

History of Scuba Diving



About 500 BC: (Information originally from Herodotus): During a naval campaign the Greek Scyllis was taken aboard ship as prisoner by the Persian King Xerxes I. When Scyllis learned that Xerxes was to attack a Greek flotilla, he seized a knife and jumped overboard. The Persians could not find him in the water and presumed he had drowned. Scyllis surfaced at night and made his way among all the ships in Xerxes's fleet, cutting each ship loose from its moorings; he used a hollow reed as snorkel to remain unobserved. Then he swam nine miles (15 kilometers) to rejoin the Greeks off Cape Artemisium.



15th century: Leonardo da Vinci made the first known mention of air tanks in Italy: he wrote in his Atlantic Codex (Biblioteca Ambrosiana, Milan) that systems were used at that time to artificially breathe under water, but he did not explain them in detail due to what he described as "bad human

nature", that would have taken advantage of this technique to sink ships and even commit murders. Some drawings, however, showed different kinds of snorkels and an air tank (to be carried on the breast) that presumably should have no external connections. Other drawings showed a complete immersion kit, with a plunger suit which included a sort of mask with a box for air. The project was so detailed that it included a urine collector, too.



1772: Sieur Freminet tried to build a scuba device out of a barrel, but died from lack of oxygen after 20 minutes, as he merely recycled the exhaled air untreated.

1776: David Bushnell invented the Turtle, first submarine to attack another ship. It was used in the American Revolution.

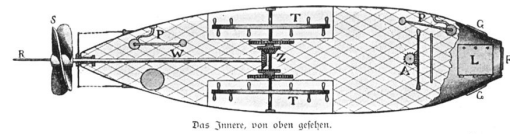
1800: Robert Fulton builds a submarine, the "Nautilus"

1825: William H. James designs a self contained diving suit that had compressed air in an iron container worn around the waist.

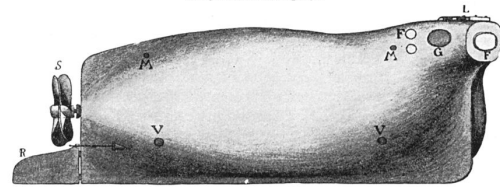
1829: Charles and John Deane of Whitstable in Kent in England designed the first air-pumped diving helmet. It is said that the idea started from a crude emergency rig-up of a fireman's water-pump (used as an air pump) and a knight-in-armor helmet used to try to rescue horses from a burning stable.

1829: E.K.Gauzen, a Russian naval technician of Kronshtadt naval base (a district of Saint Petersburg), offered a "diving machine". His invention was an air-pumped metallic helmet strapped to a leather suit (an overall). The bottom of helmet was open. The helmet was strapped to the leather suit by metallic tape. Gauzen's diving suit and its further modifications were used by the Russian Navy until 1880. The modified diving suit of the Russian Navy, based on Gauzen's invention, was known as "three-bolts equipment".

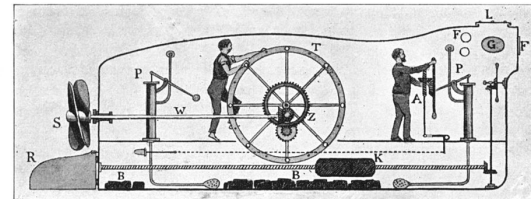
Around 1842: The Frenchman Joseph Cabirol started making standard diving dress.



Das Innere, von oben gesehen.



Äußere Ansicht.



Das Innere, von der Seite gesehen.

Der Bauersche Brandtaucher.

Länge: 7,90 m. Breite: 2,00 m. Höhe: 3,00 m.

- | | |
|------------------------------------|---|
| S Medizinische Schraube. | B Eisenballast. |
| W Schraubenwelle. | V Ventile für das einlassende Wasser. |
| R Steuerräder. | M Öffnungen für das auszapfende Wasser. |
| A Steuerapparat. | F Mit Glas verschlossene Fenster. |
| T Zylinder. | G Mit Gummi verschlossene Öffnung zum Hinaus- |
| Z Zahnradsystem. | greifen, um Sprengminen an den feindlichen |
| P Pumpen. | Schiffen zu befechtigen. |
| K Verschiebbares Balanciergewicht. | L Günstigelast. |

1856: Wilhelm Bauer started the first of 133 successful dives with his second submarine Seeteufel. The crew of 12 was trained to leave the submerged ship through a diving chamber.



1863: CSS Hunley was the first submarine to sink a ship, the USS Housatonic, during American Civil War.

