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The Divine Secrets of the She-P Sisterhood

Seduced by the call of the deep, technical divers Heleen and Laura face-off with that most fundamental challenge of extended duration diving: the call of nature. With their solution in hand – well, not so much – they're spreading the word and the sisterhood, to no one's surprise, is greatly relieved.

Text by Michael Menduno

The joke goes that when God was done creating the Earth he had two extra things left over in his bag and so decided to split them between Adam and Eve. One of the things enabled the owner to pee standing up. "It's a handy thing," explained God, "I was wondering who would like it?"

Adam jumped up and blurted, "Me! Give it to me! I'd love to be able to do that! It's just the sort of thing a man should do. Please, oh please, give it to me!"

Eve just smiled and told God that if Adam really wanted it that badly, he should have it. So God gave Adam the ability to pee standing up. Adam was so excited he whizzed on the bark of a tree and then ran off to write his name in the sand.

"Well, here's the other thing," said God, "I guess you can have it."

"What's it called?" asked Eve.

"Brains," came the reply.

Today with a myriad of female urinary aids flooding the market for concert goers, hikers, skiers, cyclists and fly-fisher women, it's fair to say that Eve's sex is no longer taking its gender differences sitting down. *Trend Hunter* magazine recently identified women's newfound ability to stand and pee using one of several devices like the P-Mate or She Wee, as an emerging societal trend.

But it's the She-P, a unique new silicon external catheter that enables female dry suit divers to pee while standing on the beach, the deck of a bouncing Zodiac, or swimming upside down while squeezing through a restriction in 250 feet (76m) of water, that's changing the world of diving.

Now the girls, like the boys, can go where no one has gone before.

To Pee or Not to Pee?

Male commercial divers have enjoyed the benefits of an in-water urinary solution beginning as early as 1876. By 1909, Siebe Gorman & Co. Ltd. was touting its 'Portable Rubber Urinal' in its catalog. According to the entry, the pouch-like device, which attached to the male diver by means of a belt, was so constructed that "the diver can urinate without fear of the urine entering his dress, no matter what position he may be working." Urine was captured in a tube with a non-return valve and emptied at the end of the job. The accompanying dry suit featured a watertight metal port with a

screw-down plug enabling the diver to pee without undressing. Later innovations included the condom catheter and the working P-valve (the condom catheter is connected to the one-way P-valve used to expel urine from the dry suit without admitting water from the outside).

Early recreational divers never had a pee problem. As everyone knows, though not everyone admits, peeing in a wet suit is easy. Whether you're a guy or a girl, you just let nature take its course, and rinse out the suit later. However, the increasing use of dry suits coupled with the advent of technical diving where long dive times and decompression are the norm, finally forced divers to address the issue of urination.

Ironically, early dry-suited tech divers were slow to heed the call of nature. As underground grey beard Paul Heinerth, who was a member of the original 1987 Wakulla Project, recalls, "We would just hold it till we were in the deco habitat and pee through the doorway in the water just before changing depth, which would act as a flush." And these were long decompression dives to depths between 260 to 320 feet (80-100m). Adult diapers were available, but not regarded as an acceptable solution. "Us manly men were too stupid and or embarrassed to slip on diapers," admitted team member and filmmaker Wes Skiles. Underground patron saint Sheck Exley, also on the project, continued to use a wet suit supplemented with chemical heaters for most of his extended dives.

But times change. Jim King and his team began using diapers on their 1991 Diepolder #2 Project. So did Capt. Billy Deans and the Key West Divers team on deep wreck dives [Full disclosure: I was a member of Dean's team and we used Depends.] Within a few years the men turned in their diapers for a condom catheter and P-Valve. Women were stuck with diapers (or nothing at all), which turn out to be a marginal alternative at best for a couple of reasons. First, because of their limited absorption capacity and second – importantly – because wet diapers produce an unhealthy environment for girl parts and can lead to yeast infections.

Today, the 'condom cath' and P-valve is regarded as technology de rigueur among male tech divers and used by a growing number of instructors and other working divers as well. And for good reason. First, adequate hydration is believed to play an important role in helping the body handle the additional gas loading and

avoid decompression illness (DCI), as well as aiding general bodily comfort and ease. It also helps ameliorate the effects of seasickness. Moreover, being able to pee at will removes an additional stressor and anxiety from the dive. Finally, not having to de-suit before or in between dives can make things much more convenient, for example where there are no facilities, and in some cases, potentially less embarrassing.

"The P-valve is the norm for any meaningful tech dive," explains Jarrod Jablonski, cave explorer and CEO of Global Underwater Explorers and Halcyon Manufacturing. "I look suspiciously at anyone with a dry suit and no P-valve, even in our Cave Class One. It makes people try not to drink when they should. In our community where most people dive dry suits, I'd say there's 90 percent acceptance among the men." As a result, the relief zipper – remember them? – is becoming a thing of the past.

