Scape-hander dive team inside Dragon's Breath Cave in Namibia (right). It is a tight squeeze to get into the cave (below).

Dragon's Breath Cave

Cave Exploration in Namibia

Text and photos by Stefan Pape

Dragon's Breath Cave is located in the mountainous region of northern Namibia. Parts of this mysterious cave have yet to be mapped. Technical diver and underwater photographer Stefan Pape tells of his adventure exploring the cave with the Scapehander team.

A dry plateau in northern Namibia. A field of tuff and lava rock. There is a small hole in it. It turns out to be the entrance to a cave system. Everyone is curious. After all, there is an explorer or researcher in each of us. It seems that we are always interested in finding out more about our environment.

Namibia's geography is very diverse. In the north, there is a very arid region with high mountains, and in the northwest, where Etosha National Park is located, there is a large salt pan and game reserve. The vast Namib Desert begins just off the coast. It has some of the largest dunes on the African continent.

In southern Namibia, near the small town of Lüderitz, many tonnes of diamonds have been found in the past. From 1884 until the end of the First World War, Namibia was a German colony, a so-called *Schutzgebiet*, and the small town of Kolmanskop

The Scapehander dive team explored Guinas Cave, which is located in a sinkhole in Namibia (above). Now a ghost town, Kolmanskop was a centre for diamond mining (top centre). The small town of Lüderitz in southern Namibia (top right). Airplane flying over the great dunes of the coastal desert of Namib (far right).

Elephants (above), giraffe and antelopes (centre) in Etosha National Park in northwestern Namibia

became a centre for diamond mining. After the First World War, when Germany surrendered Kolmanskop, it became a ghost town. However, the dry climate has preserved the old houses.

The so-called Otavi Triangle in the north of Namibia is a mountainous region with a high plateau at 1,700m. This region is a very old part of the terrain, full of minerals and caves, including dry caves such as the 2.7km long Ghaub Cave and wet caves such as the huge sinkholes of Harasib Cave, Otjikoto Lake and even Dragon's Breath Cave.

