

1974, July 14

The Strait of Otranto, off the coast of southern Italy

**Tetraethyl lead** and **tetramethyl lead** (Class 6) in drums; liquids that are poisonous if inhaled or if skin is exposed; VP 0.01 kPa (20°C), TLV 0.075 mg/m<sup>3</sup> (USA), IDLH 40 mg/m<sup>3</sup> (USA); **marine pollutants**

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**Summary:** The Yugoslavian dry cargo ship **Cavtat** collided with the Panamanian bulk carrier **Lady Rita**. Cavtat, who sank in Italian territorial waters at the depth of 94 m four hours after the collision, carried 150 tons of **tetramethyl lead** (TML) in 500 drums on deck and 120 tons of **tetraethyl lead** (TEL) in 400 drums in the holds. The hull of Cavtat was split open at the collision and this made salvage of the whole vessel impossible. 400 drums of TML lay on the seabed around the vessel whereas the other drums remained on and within the damaged ship. Some drums became demolished at the accident. After more than two years of governmental discussions and media debate, the Italian Parliament granted financial support for salvage of the cargo. In April 1977 salvage of the drums started by the Italian offshore company Saipem. Teams of two **saturation divers** each performed the work inhaling a mixture of oxygen and helium. They worked 8 hours per day during 20 days, after which a three days decompression they were replaced by two new divers. The team spent 16 hours overnight in a **residence pressure chamber** on a salvage vessel's deck. In the mornings they crept over to a smaller chamber that was descended to a place close to the wreck where they took on outer protecting suits which were kept on the seabed. Through instructions over radio between the salvage vessel and the divers the drums were moved by a lifting device to a special container that could hold 14 drums. When this container had been filled, it was tightened gas-proof, lifted to the vessel and replaced by an empty container. The work was finalized after one year.

93% (250 tons) of the cargo was salvaged and 20 tons lost. Monitoring afterwards showed minor environmental effects. The cost of the operation was USD 16 million.

**Cause of Accident:** The northbound Cavtat suddenly sheered apart and the collision occurred with the southbound Lady Rita.

**Comments on Response:** The decision to salvage the cargo was very much delayed and was not taken until 2.5 years after the accident, after great pressure from scientists, politicians and mass media. When the work started it was performed in a professional way by an offshore company.

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**Source of Information:** 1) Principally personal communication, 2) G. Tiravanti, G. Boari, 1979, "Potential Pollution of a Marine Environment by Lead Alkyls: The Cavtat Incident", Environmental Science & Technology, 13 No. 7, 849-854. (Abstracted April 1991 by Björn Looström, Swedish Coast Guard H.Q.)