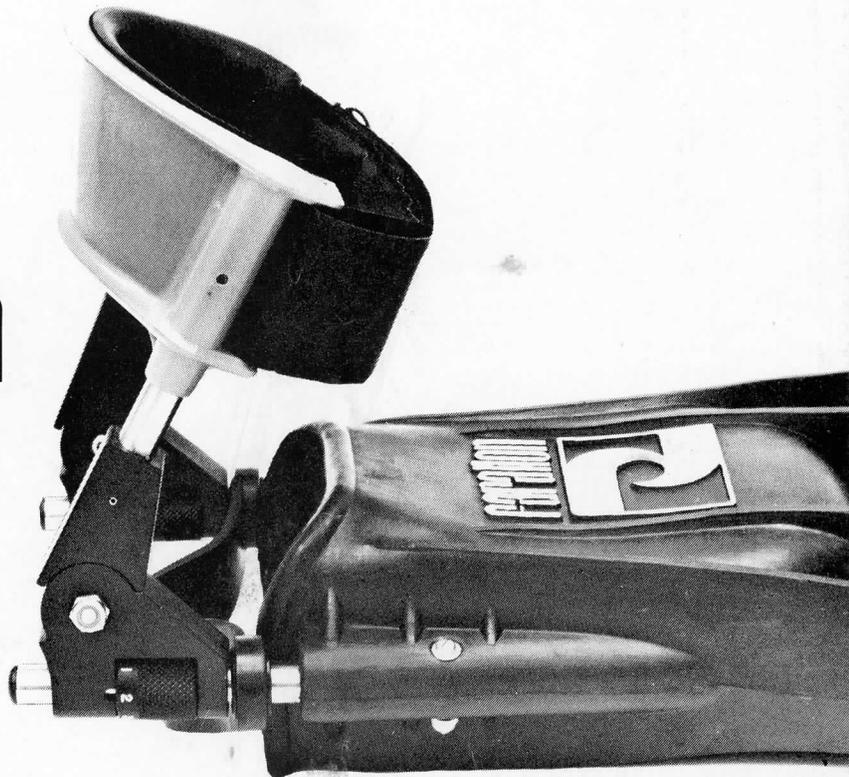


The fara-fin By farallon

AN EXCLUSIVE SDM PRODUCT REPORT
By Jack McKenney



Ralph Shamlan, president of Farallon Industries, Dr. Jesse Garber and I stood on the ramp of Jesse's 37 foot charter boat, the *Safari*. In my hands I held the very first pair of Farallon Fara-Fins, a brand new swim fin design that is a radical departure from any other fin ever manufactured for the purpose of propelling a diver through the water. My first impression was that they were very strange looking, but only because they are so unique.

There have been literally hundreds of fin patents over the last 80 years, which are remarkably similar to the traditional types of fins that we know today. With modern fins, manufacturers have varied the blade length, stiffness and width, adding vents, full foot pockets, adjustable straps, etc. Most efforts to increase swimming efficiency has been in design related exclusively to the blade area. But the most important and significant problem of trying to couple the tremendous amount of energy, which is available from the well-developed leg muscles, to extend to a propulsive device attached to the foot has been sadly neglected. At least it has up until now . . .

