

Dolphins newest residents of Long Marine Lab

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Two bottlenose dolphins are now at home in Santa Cruz County.

Josephine and Gwendolyn, donations from the U.S. Navy, will be subjects of scientific study at the UC-Santa Cruz Long Marine Laboratory.

Kenneth Marten, one of a team of marine biologists who will study the animals, said the 21-year-old Josephine and 17-year-old Gwendolyn are "somewhat elderly ladies" in dolphin terms.

They arrived at 4 a.m. Friday after a day-long truck ride from San Diego and were placed in special cloverleaf tanks at the Santa Cruz lab facility.

The tanks were specially designed for their acoustics and so that each of the three sections can be shut off from the others. The tanks have underwater viewing windows.

So far, Marten said, Jo and Gwen have been rather shy. They have not ventured out into tanks other than the one they were placed in, though there is nothing to prevent them from doing so.

They also have not "spoken" to each other — that is, communicated with the clicks and whistles dolphins use.

But Marten said that is to be expected, because the two are strangers to each other. They have spent most of their lives in captivity.

There is also a possibility, although Marten said it is unlikely, that Josephine is

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pregnant. Scientists will not be certain until Jo progresses further, if she does, in a year-long gestation period.

The lab has big plans for cetacean research, and Jo and Gwen have an important role in it.

For these two permanent residents, Marten said, a number of experiments testing intelligence will be conducted.

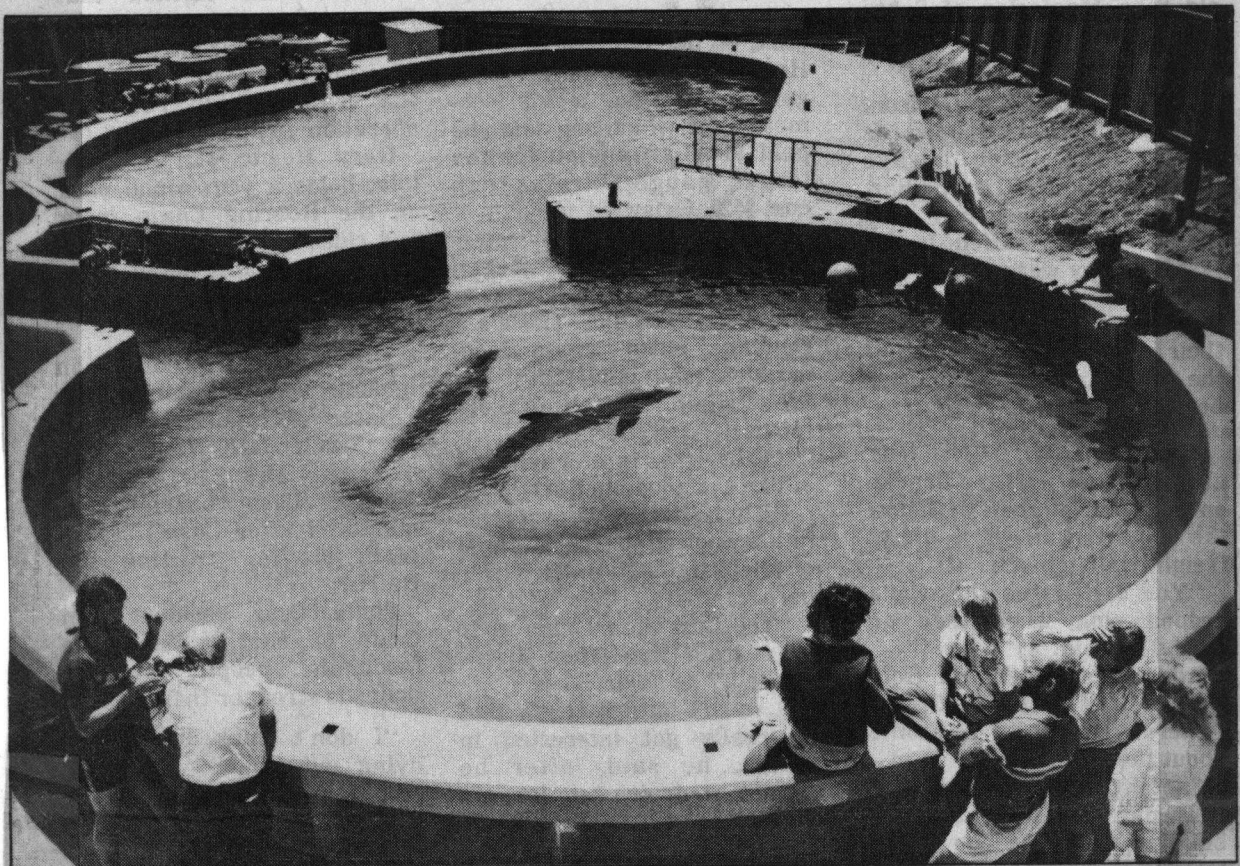
"The public has been misled as to their intelligence," Marten said of dolphins. "They are very intelligent animals, but in no way are they as intelligent as people. I'd put them in the same category as monkeys and apes."

The first experiment performed on the animals will be a study of their rhythmic patterns, such as the use of their heads, bodies and tails, which they seem to use in conjunction with echolocation — identifying objects acoustically by emitting clicks that bounce off objects — to find out about their environment.

