



Text by Simon Pridmore

— This issue's column is adapted from a chapter in Simon's latest book *Scuba Exceptional: Become the Best Diver You Can Be*.

**In 2014, off the Coromandel Peninsula in New Zealand, a diver on a discover-scuba experience died when she became separated from her group and ran out of air. She was discovered on the surface, floating face down. The inquest found that the dive operation involved was to blame because they had failed to supervise her properly. They were also criticised for having given her a BCD that was too large and that made it “difficult for her to lift her head and breathe”, as the verdict read.**

The chief health and safety inspector who conducted the investigation into the death was quoted as saying: “... the ill-fitted equipment compromised the victim's ability to try and breathe when her air supply ran out. It also meant she

couldn't tell anyone she was in distress or get help.”

Evidently, the diver ran out of air but actually made it to the surface alive, where she then drowned because of her over-sized BCD. The lack of supervision

put her in difficulty, but it was the BCD that killed her—a tragedy that was completely preventable.

**A solution for the slight**

Poorly-fitting rental equipment is all too

common, and BCDs are the main problem, especially for slimmer adults and children. You often see smaller-framed individuals and teenagers on scuba try-dives and courses for beginners, floating on the surface in a pool or the ocean,

lost inside their inflated BCD with the shoulder harness straps hovering above their ears and their heads partly submerged. Over the years, a number of people have told me that their first experience of scuba diving was so unpleasant

# Choosing a BCD

— *Solutions for the Slight*



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because of an over-sized BCD that they never dived again.

### An answer that fits the problem

It is a systemic problem within the dive industry, but there is a solution and it is being adopted widely in Asia, where

scuba diving is still relatively new, and many scuba divers are of smaller build. I should mention here that the diver who died off the Coromandel Peninsula was Asian, and she was diving in a country where the majority of the diving population is probably not small of build. It may

well be that the BCD that was too big for her was the smallest size the dive operation had.

The solution to the problem is a harness that hugs the body, with straps over the shoulders, around the waist and between the legs, attached to a back mounted air cell. The common terminology for this style of BCD is a harness and wing. The air cell is the wing.

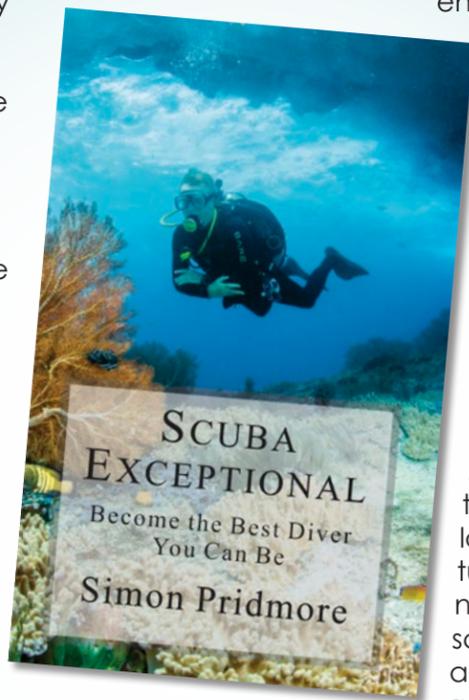


SIMON PRIDMORE

## A New Book for Scuba Divers!

*Scuba Exceptional* may be the fifth in Simon Pridmore's *Scuba* series, but it is actually the true follow-up to his first book, the best-selling *Scuba Confidential*.

The philosophy of safer diving through the acquisition of knowledge and skills is the same, although this time the themes are different. As before, Pridmore provides us with a whole host of extremely useful advice and techniques, illustrated by real-life experiences and cautionary tales. The focus this time, though, is more on issues that experienced divers face. There is more technical diving content, and Pridmore covers some relatively complex issues in his usual clear and easy-to-read style. In many cases, the issues that concern technical divers reflect those that affect scuba divers at every level. After all, as Pridmore writes, technical diving is on the same spectrum as conventional sport diving: It is just a differ-



ent frequency.

*Scuba Exceptional* also deals in more detail with the psychological approach to scuba diving, broaching familiar topics from new angles and borrowing techniques and procedures from other areas of human activity.