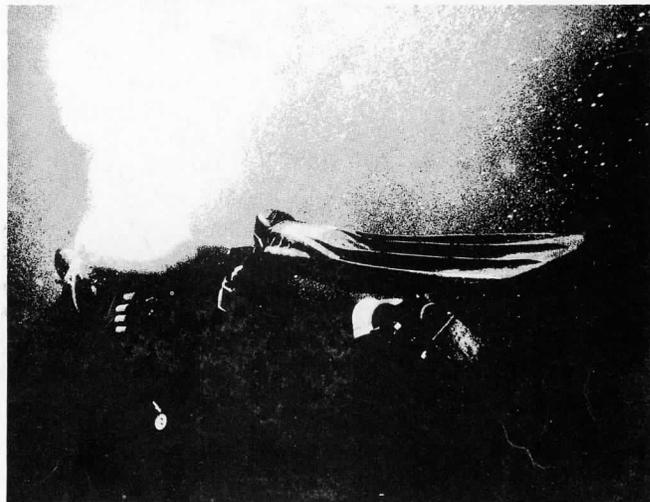
Sit on a desk and wiggle your foot around without letting it hit the floor. You'll notice that your foot is attached to your lower leg by a fully articulated joint called the ankle, which is capable of movement in any direction. It's a fact the ankle is one of the weakest joints in the body. Typically the most common injury a professional athlete experiences, whether he is a basketball player, a track and field man, or a football player, is a twisted or sprained ankle. Take the most well-developed athlete in the world: all he has to do is step off a curb the wrong way and it can put him out of commission for a couple of weeks.

Now, strap a pair of typical fins onto your typical foot, swim with them and chances are that two very distinct things will happen. When the leg is moved up and down, the fin tends to

move from side to side because of ankle movement. This is called "yaw." The second thing is the twisting of the blade about the axis of the foot. When the fin twists (rolls) and yaws, it causes spillage off the sides of the fins. Relatively high ribs on fins, which work similar to spoilers on race cars, can somewhat reduce this spillage, but when a certain degree of twisting and yawing of the kick stroke is reached, so much of the forward thrust component is lost due to spillage, that it drastically reduces efficiency of the kick.

Acknowledging that the ankle is a weak link and that most fin designs do not compensate for yaw and roll, Farallon decided to sit down and really take a good hard look at the problem. Shamlan, who's been referred to as the "boy

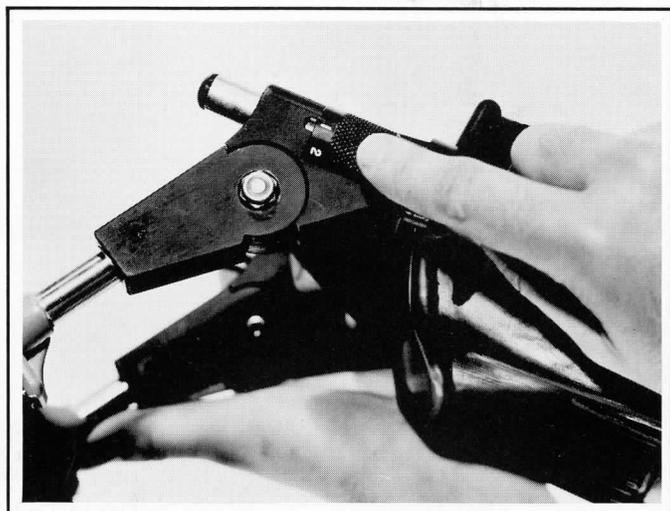
photography by Author



Adjusting the Fara



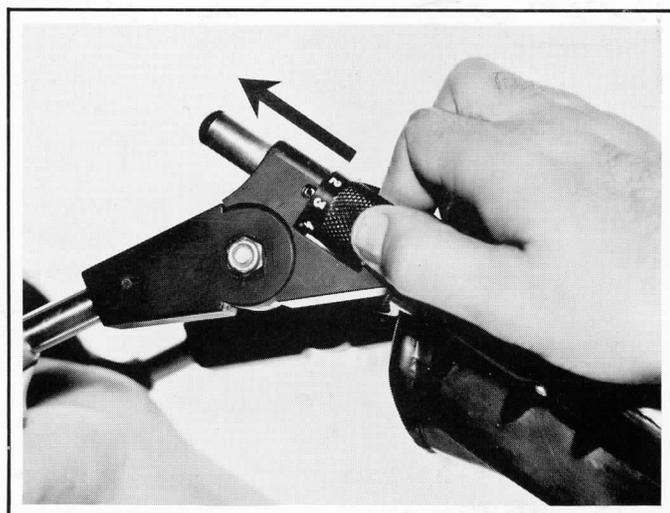
Farallon Industries Belmont, Calif.



