1

00:00:00,000 --> 00:00:04,000

Is our vital undersea cable network at risk

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00:00:04,000 --> 00:00:06,000

from forces beyond our control?

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00:00:06,000 --> 00:00:12,000

It could literally cripple modern society as we know it.

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00:00:12,000 --> 00:00:15,000

Can new discoveries on the sea floor finally confirm

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00:00:15,000 --> 00:00:21,000

an explosive theory about the Atlantic's most notorious expanse of water?

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00:00:21,000 --> 00:00:26,000

Could this explain some of the stories that we've heard about the Bermuda Triangle?

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00:00:27,000 --> 00:00:32,000

And how have a fortunate few gone over the world's most famous waterfall

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00:00:32,000 --> 00:00:35,000

and lived to tell the tale?

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00:00:35,000 --> 00:00:40,000

It's very, very unlikely that you would survive going over the Niagara Falls.

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00:00:44,000 --> 00:00:48,000

The underwater realm is another dimension.

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00:00:48,000 --> 00:00:53,000

It's a physically hostile place where dreams of promise

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00:00:53,000 --> 00:00:58,000

can sink into darkness.

13

00:00:58,000 --> 00:01:00,000

I'm Jeremy Wade.

14

00:01:00,000 --> 00:01:05,000

I'm searching the world to bring you the most iconic and baffling underwater mysteries

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00:01:05,000 --> 00:01:07,000

known to science.

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00:01:07,000 --> 00:01:10,000

Shipwrecks can't just disappear, or can they?

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00:01:10,000 --> 00:01:14,000

It's a dangerous unexplored frontier that swallows evidence.

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00:01:14,000 --> 00:01:18,000

We know more about the face of Mars than we do our deepest oceans.

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00:01:18,000 --> 00:01:23,000

Where unknown is normal and understanding is rare.

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00:01:35,000 --> 00:01:40,000

Over the years, the Bermuda Triangle has been the scene of the disappearance

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00:01:40,000 --> 00:01:44,000

of dozens of ships and aircraft and hundreds of people.

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00:01:44,000 --> 00:01:49,000

What is it about this area of ocean that has made it so notorious?

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00:01:49,000 --> 00:01:54,000

Now, scientists are making big discoveries at the bottom of our oceans

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00:01:54,000 --> 00:02:00,000

that promise to shed new light on some of the Bermuda Triangle's most mysterious incidents.

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00:02:07,000 --> 00:02:13,000

On a calm spring day, a tugboat is sailing from Puerto Rico to Fort Lauderdale, Florida

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00:02:13,000 --> 00:02:17,000

through the southern section of the Bermuda Triangle.

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00:02:17,000 --> 00:02:24,000

Her experienced captain is resting below deck when he receives a sudden call to come to the bridge.

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00:02:26,000 --> 00:02:31,000

The compass was spinning like mad, and he'd never seen anything like that before.

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00:02:33,000 --> 00:02:37,000

A strange darkness descends on the vessel,

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00:02:37,000 --> 00:02:42,000

and without warning, all the tugboat's electronic systems shut down.

31

00:02:43,000 --> 00:02:47,000

Nothing electric was working, the communications were all out.

32

00:02:47,000 --> 00:02:51,000

The captain heads out on deck and is shocked by what he sees.

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00:02:51,000 --> 00:02:56,000

The crew become aware that the sea around the ship is boiling.

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00:02:56,000 --> 00:03:01,000

The currents on the sea are going wildly in different directions.

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00:03:01,000 --> 00:03:05,000

The crew are absolutely terrified.

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00:03:05,000 --> 00:03:11,000

The fog is just so thick that he can't distinguish between where the sky stops and the sea starts.

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00:03:12,000 --> 00:03:18,000

Fearing the worst, the captain orders full speed ahead to escape the churning waters.

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00:03:20,000 --> 00:03:27,000

Eventually, the tugboat breaks through the fog into calmer seas and sails away from the danger.

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00:03:27,000 --> 00:03:32,000

The crew are at a loss to explain what they have just experienced.

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00:03:32,000 --> 00:03:35,000

What could have caused this to happen?

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00:03:35,000 --> 00:03:38,000

We want to know what it is, and we want to know more.

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00:03:39,000 --> 00:03:44,000

One natural phenomenon that can have a dramatic effect on the state of the sea

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00:03:44,000 --> 00:03:47,000

is underwater seismic activity.

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00:03:47,000 --> 00:03:52,000

Volcanoes and marine systems vary quite a bit, just like they do on land.

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00:03:52,000 --> 00:03:57,000

It can cause disturbances that can affect the surface of the water.

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00:03:57,000 --> 00:04:00,000

In that case, what you actually have is heat.

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00:04:00,000 --> 00:04:06,000

They emit a huge amount of gases, and all of those create bubbles.

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00:04:07,000 --> 00:04:14,000

Underwater volcanoes have been blamed for sea disturbances and ship disappearances elsewhere in the world.

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00:04:14,000 --> 00:04:20,000

But no volcanic activity was reported in the vicinity of the tugboat incident.

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00:04:20,000 --> 00:04:23,000

So what else might be responsible?

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00:04:23,000 --> 00:04:30,000

There are also underwater rock shifts that will release unexpected waves, unexpected currents.