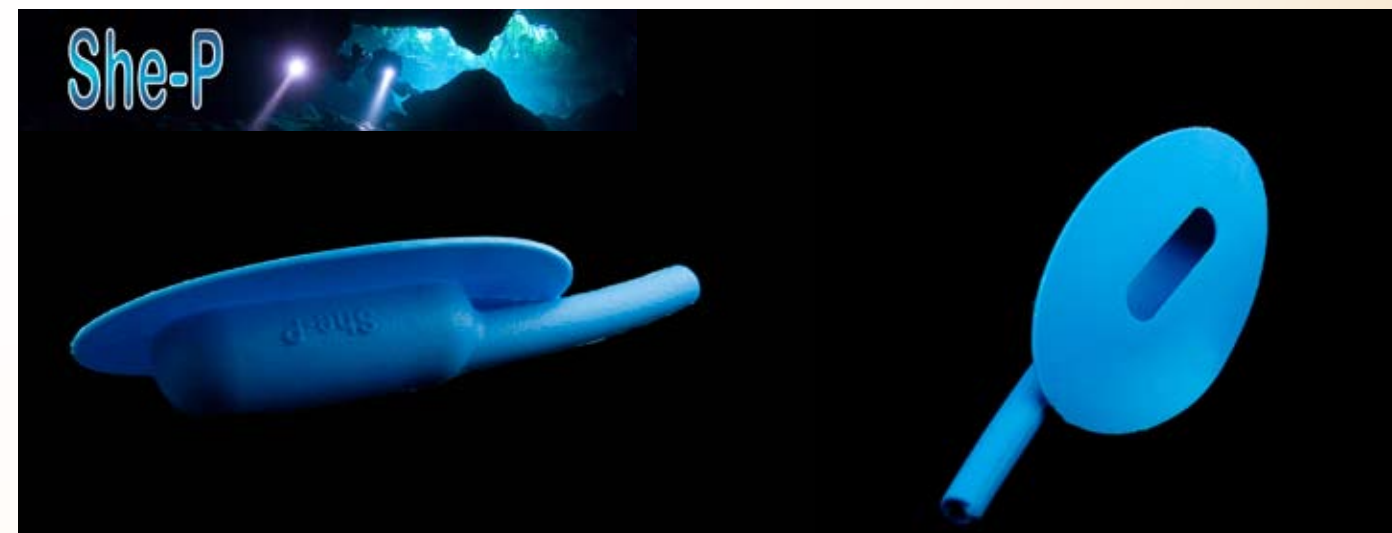
Unfortunately, a woman's anatomy and physiology makes the matter of a portable urinary solution more complicated, particularly for one that will work underwater. But then necessity is the mother of invention; when you gotta go, you gotta go!

The Mothers Of Invention

The absence of something you can get your hands around is not the only challenge in designing a female urination system. Because of their very short urethra (the tube that channels the urine from the bladder and out) a woman's urinary flow is basically on or off. By contrast, men enjoy a measured flow as a result of their long urethra giving them a modicum of control; they can even pinch off their peter and wait, only to release it and flow again. Not so women, who have so much immediate flow they can easily overwhelm a diaper that can only absorb so much liquid per second, and often do. In fact, men actually take two to three times longer to pee than women. Evidently, it's the sitting down and standing back up that takes all the time. As a result of these complications, it's taken more than a century and a quarter for women divers to enjoy the same technological advantages as men.

Enter Heleen "Wethorse" Graauw. A Netherlands secretary by day, Graauw was certified as a recreational diver in 2003 only to fall in love with DIR ('Doing It Right, The Fundamentals of Better Diving', GUE) and cave diving, an avocation she has

■ Conceived by Heleen Graauw, a Netherlands-based diver, the She-P (patent pending), is an enterprise now operated jointly with Laura James, a Seattle area diver. The device has evolved to its present form; the first molded latex She-P is gone, in favour of a soft, medical grade hypo-allergenic silicone model. It connects to a commercially available pee valve via a short length of flexible tube, as seen on opposite page. For more information and instructional videos, go to www.she-p.com - Photo opposite page: Courtesy Alexander Renz - All other photos: Courtesy She-P





■ The evolution of the She-P from modified vibrator, left, through various molded versions, to the present day medical grade silicone model in blue. BELOW: Happy divers, Heleen and Laura. Photos: Courtesy She-P

pursued with passion ever since. Sometimes it takes a newcomer unencumbered by the status quo to dream of things that never were and ask, why not? Wethorse, (her nickname derives from her underwater proclivities and her street address, Paardenhoeve, which translates from the Dutch as 'horse street'), was dreaming of being able to take a whiz on those long decompression stops.