1. The Fara-Fin™ is equipped with a positive locking dial adjustment feature. Each Fara-Fin™ is independently adjustable through a range of four foot sizes.

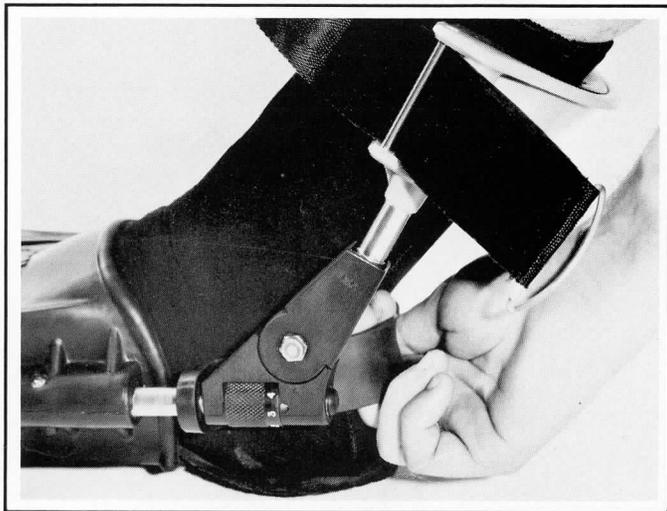


2. With the blade edge toward you, hold the fin securely, and move the flex frame toward the blade. Set the dials for the proper setting to accommodate your foot as you would normally dive (with wet suit boots). To prevent chafing when diving without a wet suit, you should wear boots that are as high as the flex frame.

