

Whilst a semi-atmospheric diving system is plagued with major inherent disadvantages, it cannot be denied that it was successfully applied in several significant salvage operations spread over three centuries.

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## A BRIEF HISTORY OF SCUBA DIVING IN THE UNITED STATES

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## Key Words

History, recreational diving.

## Summary

This presentation provides a brief overview, with dates, of how recreational scuba diving developed and is developing in the United States of America.

## Introduction

Recreational compressed air diving, except for occasional experimenters using home made surface supplied equipment, came into being with the invention of the Aqualung by Cousteau and Gagnan. Self contained underwater breathing apparatus (scuba) had been envisaged, and even used long before the 1940s, but it was the simplicity of Cousteau's Aqualung (twin hose scuba equipment) and the manufacturing and technical support available which enabled recreational diving to move from "macho" breath holding to spear fish to scuba diving and photography.

This paper shows how much the development of recreational diving in the USA has been influenced by publicity, both books and films.

## Early ideas

We start in antiquity, for in 1680 Borelli, an Italian, wrote of a closed circuit rebreather and swim fins. If the equipment had been made and used it would have been the first "frogman" outfit.

## Nineteenth century

In 1831 an American machinist, Charles Conert, designed a self-contained diving dress. This was the only US predecessor to Cousteau's concept of scuba.

Recreational diving supports the recreational diver training industry, which supplies its trainees with travel, equipment and instruction. The first "how-to" diving manual appeared in 1836 when John Deane published, in London, his *Method of using Deane's Patent Diving Apparatus*.

In 1864 two Frenchmen, Rouquayrol and Denayrouze, developed the first tank based, demand valve

type of scuba which was actually used successfully. Five years later Jules Verne popularised the concept of scuba by featuring the use of Rouquayrol units in his book *20,000 Leagues Under the Sea*, published in 1869.

### Twentieth century

In 1916 John Williamson, an American, was the first to use underwater cinematography commercially while filming a version of *20,000 Leagues Under the Sea*. This film was the first American use of special effects and was one and a half years in production. The underwater scenes were shot in the Bahamas with other shots at Universal's studios in New Jersey and Los Angeles. Captain Nemo's submarine was a genuine working craft

The Bottom Scratchers, a famous "macho" club of underwater game hunters, was formed by San Diego skin (free or breath-hold) divers in 1933. The era of "goggling" and game taking began in America. Game taking defined the sport until the 1960s.

The first US-developed mixed gas rebreather was manufactured in 1937 by American Diving Equipment and Salvage Company (later to be known as DESCO). This was used by Max Nohl during his world record dive to 126 m (420 feet).

In 1938 Guy Gilpatric wrote *The Compleat Goggler*. This was the first book for skin divers. Free diving popularity began in earnest throughout the US, especially in California. Many goggling clubs were formed.

Owen Churchill helped popularise skin diving in the USA in 1940 by mass producing "Churchill" fins under licence from the patentee, Frenchman Louis Corlieu. They were sold to recreational swimmers and to the US military.

### The scuba era

The commercial production of the Aqualung in France allowed Europeans to scuba dive. but the equipment was not available in the US until 1948. That year *Rene's Sporting Goods* opened in Westwood, Los Angeles near UCLA. An immigrant from France, Rene Bussoz was the husband of a cousin of Simone Cousteau. Rene displayed three Aqualungs from Cousteau at the 1948 National Sporting Goods Association (NSGA) show in New York. The Show generated moderate interest in scuba. Soon after, the first US article on Cousteau appeared in *Science Illustrated*.

The US Navy (USN) evaluated the Aqualung in 1949. Douglas Fane, commander of an underwater demolition team (UDT) visited France and was the first American to try an Aqualung, at Cannes. Lieutenant N Blocknick

submitted a report on the apparatus. Later that year Cousteau brought 6 Aqualungs to Los Angeles and conducted training. Cousteau, Rene Bussoz, Johnny Weismuller and two others made the first Aqualung dives in the US off Point Dume, California.