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00:04:30,000 --> 00:04:35,000

But generally, those currents are not associated with bubbling or boiling.

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00:04:36,000 --> 00:04:41,000

For the ocean to be as volatile as the waters that surrounded the besieged tugboat,

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00:04:41,000 --> 00:04:46,000

it is thought that some other natural force must have been at play.

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00:04:46,000 --> 00:04:53,000

And there is one prime suspect, the highly combustible gas, methane.

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00:04:53,000 --> 00:05:01,000

Methane deposits are mixtures of ice and gas that are found in sediments in the world's oceans,

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00:05:01,000 --> 00:05:04,000

and we're finding more and more of them.

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00:05:04,000 --> 00:05:09,000

Kept in an icy state by the immense pressure and low temperatures at the bottom of the ocean,

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00:05:09,000 --> 00:05:17,000

methane, often in the form of solid compounds called hydrates, only needs a small disturbance to be unleashed.

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00:05:17,000 --> 00:05:21,000

You go to the bottom of the ocean and you shake up and you disturb the areas where the hydrates are,

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00:05:21,000 --> 00:05:29,000

and literally bubbles of gas erupt from the bottom of the ocean, and start going up the water column.

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00:05:29,000 --> 00:05:35,000

So could releases of methane from the sea floor have caused the appearance of a boiling sea

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00:05:35,000 --> 00:05:39,000

around the tugboat traveling through the Bermuda Triangle?

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00:05:39,000 --> 00:05:44,000

By the time methane gas reaches the top surface, it is going very rapidly.

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00:05:44,000 --> 00:05:52,000

That motion generates turbulence, seemingly random motion in all directions.

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00:05:52,000 --> 00:05:57,000

But a boiling sea was not the only phenomenon witnessed by the tugboat crew.

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00:05:57,000 --> 00:06:01,000

Their navigational instruments also malfunctioned.

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00:06:01,000 --> 00:06:08,000

When gases follow close to a conductive surface, they build up an electric charge.

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00:06:08,000 --> 00:06:13,000

It's known as the streaming potential. It's an electric kinetic phenomenon.

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00:06:13,000 --> 00:06:20,000

This charge could have overloaded the tugboat's electrical systems, sending its instruments haywire.

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00:06:21,000 --> 00:06:29,000

The tugboat was then sailing blind, trying to get through the dense fog, possibly another effect of methane.

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00:06:29,000 --> 00:06:33,000

Those small bubbles, they've had the opportunity to hit 100% relative humidity,

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00:06:33,000 --> 00:06:38,000

and it will release a fog when those bubbles have burst.

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00:06:38,000 --> 00:06:41,000

It's a fog that should be fairly dense.

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00:06:41,000 --> 00:06:48,000

A methane burst seems the most likely cause of the mysterious event experienced by the tugboat crew.

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00:06:48,000 --> 00:06:55,000

But could methane be responsible for more deadly incidents in these notorious waters?

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00:06:55,000 --> 00:07:04,000

Could this potentially explain some of the narratives and the stories that we've heard about the

Bermuda Triangle?

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00:07:04,000 --> 00:07:13,000

Terrifying a tugboat crew is one thing, but causing the disappearance of whole ships with all passengers and crew is quite another.

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00:07:13,000 --> 00:07:18,000

This would require an enormous force.

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00:07:18,000 --> 00:07:21,000

October 1985.

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00:07:21,000 --> 00:07:28,000

In the Norwegian oil fields of the North Sea, a helicopter captures this extraordinary footage.

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00:07:28,000 --> 00:07:36,000

Routine drilling beneath a rig has accidentally unlocked a large pocket of natural gases, predominantly methane.

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00:07:36,000 --> 00:07:45,000

Huge quantities of gas roar up from the sea floor with a force that threatens the stability of the

platform itself.

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00:07:45,000 --> 00:07:53,000

This phenomenon, known by oil workers as the Burp of Death, is not uncommon in oil fields.

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00:07:53,000 --> 00:08:02,000

But could there be dangerous methane deposits elsewhere, including in the Bermuda Triangle, with the power to take down ships?

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00:08:07,000 --> 00:08:10,000

The Bermuda Triangle

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00:08:14,000 --> 00:08:22,000

Methane gas escaping from the sea floor is responsible for a number of disturbing incidents at sea.

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00:08:22,000 --> 00:08:29,000

But could it be behind mystery disappearances in the Bermuda Triangle?

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00:08:29,000 --> 00:08:36,000

The 1985 gas release that threatened an oil platform in the North Sea showed devastating force.

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00:08:36,000 --> 00:08:45,000

The incident was not a natural occurrence, however. It was caused by intrusive human activity drilling for oil.

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00:08:45,000 --> 00:08:55,000

But could massive methane discharges like this occur naturally and on a scale that could endanger shipping?

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00:08:55,000 --> 00:09:02,000

In 2017, researchers at the Arctic University of Norway report a remarkable new discovery.

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00:09:02,000 --> 00:09:09,000

Huge craters at the bottom of the ocean, up to half a mile wide and almost 100 feet deep.

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00:09:09,000 --> 00:09:17,000

The Norwegian research indicates that you could have large bubble bursts from the sea floor.