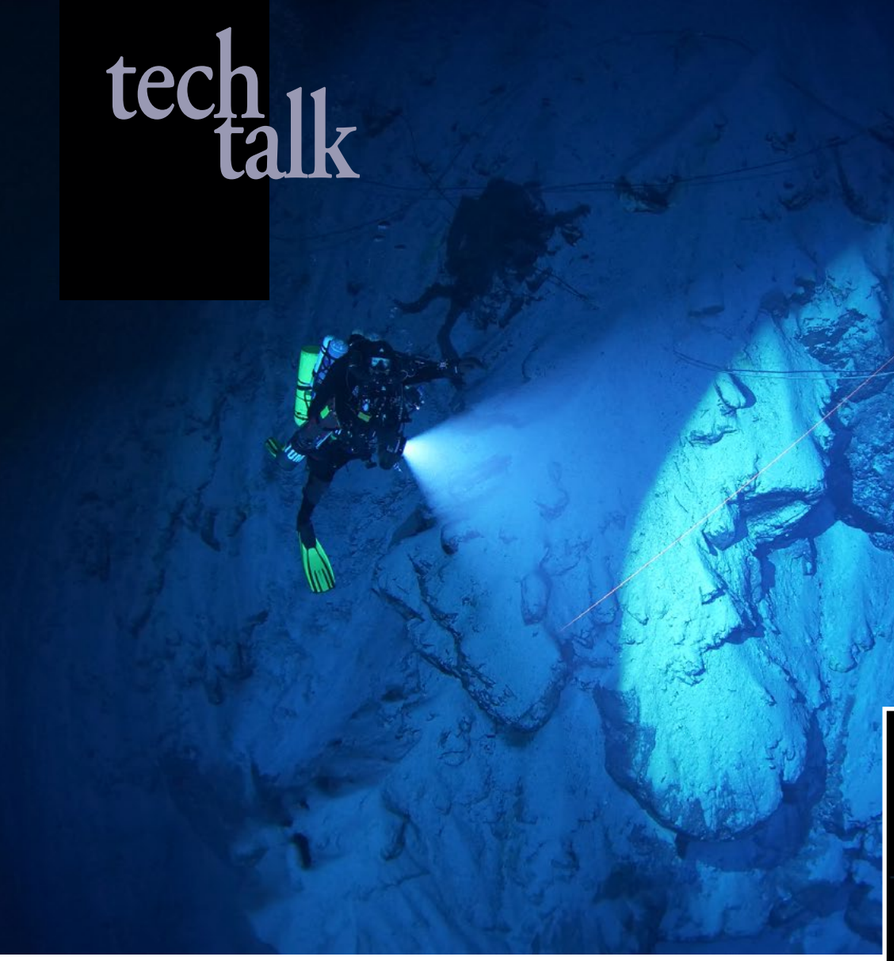
The cave diving team

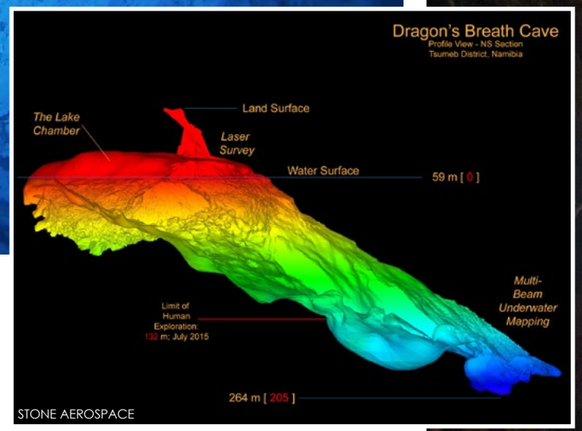
Every cave diver's dream is to go to places where no one has been before. This is what drives us. But this is becoming increasingly difficult in our modern world. The blank spots on our maps are getting smaller and smaller, while deep-sea and space exploration is mainly done by governments or institutions. But there are still uncharted areas on Earth—often right beneath our feet.

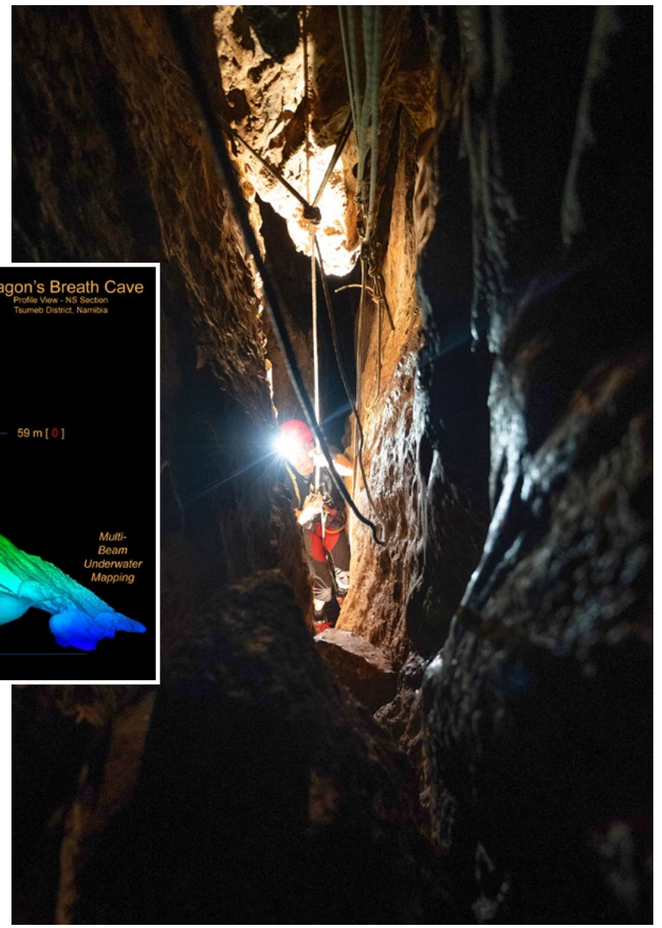
Our cave exploration team, Scapehander, has been active in Namibia since 2017. We have explored dry caves here as well as large underwater sinkholes. In Guinas Cave, we explored a system that was created by a collapse, in Otjikoto we explored the entire depth range, and in the Harasib cave system we penetrated to a depth of 179m.

About the cave

Harasib Cave is located on private land at Harasib Farm, and Dragon's Breath Cave is







Scapehander dive team members explored Harasib Cave (above) at Harasib Farm in the mountainous region of northern Namibia, where Dragon's Breath Cave is located. A map of Dragon's Breath Cave was produced by a Stone Aerospace survey using a Sunfish underwater camera drone (right).

located in the same area. The cave is home to the largest known underground lake in the world, and the first speleological exploration of the cave took place in 1986. The deepest dive to date, which took place in July 2015, was probably 132m deep.

In 2019, Stone Aerospace surveyed the enormous underground lake, using a Sunfish underwater camera drone. The map produced by this survey gave our team a good orientation of the cave. The map showed that the lake was 205m deep, around 2.6 hectares in size, and that the surface of the water only began at a depth of 60m.

Preparations

In preparation, the Scapehander team met regularly for training over three years. We received comprehensive training in SRT (single rope technique) from our SRT coach, Werner (Cheesy) Giesswein, so that all participants would be able to abseil and climb back up on the rope. We practised abseiling into a boat in a swimming pool and rope drilling techniques in dry cave shafts in the Swabian Alb, a mountain range in Baden-Württemberg, Germany.