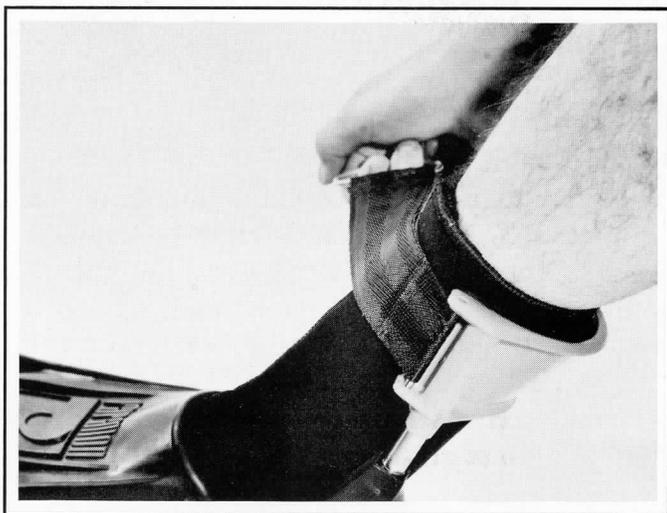


3. Adjust both sides of the flex frame, and slide the dial adjusters forward to the locked position.

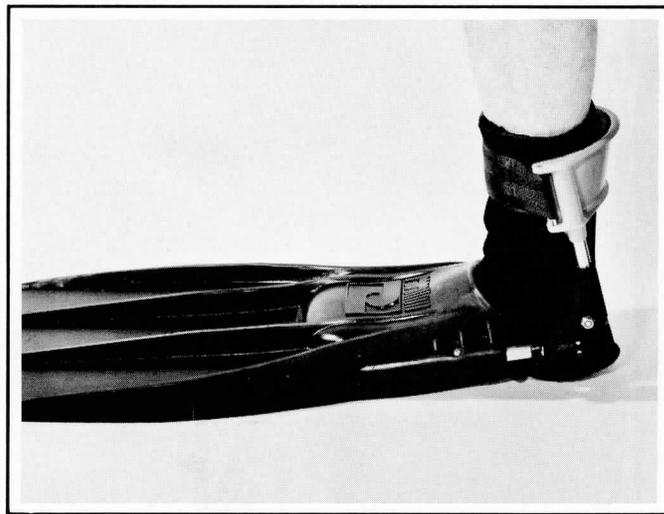
-Fin:™



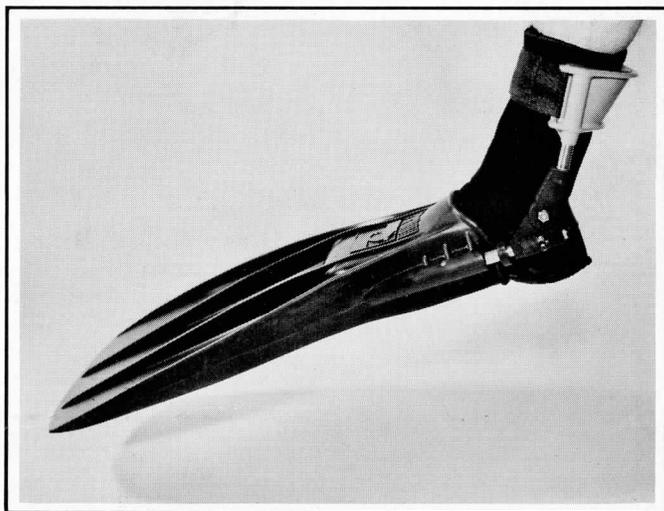
4.
Your foot goes through the Velcro strap and into the foot pocket. Pull heel strap onto the heel.



5.
Adjust the Velcro retainer strap snugly, but not tight around the ankle. (The strap should be loose enough so that it is not felt while diving.)



6.
The Fara-Fin™ hinged flex frame allows you to walk, move forward and stand completely upright comfortably.



7.
In the ideal swimming position, the hinged flex frame braces the foot in the most comfortable and efficient position.

Maintenance Instructions:

1.
After each use, thoroughly rinse your fins with fresh water.
2.
After each use and before prolonged storage, apply silicone spray to the pivot joints and the flex frame, as well as all rubber parts.

wizard" of diving, was standing in front of the windows of the porpoise tank at Steinhart Aquarium studying the swimming action of the porpoise when the answer suddenly came to him:

"If you look at the swimming action of porpoises", he said, "you'll see that the junction between the fluke of a porpoise and its body is not an articulated joint, but instead is rather stiff. If the joint was articulated, the fluke would flop around as our feet do and the porpoise would have to expend a tremendous amount more energy to move at a rapid rate of speed. As it works now, when he pours on the power, the energy is sufficiently transmitted through to the fluke. All we've done is to study marine animals, which are extremely proficient swimmers and make use of these same principles."

According to Shamlian, blade length is also a very important criteria in fin performance. The shorter the blade, the more one has to bend one's foot in order to bend the blade back far enough to develop the forward thrust component of the kick stroke. The longer the blade, the shorter the distance one has to move his leg in order to bend it. A good analogy is in sculling. Very long oars are used rather than shorter ones. The same principle applies with fins. The longer the blade, the more thrust will result, and the Fara-Fin is a good four to five inches longer than most other fins now in the market. From the opening of the foot pocket to the tip of the fin it measures 22-3/4 inches. The stiff side ribs on either side of the fin measures over two inches at the front end of the foot pocket and the blade is nine inches wide.

