

TRIESTE BATHYSCAPHE

General dimensions

Overall length: 18.15 m

Overall width: 3.5 m

Overall height: 8.0 m

Draught: 5.6 m

Displacement: 150 t

Payload at a depth of 11,000 m : 3 t

Materials: steel float and sphere

Ballast: 18 t (including iron pellets and hoppers)

Construction: Cantieri Riuniti dell'Adriatico in Montfalcone (I), in 1952.

In 1952, an initial 3.5 m diameter float, 15 m long and weighing 15 t was built in Italy, as well as an initial sphere. When the Americans stated their objective of descending to a depth of -11,000 m, a new sphere was built by Krupp. Unable to machine the sphere in two hemispheres, the German firm forged it in three parts: a ring and two caps weighing 13t. Its thickness was 12 cm, reinforced to 18 cm near the portholes. The internal diameter was 1.94 metres. It was fitted out in Vevey, Switzerland. The second float, also of German construction, had a diameter of 3.5 metres and weighed 16 tonnes. To compensate for the weight of the new cabin and additional ballast, the float was extended to 17.60 metres, taking the volume of gasoline to nearly 130 m³. The float was manufactured from steel and aluminium. To prevent it from being crushed during the dive, the float was open in its lower part to balance internal and external pressures. Because of this, its structure was relatively light. To fill it, gasoline was chosen because it was cheaper and, more importantly, a liquid. Gas was unsuitable, being too compressible for a dive of such depth.

Cabin

1st sphere constructed by: Aciéries de Terni, Terni (I), 1952.

2nd sphere constructed by: Krupp, Essen (D), 1958

Fitting out of 2nd sphere: Ateliers de Constructions Mécaniques de Vevey (CH)

Internal diameter: 1.94 m

Hull thickness: 9 cm, 15 cm (near openings)

Weight: 2 t

Crew: 2 men

Endurance submerged: 24 hours

Portholes: 2, cone-shaped, made of Plexiglas, (polymethylmethacrylate)

Air: oxygen supplied by bottles of compressed gas (CO₂ contained in Draeger cannisters)

Batteries: 60 kWh

Propulsion: 2*2 HP

Records established:

1956, record for the deepest dive in the Mediterranean, -3,700 m (-12,139 feet).

1960, world record for the deepest dive: -10,916 m (-35,813 feet). The feat has since been repeated by remote-controlled apparatus but never again by man.

Completed dives

1953: First adventure in the Mediterranean: 7 dives off the shore of Capri to depths of between -8 and -3,150 m (-10,334 feet).

1954-1955: No dives. Jacques Piccard met Robert Dietz, Scientific Liaison Office of the US Navy.

1956: The Trieste made 8 dives between Capri and Ponza to depths of between -4 and -3,700 m (-12,140 feet).

1957: As part of a wide-ranging programme of scientific research, twenty-six dives took place in the Gulf of Naples to depths of between -34 and -3,200 metres (-110 and -10,500 feet). On board were American, Swedish, Italian and Swiss scientists.

8 January 1958: purchase of the submarine by the American Navy.

1958: 10 dives were made off the shore of San Diego to depths of between -270 and -1220 metres (885 and 4,000 feet).

1959: test dive, followed by a descent to -5,530 metres (-18,143 feet) off the island of Guam.

23 January 1960: the dive to a depth of -10,916 m (-35,813 feet), in the world's deepest trench, the Mariana Trench, at 11°19.7'N and 142° 12'E, in the Pacific Ocean. Jacques Piccard and Don Walsh were decorated by America's President Eisenhower. Even today, no man has ever ventured deeper.

1963, the **Trieste** was used again to search for the wreck of the Thresher, the atomic submarine which disappeared at a depth of -2,350 metres (-7,709 feet) with 129 men on board.

Actual location: The submarine is conserved by the National Museum of the US Navy in Washington (USA). A replica of the second sphere is on display at the Deutsches Museum, Munich (D).