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00:09:18,000 --> 00:09:28,000

The giant craters found at the bottom of the Beren Sea reveal what could be evidence of massive, naturally occurring deep ocean methane bursts.

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00:09:28,000 --> 00:09:34,000

These large methane craters were the result of significant methane explosions.

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00:09:34,000 --> 00:09:41,000

The methane built up in large amounts and then was released all at once.

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00:09:42,000 --> 00:09:53,000

Instead of a gradual release of bubbles that causes the surface water to churn, these craters suggest methane blowouts on a massive scale.

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00:09:53,000 --> 00:10:01,000

A single eruption can throw vast quantities of methane into the sea. We're talking millions of tonnes.

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00:10:01,000 --> 00:10:06,000

A ship caught in such an event could be doomed.

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00:10:07,000 --> 00:10:15,000

The water would suddenly become much less dense due to the sheer quantity of gas, sinking the vessel in a matter of moments.

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00:10:15,000 --> 00:10:28,000

If a bubble occurred while a ship was directly above it, it could be submerged into this pocket of gas that is less dense than the water that the rest of the ship is on.

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00:10:29,000 --> 00:10:38,000

But this deadly gas from the bottom of the ocean doesn't stop at the surface. It continues to rise.

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00:10:38,000 --> 00:10:48,000

So if you have a crater that's half a mile wide releasing a burst of methane, what would it do to the air sea interface and the turbulence of the air above?

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00:10:48,000 --> 00:10:50,000

What would that look like?

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00:10:51,000 --> 00:11:00,000

Momentum doesn't just stop when this plume hits the top surface. It carries on into the atmosphere.

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00:11:00,000 --> 00:11:09,000

If your aircraft is above that, it will knock out the controls, the communications and of course the navigation.

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00:11:09,000 --> 00:11:14,000

And there's a further potentially fatal threat to overflying planes.

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00:11:14,000 --> 00:11:21,000

Methane is explosive and if you have a huge pocket of it, an aircraft goes through it.

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00:11:21,000 --> 00:11:30,000

You have all that static electricity around them as well and if you just need to spark methane in a surrounded by oxygen.

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00:11:30,000 --> 00:11:41,000

But what happens if you're in the middle of the ocean?

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00:11:41,000 --> 00:11:56,000

Faced with shocking evidence of the dangers to shipping an aircraft, scientists are racing to try and identify where large reserves of methane may be located, either in the form of gas pockets or solid hydrates.

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00:11:56,000 --> 00:12:05,000

Currently, researchers at the Woods Hole Oceanographic Institute are using spectroscopy to identify methane hydrates.

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00:12:05,000 --> 00:12:23,000

They've been using gas collection techniques to actually measure the amount of natural gas that's found on the seafloor in different locations and they're measuring those gases to see what their components are.

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00:12:23,000 --> 00:12:26,000

And the results for methane are startling.

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00:12:26,000 --> 00:12:33,000

Recent discoveries show that methane is incredibly super abundant in the world's oceans.

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00:12:33,000 --> 00:12:40,000

Some estimate that it's as much as 70% of the world's fly of methane is actually stored on the oceans.

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00:12:40,000 --> 00:12:49,000

These undersea reservoirs are being discovered all over the world, including off the east coast of the United States.

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00:12:49,000 --> 00:12:53,000

But are there any in the seabed under the Bermuda Triangle?

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00:12:53,000 --> 00:13:00,000

We currently don't have any evidence that large methane buildups are happening in the area of the Bermuda Triangle.

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00:13:00,000 --> 00:13:06,000

That's yet to be discovered.

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00:13:06,000 --> 00:13:17,000

Massive methane discoveries under our oceans add weight to the theory that this gas could be responsible for disappearances in the Bermuda Triangle.

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00:13:17,000 --> 00:13:33,000

But with reserves being uncovered worldwide, could methane be behind the mystery of missing ships in other parts of the world too?

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00:13:33,000 --> 00:13:39,000

Hidden on the bottom of our oceans is a massive network of undersea cables.

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00:13:39,000 --> 00:13:47,000

These carry 99% of all internet traffic and trillions of dollars of financial transfers every day.

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00:13:47,000 --> 00:13:52,000

They are the arteries that keep the modern world alive.

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00:13:52,000 --> 00:14:00,000

But an alarming incident in the early 1970s suggests this network could be vulnerable to mysterious forces.

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00:14:01,000 --> 00:14:06,000

August 1972.

129

00:14:06,000 --> 00:14:15,000

A military aircraft from US Task Force 77 is flying over Southeast Asia on a routine flight.

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00:14:15,000 --> 00:14:26,000

As it banks over the South China Sea, the crew sees a disturbance in the water below, a large mysterious explosion bursting from the ocean.

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00:14:27,000 --> 00:14:32,000

This is a real mystery. No one actually really knew what happened here.

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00:14:32,000 --> 00:14:40,000

The Vietnam War is at a critical stage, but there are no major combat operations in the area at this time.

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00:14:40,000 --> 00:14:45,000

So what is exploding? And why?

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00:14:45,000 --> 00:14:55,000

In an attempt to bring the war to a swift conclusion, the US military has initiated a blockade of North Vietnamese ports.

