

Recompression Chamber Safety

 August 1, 2017  By Francois Burman, Pr. Eng, MSc.



Photograph by Matias Nochetto

When a diver is injured in a remote location, the best course of action is not always apparent. Historically, the major dilemma was whether to get the diver to a nearby but less well-known treatment facility or to initiate an evacuation.

To promote the best outcomes in these situations, DAN®compiled a risk assessment guide¹in 2000 that drew from the many international publications that moderate and regulate the commercial diving and medical hyperbaric oxygen therapy industries. These publications include risk management philosophy and consideration of related issues such as occupational health and safety.

Instead of simply listing requirements relevant to the safe recompression of injured recreational divers, DAN identified real, likely hazards, quantified their significance and presented mitigation guidance for each. The purpose of this approach was to foster comprehension rather than just compliance — to focus on actual rather than hypothetical issues.

In 1998, two years before the first edition of the guide was published, DAN had embarked on an assessment process of recompression facilities around the world that would ultimately last 13 years and include 105 facilities. The data that resulted from this work formed the basis of not only the 2000 edition of the risk assessment guide but also two subsequent editions, published in 2011 and 2016.²

A DAN researcher analyzed the initial data to identify the most significant risks at all these facilities. He found 82 common risks and scored them using a dedicated recompression-chamber risk-assessment model that accounted for probability, consequences and frequency of occurrence. The most concerning risks, listed by rank, were as follows:

These results clearly show that effective management, administration and operation of a facility — human factors — affect patient safety more than technical factors do. Better-trained and motivated staff and more frequent use of the chamber also enhance safety. Recompression chamber facilities that establish systems for effective staff training, continuous risk awareness, appropriate medical supervision and reliable chamber operation and availability are well on their way to providing excellent care and improving outcomes.

DAN's promotion of safe chamber operations goes far beyond the creation and dissemination of risk assessment guides. Back in 1993 DAN created an international outreach initiative known as the Recompression Chamber Assistance Program (RCAP) to help improve underfunded chamber facilities around the world. Through RCAP, DAN has designed and conducted a series of safety education programs, provided on-site safety assessments at more than 150 facilities, paid for advanced training for facility staff and offered technical and operational support to chamber facilities that expressed interest in addressing their safety issues.

Through these continuing efforts to elevate the safety and capabilities of hyperbaric chambers around the world, DAN advances its mission: to help divers in need.

References

1. Burman F, Ramsay R, Cronjé FJ. IDAN risk assessment guide for recompression facilities. Durham, NC: International DAN, 2000.
2. Burman F, Cronjé FJ, Ramsay R. Risk assessment guide for recompression facilities. San Antonio, TX: International ATMO, 2016.

© *Alert Diver* — Q3 2017

Articles in [DAN Mission](#)

[Avoiding Panic After Regulator Failure](#)

[Dive Boat Fire Safety](#)

[Reduce Your Liability Risk](#)

[Supporting Those Who Serve Underwater](#)

[Right of Refusal](#)

[Ketones, Manta Rays and Extreme Environments](#)

Issue

Q3 2017