During a two-day light training course in the Schwalefeld slate mine (in the Sauerland region of Germany), we practised lighting large spaces with a team of divers and powerful

The Scapehander dive team members prepare and transport gear into Dragon's Breath Cave (top centre and top right). As the entrance into the cave was only 60cm by 40cm, rebreathers had to be dismantled, stages were packed into special bags, and boats, floating platforms, food, water, clothing and dive equipment were packed so that everything would fit through the narrow passage (above and right).

It was a tight squeeze (right) getting through the narrow passage to the chamber where the boats and floating platforms could be inflated (left).

Scapehander dive team members on location in Namibia

video lights. We also developed dive plans, materials and decompression strategies, adapting them for different depths and times.

On location

In June, our team arrived at Harasib Farm. We were warmly welcomed by the farmer's family and moved into our tent camp in the farm's garden. After almost three years of preparation, the time had come to get ready for the dive.

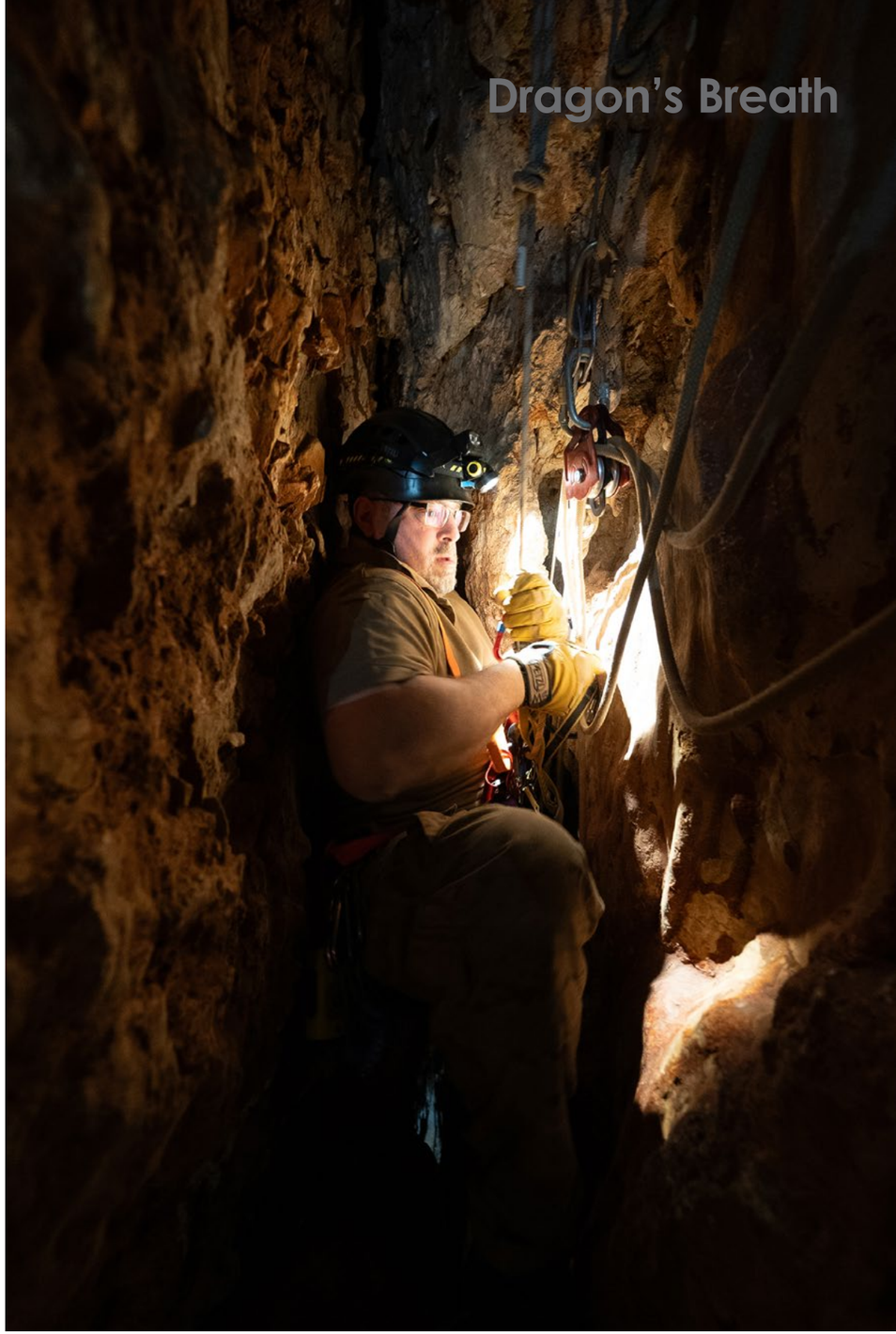
The Scapehander dive team consisted of nine participants: Oliver Schöll (photography), Stefan Gries, Ralf Wupper, Alan Calovs, Markus Schuster, Chris Steenkamp (from Dantica Diving, responsible for on-site organisation), Low Greff (surface support and transport), myself (photography and videography) and, of course, Tom Baier (expedition leader). We spent the next three days bringing the equipment down.