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00:14:56,000 --> 00:15:00,000

All entrances to North Vietnamese ports will be mined.

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00:15:00,000 --> 00:15:04,000

Huge numbers of powerful sea mines are deployed.

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00:15:04,000 --> 00:15:11,000

This was a huge operation done by the United States Navy. The sea was literally seated with over 11,000 mines.

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00:15:13,000 --> 00:15:20,000

Floating on or just under the surface, these mines lie in wait for any unsuspecting enemy vessel.

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00:15:20,000 --> 00:15:27,000

Any ships attempting to leave or enter these ports will do so at their own risk.

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00:15:29,000 --> 00:15:35,000

But on August 4th, near the North Vietnamese port of Hai Phong, something strange starts to happen.

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00:15:35,000 --> 00:15:38,000

These mines just start exploding.

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00:15:40,000 --> 00:15:43,000

The US Navy has no idea why.

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00:15:44,000 --> 00:15:51,000

The overflying US aircrew observed 25 explosions in about 30 seconds.

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00:15:51,000 --> 00:16:01,000

But it's just the tip of the iceberg. Elsewhere along the coast, many hundreds of mines spontaneously explode.

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00:16:01,000 --> 00:16:07,000

When your weapons start going off, that is a mystery that you want to get to the bottom of.

146

00:16:07,000 --> 00:16:18,000

What's behind this synchronized undersea salvo? Enemy action? A new superweapon? Or something from out of this world?

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00:16:18,000 --> 00:16:37,000

Our vital undersea cable network is under threat and with it the very future of the modern world.

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00:16:37,000 --> 00:16:44,000

And the key to understanding why lies in a mysterious incident 50 years ago.

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00:16:44,000 --> 00:16:56,000

In August 1972, up to 4,000 US Navy mines mysteriously explode in the seas around Northern Vietnam.

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00:16:56,000 --> 00:17:04,000

The question is what caused all of these sea mines to self-detonate for apparently no reason.

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00:17:04,000 --> 00:17:10,000

The initial assumption of US investigators is that the enemy must be responsible.

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00:17:11,000 --> 00:17:20,000

There's speculation that it may be the North Vietnamese that somehow they've been able to alter these mines autonomously.

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00:17:20,000 --> 00:17:27,000

But few believe that the Vietnamese have the technological means to pull off such a coordinated feat.

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00:17:27,000 --> 00:17:34,000

It's not as though the Vietnamese are sending out underwater demolition teams and blowing these things up.

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00:17:35,000 --> 00:17:42,000

The naval officers in charge, they have no idea why these mines were self-detonating.

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00:17:42,000 --> 00:17:50,000

With the North Vietnamese plot unlikely, the Americans investigate further and discover something intriguing.

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00:17:50,000 --> 00:18:01,000

Among the different mines deployed by the US Navy, only one specific type has blown up in large numbers. Magnetic mines.

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00:18:01,000 --> 00:18:07,000

These are mines which go off when they feel large disturbance in the magnetic field of the earth.

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00:18:07,000 --> 00:18:14,000

As a ship passes through this, it affects the field. It's a big lump of metal and it affects the magnetic field around it.

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00:18:14,000 --> 00:18:18,000

If it's a big enough effect, the mine goes off.

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00:18:18,000 --> 00:18:26,000

But no ships were spotted in the vicinity of the explosions, so there must have been some other kind of trigger.

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00:18:27,000 --> 00:18:34,000

US Navy investigators now strongly suspect some sort of secret enemy weapon.

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00:18:34,000 --> 00:18:37,000

And for this, there is a precedent.

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00:18:37,000 --> 00:18:47,000

During World War II, British engineers were able to trip magnetic mines by using huge electromagnets attached to aircraft.

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00:18:48,000 --> 00:19:00,000

If you have a mine sitting here in the earth's magnetic field, then all of a sudden this other artificial magnetic field comes through and it will basically trip off the mine.

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00:19:02,000 --> 00:19:14,000

The Vietnamese are not thought to have such means at their disposal, but their cold wall backers, the Soviet Union, could the Americans suspect be using such aerial technology.

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00:19:15,000 --> 00:19:24,000

The first investigations were all focused on sabotage and a secret Soviet weapon, which caused probably a CIA to spend a lot of time chasing its own tail.

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00:19:24,000 --> 00:19:33,000

Having found no evidence of an electromagnetic super weapon, the US Navy investigators are left

scratching their heads.

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00:19:35,000 --> 00:19:43,000

But then, in a strange twist, reports emerge from further afield indicating that they've been looking in the wrong place all along.

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00:19:44,000 --> 00:19:49,000

Elsewhere in the world, other unexplained phenomena have been occurring.

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00:19:49,000 --> 00:19:54,000

We know that this kind of thing was happening, not just with these mines, but with other things.

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00:19:55,000 --> 00:20:03,000

At the same time as the mines went off in Vietnam, there were actually reports of electromagnetic services in the Philippines, Brazil, Japan.

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00:20:05,000 --> 00:20:11,000

In America itself, power companies were reporting failures. The power systems went completely haywire.

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00:20:12,000 --> 00:20:17,000

There's only one thing known to meddle with the Earth's magnetic field with such force.

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00:20:20,000 --> 00:20:21,000

The Sun.