When a girlfriend and fellow diver showed her a rudimentary urinary device she had made, Graauw had her epiphany. Within a week, she had made her first prototype using a pink vibrator she purchased in the Amsterdam Red Light District. The device showed promise but was hard and very uncomfortable. Her boyfriend, commercial diver Sander Jansson, had a better idea, and created a mold to make the device from latex. The first early latex systems, which took three hours each to make, were held in place by means of a paste and back-up diaper. Graauw began producing them for her fellow divers and continued to improve on the design.

The year 2007 was a milestone year for Graauw's invention. While showing off the device during a cave diving trek to the Yucatan, Fred Devos, cave instructor and co-owner of Zero Gravity, Puerto Aventuras, Mexico, dubbed it the 'She-P', and the name stuck. More importantly, one of Graauw's dive partners and early adopter, Anne-Marie van Ginneken, also from The Netherlands, posted news of the She-P on the DECO STOP bulletin board, where it was immediately spotted by dedicated tekkie, photojournalist and videographer Laura James of Seattle, Washington, who ordered a unit, stat! "It was what I had been looking for all my diving life," she said.



As luck would have it, James's She-P got lost in Customs. She ended up contacting Graauw to order a second unit and in the ensuing discussions the two became friends. A surgical tech by training, James eventually received both units—think redundancy—and went to work immediately finding a better adhesive. "The paste was not really sticky," she recalls. "It didn't adhere and you needed a diaper. When it dried it would create obnoxious flakes. And when you tried to wash off, it turned to a sticky mess resembling Elmer's glue."

James started experimenting with Hollister Medical Spray used to hold surgical drapes and prosthetic devices in place and other medical adhesives. Soon after, Graauw agreed to let her become the North American distributor for the She-P, and she eventually became her business partner, all the while working to improve the She-P. "Poor adhesives gave the She-P a bad name in the early days," James laments. "Some women tried it once, and never picked it up again! But we kept trying."

Water Sports Anyone?

More than a year and 20 adhesives later, the girls arrived at the current generation of the She-P. The evolution involved changing materials to stronger, more comfortable medical grade hypo-allergenic silicone; optimally sizing the She-P's reservoir, which acts as a mini-turbulence chamber to manage the flow; adding an extension tube to connect with a P-valve to avoid stressing the unit; and settling on Urobond IV adhesive developed by male urologists. In fact, the watertight adhesive seal is one of the factors that make the She-P unique in the marketplace, enabling the user



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to pee underwater no matter what the orientation and even pee while swimming. It also helps prevent leaks.

The result: A unique device the diameter of a scuba regulator that's soft and adheres snugly against a woman's Mound of Venus forming a watertight seal. Yes, a complete shave is strongly recommended. "We tell users... leave a landing strip at your own risk," cautions James. "We also tell them positioning is everything!" In addition, users are advised to wear a thong, underwear or diaper, over the unit to help keep it firmly in place.

Once secured, the user connects the neck of the She-P to a flexible extension tube and then to a commercially available P-Valve via a quick-disconnect. The She-P works with most P-valves but the company recommends the balanced Halcyon valve because of its wide bore and low resistance.

Most importantly, the She-P is easy to deploy on site says cave instructor and Deco Stop co-founder Heather Armstrong. One of the first 12 women in North America to order a She-P in January 2008, she's used it ever since. "I wrap myself in a towel and can position the She-P and hook it up in under 90 seconds. Even in a small boat." Before the She-P, she used a diaper but said that it just didn't work.

Graauw still makes each She-P by hand, able to complete more than a dozen each day. The basic kit includes the She-P, connecting tube and adhesives, and necessary accoutrements and can be purchased for around \$200 from selected retailers and online at www.she-p.com. Graauw, James and Jansson filed for a U.S. patent last year for both design and concept of the She-P.



■ Laura demonstrates the hands free operation of the She-P. BELOW: Heleen hard at work. Photos: Courtesy She-P

They estimate they have approximately 500 users worldwide and dealers in 18 countries.

Though using the She-P is easy, like other diving technology it requires education, practice and prior prep work, as described above. As a result, Graauw and James have worked hard to provide a plethora of resources including humorous but effective educational videos, pictures, a blog, reviews, FAQ, online ordering, news, a guestbook, and the requisite Facebook fan page titled, 'The Divine Secrets of the She-P Sisterhood.'

"The Sisterhood is an excellent resource," says Yasuko Okada of North Bergen, New Jersey, who dives a classic KISS rebreather and has been using the She-P for more than two years. "It has helped us to nail down and communicate the best practices through trial and error."

Retailers also find She-P resources useful. "Laura has done a great job with her videos and obviously had some fun with them. They really help a potential user to understand what's involved," says She-P retailer Jablonski, who describes it as a "pull and not push" product, available at his Extreme Exposure dive shop in High Springs, Florida.

