## Krakatoa

### Ring of Fire

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Introduction

Volcano’s can be thrilling, spectacular to watch and also life threatening. The sheer amount of energy can be truly amazing. None more so than the major eruption of the volcano Krakatoa. The force of the eruption caused the entire volcano island to explode into the air. What did not become air borne sank beneath the ocean. The enthralling yet dangerous effects of the explosion still cause some to shake at the knees.

# What is a volcano

Underneath the earth’s crust is a continual movement of magma. Magma is under pressure is escapes onto the crust by volcano’s. Volcano’s are opening’s in the earth’s crust where pressurised magma (lava), hot gases and rock fragments escape onto the surface releasing pressure and energy. Layers of lava and ash that erupt from the opening cause a mountain to slowly build up around the opening.

The formation of these openings start around 80-160 km under the earth’s crust. Magma is formed from melted rock, the result of the heat from the interior of the Earth. Heat from the interior also causes rocks inside the earth to partly melt. When this occurs a lot of gas is formed. This gas mixes with the magma. The magma filled with gas slowly rises as it is lighter than the rock surrounding it. While magma is rising it melts a chamber is formed underneath the surface which can be as close as 3 km deep. This chamber of magma is what is released during a volcanic eruption.

The magma/gas in the chamber is under great pressure from the solid rock that surrounds it. Pressure causes magma to create a channel of conduit to be formed in weakened rock. As the travelling magma reaches the surface the gas is released. The release causes the magma and gas to explode or erupt out onto the surface. These causes and opening to let magma and gas and ash to escape from when the pressure builds up again.

Krakatoa

Krakatoa is a volcano located in Indonesia, on the edge of the Ring of Fire. Krakatoa is an island in the Sunda Strait, a safe shipping passage into the Java and South China Seas.

Krakatoa was a fairly large island. The volcano contained three peals. The island is covered quite densely with vegetation however no one lived on the island and it was rarely visited.

Krakatoa is a composite volcano. It also can be described as a Seleen or Vesuvius volcano. This type of volcano normally is considered dormant, however there are a series of events that lead up to an eruption. The volcano shows it is about to explode from the releasing of gas. Lava flows quietly and cools very quickly. As the lava cools it plugs up the mouth of the volcano. The pressure is then trapped until it finally explodes. This eruption is normally a very large and devastating eruption. The volcano then goes into a long rest period after these large eruptions.

Though Krakatoa had been dormant for a couple of centuries Krakatoa gave some signals that the volcano was about to explode. Tell tale earthquakes that occur before volcanic eruptions had been occurring since the 1870’s. The year of 1883 saw the volcano once again become active with numerous small eruptions occurring throughout the year. But in August the largest and most devastating eruptions were still to come.

It started with the smallest cone, which threw rocks and dust into the air every ten minutes. Dust was found in places 300 miles away. The first explosions were on May 20. When the explosions weakened a week later a group of people went over to the volcano. Fumes were escaping from to cracks in the ground. The plants were all dead, covered in a thick layer of fine dust. More explosions occurred during the summer as the pressure built up.

The Explosions

In late August some rocks gave way. Five cubic miles of rock disappeared. In the early afternoon of August 26 a sailor reported a great noise and a column of black dust was thrown into the air 15-20 miles high. People were 100 miles away heard explosions. The explosions got louder and were still going at nightfall. By midnight the explosions shook houses. A boat close to the volcano reported seeing lightening flashes close to the volcano mouth. The boat was covered with ash and the rain contained particles that glowed in the dark on the ships decks.

On the 27 August in the morning there was an explosion that was heard 200 miles away. One hour later there was a second explosion. Then there was a three and a half hour calm.

A few minutes after ten am much of the island was blown upwards. The rest of the island sank beneath the water.

The sound waves from the explosion travelled 750 miles per hour. The waves broke windows and cracked cement. People 3000 miles away said it sounded like artillary firing that continued over a five hour duration. Over nine days the sound waves had travelled tour times around the world.

As the volcano blew up the heavier of the material fell back into the ocean. However the fine dust got caught in wind currents. For miles the sun was hidden. Some dust even managed to reach altitudes of 50 miles above water level. By 2 September some ash fell off the West Coast of South America. On September 9 some dust and ash had completely orbited the earth and was falling where Krakatoa should have been.

The collapse of Krakatoa also caused Tsunami’s. The waves travelled at 350 miles per hour. Indonesian beach villages were swamped. 125 foot high wall of water swept the coast of Java destroying 800 villages. Sumatra was similar. Villages were covered by 80 feet of water. Everyone drowned. The death total was 36 000. Thousands of boats capsized. Rescue parties were impossible in the darkness from all the dust.

After the Explosion

After the explosion for 18 months ships had to travel slowly through a sea of floating pumice rocks. The dust and ash stayed in the atmostphere for a year, causing a ten percent fall in radiation.

On January 25, 1925 a new tiny island rose a few feet above sea level. In October 1952 the island had risen a further 200 feet and in 1975 the island stood at an altitude of over 325 feet.

It is unlikely the world has heard the last of Krakatoa.