

**ACTIVITY:** Surfing

**CASE:** **GSF 1997.07.10 / SA-0419**

**DATE:** Monday July 21, 1997

**LOCATION:** The attack took place in the Indian Ocean at Breezy Point, Ntlonyana, a remote and pristine area 140 km southwest of the border between KwaZulu-Natal and the Eastern Cape, 70 km southwest of Port St. Johns, 105 km northeast of East London, and five km northeast of the Bashee River Mouth, South Africa.

32°12'S, 28°57'E



**NAME:** Mark Penches

**DESCRIPTION:** The surfer, one of three Australian surfers who had journeyed to South Africa in search of its “perfect winter waves”. He was 25-years-old, 1,8 m tall and weighed 70 kg, and had no injuries prior to the incident. He was wearing a full 3 mm, double nylon, black wetsuit, a silver ring on the fourth finger of his left hand and a surfboard leash attached to his right ankle. He had just earned a degree in coastal management.

**SURFBOARD:** A white 1,9-metre trifin board. The central and left fins were clear with narrow, closely spaced, diagonal black stripes. The right fin had been replaced and was all black.



*Mark Penches*

## **BACKGROUND**

**WEATHER:** It was a sunny, cloudless day. A stiff offshore breeze blew earlier in the morning, but the wind had started to swing to a light offshore (from the northeast) between five and eight knots.

**MOON PHASE:** Full Moon, 98% of the Moon’s visible disk was illuminated.

**SEA CONDITIONS:** The water temperature was cold; Penches’ two colleagues estimated the water temperature to be about 18°C. There was no noticeable surface current. The water was described as greenish-blue. The surfers said it was difficult to see the details of their feet while sitting on their boards, which would translate to a water clarity of one to two metres. There was a swell of about 1.5 to two metres. The swells were breaking off Breezy Point and running northward across the bay, a distance of about 200 metres, before they formed into a beach break on to a rocky, boulder-strewn shoreline. “Cooking surf was peeling to the beach,” said the surfers.

In addition to the rocks on the shore, there is considerable subtidal reef on which shore anglers regularly lose fishing tackle. There was no longshore channel immediately behind the shorebreak. It was a spring tide. High water in Durban was at 16h52.

**ENVIRONMENT:** Another surfer had been chased from the same break by a shark less than a week before this incident. Two days earlier a pocket of sardines was seen at Mazeppa Bay. Mazeppa Bay is 29 kilometres [18 miles] south of Dweza and the sardines travel south to north on their annual run. This season the sardine run moved close to the beaches of the Transkei following a tapering band of cool water.

Large numbers of dolphins were seen heading north, some surfing the waves, earlier in the morning (about 08h00-09h00). From their behavior, it was assumed they were bottlenose dolphins. This, according to Peter Barrable who has been visiting the area since 1986, is a regular occurrence. Earlier in the day there was concentrated diving by gannets, suggesting that there were baitfish, probably sardines, in the area. Such pockets of sardines are accompanied by predators. However, at the time of the attack there was only the occasional bird diving. Whales had been seen at about the same time as the dolphins; they were about "halfway to the horizon" and heading slowly north.

Alan Paul has a beach cottage overlooking the site; he commented that the area is well known for its fishing, especially for sharks. This was confirmed by Barrable and Anthony Diplock, an experienced shore and boat angler, whose shark catches in the area included a 200 kg Zambezi shark using a 30 kg hammerhead as live bait. Ntlonyana is apparently one of the few localities on the Transkei coast where the sardines beach themselves. Such beaching usually takes place on the KwaZulu-Natal coast south of Durban during the "Annual Sardine Run" in June and July.

**DISTANCE FROM SHORE:** 50 metres directly offshore from the beach and 150 to 200 metres north of the point. Barrable described the position as being "at a point where I would have expected Mark to have completed his riding of the wave."

