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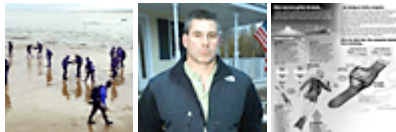
**Corporate coverup exposed divers  
to grave risk**  
**Company kept computer defect  
secret for 7 years, according to  
Oakland lawsuit**

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[Reynolds Holding, Chronicle Staff Writer](#)

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From the first moment of every day, Robert Raimo is exhausted.

His head rages with pain. Black spots like mice dart across his vision. Numbness grips his hands and feet, and he cannot work.

It is as if the oak-chested ex-Marine had suffered a stroke.

But Raimo was merely diving. "Baby diving," he protests - swimming scuba-clad along the reefs off Bonaire, the Netherlands Antilles, last April. And today he can barely function because, Raimo says, he staked his life on a sophisticated diving computer with a potentially deadly flaw.

It was a flaw the manufacturer, Uwatec, hid for seven years, a span of silence that jeopardized the health and safety of hundreds of divers, according to interviews, legal documents and company memos.

In November, four of the divers take their cases to trial in Oakland federal court, where they will argue that Uwatec blocked disclosure of the computer defect at every opportunity.

After two Uwatec employees urged a recall of the computer, the company fired them. When Uwatec's founders sold the company, they

assured the buyers there was no defect.

When the company president testified about the computer, he denied under oath that the flaw existed. And when Raimo asked in January whether there was anything wrong with the computer, a company technician said, Nope. Go ahead and use it.

Cynthia Georgeson, a spokeswoman for Uwatec's parent, Johnson Outdoors Inc.,

says the company moved to protect divers using the computer as soon as possible after confirming the defect last summer.

"This is not a company that behaves irresponsibly when it comes to consumers," she said, "especially when you're talking about diving equipment."

But word of the defect has unnerved countless divers from Miami to Monterey,

where as many as 1,000 explore the bay on any given Saturday.

And the tale of how a corporate coverup exposed serious divers like Raimo to danger has stirred their deepest fears.

"Gear is everything," Raimo said. ". . . I could be dead."

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*Diving fanatics navigating San Francisco's Moscone Center on Jan. 19, 1995 -*

the "gear geeks" and adrenaline junkies with near-death memories of Monterey kelp and Florida caves and U-boat wrecks off New Jersey - had never seen anything like it.

The Aladin Air X Nitrox performed conventional tasks such as tracking safe depths and time limits, but it also monitored blends of Nitrox, a low-nitrogen air supply that allowed divers to venture where they had never gone before.

The sleek, wrist-strapped device was a godsend for serious divers, who risked death or severe injury from the bends - a clumping

of nitrogen bubbles in divers who surface too quickly - or the "martini effect," a nitrogen-induced drunkenness at extreme depths. In 1994, 92 diving deaths and about 1,200 bends cases were reported to the Divers Alert Network.

With the Aladin, Uwatec founders Karl Leemann and Heinz Ruchti were poised to make another splash.

Since developing a primitive diving computer in 1987, the Swiss engineers had introduced technologically dazzling models that allowed Uwatec to capture about 75 percent of the world market.

The company pressed its success by recruiting high-end dealers such as Raimo, who ran dive stores on Long Island, N.Y., and Mitchell Skaggs, a veteran diver from Miami. It consulted on design and performance with highly accomplished divers such as Bret Gilliam, holder of the scuba depth record and a passionate advocate for diving computers.

Now Uwatec founders Ruchti and Leeman counted on the Aladin to lure buyers as no product before, and despite its \$1,200 price - about three times that of other diving computers - it exceeded their expectations.

"When (the Aladins) first came out, they were unbelievable," Skaggs said. "I mean, you could just sell every one you could get."

Then came disturbing news.

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*The timing could not have been worse. It was November 1995, just 10 months after the Aladin's sensational Moscone debut - and shortly before Leemann and Ruchti planned to put Uwatec up for sale.*

According to later testimony by several witnesses:

A design engineer told the two founders about a software defect that caused the device to underestimate nitrogen levels after a series of closely spaced dives. Any diver breathing Nitrox and relying on the computer

over successive dives could exceed safe time and depth limits and fall prey to deadly bends.

Their flagship product in jeopardy, Uwatec executives faced a choice. They could recall the Aladin and protect the lives of hundreds of divers. Or they could keep quiet and shield the company from publicity that might dissuade prospective buyers.

Leeman and Ruchti kept quiet.

Their silence became the template for Uwatec executives questioned about the Aladin. And over the coming years, Raimo and other divers continued to rely on the device, secure in the thought that it would keep them safe.

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*On April 23, 1996, two Uwatec managers at the firm's U.S. headquarters in Greenville, S.C., drafted a notice recalling all Aladin Air X Nitroxes made before December 1995 and sent it to a Kinko's copy center. They said they had "an obligation to try and protect the customers."*

That afternoon, Ruchti fired the managers and replaced them with diving legend Gilliam.