"Selling the She-P can be awkward on both sides of the counter and sometimes downright intimidating. By contrast, no teaching is needed with a condom catheter. The men just need a few tips. That's all. (Ever try slipping on a condom sans stiffy on a rocking boat deck?) But the typical woman tech diver is starting at square zero."

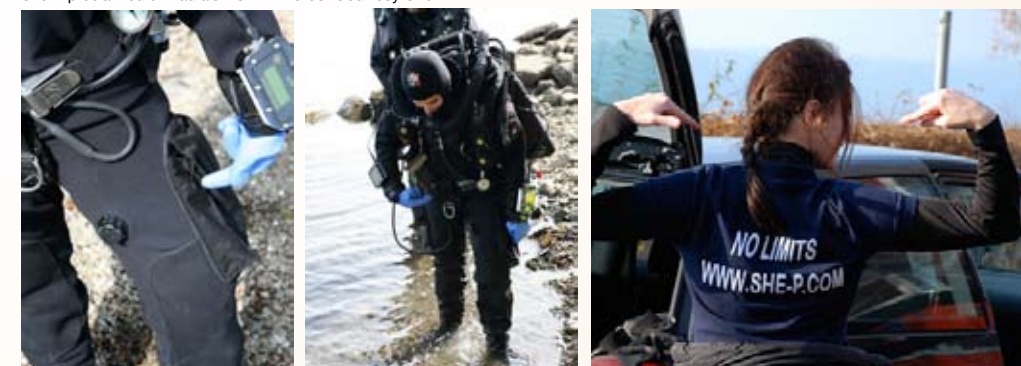
Happy Girls

When I asked Graauw about her goals for She-P's future, her reply was reminiscent of the very early commercial-free days of tech diving when everyone was eager to share what they knew. Call it a labour of love. "Do I have to say something commercial?" she asked quizzically in her Dutch English. "We're not doing any big marketing. Its just girls talking to girls at dive sites. We're just happy to make other girls happy with the She-P. Their men are happy too because they can now make long dives together."

And happy girls they are!

"The She-P gives me the ability to use my dry suit anywhere and everywhere no matter how long the dive, or what the facilities are like," enthused Lynne Flaherty, of Woodinville, Washington, who has been using the She-P for coldwater recreational diving, and cave diving for two years. "Now I'm much more willing to visit shore dive sites with no facilities, including some that I used to avoid." And diving dry in the caves in Mexico "makes me way more comfortable," she added.

■ LEFT: pee valve on leg of drysuit. MIDDLE: Water works in action. RIGHT: The benefit of the She-P proclaimed on Laura's T-shirt! Photos: Courtesy She-P



van Ginneken, who is a mixed gas wreck and cave diver, says the most important benefit is being able to pee under water. "The She-P has prolonged my dives and makes them so much more relaxed and comfortable. Even on the surface, I can wear my dry suit all day and go when I don't have the option of undoing my suit or using a bathroom, and of course there's the privacy aspects of doing this in front of male dive buddies."

The She-P also can help those who suffer from mal de mer, reports Okada. "I get seasick often, so even if the boat has a head, it's very hard for me to go down below to use it. Now that I can drink plenty of water, I'm definitely less seasick and have less risk of DCI."

All of the girls I spoke to emphasized that the She-P is not fool proof. There are occasional leaks, and some women may have trouble getting a good fit because of their belly and shape. Others dislike the clean-up process though it's come a long way since the latex days of using rubbing alcohol or nail polish remover to clean up the glue. Everyone agreed that the time and effort it took to use the She-p was every bit worth the added diving safety and comfort.

"There is a learning curve to using the device, and just as with the guys, there will be failures," reports Flaherty. "But it's worth it. And if you think it's too complicated or distasteful to use, it's not. And besides it's a lot of fun to pee standing up."

Is nothing sacred?

I pressed each of the girls hard to reveal some of the divine secrets of the sisterhood. Unfortunately, to the man they remained tight-lipped. Luckily, Ms. James, an avid communicator, was more forthcoming and shared one of the fundamental mysteries of the order. I offer it to the guys to think about:

"When you see that big smile on our faces before the dive, or hanging on a deco line, or just floating around after the dive, that's not just our love of the water, or our love of diving; that's us, using our She-PS! 🍀"



■ Business partners and fast friends. Half a world away from each other, Heleen, left, and Laura have become like sisters and visit each other in Europe and North America. Photo: Courtesy She-P



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Writer, technologist and tech diver Michael Menduno published and edited *aquaCorps: The Journal for Technical Diving* (1990-1996) and the *tek.Conferences*, and coined the term "technical diving". He has been a member of NACD since 1990. His freelance work has been published in numerous publications that include *Outside* magazine, *Newsweek*, *Scientific American*, and *Wired*.