

From Innerspace to Outerspace

Scuba Diver Blasts Off to the Stars

by Laurel M. Sheppard



Though scuba diving may be considered an extreme sport to some, to Dr. Mary Ellen Weber, NASA Astronaut, Class of 1992, this sport actually provides a way to relax from her other stressful activities. In addition to blasting-off into space, Mary Ellen gets an adrenaline rush from skydiving.

Mary Ellen's talent in this area is evident as she has received a silver medal at the U.S. National Skydiving Championships in the 20-person free fall formation event in '91, '95, '97, and '98. She was in the world's largest free-fall formation, with 297 people, in '96.

Mary Ellen is also a licensed pilot. "Flying has aspects of both these sports," she says. "It is skill oriented like sky diving, and also lets you see another world from a different perspective like scuba."

Mary Ellen, a native of Cleveland, Ohio, first became interested in scuba diving after taking a trip to Cozumel with a friend. She became certified several years later while attending school in '89. Like many divers, her open water certification dives were not a pleasant experience. "I got certified in a Texas lake in February when the water temperature was only 49°F," Mary Ellen explains. "We were only wearing wet suits and I remember filling our suits with hot water using a hose."

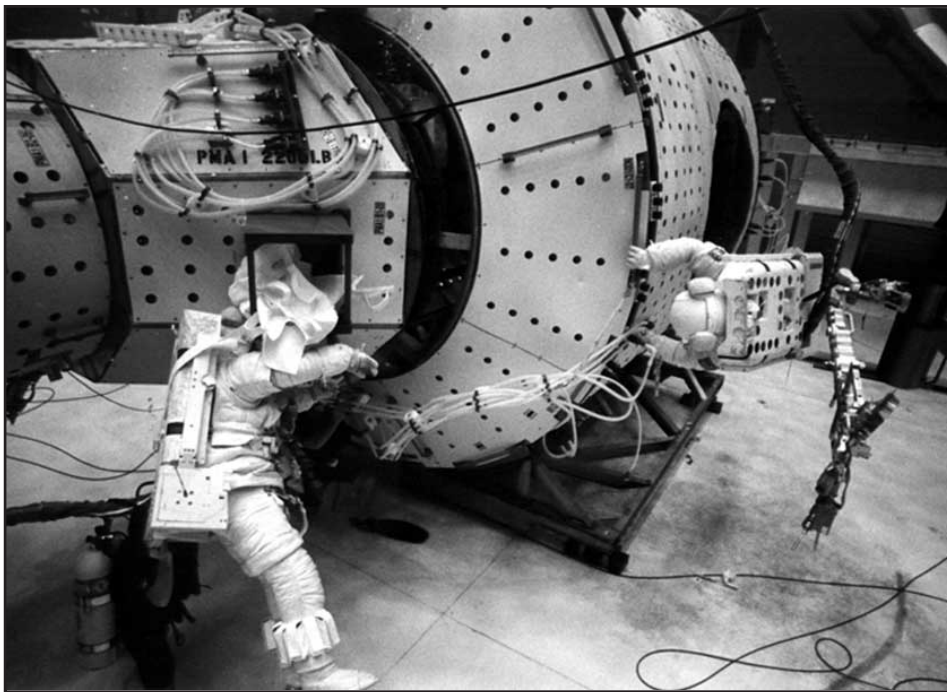
Fortunately, this experience did not turn Mary Ellen off from diving, though

During a training session Mary Ellen prepares to deploy a life raft as part of an emergency bailout rehearsal for an upcoming mission.

it may be one reason she is strictly a warm-water diver. She and her husband, Dr. Jerome Elkind, head to the tropics twice a year for

scuba diving vacations. Her husband, who was never interested in swimming let alone diving, was finally convinced to become certified so they could go diving together on a Christmas vacation. He ended up loving it, a good thing for Mary Ellen!

Now Mary Ellen has over 300 dives under her belt (compared to two space flights totaling over 450 hours in space, more than 3,100 sky dives, and 800 hours of flying). Her favorite dive location is the Cayman Islands, where she and her husband honeymooned.



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She has also dived Cozumel, Cancun, Belize, Costa Rica, Roatan, Barbados and Hawaii, among others.

Some of her most memorable experiences have involved interactions with animals. On a dive in Cabo San Lucas, she was lucky to swim with a school of seals. Another amazing dive took place in St. Thomas. "A dolphin came out of nowhere," Mary Ellen describes, "and swam with us for fifteen minutes. We later found out this was quite rare."

Being able to see the entire marine ecosystem is another reason why Mary Ellen enjoys diving. "It is pleasant to just watch the entire underwater show, including the interesting fish," she says. "You see so many wonderful things that you talk about it the rest of the day."

Being a diver can also make it easier to become an astronaut. For Mary Ellen, who became interested in this career during graduate school (B. S. in chemical engineering from Purdue, Ph.D. in physical chemistry from the University of California), diving gave her a better understanding on how the body responds to changes in pressure. She also was already certified when she began training in '92, which is required for all astronauts for space walking training. This takes place in a large tank of water where astronauts both practice in space walk suits and provide diving support. "The sensation



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of floating in space is similar to being underwater," she adds.

Mary Ellen's principal technical assignments within the Astronaut Office have included Shuttle launch preparations, payload and science development, and

Wearing training suits, astronauts conduct a dress rehearsal at the Neutral Buoyancy Lab in order to prepare for an EVA at the International Space Station.

development of standards and methods for crew science training. Her first venture into space took place in '95 on the

shuttle Discovery. On this first mission, STS-70, Mary Ellen helped launch a NASA communications satellite. Her primary responsibility was checking the systems of the satellite and sending it into its 22-thousand-mile orbit above the equator. Mary Ellen also performed biotechnology experiments, growing colon cancer tissues never before possible. She was the primary contingency space walk crew member, and the medical officer. On a 9-day mission, Discovery completed 142 orbits of Earth and traveled 3.7 million miles.

Mary Ellen flew on Atlantis on STS-101 in May 2000, which was the third shuttle assembly mission for the International Space Station. The 11-day mission included a rendezvous with the space station, robotic arm operations, and space walks. The crew repaired and installed a myriad of electrical and life-support components, both inside and out, and boosted the Station to a safe orbit. Mary Ellen's two primary responsibilities were flying the 60-foot robotic arm to maneuver a space walk crew member along the Station surface, and directing

Mary Ellen in the airlock of the Shuttle Atlantis surrounded by space suit gear (above). Underwater practice sessions are conducted in special training suits (left).

the transfer of over three thousand pounds of equipment.

Mary Ellen does not know when her next shuttle flight will be. But it is clear that this diver turned astronaut will continue to set new records, whether it be underwater, in the sky, or beyond.

Author's bio: Laurel has been certified since 1981 and is a freelance writer living in Columbus, Ohio. She is editor of her scuba club newsletter and had much better certification dives than Mary Ellen since they took place in the Sea of Cortez.