

Hawaiian Helicopter

Take a trip over this explosive island!

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Helicopter Day Trip

Today you are going to Hawai'i, specifically you are headed to what everyone calls the Big Island – but which is also confusingly called Hawai'i! The Big Island is well-named; it is half the size of Wales and is bigger than all the other Hawaiian islands put together.

You are going to see the dramatic and potentially devastating side of Hawaii by taking a helicopter ride over the island to see the volcanoes close up – although not too close!

You're day begins at a heliport. Emerging into the light early morning rain, you gaze in astonishment at the Hawaiian flag that is proudly flying, and think for a moment you really haven't landed on American soil at all – for it's not the stars and stripes you see, but the Union Jack and Stripes! The early Hawaiian rulers were so impressed with the ships and weapons of Captain Cook that they actually asked to be ruled by Britain, and this strong bond still continues.

You stand looking round the heliport at the rows of sparkling helicopters. Your attention is caught by an unfamiliar sound - the constant chirping of hundreds of frogs! A few years ago some tiny Coqui frogs from Costa Rica were accidentally transported to the island and their millions of descendants have already spread across it. They form a backdrop of sound to the island.

A man walks towards you across the tarmac. He introduces himself as Mike Pokahuna your pilot. Mike shows you over to the beautiful blue helicopter you'll be flying in. He opens the door and you get into the back. You're the only passenger, so you choose a seat by the window, so that you can enjoy a great view. Mike climbs in and tells you to put on a set of headphones. You see they have microphones attached and you can hear his voice clearly in your ear.

You watch as Mike flicks different switches to start the engine. The great mechanical bird begins to rumble as the blades start to spin. You feel a surge of adrenalin and your stomach does a little flip-flop; but as you smoothly lift off the ground, you feel completely safe and really excited.





Mike skilfully takes off and flies away from the heliport, giving you a fantastic aerial view over the island. The panoramas are breath taking, it's a clear day and you can see for miles. You're flying away from the populated part of the island, leaving behind built up commercial and residential areas, and heading inland towards the rising peak of a mountain.

Mike's voice comes over the radio. 'I know when you mention the word "volcano" the image is one of a huge conical mountain spurting torrents of orange flame with lava running down its sides, towards the terrified villagers below. But this is Hawai'i, where even the volcano is laid-back. Eruptions here tend to attract visitors rather than repel them. The volcano is called Kilauea, and it is the most active volcano in the world, having been constantly erupting since 1983.

'Every one of the Hawaiian Islands is, or has been, volcanic. The tectonic plate the islands sit on is moving slowly Northwest over a stationary magma chamber many miles below, which acts as a sort of blowtorch piercing the Earth's crust. Mauna Kea moved over the blowtorch hundreds of years ago (which is how scientists know its erupting days are over) but currently Mauna Loa and Kilauea are sitting on top of it. Further south-west below the Ocean, a new volcano is already growing, and has even been given a name, Loihi. In about 20,000 years it will break the surface of the water, above the blowtorch, and there will be a new Hawaiian island.

'Take a look down at the land,' he says. Looking out of the window, you can't believe how black the rock around you is. 'Amazing isn't it? That's hardened black lava - the whole island is covered in it and it's all come from the erupting volcanoes.'

You stare at the expanse of cracked black lava which stretches out for miles.

'It's known as Lava Rock or Basalt. Speaking of eruptions, if you're lucky one of the active volcanoes will erupt when we're near and you'll get to see an amazing demonstration today. Don't worry though, we won't get too close.

'We'll have to ask Madame Pele to show us her presence. Madame Pele is the Hawaiian volcano and fire goddess; it depends on how she feels, if we'll be lucky enough to see an eruption on this tour. Known as "She-Who-Shapes-The-Sacred-Land", the story of Madame Pele goes back to centuries-old chants and oral traditions of the Hawaiian people, used to describe and understand the volcanic eruptions and lava flows. The Halemaumau Crater of the Kilauea Volcano is the present home of Madame Pele and visitors to the crater take her offerings, as symbols of thanks and as pleas of help.'

Looking down from the helicopter as you fly over this incredible landscape, you can't help but gasp every time you see something new. There are so many signs of the fierce, dangerous heat which lies just below the surface of this beautiful island, from the black rock to the smoke in the distance. It's incredible and you sense the great power beneath the island.

'There aren't just volcanic eruptions to contend with,' Mike says. 'This is an Earthquake zone, because the island is situated on a slowly drifting Pacific plate, it moves over deep hotspots that create the volcanoes and vents by causing the magma layers to shift and change. This movement causes thousands of earthquakes, some you can hardly feel to the larger ones which tear the island causing cracks and fissures.





'One such example is the "great crack" a giant fissure, 8 miles long, 60 feet wide, and 60 feet deep! We're now flying over the Hawai'i Volcanoes National Park.'

You look down on the park which stretches out beneath you. You can make out the tiny dots of people hiking across the varied terrain.