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00:20:23,000 --> 00:20:28,000

The magnetic mines are set up by a magnetic anomaly by a solar flare.

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00:20:30,000 --> 00:20:34,000

A solar flare is an explosion of energy on the surface of the Sun.

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00:20:34,000 --> 00:20:45,000

It can trigger what's known as a coronal mass ejection, which blasts an immense cloud of magnetized particles out from the Sun at over a million miles per hour.

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00:20:46,000 --> 00:20:51,000

If the Earth happens to be in its path, strange things start to happen.

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00:20:52,000 --> 00:20:57,000

They can cause alterations in the Earth's magnetic field.

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00:20:58,000 --> 00:21:09,000

If the magnetic flux caused by the Sun matched that of a large metal ship passing near the sea mines, it could have triggered the underwater explosions.

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00:21:10,000 --> 00:21:14,000

For researchers, this was sort of a smoking gun.

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00:21:15,000 --> 00:21:19,000

The explosive events of 1972 were shocking enough.

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00:21:20,000 --> 00:21:29,000

But a similar solar event today could have a far more wide-ranging impact, devastating our vital underwater communications.

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00:21:30,000 --> 00:21:37,000

If we had a massive solar flare, it could literally cripple modern society as we know it.

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00:21:50,000 --> 00:21:59,000

Explosive events in 1972 showed conclusively that solar storms can have a dramatic impact here on Earth.

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00:22:01,000 --> 00:22:11,000

But new evidence suggests that their effects can penetrate to the very bottom of our oceans, with potentially devastating consequences.

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00:22:12,000 --> 00:22:29,000

Electromagnetic radiation from a solar flare can have implications for radar and communications at sea, but it also has the potential to affect undersea cables.

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00:22:30,000 --> 00:22:37,000

Hidden along the bottom of the world's oceans and connecting the continents lies a network of submarine cables.

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00:22:38,000 --> 00:22:45,000

All this data that we're sharing and transferring doesn't get thrown up through satellites, it all goes through subsea cable systems.

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00:22:46,000 --> 00:22:50,000

Those are really the conduits of the modern information age.

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00:22:53,000 --> 00:23:00,000

21st century life on Earth relies on three-quarters of a million miles of undersea cables.

193

00:23:00,000 --> 00:23:08,000

Every day these carry $10 trillion worth of financial transfers and 99% of internet traffic.

194

00:23:09,000 --> 00:23:13,000

Data doesn't move through the cloud, it moves under the ocean.

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00:23:15,000 --> 00:23:24,000

We sometimes think that they are, since they're so deep in the water, that they're not affected by these solar storms, electromagnetic kind of disturbances.

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00:23:24,000 --> 00:23:29,000

But what we're finding now is that they are actually being affected by these things.

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00:23:30,000 --> 00:23:40,000

Many experts now agree that a large-scale solar event could cripple our essential underwater cable network, causing unimaginable disruption to our daily life.

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00:23:41,000 --> 00:23:45,000

We cannot rely upon the sea to protect our communication systems.

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00:23:45,000 --> 00:23:58,000

If we have another solar flare, if there is another event similar to that of 1972, then that could wipe out global communications for days, if not weeks, causing untold trouble for millions.

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00:23:59,000 --> 00:24:04,000

The question is not if, but when the next solar storm will hit us.

201

00:24:05,000 --> 00:24:07,000

It's turned from a mystery into a nightmare.

202

00:24:16,000 --> 00:24:31,000

The world's great waterfalls combine awe-inspiring beauty with terrifying power and the dizzying prospect of certain death.

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00:24:32,000 --> 00:24:38,000

On rare occasions, however, people do survive such chance in a million cascades.

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00:24:39,000 --> 00:24:44,000

But how does anyone overcome the most feared and famous falls on the planet?

205

00:24:45,000 --> 00:24:48,000

How does anyone survive Niagara?

206

00:24:54,000 --> 00:24:57,000

May 21st, 2012.

207

00:25:00,000 --> 00:25:06,000

A man in his early 40s climbs a railing near the top of Niagara Falls and jumps in.

208

00:25:09,000 --> 00:25:13,000

He disappears into the torrent and is swept over the top.

209

00:25:16,000 --> 00:25:25,000

Emergency services are scrambled to recover what is assumed to be his dead body.

210

00:25:26,000 --> 00:25:31,000

But when they arrive at the foot of the falls, they are amazed to discover him alive.

211

00:25:32,000 --> 00:25:37,000

The survivor is hauled back up the cliff on a stretcher and airlifted to the hospital.

212

00:25:38,000 --> 00:25:42,000

There, doctors treat him for broken ribs and a collapsed lung.

213

00:25:43,000 --> 00:25:45,000

But he lives.

214

00:25:48,000 --> 00:25:56,000

Of the estimated 5,000 people who have gone over Niagara Falls, the middle-aged man is one of just 13 who have survived.

215

00:25:57,000 --> 00:26:03,000

Statistically speaking, it's a very, very unlikely event that you would survive going over the Niagara Falls.

216

00:26:04,000 --> 00:26:12,000

Is it luck? Is it a miracle? Or can science help us understand how a fortunate few have survived this deadly drop?