1865: Benoit Rouquayrol and Auguste Denayrouze designed a diving set with a backpack spherical air tank that supplied air

through the first known demand regulator. The diver still walked on the seabed and did not swim. This set was called an aérophore (Greek for "air-carrier"). But air pressure tanks made with the technology of the time could only hold 30 atmospheres, and the diver had to be surface supplied; the tank was for bailout. The durations of 6 to 8 hours on a tankful without external supply recorded for the Rouquayrol set in the book 20,000 Leagues Under the Sea by Jules Verne, are wildly exaggerated fiction. Judging by Jules Verne's inaccurate attempts in the book at describing how the Rouquayrol set worked, how the demand regulator works was not generally known or had already been forgotten when he wrote the book, which was published in 1870. But Jules Verne knew about the tendency of some divers surfacing into rain to want to stay underwater to keep out of the rain.

Late 19th century: Industry began to be able to make high-pressure air and gas cylinders. That prompted a few inventors down the years to design open-circuit compressed air breathing sets, but they were all constant-flow, and the demand regulator did not come back until 1939.



Fig. 35
I. Breathing bag. C. Oxygen cylinder. K. CO₂ absorbent chamber.

1879: The first certainly known rebreather (its absorbent was caustic soda), was invented by Henry Fluess in 1879 to rescue mineworkers who were trapped by water.



1893: Louis Boutan invented the first underwater camera.

1908: John Haldane, Arthur Boycott, and Guybon Damant published "The Prevention of Compressed-Air Illness", detailed studies on the cause and symptoms of decompression sickness.

1912: Haldane, Boycott and Damant published the U.S. Navy tested decompression tables.

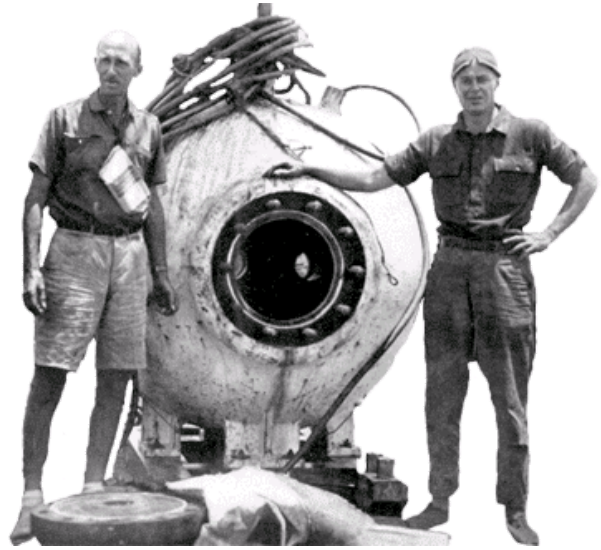
The 1930's: In France, Guy Gilpatrick started swim-diving with waterproof goggles, derived from swimming goggles (which were

originally intended to keep salt water out of the eyes at the surface). Sport spearfishing became common in the Mediterranean, and spearfishers gradually developed the common sport diving mask and fins and snorkel, and Italian sport spearfishers started using oxygen rebreathers. This practice came to the attention of the Italian Navy, which developed its frogman unit which had a big effect in World War II.



1933: In San Diego (USA) the first sport diving club started, called the Bottom Scratchers. It did not use breathing sets as far as is known. Its main aim was spearfishing.

1933: Yves Le Prieur invented a constant-flow open-circuit breathing set. It is said that it could allow a 20 minute stay at 7 meters and 15 minutes at 15 meters. It has one cylinder feeding into a circular fullface mask. Its air cylinder was often worn at an angle to get its on/off valve in reach of the diver's hand; this would have caused an awkward skew drag in swimming.



1934: Otis Barton and William Beebe dived to 3028 feet using a bathysphere.

1937: The American Diving Equipment and Salvage Company (now known as DESCO) developed a heavy bottom-walking-type diving suit with a self-contained mixed-gas helium and oxygen rebreather.

1939: Georges Commines offered his breathing set to the French Navy, which could not continue developing uses for it because of WWII. In July 1943 he reached 53 meters (about 174 feet) using it off the coast of Marseille. But he died in 1944 in the liberation of Strasbourg in Alsace. His invention was submerged by Cousteau's invention.



1940: Dr. Christian Lambertsen in the USA designed a 'Self-Contained Underwater Oxygen Breathing Apparatus' for the U.S. military. It was a rebreather. It was the first device to be called SCUBA.



1943: Jacques Cousteau and Emile Gagnan invented and made an open-circuit diving breathing set, using a demand regulator which Gagnan modified from a demand regulator used to let a petrol-driven car run on a big bag of coal-gas carried on its roof during wartime shortages of petrol. Cousteau had his first dives with it. He made two more aqualungs: there were now 3, one each for Cousteau and his first two diving companions Frédéric Dumas and Taillez. His aqualung remained a secret until the south of France was liberated. This type of breathing set was later named the "Aqua-Lung". This word is correctly a tradename that goes with the Cousteau-Gagnan patent, but in Britain it has been commonly used as a generic and spelt "aqualung" since at least the 1950's, including in the BSAC's publications and training manuals, and describing scuba diving as "aqualunging".

1944: Frédéric Dumas reached 62 meters (about 200 feet) with a Cousteau aqualung.