When Gilliam arrived at work two days later, a Kinko's employee presented him with the copying bill. It was, said Gilliam, the first he had heard of any defect, and he called Ruchti for an explanation.

Ruchti told him "there was no defect in the computer and never had been," Gilliam later testified. Ruchti dismissed the notice as the work of "disgruntled, fired employees."

Ruchti repeated the denial a year later, while negotiating the sale of Uwatec to Johnson Worldwide Associates Inc., which later changed its name to Johnson Outdoors Inc. When the deal finally closed for \$33.5 million on July 11, 1997, the sale agreement contained representations from Uwatec that no defect existed.

But Johnson soon learned otherwise when it sought to defend a lawsuit filed by Frank Marshall, one of the fired Uwatec managers,

claiming that the company had terminated him for trying to report the defect.

At first, Johnson's legal position seemed strong. In addition to Uwatec's assurances, Cynthia Moore, a longtime Uwatec sales manager, was on record testifying that the fired managers had concocted a story about the defect to get back at their bosses.

But in March 1998, shortly before the trial, Moore declared that she had lied. She believed that the 1995 Aladin was, in fact, defective, and Uwatec had pressured her to say otherwise.

Gilliam said he called Carl Schmidt, Johnson's chief financial officer, to report that Moore had changed her testimony and was now a hostile witness.

According to Gilliam and his assistant, Schmidt asked: "Well, did you try to bribe her?"

Gilliam paused and said, "No, Carl, that would be illegal and it would be wrong," Gilliam testified later.

Asked in a deposition about the conversation, Schmidt said he "would never conspire with Mr. Gilliam or anyone else to perform any kind of act of that nature."

The trial of Marshall's case commenced before Judge Joseph Watson in Greenville, S.C., in June 1998.

Ruchti took the stand. Asked whether there had ever been a defect in the Aladin's software, he answered, "No. Never."

But sales manager Moore testified that the computer did have a defect. Robert Ling, a Clemson University professor hired by Marshall to test the Aladin, showed how its calculations differed substantially from later, defect-free models.

The jury reached a verdict that Marshall had been wrongfully terminated. The decision, though, did nothing to keep the defective

Aladin off the market.

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*In the evening waters off Miami on March 19, 1999, Skaggs and Rezvan "Tuna" Iazdi headed with video camera and lights to the shipwreck Deep Freeze. Skaggs no longer worked for Uwatec, but he and Iazdi dived professionally. They were breathing Nitrox and using the Aladin.*

After a short and shallow dive, they moved to another wreck, the Tortuga. A few minutes later, they aborted the dive because the camera lights had burned out. They surfaced, replaced the lights, then checked their computers to make sure another dive was safe.

"I look at Mitch's computer and look at mine," said Iazdi in his throaty Portuguese accent. "I say, 'We're good.' "

Finishing at about 10 p.m., the divers checked their computers again. They had a 6:30 a.m. flight to Tennessee, and if they did not allow enough time for the nitrogen in their bodies to dissipate, the low pressure in the airplane could give them the bends.

The computers said they had plenty of time.

But the next day, about an hour into the flight, both men grew nauseous. Iazdi threw up and his fingers went numb. Skaggs' head and shoulder throbbed. They had the bends.

When the plane landed on a stopover in Charlotte, N.C., they rushed to the nearest recompression chamber, in Durham, more than 100 miles away. Shaking, terrified, they spent six hours in the high-oxygen, high-pressure atmosphere that forced deadly nitrogen bubbles from their bodies.

They survived, but the headaches, fatigue and numbness would never go away -

and they would never work again as divers.

At first, neither man could explain the incident.

"I follow my computer," lazdi said. "I always did."

In May, Skaggs told Gilliam of the accident. Gilliam, who had left the company the year before, didn't think much about it until a week later, when a copy of a 3-year-old memo, dated Jan. 30, 1996, arrived anonymously at his office.

It was written to the head of Uwatec's British subsidiary by Ernst Vollm, a software engineer who helped design the Aladin.

"I got e-mail from Rob Palmer (a Uwatec test diver) with a question about the faulty Aladin Nitrox," the memo said.

The question involved how to correct the very software defect whose existence Ruchti and other Uwatec executives had been denying for four years. The memo ended with a warning: "Please keep this information CONFIDENTIAL."

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*For three years after Gilliam's receipt of the damning memo, Uwatec and Johnson remained silent about the Aladin's defect.*

The company weathered an investigation by the U.S. Consumer Product Safety Commission, which had inquired about the computer at the end of 1998 but dropped the proceedings many months later without announcing findings. Gilliam and other former Uwatec employees say the company misled the commission by sending it Aladins altered to remove the defect, but Johnson denies the charge.

More troubling for Uwatec was the growing number of reported injuries - and the lawsuits they provoked.