Transporting gear

The cave was accessed through a crevice on the surface. A passage then led slightly downhill to another crevice in the ground, the first abseil section. With an opening of just around 60cm by 40cm, this passage became a bottleneck for transporting all the gear.

All the equipment had to be packed so that it could be transported through this narrow passage. Our rebreathers had to be dismantled; stages had to be packed into special bags; and boats and floating platforms, food, water, clothing and dive equipment had to be packed so that everything would fit through the passage.

But first, all the equipment had to be put into a small chamber—the storage room. It was in this chamber that the boats and floating platforms were first inflated and lowered down a ramp to a bridging metal plate attached to the crevice. From here, the passage led down to a depth of about 50m, directly to the surface of the water. Having reached this point,



Dragon's Breath

Scenes from inside Dragon's Breath Cave (this page); Bones and remains of an animal inside the cave (centre)

the first thing we had to do was to connect the boats and platforms to each other in order to accommodate the dive equipment.

For eight divers, we brought down eight backmount rebreathers, two backup sidemount rebreathers and a total of 26 stages with trimix and bailout gases on a rope, as well as the rest of the dive equipment, camera equipment and eight bright video lights from Swedish manufacturer Era-Underwater. We also colour-coded the personal equipment so that each diver could access their gear on the floating platforms.

All this took three days. Then came the big day.

Diving the cave

In the years before we arrived at the cave, we had practised in a swimming pool the sequence of abseiling into a boat, putting on a drysuit, putting on a rebreather and then going into the water. If possible, each team member should be able to complete this sequence in about eight minutes, so that the first divers do not have to wait too long in the water. It took a lot more effort to do the dive in parallel with eight other divers, but we wanted every team member to be able to dive on an equal footing and for there to be no difference between push divers and support divers.

The dive itself was breathtaking. We glided down into the darkness, and our powerful lamps revealed huge stretches of stone, sandy areas and animal bones. The cave first descended vertically to

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Scenes from inside Dragon's Breath Cave (this page). A diver sets a marker on a line, part of nearly 400m of line that was laid by the team (above).

a depth of 55m, then we reached a gigantic passage that descended at an angle of around 15 degrees. The cavity was so huge that even with all our lamps and our team very widely spread out, we could only illuminate a quarter of the entire passage at best.

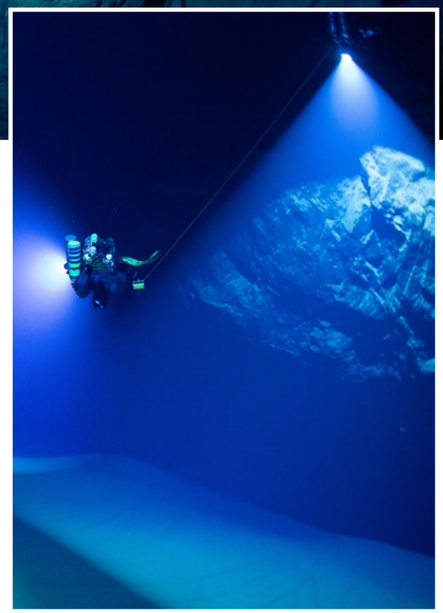
We re-laid around 400m of line and descended to a depth of almost 160m. As the way back took just as long as the way to this point, the first decompression stage began at 102m. We then continued in this manner, so that in the end, we had a total dive time of nine hours and two minutes, with a maximum depth of 200m, and we had planned a maximum dive time of 10 hours.

After the last three hours of decompression with some back pain, we were really glad to be able to take off our equipment and rest on the wet platforms. No rebreathers had failed, and there had been no major equipment failures, nor team failures after the dive. This put the team in a good mood and showed that our dive planning and decompression strategy had worked.

After about six hours of rest, we began the ascent, and expedition leader Tom Baier was particularly happy when everyone was back at the surface, safe and sound. We then spent the next two days bringing the approximately 1.8 tons of equipment back to the surface and out of the cave.

Conclusion and results

The Scapehander team explored a considerable new section of the Dragon's Breath Cave and achieved a depth record in the cave, with eight divers. We have learnt that teamwork and training, as well as meticulous preparation, are necessary to carry out such an expedition. Nevertheless, we only got to know and document a small part of this enormous cave. ■



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REFERENCE: ETOSHANATIONALPARK.ORG