217

00:26:13,000 --> 00:26:18,000

Astonishingly, some people have, for whatever reason, gone over these falls and survived.

218

00:26:19,000 --> 00:26:32,000

Niagara Falls is a thunderous cliff on the American-Canadian border that sends an icy torrent plunging 188 feet down into a churning mass of frothy water and jagged rocks.

219

00:26:34,000 --> 00:26:44,000

This natural wonder is thought to be the fastest-flowing falls in the world, with over 6 million cubic feet of water rushing over the edge every minute.

220

00:26:45,000 --> 00:26:51,000

Niagara Falls is absolutely spectacular. Hundreds of thousands of tons of water crashing over the escarpment.

221

00:26:53,000 --> 00:27:01,000

It's powerful. It's fast. There's a lot of force. It's cold. It's one of those amazing places on Earth.

222

00:27:02,000 --> 00:27:11,000

Despite the obvious dangers, there is a long history of people throwing themselves over the great falls at Niagara to see if they can survive.

223

00:27:12,000 --> 00:27:19,000

People get mesmerized and they're curious. Can I survive it? How could I survive it? Is it even possible to survive it?

224

00:27:20,000 --> 00:27:29,000

The first known successful attempt was made by a woman called Annie Edson Taylor, a 63-year-old teacher from Auburn, New York.

225

00:27:29,000 --> 00:27:37,000

Annie Taylor decides that she is going to be the first to survive going over the Niagara Falls purposely in a barrel.

226

00:27:38,000 --> 00:27:49,000

She had a mattress wrapped on the inside of the barrel for cushioning, went over the falls, survived it and was therefore the first person to successfully go over the falls.

227

00:27:50,000 --> 00:28:06,000

Annie Taylor survived with just a cut and bruises. But her first words when she surfaced after the death-defying feet were a warning to others. No one ought to ever do that again. But they did.

228

00:28:07,000 --> 00:28:27,000

People started to go over the falls in barrels. Some made metal barrels, some went over in wood barrels. People come up with inventive ways to go over Niagara Falls. Metal boats. One guy used inner tubes.

229

00:28:28,000 --> 00:28:35,000

I guess the same reason why people want to climb mountains is the falls is there and he just won the Congress.

230

00:28:37,000 --> 00:28:42,000

Some people go over because they want to be daredevils. Some people go over just because they're crazy.

231

00:28:44,000 --> 00:28:52,000

Daredevil attempts carried out using some form of safety equipment like barrels make up the majority of Niagara's survivals.

232

00:28:53,000 --> 00:29:03,000

But even more remarkable are the handful of survivors who have made the Great Leap without any form of protection. How could anybody survive such a fall?

233

00:29:03,000 --> 00:29:29,000

As far as we know, only 13 people have survived a leap over Niagara Falls, the majority in protective barrels. But a handful have gone over without any form of protection and lived to tell the tale.

234

00:29:30,000 --> 00:29:36,000

It's kind of a mystery why those people survive while other people don't.

235

00:29:37,000 --> 00:29:41,000

There are a number of factors to bear in mind here. So firstly, there's the sheer heights.

236

00:29:42,000 --> 00:29:47,000

At 188 feet, Niagara is higher than the Leaning Tower of Pisa.

237

00:29:48,000 --> 00:29:53,000

188 feet, icy drop to the bottom. No thank you.

238

00:29:54,000 --> 00:30:00,000

But remarkably, unprotected jumps into water from an even greater height have been survived.

239

00:30:02,000 --> 00:30:10,000

In 2015, Lazaros Schaller jumped into a lagoon in Switzerland from a height of 192 feet.

240

00:30:16,000 --> 00:30:18,000

He came out unscathed.

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00:30:19,000 --> 00:30:27,000

But Schaller had carefully selected his jump point and could control exactly where and when he hit the water.

242

00:30:29,000 --> 00:30:34,000

A jump into the mighty torrent of Niagara is far less predictable.

243

00:30:35,000 --> 00:30:40,000

At the bottom of the falls, there are some areas that are rockier and some areas that are less rocky.

244

00:30:41,000 --> 00:30:44,000

And there are other odds stacked against a Niagara jumper.

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00:30:45,000 --> 00:30:47,000

There's a shock of the hitting the water.

246

00:30:48,000 --> 00:30:53,000

The water is cold. It's freezing. How long do you have before you're at risk for hypothermia?

247

00:30:54,000 --> 00:30:56,000

There's so many things working against you here.

248

00:30:58,000 --> 00:31:05,000

But certain things are as applicable to successful Niagara jumpers as they are to any other high divers.

249

00:31:06,000 --> 00:31:09,000

Body position on water entry is critical.

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00:31:10,000 --> 00:31:17,000

It seems as though many of them enter the water feet first, perhaps on the tips of their toes, which is protecting their brain from a brain injury.

251

00:31:18,000 --> 00:31:20,000

And therefore they go much more easily into the water.

252

00:31:21,000 --> 00:31:25,000

And high divers have another trick to survive hitting the water.

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00:31:26,000 --> 00:31:30,000

They will tighten up their muscles really, really tight.

254

00:31:31,000 --> 00:31:38,000

And this will help them avoid any sort of injury to their organs or their other muscles by going, entering the water in super tight form.

