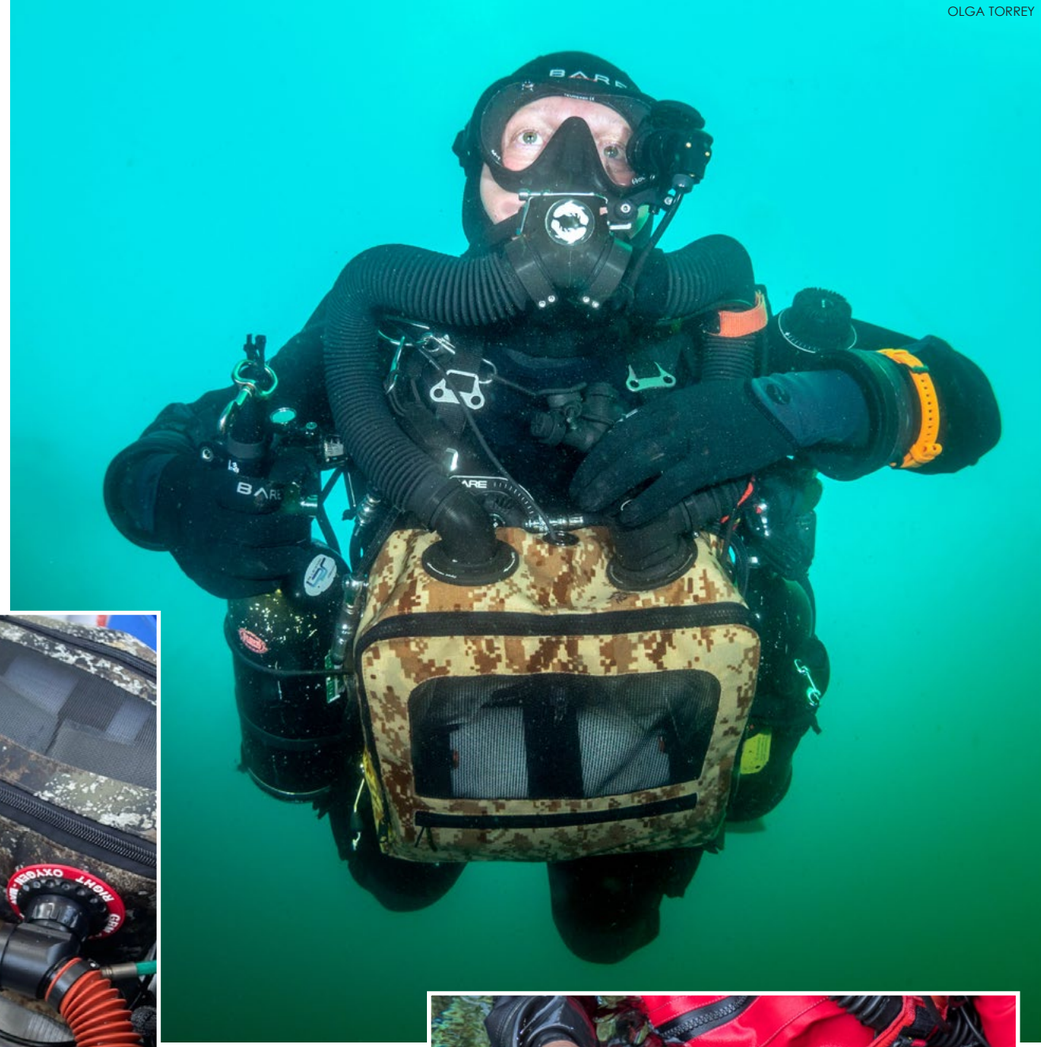
OLGA TORREY

Gregory Borodiansky diving his Generic Breathing Machine (GBM), a front-mounted rebreather he invented (right); The most recent GBM configuration (center); Detail of the single button needle valve oxygen control block (bottom right)

The Generic Breathing Machine

— *Front-Mounted Rebreather Innovation*

Text by Larry Cohen
Photos by Larry Cohen, Olga Torrey and Gregory Borodiansky

Technical diving instructor and inventor Gregory Borodiansky is qualified to dive 20 different rebreathers. He is also a rebreather instructor on many units and a rebreather instructor trainer. Since Borodiansky has a background in electronic engineering and computer science, he took the features he liked on each unit and designed a front-mounted rebreather. Larry Cohen reports.

Borodiansky's philosophy is to make rebreather diving more like diving open circuit. Open circuit divers do not need to be trained on each brand of regulators, so if a diver is certified on any rebreather, they can dive on Borodiansky's Generic Breathing Machine (GBM).

The GBM does not have a solenoid to control the amount of oxygen injected into the loop. Instead, it has an adjustable needle valve that does not need to be calibrated with a regulator. Divers wear the rebreather on the front of their bodies. It is so tiny that the diver will not even notice it is there. It is like the pouch a kangaroo has for its baby.

The oxygen bottle can be attached to the bottom of the rebreather or carried off-board. The diluent gas bottle is carried off-board. Because of the GBM's size and simple operation, it can be used as a backup rebreather for extremely deep or long dives.


GREGORY BORODIANSKY


OLGA TORREY

Diving Dutch Springs in Pennsylvania, USA. The GBM is extremely small.

Electronics

The electronics has an interesting design. There are two sensor modules. One holds three sensors and the other holds one sensor. The configuration is two solid-state and two analog sensors.

Borodiansky has electronics that convert the two solid-state sensors, so a Shearwater computer can read them. The sensor modules are connected to the Shearwater computer with an AK4 four-pin cable designed for marine electronics. It is possible to disconnect and change computers without causing a flood.


LARRY COHEN

Borodiansky has been diving and improving the GBM for the past several years. He has been diving the GBM on wrecks as deep as 100m (330ft) and using it in caves. Once he has the GBM certified by a training agency, it will be offered to the technical diving community. ■