While most of *Scuba Exceptional* focuses on the diver, it also takes a look at the wider picture and highlights a number of areas where scuba diving professionals and the "industry" as a whole are letting divers down. As always, Prid-

more is realistic in his assessments. He may shine a little light on the dark side of the scuba diving world, but he does this in order to illuminate bad practices and encourage change, while offering solutions.

*Scuba Exceptional: Become the Best Diver You Can Be* by Simon Pridmore is available on: [Amazon.com](https://www.amazon.com).

### A little history

A couple of decades ago, the first harness and wing systems were developed by cave divers and quickly became the standard for technical divers of all disciplines. Their versatility, the uncluttered design and the increased freedom of movement they offered swiftly led to interest from non-technical divers too. Mainstream industry players, conservative and resistant to change as always, reacted with disdain. "They are unsafe; they will throw you on to your front at the surface and you will drown," said people who had never even tried using this type of equipment. "Divers will find it difficult to vent air from them," they complained.

As is often the case, divers did not listen to the naysayers and decided that they would make up their own minds. They found that all they needed was a little practice in the use of a back-mounted air cell and they could benefit from a design that held the head higher on the surface than a conventional jacket-style BCD, was actually easier to control and did not squeeze their ribcages and inhibit

breathing when the air cell was fully inflated.

They also discovered that a harness permitted every diver, whatever his or her shape and size, to have a BCD that fitted perfectly, as all the straps could be lengthened or shortened to match the individual. They could also be easily adjusted when a diver switched between using a wetsuit and a drysuit. Inevitably, BCD manufacturers followed the demand and more options appeared on the market.

### The story today

This all took place several years ago but,

today, standard jacket-style systems are still more commonly seen, particularly in dive centre rental fleets. Why is this, when a harness and wing offer so many advantages?

A number of factors are responsible. First, harness-and-wing designs have always been more expensive than jacket-style BCDs. This means that, for financial reasons, dive centres have continued to buy jacket-style options for training and rental use. Therefore, not only do new divers get used to using jacket-style BCDs, they are often unaware that an option even exists.

Second, many harness-and-wing sys-



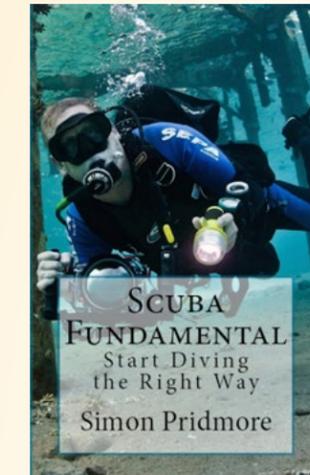
# opinion

A boy in a harness-and-wing system, which is adjustable, so it fits him perfectly. The system allows the head to be held higher on the surface of the water than a conventional jacket-style BCD does. It is easier to control and does not squeeze the diver's ribcage and inhibit breathing when the air cell is fully inflated.

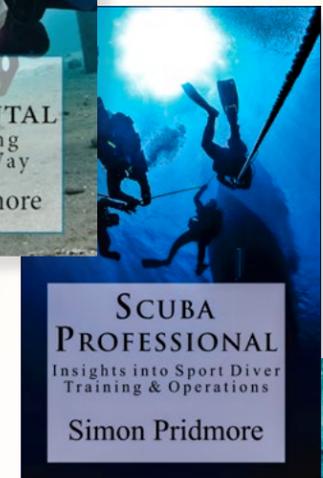


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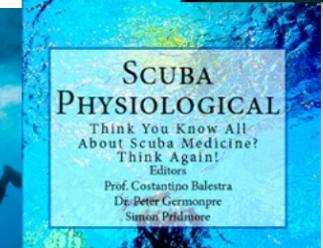
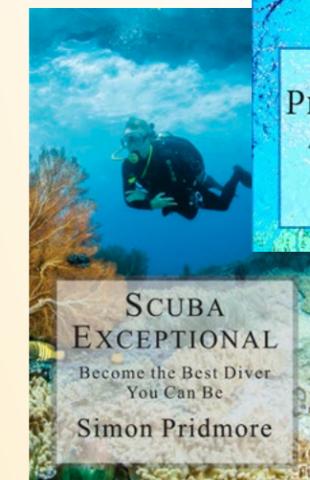
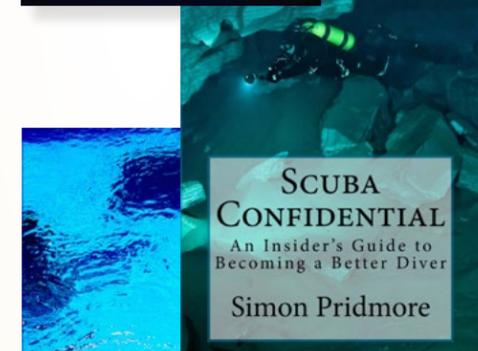
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tems have a solid aluminium or stainless steel backplate and those developed to date have been mostly one-size-fits-all and uncomfortable to wear, unless your body contours match the plate exactly and you wear plenty of neoprene.

