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Selman Akbulut* (akbulut@math.msu.edu), Michigan State University, Department of Mathematics, E. Lansing, MI 48824. *Cappell-Shaneson's 4-dimensional s-cobordism*. Preliminary report.

In 1987 Cappell and Shaneson constructed an s-cobordism H from the quaternionic 3-manifold M to itself, as a possible counter-example to the missing 4-dimensional s-cobordism theorem. We will exhibit a simple handlebody picture of H . We will show that while capping one end of H (by some natural 4-manifolds bounding M) dissolves H , it continues to exhibit strange behavior from the other end. We will discuss the relation H to the Gluck construction and Fintushel-Stern Knot surgery construction. (Received October 03, 2000)