

Transportable Recompression Chamber System

When initially established, the UCTs were provided with a large double-lock recompression chamber system (RCS), manufactured by Dixie Manufacturing. In the inner lock, it could treat seven personnel seated (six patients with an accompanying tender) or two patients lying down with an accompanying tender. The total system was contained in two 20' MILVANS for transport. One MILVAN contained the double-lock chamber with controls. The second MILVAN contained two low pressure air compressors for chamber air supply plus high-pressure air flasks for emergency back-up air supply as well as one high pressure air compressor provided to charge the associated air flasks. While this system provided a robust capability for recompression treatments, the size, weight and overall complexity of the system resulted in significant challenges for rapid deployment.



Chamber System at NOTC, Morris Dam, Azusa, CA



Chamber System being loaded on C-141

Additionally, because of the size and expense, initially only one system was provided to each UCT. As UCT detachments grew in number, the question of full coverage of recompression treatment for each detachment was an operational as well as safety requirement. Navy diving units such as the UCTs, EODs and later the MDSUs all expressed a need for a lighter and more portable recompression chamber system.

In the mid-1980's a potential upgrade to the larger RCS was identified from Australia, built by the Parcel company

The Parcel, Transportable Recompression Chamber System (TRCS) is a reduced volume, semi-closed, dual place detachable lock recompression chamber system which features light overall weight and efficient use of compressed air. The treatment chamber is designed to facilitate hyperbaric oxygen therapy to a diving casualty tended by another diver or corpsman. Unique to the TRCS is the ability to detach the outer transfer lock (TL) to facilitate transport of patient and tender while under pressure to the site of a hospital or Definitive Treatment Chamber DTC.

The OFP joined with the UCTs and other Navy diving units in support of the development and evaluation of the PTRCS with the goal of establishing the units as Navy-authorized equipment. Tests and evaluations were conducted at the Naval Civil Engineering Laboratory, the

Experimental Dive Unit and the Naval Coastal Systems Center. Field evaluations included tests conducted by EDU and UCT-2 in the Arctic environment. In 1990 the units were successfully qualified for Navy use.

“The TRCS (Figure 21-7) consists of two pressure chambers. One is a conical-shaped chamber called the Transportable Recompression Chamber, and the other is a cylindrical shaped vessel called the Transfer Lock (TL). The two chambers are capable of being connected by means of a freely rotating NATO female flange coupling. The TRCS is supplied with a Compressed Air and Oxygen System (CAOS) consisting of lightweight air and oxygen racks of high-pressure flasks, as well as a means of reducing the oxygen supply pressure. The chamber is capable of administering oxygen and mixed gas via BIBS.”

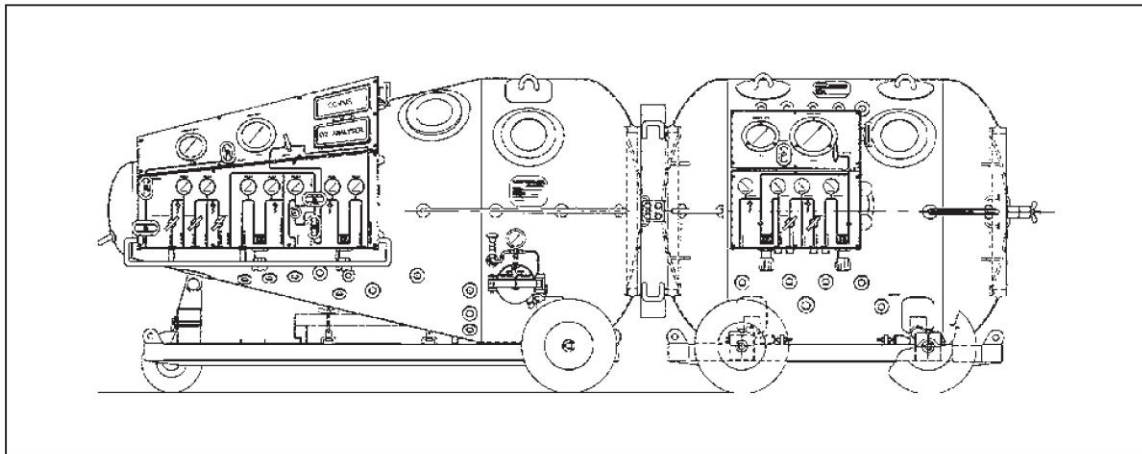


Figure 21-7. Transportable Recompression Chamber System (TRCS).

1



UCT-2 utilizing TRCS during cold weather diving training, Bridgeport, CA

Additional citations: DTIC ADA229907 and ADA223038