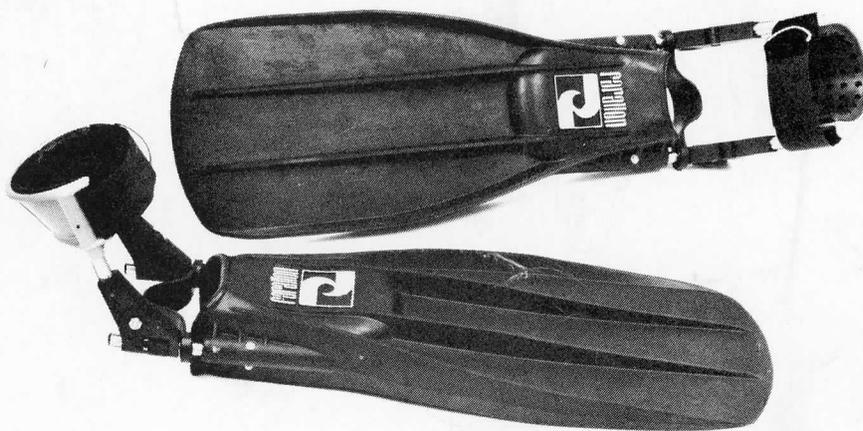
However, getting back to the most important aspect of this new design — that of extending leg power, rather than ankle power into the blade — Farallon solved the problem in the following way: It's a known fact that the most powerful and effective part of a diver's kick takes place during the extending of the leg on the downward stroke. In other words, not the bending of the leg but the straightening of the leg provides the most power output. And when a diver is pouring it on with a large pair of fins, there is a tremendous strain put upon the ankles. The Fara-Fin has two one-half inch stainless steel tubes secured, one on each side of the foot pocket, which extends back from the end of the foot pocket about three inches. Secured to these tubes by an elbow which stops into position at 35 degrees back from the vertical, are two more stainless steel tubes, one on each side, which are connected to an orange Lexan® leg cuff. This cuff fits around the back of the leg just below the calf. A neoprene pad is cemented to the inside of the cuff for comfort and to prevent slippage. A two inch wide velcro strap, which opens to a length of 13 inches secures around the front of the leg and holds the leg firmly in position against the cuff. The elbow can bend forward 30 degrees from the vertical to facilitate walking and standing in the fin.

An adjustable heel strap holds the foot firmly in the foot pocket. Two knurled dial adjusters are an integral part of the elbow and slide smoothly along the horizontal tubes. These dial adjusters have numbers on them from one to four. Number

four position allows for a distance of nine and one-half inches from the inside end of the foot pocket to the back of the heel strap (measured in a relaxed position). Number one position shortens the distance to eight and three-quarters inches.

In effect, what the fin does is to strap the ankle in and prevent it from moving sideways and back past 35 degrees. Power from the strong well-developed leg muscles can now be transmitted directly to the fin blade bypassing the weak ankle because it has been made rigid.

I was anxious to try them out. I sat down on the fantail, strapped myself into them, and slid over the side of the boat. As



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soon as I started to swim, I could instantly feel the difference. When one kicks hard with a standard type of fin, the blade acts like a giant lever trying to straighten the foot out. This is known as planar flexion and causes the typical cramping that is felt in the ankle, arch, and in the calf. With my ankle securely in place, I didn't experience these problems even after swimming fairly hard for an hour. However, what I did experience was a soreness along the inner front part of my legs extending up into my upper thigh near the crotch. Using the fins pulls into play an entirely different set of muscles and it will take a few tries to get used to them. It's like learning to swim with fins all over again.

Later on at UCLA's pool with Dr. Egstrom, I tried swimming with the Fara-Fin on one foot and a standard type of fin on the other foot. That really made a believer out of me! It's not that the Fara-Fin allowed me to swim any faster than with other fins of comparable size, but the comfort improved one thousand percent. The powerful leg muscles of one leg were operating the Fara-Fin, but my one ankle was doing most of the work, or at least taking most of the strain from the standard fin. It's obvious that a diver using Fara-Fins, once he has conditioned his legs to accept this new swimming method, will be able to function in the water much longer than if using standard fins.

At \$59.95, the Fara-Fin certainly has to be the most expensive pair of fins on the market, but when you consider the benefits, they're cheap at twice the price. Ask to try them out in the pool at your favorite dive shop swimming with the Fara-Fin on one foot and your old fin on the other foot. ➤