

Hello, my friends, and welcome back to the program that helps you learn and improve your American English. I'm Jim Tedder in Washington.

Today we return to Southeast Asia to hear about efforts to remove a dangerous chemical that was used during the Vietnam War.

Then ...to the moon! In fact ...into the moon. NASA has sent a spacecraft crashing into our nightly neighbor to study ...of all things ...dust! If you stay with us, you'll find out why.

As It Is ...from VOA ...is on the air.

Officials from the United States and Vietnam attended a ceremony last weekend at a former U.S. air base in central Vietnam. The event marked a new step in efforts to clean up a chemical used by American forces during the Vietnam War.

The U.S. military used the chemical, known as Agent Orange, to destroy plants and trees. Agent Orange has been linked to some forms of cancer and other health problems. Jonathan Evans tells us more.

The U.S. military used Agent Orange during the Vietnam War to destroy tree cover for communist troops. However, the herbicide releases a poisonous byproduct or dioxin. It has been linked to diseases such as diabetes, cancer and birth defects.

Last Saturday, officials from both countries met at the Da Nang air base, where Agent Orange was once stored. The base is one of 28 dioxin hotspots in Vietnam. Officials plan to clean up the polluted soil in the affected areas by cooking it at high temperatures.

David Shear is the U.S. Ambassador to Vietnam. He spoke about the clean-up process.

"We built a containment structure roughly the size of a football field and filled it with 45,000 cubic meters of dioxin-contaminated soil...Beginning today the contaminated soil will be heated to extremely high temperatures to destroy dioxin. After approximately four months the soil will be tested to confirm that the project cleanup goals have been achieved."

Patrick Leahy is a Senator from the American state of Vermont. He says the Agent Orange project has four goals.

"First to eliminate the danger from dioxin to people living here. Second to show that for so many years, the US didn't ignore this problem, we returned to take care of it. Third, our two countries can work together on a problem that for more than three decades was an obstacle for better relations. Fourth to improve services for people with disabilities regardless of the cause, including what may have been caused by Agent Orange."

Repairing relations has been an important issue for the U.S. and Vietnam since the two sides re-established ties nearly 20 years ago. The cleanup is a sign of progress in cooperation between the two governments. Ambassador Shear spoke about this cooperation during his speech at the event.

"President Obama and President Sang inaugurated the new US-Vietnam comprehensive partnership last summer. I can think of no better example for our growing friendship than this project."

The United States continues to provide money for the Agent Orange cleanup and projects to help people with disabilities in Vietnam. But the U.S. has never admitted responsibility for health problems caused by dioxin.

Carl Thayer is a professor from the University of New South Wales in Australia.

"America is trying to avoid all the one-to-one compensation cases by arguing the scientific basis is not clear, you have no basis, you don't know what the genetics of the people were to begin with. That's what a good defense lawyer would do."

In 2004, a group of Vietnamese took legal action against the chemical companies that produced Agent Orange. But a U.S. federal judge dismissed the case. The judge ruled that the use of Agent Orange did not violate international law at the time it was used.

Nguyen Chi Vinh is Vietnam's Vice Minister of National Defense. He believes the Agent Orange project is an opportunity to look to the future.

He says he believes the success of the Agent Orange project does not depend on fixing past issues, but on opening a new road for the future. I'm Jonathan Evans.

The Moon is a Dusty Place

Recently, the American space agency, NASA, directed one of its spacecraft to crash on the moon. The spacecraft was known as the Lunar Atmosphere and Dust Environment Explorer, or LADEE.

Before the crashing on the moon's surface, NASA scientists collected information from LADEE. Mario Ritter likes looking at the moon, and he tells us about some early findings.

NASA launched the spacecraft from its Wallops Flight Facility in Virginia on September 6, 2013. A Minotaur V rocket carried LADEE into space.

"Seven, Six, Five, Four, Three, Two, One, Zero. Ignition and lift off of Minotaur V with LADEE, pursuing a mission of moon dust and the lunar atmosphere..."

LADEE has been orbiting the moon since last October. The tube-shaped vehicle was about the size of a vending machine, with solar equipment on its sides.

The goal was to study dust in the moon's atmosphere. Butler Hine is project manager with NASA's Ames Research Center in California. Speaking by Skype, he says LADEE began taking measurements at 250 kilometers above the moon's surface.

"And as we got lower into the science orbit, the dust density just kept increasing."

So where does all that dust come from? And how does it move around on the moon? To answer those questions, LADEE's instruments made about 700,000 measurements.

"And one of the things that we saw is that it is almost a continuous shroud around the moon, and some of the production of the dust is done by meteorite impacts to the moon, and that's kind of a continuous rain on the moon. And so the source of the dust is kind of a continuous thing."

Butler Hine says a moon-based observatory would have to deal with all the dust. But he thinks the dust would not cause problems for spacecraft or human activity on the surface.

“And what we’ve seen so far is that while there’s a lot of dust, the levels are high, we haven’t seen any indication that that level of dust is a hazard at all. We haven’t seen any degradation of our spacecraft systems, for instance, and the dust levels that we do detect wouldn’t pose a significant risk to any future mission.”

LADEE found evidence of neon, argon, methane, carbon dioxide and other substances. It also successfully tested a broadband communication system between Earth and the moon. Butler Hine thinks LADEE’s space bus design could be copied for other missions.

“The spacecraft can be put together in different ways, depending on the type of mission. So for instance, this bus (design) can be configured as a lunar orbiter, which is what LADEE is...It’s designed for the environment anywhere between the Earth orbit and Mars orbit. It’s even designed as a lunar lander configuration. So you can take some of the bus modules, put them together in a fashion where it could land on the moon.”

NASA scientists were concerned about a lunar eclipse during LADEE's final days. During this period, the solar equipment was in total darkness. For four hours, the spacecraft had to depend on battery power to protect its systems from freezing.

"We basically prepared the spacecraft ahead of the eclipse, where we turned off the science instruments to conserve power. We turned on and off different heaters or configured them to go on and off and then we let it fly through the eclipse."

But LADEE did not need much more power. The spacecraft was programmed to crash on the far side of the moon, far from the historic areas where astronauts have landed. It continued to gather and send information to Earth in its final days. I'm Mario Ritter.

And I'm Jim Tedder in Washington. That's all for today, but don't go away. There are more Learning English programs yet to come, and world news at the beginning of the hour on VOA.