Third, where manufacturers produce more comfortable soft backpacks for back-mounted air-cells, they tend to sacrifice versatility in the harness design. Strap length and buckle and D-ring placement are often fixed and non-adjustable. This removes one of the most important advantages of a harness and wing.

Fourth, to date, very little thought has been given to creating wings for the wider market of divers who do not dive with multiple cylinders. Wings designed for use with double cylinders are much too big for single cylinder diving.

Finally, despite the fact that several years ago, scuba diving entered an era where the majority of new divers were women, smaller men or teenagers, few manufacturers have responded with designs that suit the body shapes of this new market.

### New thinking

This has changed. At a dive exhibition in Asia recently, I noticed a crowd around one of the stands and stopped to see what the excitement was all about. I saw a small teenage boy standing there in a wetsuit and wearing a harness-and-wing system that fitted him perfectly. Most of the people drawn to the stand were discussing how well the harness would fit them and how unobtrusive and streamlined the wing looked.

In a region where almost everyone has to fly somewhere to scuba dive, the onlookers were also impressed by how little this harness-and-wing system weighed. Despite the fact that the wing had both an outer and inner bladder; all the D-rings, slides and the harness buckle were premium stainless steel; and it had two cylinder bands—the total weight was under 3kg (7lbs). There were a variety of shapes and sizes of backplate available, to accommodate different body shapes, and the wing was sized and designed specifically for use with a single cylinder.

A few months later, I noticed another manufacturer in Europe selling a wing and harness, sized for what they referred to as a "youth" market. It looked perfect too for adults who find that extra-small European and US sizing is still too big for them.

### Karen's story

I close this chapter with a much happier tale than the one I began it with. A while ago, I mentioned the advantages of harness-and-wing systems to a friend named Karen, who is a petite, slim, fit New York lawyer. She was complaining that, in all her 20-plus years of diving, she had never been able to find a BCD that fit her well. She had tried extra small options from a variety of brands, as well as BCDs supposedly designed for ladies, and had found that they were either still too big for her or did not offer sufficient stability.

I suggested a harness with a small

wing, gave her a (short) list of manufacturers and did not give the conversation any further thought until I met up with her again a year or so later, when she threw her arms around me in an unusually enthusiastic welcome and said she wanted to thank me.

Her new BCD had transformed her diving life. She said she had never experienced anything so effortless and comfortable. What is more, she was delighted to find that now she only needed to carry 2kgs (4.5lbs) of weight with her 3mm wetsuit, instead of the 4kgs (9lbs) she had required before.

I am sure there are many other Karens out there who may need a similar transformation in their diving life. If you know one, please pass on the message. ■

SIMON PRIDMORE

Simon Pridmore is the author of the international bestsellers *Scuba Confidential: An Insider's Guide to Becoming a Better Diver*, *Scuba Professional: Insights into Sport Diver Training & Operations* and *Scuba Fundamental: Start Diving the Right Way*. He is also the co-author of *Diving & Snorkeling Guide to Bali* and *Diving & Snorkeling Guide to Raja Ampat & Northeast Indonesia*, and a new adventure travelogue called *Under the Flight Path*. His recently published books include *Scuba Exceptional: Become the Best Diver You Can Be*, *Scuba Physiological: Think You Know All About Scuba Medicine? Think Again!* and *Dining with Divers: Tales from the Kitchen Table*. For more information, see his website at: [SimonPridmore.com](http://SimonPridmore.com).