'It's a popular place for visitors,' Mike says, 'although you'll need more than beachwear if you plan to go hiking. Everybody thinks that Hawai'i is hot and sunny; but if you were on the ground, you'd be amazed at how cold and damp it is. Kilauea's summit is 4000 feet elevation and the weather constantly varies. Temperatures can be 12 to 15 degrees cooler than at sea level.'

'By flying over the park you're also missing out on the smell. We're near Ha'akulamano, the sulphur banks. They smell like rotten eggs and are enough to turn your stomach. Definitely not the smell you associate with a tropical island!'

The view beneath you is constantly changing, from cracked rock and earth, to lush green vegetation of the rainforest, with giant ferns up to 60 feet high.

At the bottom of a crater you see it's strewn with huge boulders, some as large as houses and you can make out hikers sitting eating picnics on some of them. The ground is covered in deep cracks, some of which are still venting steam.

'In the late 1950's there was a big eruption here,' Mike says. 'It sent fountains of lava over 1000 feet into the air, and broke through part of the crater walls in a series of lava waterfalls. The ever-present trade winds caught the material in the fire fountains and blew them into a giant rounded hill called Pu'u Pua'i that you can see over to your right. The cleft all along one side has led some to call it "buttcheek hill".'

'It can rain a lot here; it is in a rain forest, after all. In 2000 they had thirty inches of rain in one day and the rainwater seeps down to the rumbling magma chamber just 200 feet below you. Lava is quite porous, so the rainwater doesn't rush down straight to the magma chamber; but you do get a lot of steam.'

Looking around you, you realise that you're not the only thing in the air, there are beautiful tropic birds and frigates flying high, cruising lazily on the thermals.

'Now I'm going to fly you along Chain of Craters Road, where you will see some actual lava!

'The road is accessible to cars; but you can see it all from up here. There are lots of craters, all of which are different; Lua Manu, Puhimau, Ko'oko'olau, Pauahi. Mauna Ulu is still active and with a crumbling mouth visitors are warned not to approach for fear of the 400-foot drop into the smouldering crater below.

'We are getting close to the main vent of the volcano, Pu'u O'o, which has been sending streams of lava to the sea about 12 miles away, where it forms new land. This means that Hawai'i is under constant formation, changing shape and size all the time.

'We may see Pu'u O'o erupting today. Pele we ask that you grant us a viewing.'

With that he flies the helicopter towards the crater and you keep your fingers crossed for a great show.





In the distance you see clouds of smoke that drift up into the sky and looking down you expect to see some sort of fire raging beneath you. At first you can't see anything; but as the helicopter flies nearer you see a bright orange glow, like the heart of a furnace.

The closer you get, the more you can see that the orange is liquid and it's bubbling and boiling, flowing like a river.

As you watch the ground, you see the lava is flowing really fast, its glowing molten orange and looks frighteningly hot. Mike keeps the helicopter high above it, avoiding the heat.

'Keep watching the lava,' Mike says. 'Sometimes eruptions can be really slow and scientists film time-lapse videos to show them; but at other times they can be really fast and spectacular. Pu'u O'o has given some very spectacular displays in the past.'

You stare at the thick boiling liquid and watch as a cloud of gas is released, then a small spray of the bright orange droplets shoots up into the air, before falling back to the earth.

It happens again, this time the droplets go even higher, spraying out like a molten fountain.

'I think we've got close enough for today,' Mike says. 'The lava is usually around 1100°C when it erupts! Once it starts to cool, that's when it hardens and turns black like the rest of the rock you see around you.'







'Some of the lava has already started to cool and it is much slower moving. See the thick, treacherous mass of dark lava down there?' Mike points towards a thick dark substance that looks very different to the bright orange you've seen so far. From up here it looks completely solid; but focusing you see that it is very slowly moving across the ground.

'If you were standing near it, you would feel the heat; but could easily out walk it, because it hardens as it moves. Soon it will be as solid as the acres of lava all around, that's how quickly the new land forms and sets around here. The island is constantly changing and growing. Old land is covered up with new. Just take a look at that road sign up ahead.'

You look through the window and all you can see is the top of the sign – the pole that supports it is completely buried in black, glassy, hardened lava.

'Since the lava covered the road in 2001,' Mike says, 'the lava field has become a one way destination. Cars have to turn around to drive back the way they came; but we can fly over it. I want to take you over the lava fields and head out to the coast.'

The land below you is descending rapidly and you can see the sparkling blue of the Pacific Ocean before you. Flying over the seemingly limitless tract of black rock you see that in the distance there are more columns of billowing steam.

Mike flies straight towards the steam and you see that there is hot orange lava coursing down the cliffs in fiery torrents. It plunges into the sea, sending up the great clouds of hissing steam.

'The lava rapidly cools and hardens in the cold water,' Mike says. 'The hard lava is then shattered to pieces by the power of the waves in the Pacific Ocean.'





'Now it's time to head back to the helipad; but before we go, we must thank Pele for her magnificent display today.'

You take one last look at the glowing landscape and silently say your thanks. On your journey home you try to take the awe-inspiring landscape in one last time.