On July 19, 2001, Skaggs and lazdi sued Uwatec and Johnson in U.S. District Court in San Francisco. They claimed the companies had sold a defective product and lied about its dangers.

On Feb. 28, 2002, bends victim Stewart Esposito filed a similar suit. Twelve days later,

diver David Sipperly sued.

Then came Raimo's accident.

After his fourth and final dive off Bonaire, Raimo returned to his hotel and grew nauseous and dizzy. Pain bit into his shoulders. He realized almost immediately that he had the bends.

Two seven-hour sessions in a recompression chamber saved his life but left him damaged goods. And Raimo, a veteran of thousands of dives, could not understand what had gone wrong.

"I made no mistakes," he says, "no miscalculations."

The accident was so unexpected that, even after months at home with his wife and two children, he could not come to terms with what had happened. But his outlook changed last Christmas, when a diving friend mentioned something about a lawsuit involving the Aladin.

Raimo got on the phone. He learned about Skaggs and Iazdi, Sipperly and Esposito. He could only guess how many others had been hurt, like him, without any notion of the cause.

Finally, he contacted David Concannon, an attorney recommended by several divers, and Concannon sent him copies of the Jan. 30, 1996, memo in which the Uwatec engineer mentioned the Aladin defect.

More than anything, Raimo wanted the Aladin off the market. On Jan. 27, Concannon started peppering the Johnson and Uwatec attorney with letters demanding a recall. The company attorney responded by threatening to sue Concannon for defamation.

On Feb. 5, Raimo sued Uwatec and its parent, Johnson Outdoors Inc., in U.S. District Court in San Francisco.

Later that day, Uwatec pulled the computer from the market.

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*The recall covered 392 Aladins distributed in the United States, but for Raimo, it won't change much.*

Diving was his life. He crewed on dive boats. He dove the limestone caves of Florida, the ships in Wreck Alley off Long Island and, four times, the Andrea Doria - diving's Mount Everest - southeast of Nantucket Island.

"Before, I was just confused," said Raimo. "Now, I was angry. I had sold these things to friends, to colleagues and to people in the military. What was to prevent someone from suing me?"

Johnson spokeswoman Georgeson said the timing of the recall announcement was "coincidental." The company reported the defect to the Consumer Product Safety Commission in October, she said, and did the recall "as soon as the CPSC approved."

In early March, diver Sipperly settled his suit against Uwaterc on confidential terms. Raimo and the other three divers continue to pursue their cases.

And yet Raimo knows that, even if he wins, he has already lost too much.

"Sometimes you just click with people," he says, "and I clicked with divers.

I loved those people. Now, I can't be around diving. It would just make me nuts."

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## **DIVER MAY HAVE GOTTEN THE BENDS...**

As divers descend underwater, pressure increases and forces the nitrogen they're breathing into their body tissue. If divers ascend too quickly, decreasing pressure releases the nitrogen as bubbles that can lodge in joints or in the brain, causing pain or even death.

## Anatomy of a dive

### Air supply

1 Divers can reduce the risk of the bends by breathing Nitrox, compressed air with more oxygen and less nitrogen than surface air. Nitrox allows longer dives but can cause oxygen poisoning on deeper dives.

### Increasing pressure

2 Every 33 feet of depth increases pressure by one atmosphere, a measure of the air pressure at sea level. The greater the pressure, the more nitrogen is forced into body tissue.

### Nitrogen saturation

3 The body consumes oxygen, but nitrogen collects unused in tissue.

### Decreasing pressure

4 Pressure drops during ascent, releasing nitrogen into the blood and through the lungs.

### Decompression

5 A gradual ascent allows nitrogen to dissipate without forming bubbles. On particularly long and deep dives, temporary stops below the surface may be necessary to let nitrogen dissipate sufficiently.

### The bends

6 Type I can cause pain, rashes and burning or itching. Type II can cause seizures, paralysis and other stroke-like effects, even death. Symptoms can occur from 90 minutes to 48 hours after a dive.

...BY RELYING ON FAULTY COMPUTER.

The 1995 Aladin Air X Nitrox diving computer incorrectly assumed that divers breathed low-nitrogen Nitrox rather than air after surfacing. This defect allegedly caused the computer to underestimate the nitrogen in divers' bodies and to tell them they could return to the water faster, dive deeper and fly sooner than

was safe. (Flying is particularly risky due to the low pressure in commercial airplanes.) Diver Rezvan lazdi says he got the bends because the Aladin led him to believe it was safe to fly too soon after three dives in March 1999. The computer also underestimated how quickly his body would eliminate excess nitrogen, or "desaturate."

After his third dive, the computer showed time remaining...

...to desaturate was:

9 hours, rather than the recommended 26 hours

...to fly safely was:

5 hours, rather than the recommended 13 hours

Sources: The Encyclopedia of Recreational Diving, PADI; pretrial testimony; Johnson Outdoor Products, Inc.