

# A WAVE OF IDEAS: THE DEVELOPMENT OF SURF LIFESAVING TECHNOLOGY



Photo: J Fitzpatrick, National Archives of Australia, A1200, L13182

## A battle with the elements

The early days of surf lifesaving saw a limited range of techniques and equipment being used. The 'human chain' was an ungainly and dangerous method of rescue; it was soon replaced by the first version of the line and surf-reel. This device was developed in 1907 by John Bond, Lyster Ormsby and Percy Flynn of Sydney's Bondi Beach Surf Bathers' Life Saving Club.

Walter Biddell of Sydney's Bronte Beach Surf Life Saving Brigade organised the purchase of a surfboat (of heavy wooden construction), lookout tower and shark bell in 1907. He also developed a torpedo-like lifebuoy which, in some surf conditions, was better than the line and reel but was not suited to rough conditions. Biddell also invented a cork surf belt and a three-person surfboat based on two torpedo-like tubes — possibly the 'ancestor' of the modern inflatable rescue boat (IRB).

**Discussion point:** What were the drawbacks of the 'human chain' rescue method?

## From rockers to EAR

Surf lifesaving resuscitation techniques have followed medical developments in this area of emergency medicine. The Schafer 'prone pressure' method was adopted in the early twentieth century. This method relied upon the patient being laid face-down while the rescuer pressed on the patient's lower back. The technique was designed to force exhalation and drain water from the lungs. Dr Frank Eve devised the Eve Rocker method in the early 1940s; this method incorporated a board that was used in conjunction with the Schafer method. While successful to some extent, the Eve Rocker/Schafer method combination was eventually found to sometimes cause water in the patient's stomach to drain into their lungs.

This led to the eventual adoption of expired air resuscitation (EAR) and cardiopulmonary resuscitation (CPR) techniques, which now assist surf lifesavers in around 25,000 first aid actions across the nation each season. Modern equipment such as oxygen units and defibrillators gives the surf lifesavers a valuable advantage in the resuscitation process.

## Bananas, ducks and quads

Attending to surf rescue duties on our often large beaches has been a constant challenge for surf lifesavers. The use of watercraft has helped meet this challenge since the early twentieth century. The earliest surfboats were heavy and wooden, and featured a sharp bow and stern, which led to the nickname of 'banana boats'. The design evolved to include the 'squared off' stern and the hulls are now made from modern materials such as fibreglass. This version is still in use in surfboat racing today.

The early 1970s saw the introduction of the IRB. This craft was championed by Warren Mitchell of Sydney's Avalon Surf Life Saving Club. Using inflated pontoons as the main flotation method, these boats are tremendously manoeuvrable and fast in the choppy surf close to shore. They typically have a 25 horsepower (18.6 kilowatt) outboard motor and a crew of two. The nickname 'rubber duckie' was soon used to describe them; this was eventually abbreviated to 'duck'.

Back on the beach, surf lifesavers now frequently use four-wheeled motorbikes as beach transport. With their large low-pressure tyres, these vehicles are ideal for use in rescue activities. The name 'quad' reflects their 'four-footed' status.

**Discussion point:** What advantages does fibreglass have over wood as a surfboat construction material?

## Bytes on the beach

Computer technology has found a vital place in surf lifesaving. An example is the development of emergency response points. These beacon units are designed for use in remote beach locations and can be activated by members of the public. Built-in Global Positioning System (GPS) and radio technology provide vital information to surf lifesavers.

Technology has greatly reduced the 'people power' required in rescue operations. The line and surf-reel teams have been replaced by one and two-person teams capable of quicker and more efficient rescue and resuscitation. Beach-goers now enjoy greater levels of safety due to the evolution and application of technology.

**Discussion point:** In what other ways can technology assist surf lifesavers?

# ACTIVITIES



Photo: Dean McNicoll, National Museum of Australia

## Activity 1

### Technology timeline

Surf lifesaving technology has gone through several stages of development. Construct and illustrate a timeline that shows these stages and identifies the various pieces of equipment developed. Extend this timeline into the next 100 years and predict when and what new forms of technology may be developed.

## Activity 2

### The breath of life

Examine the physiology of the human lung and determine exactly what happens in the process of drowning. Once you have established this, examine how expired air resuscitation (EAR) can restore breathing. Investigate how modern oxygen supply equipment is used by surf lifesavers in the resuscitation process.

## Activity 3

### Plucked from the breakers

Get students to create an artwork based upon the theme of 'the surf rescue'. The work may represent the point of view of the person being rescued or the rescuers. Students should keep in mind that their work may be more powerful if it expresses the force of the surf, the urgency of the rescue and the strong emotions that people may experience in this situation. A related activity is to interpret the theme in class using class members as 'live' models. In this way they can be positioned to create a living artwork. Other class members can make a drawing of the result from a variety of viewpoints (remember to make sure the poses aren't too difficult to hold for a few minutes!).

## Activity 4

### Walter's inventions under scrutiny

Ask students to imagine that they are Walter Biddell, inventor of the cork surf belt and torpedo-like lifebuoy in the early 1900s. Students are to present these ideas to a panel of members of the Bronte Beach Surf Life Saving Brigade, who are judging them as possible equipment for the brigade. Using a combination of drawings and verbal presentation, students need to convince the panel that their inventions are essential items for surf lifesaving. If possible, record the presentation with a video camera. You may like to add to the activity by having all participants dress in 'period' costume. Discuss who from the 1900s Bronte Beach Surf Life Saving Brigade would be likely to be on the panel and why they would have been chosen for such an activity.

## Activity 5

### Inflatable muscles

Inflatable rescue boats (IRBs) have a crew of two people who engage in a variety of physical activities, such as launching the craft, controlling it in the surf and lifting people on board during rescues. Examine these and any other physical activities associated with operating the IRBs and compile a list of strength/flexibility exercises that may assist the crews in developing specific physical fitness for their roles. Aim for a list that is suitable for both the gym and the beach.