

Daily



Trojan

University of Southern California

Volume LXVII, No. 44

Los Angeles, California

Tuesday, November 19, 1974

CATALINA ISLAND CAMPUS

Recompression facility to aid in treating divers

A recompression chamber for medical research and for treatment of diving accidents was formally dedicated Thursday at the USC Marine Science Center on Catalina Island.

The new facility will be used primarily for research in diving physiology and hyperbaric medicine.

Hyperbaric medicine deals with the use of different pressures in healing.

Through a tentative agreement proposed by County Supervisor James A. Hayes of Long Beach, Los Angeles County and the USC School of Medicine will coordinate their resources and personnel in the event of a diving accident.

Lifeguards who operate the Bay Watch rescue boats under the County Department of Beaches will pick up a diver in trouble and simultaneously notifying the U.S. Coast Guard Rescue Coordination Center.

The center will then alert technicians at the hyperbaric chamber and also the department of emergency medicine at the USC Medical Center, where physicians will stand by to radio instructions to Catalina.

If physicians are needed, two of eight physicians who have been especially trained in hyperbaric medicine will be transported by a Sheriff's helicopter to Catalina, with backup help by the Coast Guard and the Los Angeles County Fire Department.

The medical team, which works out of USC's department of emergency medicine, is coordinated by Dr. Richard Scott, an instructor in emergency medicine.

A less frequent, but more dramatic, function of the chamber will be its use for divers suffering from decompression sickness or air embolism.

Dr. Andrew Pilmanis, assistant professor of physiology who is stationed at the USC Marine Laboratory, said that an air embolism occurs when a diver, usually through panic, holds his breath while surfacing.

The air, compressed at ocean depths, expands as the diver surfaces which causes the lung to rupture, sending air into the blood vessels, thus blocking the flow of blood to the brain, he said.

"If the rupture is extensive and the amount of air introduced into the blood vessels is large, the victim usually dies within minutes," Pilmanis said.

(continued on page 6)

Recompression chamber

(continued from page 1)

"However, if only a small amount of air is introduced into the blood vessels, the patient may survive the initial trauma.

"Obviously, with time of utmost importance, the proximity of the chamber will be a valuable source of immediate help," Pilmanis said.

Pilmanis pointed out that while decompression sickness is debilitating and painful, it is rarely fatal. He said the chamber will accommodate two patients and necessary attendants and is ideally located for

its role in life-threatening emergencies since it is within sight of approximately 85% of the diving in this area.

The chamber was donated to the university by Lockheed Corp. It is 24 feet long, nine feet in diameter and weighs 22 tons.

It was transported to San Pedro and modified by Western Offshore Drilling Corp., a subsidiary of Fluor Corp.

Once at Catalina, installation of the facility was financed by Oceanographic Associates, a support group for the USC Marine Science Center.

Diving Accident Research Lab Dedicated on Catalina

A recompression chamber for medical research and for treatment of diving accidents was formally dedicated recently at the University of Southern California's Marine Science Center on Catalina Island.

The new facility, donated to USC by Lockheed Corporation, will be used primarily for research in diving physiology and hyperbaric medicine, according to J. Patrick Meehan, M.D., of Arcadia, professor and chairman of physiology at the USC School of Medicine. It will be available to any investigator doing research in this unique environment, he said.

Not only are the clear waters of the channel well-suited to year-round diving, but excellent laboratory resources are available at the Marine Science Center.

A less frequent, but more dramatic, function of the chamber will be its use for divers suffering from decompression sickness "bends" or air embolism. The chamber will accommodate two parties and necessary attendants.

Through a tentative agreement proposed by County Supervisor James A. Hayes of Long Beach, Los Angeles County and the USC School of Medicine will stand ready to coordinate resources and personnel in the event of a diving accident.

Lifeguards who operate the "Bay Watch" rescue boats under the County Department of Beaches will pick up a diver in trouble, simultaneously notifying the U.S. Coast Guard Rescue Coordination Center.

The center will alert technicians at the hyperbaric chamber and also the department of emergency medicine at the LAC-USC Medical Center where physicians will stand by to radio instructions to Catalina.

If physicians are needed, two of eight physicians who have been especially trained in hyperbaric medicine will be transported by a sheriff's helicopter to Catalina, with backup by the Coast Guard and the Los Angeles County Fire Department. The team, working out of USC's department of emergency medicine, is coordinated by Richard Scott, M.D., of Los Angeles, instructor in emergency medicine.

According to Andrew Pilmanis, Ph.D. of Avalon, assistant professor of

physiology stationed at the USC Marine Laboratory, the recompression chamber is ideally located for its role in life-threatening emergencies since it is within sight of approximately 85 per cent. of the diving in this area.

Of the two primary causes of diving emergencies — air embolism and decompression sickness — it is in the former usually fatal instance that Dr. Pilmanis foresees the chamber's greatest potential for saving lives.

An air embolism occurs when

a diver, usually through panic, holds his breath while surfacing. The air, compressed at ocean depths, expands as the diver surfaces. The lung ruptures, sending air into the blood vessels, thus blocking the flow of blood of the brain.

"If the rupture is extensive and the amount of air introduced into the blood vessels is large, the victim usually dies within minutes," Dr. Pilmanis said. "However, if only a small amount of air is introduced into the blood vessels, the patient may survive the initial trauma.

Nevertheless, his condition will deteriorate quickly if nothing is done. To avert irreversible damage, we must compress the air bubble quickly enough to allow the blood to flow to the brain.

"Obviously, with time of utmost importance, the proximity of the chamber will be a

valuable source of immediate help."

Dr. Pilmanis pointed out that while decompression sickness is debilitating and painful, it is rarely fatal. "When a diver is under pressure, his body accumulates nitrogen," he said. "The longer he stays under, and the deeper he goes, the more

nitrogen he takes on. If he comes up too fast, the nitrogen bursts into bubbles in the body tissues.

"We see less of this problem in southern California because sport divers carry only a small supply of air and do not stay down long or dive to great depths. Although it certainly can and does occur, and we will treat it, it is neither as common nor as life-threatening as air embolism."

The chamber — 24 feet long,

nine feet in diameter and weighing 2 tons — was transported to San Pedro and modified by Western Offshore Drilling Corporation, a subsidiary of Fluor Corporation. It was then towed to Catalina by Pacific Tow and Salvage Company. All services were donated.

Once at Catalina, installation of the facility was supported by Oceanographic Associates, support group for the USC Marine Science Center.