**DEPTH OF WATER AT INCIDENT SITE:** Unknown

**TIME:** 12h45

**NARRATIVE:** Mark Penches was alone in the water. He and his two friends, Terry Gibson and Clyde Crawford, had been surfing earlier in the morning (they had arrived at Ntlonyana the previous day). After a substantial meal, Penches was the first to enter the water and had been surfing for about 30 minutes. As Gibson was about to enter the water on the point, he noticed that Penches had caught the first wave of a set of swells.

Clyde Crawford was sitting up on the hill at the camping site, preparing his surfboard. He was positioned such that he could see Penches catch and ride the waves for a short distance, thereafter his view was blocked by a row of trees.

Peter Barrable was on the wooden balcony of the cottage (camp 19) overlooking the bay and saw Penches catch a wave directly in front of him. His Transkeian fishing guide then drew his attention to a patch of red in the water. With the aid of binoculars, Barrable saw the patch expand rapidly. He saw a riderless surfboard, but there was no sign of the surfer and he immediately concluded that there had been a shark attack. He saw that Gibson was about to enter the water and shouted to a friend to stop Gibson. The two men then saw two black fins break the surface and swim out to sea. Barrable watched the area for about 30 seconds and only then did he see a black object float to the surface, which he assumed was the injured surfer. There was no further sign of the shark. Barrable then ran down to the water's edge where he was joined by Crawford. At that stage the surfer's body was visible on the surface a short distance from the surfboard. Neither Crawford nor Gibson had seen the attack.

The surfboard washed ashore and was retrieved by Barrable and Crawford in knee-deep water. The surfer's body was retrieved by Gibson from slightly deeper water farther down the beach.

On the beach Barrable could not detect a pulse. Gibson performed artificial resuscitation to

no avail.

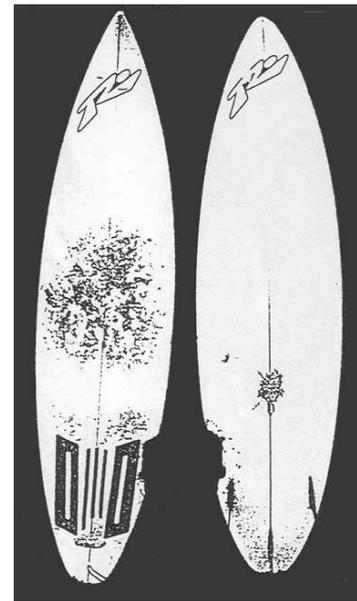
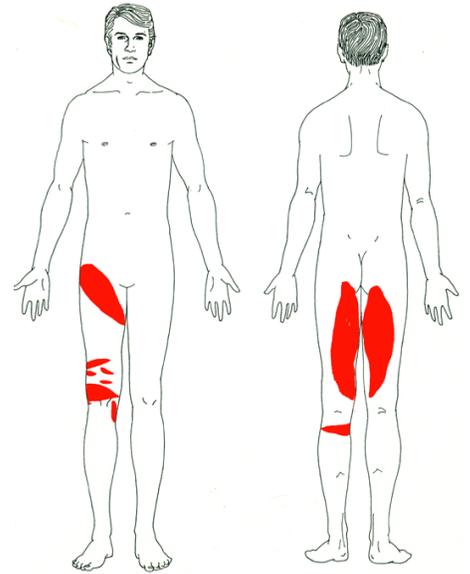
**INJURY:** Fatal.

**DAMAGE TO SURFBOARD:** The surfboard had a small, crescent-shaped chunk removed from the right side immediately in front of the right fin. There was evidence of at least six individual tooth impressions in the board's lower surface, the deepest of which was 19 mm. The lower surface of the board had been crushed at the nose. There were no tooth impressions in the upper surface of the board where the fibreglass was torn.