1945: World War II ended. Cousteau's first aqualung was destroyed by a mis-aimed artillery shell in an Allied landing on the French Riviera: that left two. Afterwards, he had more aqualungs made and gathered more men and taught them to aqualung dive. In Toulon he started an unofficial mine-clearing and wreck-clearing unit. Later this unit was made official. One of the men who he trained was Broussard, who founded the first post-WWII scuba diving club, the Club Alpin Sous-Marin.

1946: Cousteau-type aqualungs went on sale in France.

1948: Auguste Piccard sends the first bathyscaphe, FNRS-2, on unmanned dives.

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1949: Rene's Sporting Goods shop in California imports aqualungs from France. Hollywood sees them and gets interested.

1951: The movie "The Frogmen" was released. It is set in the Pacific Ocean in WWII. In its last 20 minutes it shows USA frogmen, using bulky 3-cylindrical aqualungs on a combat mission. This equipment use is anachronistic (in reality they would have used rebreathers), but it shows that aqualungs were available (even if not widely known of) in the USA in 1951.

1951: The first issue of Skin Diver Magazine (USA) appeared. The magazine ran until November 2002.

1953: The National Geographical Society Magazine published an article about Cousteau's underwater archaeology at Grand Congloué island near Marseille, and in French-speaking countries a diving film called Épaves (Shipwrecks) came out. That started a massive public demand for aqualungs and diving gear, and in France and America the diving gear makers started making them as fast as they could. But in Britain Siebe Gorman and Heinke kept aqualungs expensive, and restrictions on exporting currency stopped people from importing them. Many British sport divers used home-made constant-flow breathing sets and ex-armed forces or ex-industrial rebreathers.

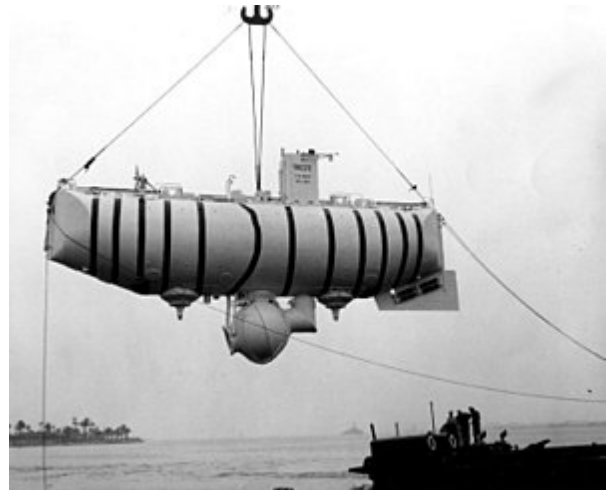
1954: USS Nautilus, the first nuclear-powered submarine, is launched.

1956: The first wetsuit was introduced.



1957: The television series Sea Hunt began. It introduced SCUBA diving to the television audience. It ran until 1961.

1959: NAUI is founded.



1960: Jacques Piccard and Lieutenant Don Walsh, USN, descended to the bottom of the Challenger Deep, the deepest known point in the ocean (about 10900m or 35802 feet = 6.78 miles) in the bathyscaphe Trieste.

1965: The film version of James Bond in Thunderball (using both sorts of open-circuit scuba) came out and helped to make scuba diving popular.

1966: PADI starts.

1968: First known rebreather with electronic parts: the Electrolung.

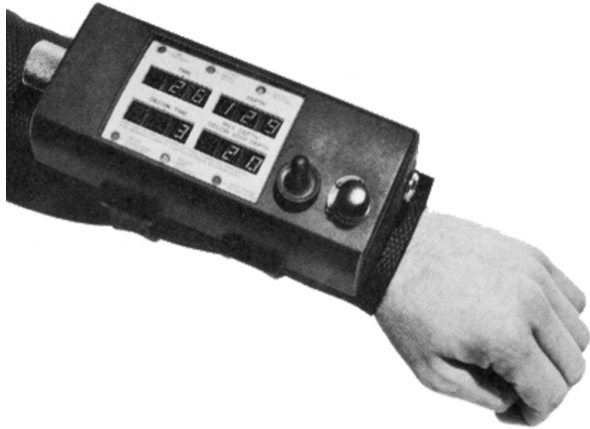
1971 – Scubapro Stab Jacket

- Patented-360 degree flow through design
- Neoprene coated fabric
- Labor intensive (!) hand manufactured
- Designed by a dentist?
 - Valve placement...

Ancient Archaic Vintage **Classic**

1971: Scubapro introduces the Stabilization

Jacket, now in England commonly called stab jacket.



1983: The Orca Edge (the first electronic dive computer) was introduced.

1989: The film The Abyss (including an as-yet-fictional deep-sea liquid-breathing set) helped to make scuba diving popular.



1997: The film Titanic helped to make underwater trips on board MIR submersible vehicles popular.