Mike flies back and lands the helicopter smoothly. You thank him for an incredible adventure, before climbing out. You feel disappointed to be back on solid ground, without the amazing birds-eye view; but now you have a new found awe and respect for the creation of this beautiful island.



Hawaiian Pizza



Hawaiian pizza does not actually originate from Hawaii; but the pineapple part of the topping is probably why it's been given that title. However it seems like a fitting thing to eat on our holiday

Ingredients

- A pre-made / bought pizza base, or English Muffins halved
- 1 tube of tomato puree or a tin of tomatoes or a jar of passata - your choice
- Cheese - mozzarella or cheddar, grated
- Topping - ham and pineapple is classic for the Hawaiian; but you can put anything you want on.

For example : onions, peppers, olives, cherry tomatoes, mushrooms, sweetcorn, anchovies, pepperoni, cooked chicken etc Be creative or just use whatever is in your cupboards and fridge.

Instructions

1. Preheat the oven to 180C
2. Place the pizza base on a non-stick baking tray.
3. Cover the base with the tomato topping of choice. You want an even layer, not too thick.
4. Sprinkle on the grated cheese.
5. Now add your toppings - you want them in bite-sized pieces, so you may need to chop them first.
6. Cook in the oven until the cheese has gone golden and bubbly 12 - 20 minutes depending on toppings.



Chocolate Molten Lava Cake



These ooey-gooey cakes are a real indulgence!

Ingredients (makes three 6-oz ramekin cakes)

- 100g dark chocolate, broken into pieces
- 100g unsalted butter, cut to small cubes
- 2 eggs
- 50g caster sugar
- 20g self-raising flour, sifted

Instructions

1. Melt chocolate and butter using either the microwave or a bowl over a pan of hot water.
2. In a large bowl, use an electric whisk beat the eggs and sugar till the mixture turns pale and frothy. This will take a few minutes.
3. While beating pour the melted chocolate, into the egg mixture.
4. Stir in the flour. Use a spatula to fold everything in and mix gently through.
5. Grease your ramekins with some butter (so that the cake will come out easily). Glass ramekins are great because you can see if the sides are cooked.
6. Fill the ramekin almost 3/4 full with the chocolate mixture and bake in a preheated oven of 180C (356F) for about 10 minutes. Don't overcook - the cake is deliberately slightly undercooked to give the molten chocolate lava. The cake will rise slightly and the top will look cooked like a normal cake; but the centre will still be gooey. If you do over-bake it don't worry, you will get a brownie / chocolate cake so that's fine too.
7. When it is baked, remove ramekin from oven and let cool for 1-2 minutes. Use a spoon to gently loosen the edges. Carefully invert the cake onto serving plate.
8. Be careful as the centre may still be hot - don't burn your mouth on the lava!
9. Serve with ice cream and pureed raspberries for your river of red lava.



Fun Things To Do!



Watch the volcanoes erupt!

See the volcanos in real time on these web cameras

<http://volcanoes.usgs.gov/hvo/cams/>

Check out the helicopter and tours. www.bluehawaiian.com/bigisland/webcam/.

Fly over a virtual model of the island

<http://satftp.soest.hawaii.edu/space/hawaii/virtual.field.trips.html>

Take a photo tour of the National Volcano Park

<http://hvo.wr.usgs.gov/gallery/kilauea/caldera/main.html>

www.nps.gov/havo/upload/Trip-Planner.pdf

Check out the guidelines for driving the Chain of Craters Road.

www.nps.gov/havo/planyourvisit/upload/Explore_SB_0110_web.pdf

You can read more about Madame Pele here... www.coffeetimes.com/pele.htm

Sleepy volcanoes?

Watch these amazing videos instead...

- www.nps.gov/havo/photosmultimedia/eruption-20110803.htm
- <http://hvo.wr.usgs.gov/gallery/kilauea/volcanomovies/>
- www.bluehawaiian.com/bigisland/video/

They're in Hawaiian Standard Time (HST) so you're need to convert it to your local time, to make sure it's not all dark.

www.timeanddate.com/worldclock/converter.html



How do volcanoes work?

Find out here... www.enchantedlearning.com/subjects/volcano/

Make your own Volcano!

Have a go at making your very own volcano; but be careful - follow the instructions!

<http://chemistry.about.com/cs/howtos/ht/buildavolcano.htm>

<http://www.sciencebob.com/experiments/volcano.php>

Or you can even buy Volcano Kits online.

Movies

- Volcano
- 2012
- Star Wars Episode III
- Dante's Peak
- Joe versus the Volcano
- You Only Live Twice
- Lord of the Rings: Return of the King

Books

- Krakatoa: The Day the World Exploded by Simon Winchester
- Ashfall (Ashfall, #1) by Mike Mullin
- Pompeii by Robert Harris
- Eruptions That Shook The World by Clive Oppenheimer
- The Volcano Lover: A Romance by Susan Sontag
- Volcano Cowboys: The Rocky Evolution of a Dangerous Science (Paperback) by Dick Thompson
- Discover Hawai'i's Birth by Fire Volcanoes by Katherine Shelley Orr

