

# Japanese space center facilities deteriorating from salt erosion due to nearby ocean

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Facilities at the Japan Aerospace Exploration Agency's Tanegashima Space Center, the base for launching the country's mainstay H-2A rockets, have seriously deteriorated due to age.

Although repairs have been conducted at a cost of about 1 billion yen (US\$11.4 million) annually, the center's seaside location has led to rapid salt erosion, and countermeasures cannot keep up with the damage.

Launches of H-2A rockets were transferred to Mitsubishi Heavy Industries Ltd. in April 2007, and liftoffs are scheduled for rockets carrying full-scale commercial satellites and information-collecting satellites.

Thus the deterioration of the center's facilities is shaking the foundation of the nation's space development.

Before the debut of H-2A rockets in 2001, the priority was on developing new technologies, and new rocket models were introduced less than every 10 launches. This led to drastic renovations in the center's facilities as well.

In addition, most satellites launched with the rockets were related to non-urgent government projects, and thus delayed launches had less serious repercussions. Therefore, the deterioration of the center's facilities was not seen as a serious problem.

According to [JAXA](#) and Mitsubishi Heavy Industries, the most serious damage is in a rocket assembly building about 80 meters (about 87.5 yards or 262.5 feet) high and with a total floor space of about 4,600 square meters (about 5,030 square yards).

Walls are rusted and have many holes, through which rain and [seawater](#) can penetrate. Because rockets' electronic components are vulnerable to water, rocket engineers need lots of time to inspect them and sometimes have to replace parts.

Also, electric wires have been damaged by birds and mice that entered the building through the holes. Due to the huge size of the building, it is difficult to pinpoint the locations of the holes.

On a rocket [launch pad](#), there are holes in pipes that send pressurized fuel to H-2A rockets, and gas has sometimes leaked out.

Arrow marks for valves on gated pipes are hard to see as the surface is rusted. In March last year, a worker turned a valve in the wrong direction, resulting in a test being postponed for six days.

On one occasion, rust fell from a launch pad observatory tower and directly hit a rocket.

So far, there have been 17 launches of H-2A rockets, and the last 11 were successful. The center's facilities are to be used for at least another 20 years.

Next fiscal year, a South Korean satellite is scheduled to be launched from the center, this nation's first order from overseas.

"We've dealt with the situation by applying 'human wave' tactics -- having engineers check every day, for example," said Takashi Maemura,

a senior engineer with Mitsubishi Heavy Industries. "For stable launches, not only the rockets but also the facilities need to be in good condition."

Located on Tanegashima island in Kagoshima Prefecture, the center is Japan's largest facility for launching space rockets. Its total acreage is about 9.7 million square meters (10.6 million square yards or nearly 2,397 acres).

The space center opened in 1969 and is said to be the world's most beautiful facility for launching rockets, given its location facing the sea.

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