

NASA's Morpheus lander in fiery crash at Cape Canaveral

Engineers still looking into cause of accident

Cape Canaveral, Fla: A small NASA lander being tested for missions to the moon and other destinations beyond Earth crashed and burned after veering off course during a trial run at the Kennedy Space Center, officials with the US space agency said.

There were no injuries after the prototype, known as Morpheus, burst into flames near the runway formerly used by NASA's space shuttle on Thursday.

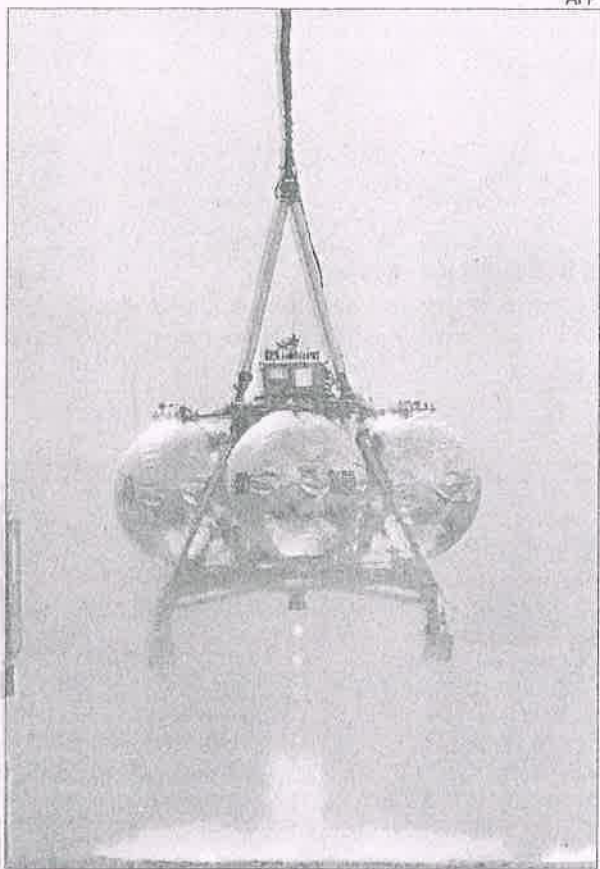
The insect-like vehicle, designed and built by engineers at NASA's Johnson Space Center in Houston, had made several flights attached to a crane before Thursday's attempted free-flight.

Morpheus' engines, which burn liquid oxygen and methane, appeared to ignite as planned, lifting the 794 kg vehicle into the air. But a few seconds later, Morpheus rolled over on its side and plummeted to the ground.

NASA video showed the vehicle engulfed in flames and then rocked by a spectacular explosion, presumably due to the fuel tanks rupturing.

"Failures such as these were anticipated prior to the test; and are part of the development process for any complex spaceflight hardware," NASA said in a statement. An investigation is under way, the statement added. Project Morpheus began in partnership with privately owned Armadillo Aerospace, which is developing re-usable, suborbital vehicles that take off and land vertically.

NASA, which has spent about \$7 million on the project over the past 2-1/2 years, is interested in developing technologies that could be used to fly cargo to the moon and other future missions beyond Earth orbit.



BLAST OFF This handout image shows NASA's Morpheus lander as it fires its liquid oxygen and methane-fueled engine for a tethered test on May 4, 2011, at Johnson Space Center in Texas

Project Morpheus was an example of what the former project manager called "Home Depot engineering" - low-budget projects that use existing resources and partner with non-traditional aerospace companies.

"The Morpheus lander is kind of our poster child. It's one of our first attempts to do these kinds of projects," former project manager Matt Ondler said in an interview with Reuters last year.

"Instead of building some elaborate test structure, you go to Home Depot and build something very quickly that gets you 80 per cent of the answer and allows you to

keep moving forward," he said. Morpheus arrived at Florida's seaside space centre in July for three months of increasingly rigorous test flights, including automated landings in a mock moon-cape, complete with craters and boulders.

The lander was designed to deliver about 500 kg of cargo to the moon, NASA said on its Project Morpheus website.

Technologies being developed include a propulsion system that uses liquid oxygen and methane -- green fuels that could be manufactured on other planetary bodies, NASA said. *Reuters*

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