In 1950 the magazine *Life* ran a seven page pictorial essay on Cousteau and his work. Through the article, Cousteau's films came to the attention of Universal Pictures. Universal acquired the rights to the first four Cousteau films for \$11,000. Each short film appeared in theatres across the US. These films significantly increased the public's awareness of the Aqualung.

1951

American actors Richard Widmark and Dana Andrews starred in *The Frogmen*, a film about the exploits of the USN's UDT divers. Aqualungs were shown prominently in a movie for the first time. Most recreational diving historians credit this film with helping accelerate growth of the sport. The film earned an Academy Award Nomination. Rene Bussoz is believed to have formed US Divers to handle the film's contract and supplied the Aqualungs, but the company was not active for several more years.

*Skin Diver* magazine, originally called *The Skin Diver*, was started by Chuck Blakeslee and Jim Auxier in their garage in LA. The new magazine instantly became the leading journal of spear fishing/hunting. It played an important role in maturing underwater photography and dive travel.

Rachel Carson's book, *The Sea Around Us*, drew attention to the marine environment. It was the first American book on environmental protection of the seas.

1952

US Divers began marketing in the US. The company took a full page advertisement in *Skin Diver Magazine* and published a small 24-page manual, *Self Contained Diving*. Their first equipment catalogue appeared in 1953.

*National Geographic* published Cousteau's article *Fish Men Explore a New World Undersea* and Cousteau's *Silent World* was published in the US.

1953

Popular Science Magazine outlined the procedure to "make your own Aqualung". The article described the necessary modifications to aircraft oxygen regulators for use underwater. The author suggested using low pressure CO<sub>2</sub> cylinders. He also provided instructions for its use. The same issue also showed how to build an underwater housing for a camera.

E R Cross published *Underwater Safety*, the first

modern diving manual in the USA, it had 86 pages and was distributed by Healthways. Rene Bussoz sold his holdings in US Divers to Air Liquide France.

1954

Hunters of the Deep, one of the first diving science documentaries made in the US, was produced by the Scripps Institute of Oceanography, the USN and the Hancock Institute. It showed marine "scientists" working with Aqualungs. Conrad Limbaugh, the Scripps Institute's first diving officer, was a primary photographer.

Two other films, Creature of the Black Lagoon (considered a benchmark film in its day for special effects) and Disney's 20,000 Leagues Under the Sea featured lots of diving. They were also considered to accelerate growth of sport diving.

LA Dept. of Parks and Recreation ran the first organised Scuba Training program in the US. Bev Morgan and Al Tillman, both diving pioneers ran the program.

1955

Dacor Begins Manufacturing

Sam Davison formed Dacor which made a new adjustable double hose regulator. Dacor went on to become a major equipment manufacturer.

1956

Wetsuits entered the market when Dr. Hugh Bradner, at University of California, researching the protective properties of "Arctic" long johns found the much better insulating properties of neoprene foam, which was being manufactured by Rubatex as automobile insulation. Up to this point most divers wore thick woollen garments as "insulation". Early wet suits were marketed by the Beaver company of La Jolla, California.

Ted Nixon introduced the American Diver Down Flag (red with a diagonal white stripe) to warn boaters away from divers. The flag has become national symbol of diving.

1958

Sportsways "Waterlung" regulator became the first single hose regulator popular enough to replace double hose regulators.

Diving manufacturers showed their wares at the NSGA show each year. In this year Voit, US Divers, Healthways, Dacor and Swimaster began talks about forming their own trade association. This stayed a "social club" of chief executives until 1963 when the Diving Equipment Manufacturers Association (DEMA) was formed.

America's first diving hero, Mike Nelson, dashed into US living rooms in Sea Hunt, which became America's most

popular television show in the late 50s. It had a four season run. Lloyd Bridges became a role model for many young, diving enthusiasts. The series brought a whole generation into diving.

1959

The Young Men's Christian Association (YMCA) began the first national scuba training program and offered the first nationwide diver certification.