255

00:31:40,000 --> 00:31:45,000

The maelstrom of water at the bottom of the falls could also offer an initial advantage.

256

00:31:46,000 --> 00:31:51,000

There is a giant washing machine creating air bubbles down there.

257

00:31:52,000 --> 00:32:00,000

Hitting static water at speed is like hitting a solid object, but aerated water provides far less resistance.

258

00:32:01,000 --> 00:32:08,000

And because of this, high divers often rig air tanks into their dive pools to soften their entry.

259

00:32:09,000 --> 00:32:12,000

But there is a downside to this aerated water.

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00:32:14,000 --> 00:32:20,000

You are not going to be able to swim in that low density, almost water.

261

00:32:21,000 --> 00:32:25,000

You can't get to the surface, you try to breathe, you're going to breathe in water and air.

262

00:32:26,000 --> 00:32:27,000

You're going to drown.

263

00:32:27,000 --> 00:32:44,000

In addition, the water thundering down from the falls creates lethal eddies and whirlpools, making the freezing water completely unpredictable and whipping debris around at up to 30 miles per hour.

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00:32:45,000 --> 00:32:49,000

There is a dynamic movement of water when you get to the bottom of the falls.

265

00:32:50,000 --> 00:32:55,000

We're talking whirlpools and currents, so it's not like you can even physically swim.

266

00:32:57,000 --> 00:33:05,000

The water beneath them churns and it will push you under and most people want to come to the surface immediately.

267

00:33:06,000 --> 00:33:10,000

What people need to do is actually swim down below to be able to get kicked out.

268

00:33:11,000 --> 00:33:16,000

Most people who go over the falls don't know that and if you're stuck, you drown.

269

00:33:17,000 --> 00:33:23,000

But against all the odds, somehow, it is possible to survive this lethal descent.

270

00:33:23,000 --> 00:33:32,000

It might be a combination of luck and chance and physics. You just kind of never know. A lot of things have to play together.

271

00:33:35,000 --> 00:33:45,000

We'll probably never really understand how a small number of men and women have endured one of the most powerful forces on the planet and lived to tell the tale.

272

00:33:46,000 --> 00:33:53,000

But for me, the best way to survive Niagara is to never even consider jumping in the first place.

273

00:34:03,000 --> 00:34:10,000

Although statistically safe, the history of sea travel is awash with mysterious dangers.

274

00:34:10,000 --> 00:34:16,000

Sudden storms, pillaging pirates, even sea monsters.

275

00:34:17,000 --> 00:34:21,000

But could there be a new danger out there on the high seas?

276

00:34:22,000 --> 00:34:30,000

A secretive force that arrives without warning causes huge destruction and disappears without trace back into the deep.

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00:34:30,000 --> 00:34:51,000

June 13th, 2019. The Norwegian-owned oil tanker Front Oltaire is sailing in international waters near the Strait of Hormuz on a routine voyage from the United Arab Emirates to Taiwan.

278

00:34:53,000 --> 00:34:57,000

When suddenly, the ship is shaken by a powerful impact.

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00:34:58,000 --> 00:35:03,000

The ship is smothered in smoke. Clearly, something dramatic has happened.

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00:35:04,000 --> 00:35:07,000

The ship's crew have no time to launch any lifeboats.

281

00:35:08,000 --> 00:35:18,000

Smoke is so thick that the crews decide to radio for help and abandon ship as quickly as they can, avoiding normal procedure and just getting to sea to get away from their ship.

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00:35:19,000 --> 00:35:26,000

The tanker is carrying 75,000 tonnes of naphtha, a flammable liquid hydrocarbon mixture.

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00:35:27,000 --> 00:35:31,000

It could be an accident, so if something's exploded on the ship accidentally.

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00:35:32,000 --> 00:35:41,000

The Front Oltaire's crew are still in the water when the nearby US 5th Fleet receives a second distress signal from a different ship.

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00:35:42,000 --> 00:35:56,000

It soon emerges that another attack has taken place on a similar vessel of another nation in the region, raising a spectre of a concerted campaign being carried out against shipping that is vital to the world economy.

286

00:35:57,000 --> 00:36:00,000

Can this be a coincidence? Probably not.

287

00:36:00,000 --> 00:36:10,000

When you see these kind of attacks that are very similar, they're very close in time, you have to start asking questions. Are they related? Are they coordinated?

288

00:36:11,000 --> 00:36:17,000

Fortunately, no one is seriously harmed, but these multiple explosions are no accident.

289

00:36:18,000 --> 00:36:20,000

Soon it becomes apparent a major incident has occurred.

290

00:36:21,000 --> 00:36:25,000

Who or what is behind this coordinated series of attacks?

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00:36:25,000 --> 00:36:33,000

A military assault on a large ship would normally utilise missiles or torpedoes.

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00:36:35,000 --> 00:36:40,000

The moment they see smoke, the moment they see a ship, belch fire, they think it's been hit by a missile.

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00:36:42,000 --> 00:36:45,000

But this is not a conventional military attack.

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00:36:46,000 --> 00:36:55,000

From the evidence we can see that they're not projectiles, they're not missiles, so it speaks to a different kind of delivery system, a different kind of attack.

