

# NASA is having a tough time testing the SLS

April 18 2022, by Shawn Dicensa

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The tail service mast umbilical is located on the SLS Mobile Launcher deck, connecting to the base of the rocket's core stage. Credit: NASA / Spaceflight Now

NASA's Space Launch System (SLS) has been having some problems getting tested since it rolled out onto launch pad 39B last month. These tests, called wet dress rehearsals, are used to find any problems with loading the propellant and verify that all of the rocket's systems are able to handle it being exposed to cryogenics.

After this most recent attempt on April 14th, it is clear that the SLS isn't ready for flight yet. The problems that the teams have been encountering have led them to make some procedural changes and slight adjustments in operations and software triggers. There are also the leak problems that have shown up that have to be addressed.

The SLS is an ambitious endeavor that has cost over \$50 billion to be developed and will cost an estimated \$4.1 billion per launch. At that price, NASA had better get it right. Many people think that we won't see it launch more than once or twice before it is decommissioned, due to the capabilities and much lower costs that private space launch companies are promising in the near future.

Regardless, it has been built and will fly. They just have to work out the problems first. This latest test exposed a leak in the tail service mast unit (which connects to the core stage), on the purge canister, which none of the contingency plans helped alleviate. The slow-fill phase went well but when the fast-fill phase began the leak was detected and operations were aborted.

The good news is that there are only a few things on the purge canister that could be the problem and NASA teams will attempt to troubleshoot it to make repairs. They will be checking for anything loose or obvious. Ambient leak checks can be done as well as leak checks made with haz-gas detection equipment.

The rocket will be rolled back into the Vehicle Assembly Building (VAB) to replace a faulty upper stage check valve as well as to repair the leak. Teams will also use the opportunity to review schedules and options to demonstrate [propellant](#) loading operations.

Later today NASA will hold a teleconference to discuss the status of the next wet dress rehearsal test. The issues the teams are encountering are

not completely unexpected and somewhat in line with what NASA dealt with when testing their previous rockets. With billions of dollars having been spent already we can be sure they will take the time needed to get it repaired and ready to go. Just how many times we get to see it fly remains to be seen.

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