen minutes later, Pipin swims from the *Eso* to the press boat. He stands relaxed on the dive platform. He looks more like a man who has done one lap around a pool than someone who just accomplished a feat many scientists call impossible.

*Pipin's record was verified by judges from the Florida Skin Divers Association. Rob Curran is president of Your Press Release Connection.*

# Looking For The Real AquaMan?

By Rob Curran

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Adds Dr. Lowenherz, "Where it's most dangerous for him physiologically is not on the way down, but on the way up, when he reexpands his lungs. The fluid that lines our lungs and permits us to breathe gets completely washed out. Were he to have a dangerous event at depths greater than 300 feet, it would be very difficult to get him breathing."

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