The first amphibious camera, the Calypso, became available from US Divers. It marked the beginning of a new era in diving.

1960

Neal Hess and Al Tillman formed the National Association of Underwater Instructors (NAUI) and conducted the first instructor certification course in Houston.

1963

Gustav Dalla Valle and Dick Bonin started Scubapro Company which went on to introduce many equipment firsts.

DEMA was formed to promote the recreational diving industry.

1964

The USN carried out Sealab I, 11 days in saturation with scuba diving excursions, at an average depth of 58 m (193 ft).

1965

In *Thunderball* James Bond went underwater to save the world. This was the most underwater footage yet taken. The film won an Academy Award for visual effects. Seen in most cinema theatres in the US, the film glamorised and updated the image of scuba. Diving retailers outfitted many people to look "just like Bond".

1966

John Cronin and Ralph Erickson formed the Professional Association of Diving Instructors (PADI) in Chicago. PADI later moved to California. PADI launched the "Positive Identification Card" or PIC. PADI was the first training organisation to recognise the need to work closely with dive retailers and travel providers.

1967

The Undersea Medical Society, now the Undersea and Hyperbaric Medical Society (UHMS), was formed with offices in Bethesda, Maryland. UHMS and its members have significantly advanced knowledge of the medical aspects of diving.

1969

See & Sea Travel opened its doors. It was the first major dive travel wholesaler in the US to cater exclusively

for diver travel. As such it ushered in the era of dive travel in the US. Later the firm focused on live-aboard dive boats.

1971

Scubapro introduced the jacket style buoyancy compensating device (BCD). The "Stab Jacket" began to eliminate the existing "horse collar" BCDs. Jacket style BCDs have become the industry standard.

1973

US Divers discontinued the sale of spearguns. This radical action, for the time, ushered in the era of eco awareness for the recreational diving industry.

1974

With the film *Jaws*, Hollywood-induced "shark-ophobia" chased people out of the water. Recreational diving retailing and certification dipped dramatically after the film's release, ending 15 years of consecutive industry growth and beginning a long depression.

1977

The movie *The Deep* also showed the horror of the underwater world. The repercussions on recreational diving were a bit lighter than with *Jaws*.

DEMA produced its first Trade Show in Miami. The show established itself as "neutral ground" where the entire industry could meet. DEMA has made itself a potent force for professionalism and unity within recreational diving industry.

1980

Duke University's F G Hall Hyperbaric Center in North Carolina started to provide a "Dive Accident Network" to support divers in need of medical care. The name was later changed to Divers Alert Network (DAN) which now provides medical support to divers support and diving medical research.

1981

DEMA initiated the "Graduated Entrance Method" (GEM) program of diver training with the backing of PADI and NAUI. The program suggested a kinder and gentler philosophy of dive instruction. This approach brought more families and busy professionals to scuba training.

1983

DEMA produced a string of promotional films that were shown as trailers in movie theatres. These were *I'd Rather be Diving*, *Treasure Diving*, *The Seven Wonders of the Diving World* and *Scuba Diving in America*.

Orca released the "Edge" dive computer. This was the first commercially successful dive computer. Recreational divers could now experience multi-level diving guided by a computer. Unfortunately some early computers allowed repetitive dives that bent their users.

1985

New Dive Tables, designed and researched exclusively for recreational divers, were published by the Diving Science and Technology Corporation (DSAT). This algorithm has been used in a number of American dive computers.

1990s

Through this decade environmental awareness has continued to rise. Dive travel has exploded to the ends of almost every airline route and live-aboard dive boats go even further afield. Technical diving has entered the recreational domain. Enriched air nitrox is available in many dive shops. Rebreathers have become available to the recreational diver. Diver training has continued to emphasise safety through streamlined education.

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Phone Brisbane (07)-3376-1056 for further details

Information and application forms for courses can be obtained from

Dr Bob Thomas  
Diving Medical Centre  
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