**SPECIES INVOLVED:** The incident involved a white shark, *Carcharodon carcharias*. Given the severity and extent of the injuries, three species of shark were considered: white shark, tiger shark and Zambezi shark. All three species are capable of inflicting extensive injuries with clean-cut margins, such as those incurred by Penches. No physical description of the shark was available, however the puncture marks on the underside of the surfboard were informative. The distance between tooth punctures were about 5 cm. This eliminated a Zambezi shark which has a much smaller intertooth distances, as do small tiger sharks. The puncture mark above the right fin was 19 mm deep and made by a slender, triangular-shaped tooth. This impression could not have been caused by the cockscomb teeth of a tiger shark, which are relatively short in height.

The white shark has triangular, serrated teeth in its upper jaw which produce lacerations with very clean-cut margins. The teeth of the lower jaw, while also serrated and triangular, are narrower than those of the upper jaw and therefore have less cutting ability. They are used to secure the prey, while the upper jaw teeth perform the severing. The intertooth distances on the surfboard match closely with those from the jaw of a 372 cm PCL (4.5 m TL) white shark in the collection of the Natal Sharks Board.

**DISCUSSION:** No one saw the shark strike the surfer. According to Barrable, the surfer was at a place in the water where he usually completed his ride. It is unlikely that the shark would have struck the surfboard unless the surfer was either lying on the board or was in the process of remounting it. The damage to the surfboard was immediately ahead of the fins, which, if the surfer was lying on the board and paddling back out to sea, would have resulted in injuries close to his knees and not below the buttocks, as was the case. Alternatively, the damage to the board resulted in the surfer being knocked off the board without any contact with the shark. Thereafter, while the surfer was in the water, the shark may have made a second strike, this time removing the right leg and severely lacerating the back of the left leg.



It appears that the shark struck the board from the right side. In this initial contact, the teeth from the centre of the lower jaw bit into the underside of the surfboard. There are toothmarks on the right fin and it is possible that this fin may have deflected the bite of the shark, however, the crescent shape of the tooth impressions is more or less symmetrical with the edge of the board, suggesting that the shark approached the board directly at right angles, rather than from the front or back.

It seems unlikely that the shark was able to sever the surfer's right leg in a single bite, with the lower jaw teeth still embedded in the board. Initially, Barrable noticed the surfboard, but not the body of the surfer, which remained submerged for about 30 seconds. Furthermore, one might have expected far more damage to the board. The crushing of the underside of the surfboard suggests that contact was prolonged and not simply a bump with open mouth which would have knocked the surfer off the board. The shark would have then freed its lower jaw teeth from the board, which resulted in a small section being removed from the board, without the upper jaw teeth making contact with the board at all. The impact of the initial contact had knocked the surfer into the water, where the shark seized his right leg and dragged him beneath the surface.

The injury to the back of the left leg was caused by a single jaw, possible the upper jaw. The most plausible explanation is that this injury was caused by the teeth of the upper jaw, i.e. an overbite, while the shark still had the right leg in its grasp.

The surfer's contact with the shark was sufficiently long enough for him to attempt to free himself from the shark's grasp, resulting in the lacerations (defense wounds) to the left hand.

Initially, Peter Barrable saw surfboard, he did not see the surfer's body. The wetsuit would have provided sufficient buoyancy so that once the shark released the surfer, his body should have floated to the surface within about five seconds. This would suggest that the shark held the body for about 20 seconds. The shark did not consume the surfer and, considering the large size of the shark its jaws were sufficiently powerful to bite through the femur in a much shorter time. This suggests that the shark exhibited the same behavior often observed when the shark preys on marine mammals, deliberating submerging them, perhaps attempting to drown or minimize their ability to offer resistance.

The post mortem was carried out near Umtata on July 23rd, then transferred the mortuary in Durban where the body and surfboard were x-rayed for tooth fragments of the shark, but none were detected. Afterwards the body was transported to Australia where his family plans to bury him at sea.

**CASE INVESTIGATORS:** Andrew Gifford, Shark Research Institute, and Jeremy Cliff, Natal Sharks Board