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00:36:56,000 --> 00:36:59,000

The damage bears the hallmarks of magnetic mines.

296

00:37:00,000 --> 00:37:09,000

Exposive devices attached to the hull, the outside of the ships, which had been set off by either via timer or remotely.

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00:37:10,000 --> 00:37:21,000

The damage at the blast hole is consistent with a limpid mine attack. It is not consistent with an external flying object striking the ship.

298

00:37:22,000 --> 00:37:29,000

Tears in the hull of this shape, of this sort of style, are usually seen when you're seeing the effects of limpid mines.

299

00:37:30,000 --> 00:37:35,000

A limpid mine is a portable small explosive that can be stuck to, in this case, a hull of a ship.

300

00:37:36,000 --> 00:37:43,000

Which means this deadly military hardware was placed in position. So who put it there?

301

00:37:56,000 --> 00:38:03,000

Mysterious, coordinated attacks on two tankers in the Strait of Hormuz have investigators baffled.

302

00:38:03,000 --> 00:38:07,000

And it turns out this is not the first time it's happened.

303

00:38:10,000 --> 00:38:17,000

A month earlier today, four other huge super tankers had sustained similar damage in other similar attacks.

304

00:38:18,000 --> 00:38:21,000

The theory about coordination becomes even more likely.

305

00:38:23,000 --> 00:38:28,000

Billions of dollars worth of oil are shipped through the Strait of Hormuz every year.

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00:38:28,000 --> 00:38:33,000

And as a result, it is one of the most closely monitored sea areas on the planet.

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00:38:34,000 --> 00:38:38,000

So if the perpetrators of the attacks were using boats, they would have been spotted.

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00:38:39,000 --> 00:38:43,000

But could they have been using remote underwater vehicles?

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00:38:45,000 --> 00:38:52,000

Was there some kind of submersible or some kind of underwater mechanism that is being used to attack these ships?

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00:38:53,000 --> 00:39:02,000

Underwater vehicles are usually operated via a control line, which makes clandestine use over distance difficult to impossible.

311

00:39:05,000 --> 00:39:12,000

Only one other obvious option remains that can operate above and below water with such stealth and precision.

312

00:39:13,000 --> 00:39:15,000

Specially trained divers.

313

00:39:16,000 --> 00:39:21,000

He's a very highly skilled frogman. Highly trained military individuals.

314

00:39:22,000 --> 00:39:23,000

Elite warriors.

315

00:39:24,000 --> 00:39:29,000

The identity and true motives of the attackers remains shrouded in mystery.

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00:39:30,000 --> 00:39:36,000

You cannot prove who they are. The equipment will all be internationally sourced. They will all disappear.

317

00:39:37,000 --> 00:39:39,000

No nation will acknowledge who they are.

318

00:39:40,000 --> 00:39:44,000

You actually have to physically catch them to be able to prove who they belong to.

319

00:39:45,000 --> 00:39:51,000

This is a region absolutely rife with tension. The blame game begins. Who did it?

320

00:39:52,000 --> 00:40:00,000

Iran does have a track record of causing trouble in the streets of Hummers. However, they cannot be ruled as the only potential actor.

321

00:40:01,000 --> 00:40:09,000

There are terrorist organisations around the world. Some of them have developed marine wings which are specialising in this sort of operation.

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00:40:10,000 --> 00:40:15,000

Could an unknown terrorist network be responsible for these maritime attacks?

323

00:40:16,000 --> 00:40:24,000

We're used to seeing terrorist acts on land. We're not used to seeing terrorist acts at sea. And especially in the stealthy undersea environment.

324

00:40:25,000 --> 00:40:27,000

This could be a really scary new development.

325

00:40:30,000 --> 00:40:38,000

As airports have become more secure, our terrorists turning to ports and shipping as the new targets of choice.

326

00:40:38,000 --> 00:40:47,000

The fear with the problem, especially with the growth in diving as a hobby and as an industry, is that these skills are actually becoming more and more available.

327

00:40:48,000 --> 00:40:52,000

Terrorist organisations developing marine wings with these capabilities.

328

00:40:53,000 --> 00:41:01,000

The world is now waking up to this new threat. But how do you stop an underwater terrorist?

329

00:41:02,000 --> 00:41:08,000

The only way they can protect themselves is getting a full picture of what's happening under the water.

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00:41:09,000 --> 00:41:19,000

So now with technology like sonar, electro-optics, radar, we're actually able to see a real-time view of the underwater environment.

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00:41:21,000 --> 00:41:29,000

But while port defences can be stepped up relatively easily, the risk of terrorist attack out on the open ocean remains.

332

00:41:30,000 --> 00:41:39,000

Are we heading to a future where these are going to get more frequent? Where there is going to be more and more incidents in the maritime sphere that impact upon global trade?

333

00:41:43,000 --> 00:41:51,000

Terrorism worldwide is constantly adapting and evolving, finding new ways of wreaking havoc in new and unexpected places.

334

00:41:52,000 --> 00:41:59,000

The 9-11 terrorists turned civilian airliners into lethally effective missiles, killing thousands.

335

00:42:00,000 --> 00:42:08,000

So if the threat of deep water terrorists isn't countered, what might they do in the future with, say, a super tanker full of oil?