Another experiment involves "cross-modal transfer," which will explore whether dolphins can translate knowledge gained by one method, such as echolocation, into knowledge of the visual world — how things look — and vice versa.

"The significance of this is that cross-modal transfer is an indication of a highly developed brain," Marten said. "We will see how intelligent they are."

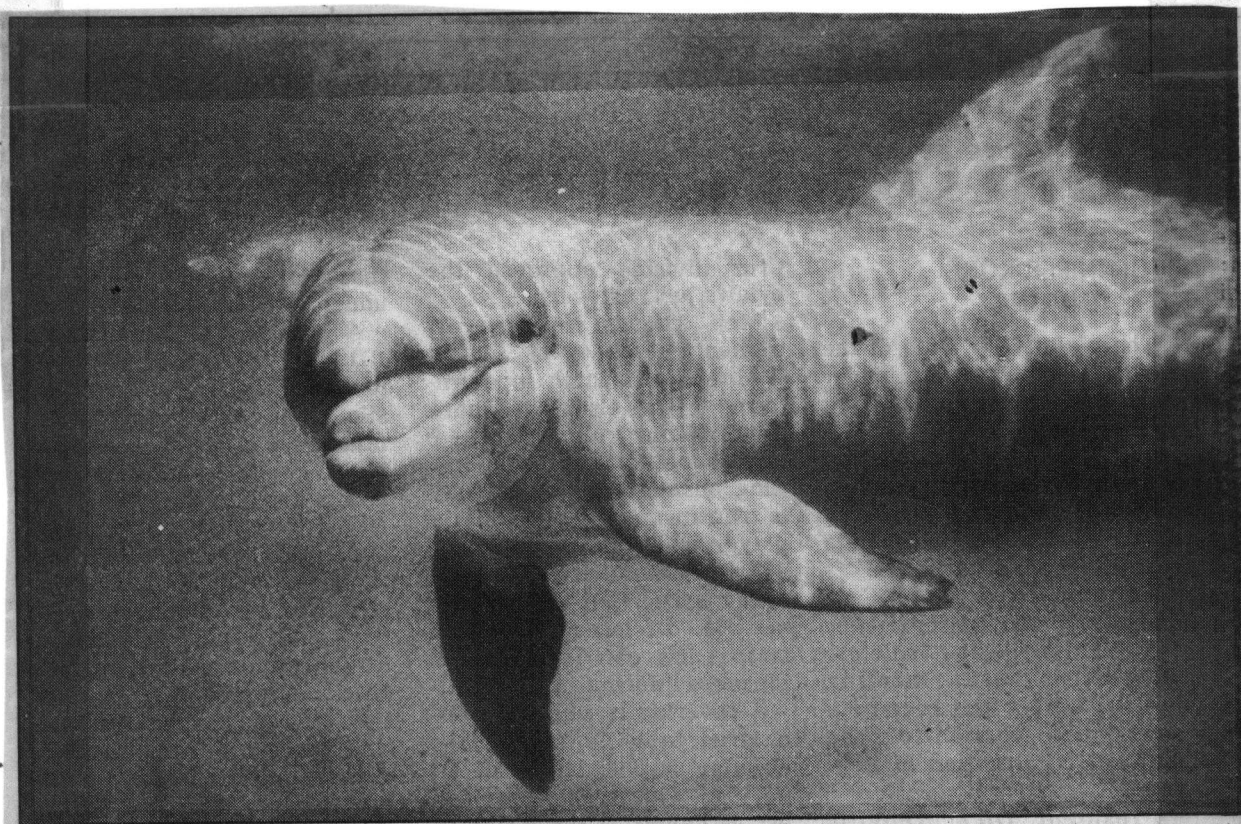
A third experiment will test the hypothesis of Kenneth Norris, director of the pro-



The two bottlenose dolphins have their own special pool at the marine lab.

REFERENCE

GREEN SHEET
July 23, 1986



Photos by Kurt Ellison

Josephine mugs for the camera.

gram, that dolphins hear through their jaws and throat.

In this experiment, Gwendolyn and Josephine will first be trained to point to the source of a sound. Then, scientists will put sound "prisms" over their jaws in order to bend the sound. If, in fact, the dolphins are hearing through their jaws, they will point in directions other than toward the sound.

But Marten called these experiments "the tip of the iceberg" in the university's cetacean research.

Most of the lab's work is done in the ocean, observing the animals in their element. Scientists use a special underwater viewing chamber to conduct their work.

The research Marten is most excited about, however, involves both the ocean and the tanks and has never been tried before — studying the language of an intact social group.

"We suspect that the communication will be more meaningful," Marten said. "It's just as if we put you in a room with your family and good friends for a while, as opposed to putting you in a group with complete strangers."

For this experiment, scien-

tists will first radio-tag one Pacific white-sided dolphin.

Then researchers will make note of other animals making contact with the tagged dolphin. They will capture one other animal that communicates with the tagged animal on each day for five days.

The tagged animal will then be captured.

These six animals will then be placed in the largest of the three tanks at the lab and studied for two or three years. After the research, the group

will be returned to the wild.

"It's both an ethical and practical reason to return them," Marten said. "Ethical in that they belong in the wild and practical in that we can then use the tank for other experiments once this one is completed."

He noted, "We prefer not to do captive stuff. But if you can't see it, you can't do it."

Scientists can keep a 24-hour monitoring of the dolphins' activities through an underwater recording system.