



GEM 63XL QM-1 STATIC TEST

August 13, 2020

Qualification Motor

This booster motor is being qualified to power ULA's Vulcan Centaur launch vehicle with a design that leverages Northrop Grumman's GEM 63 motor in an extended length configuration.

GEM 63XL QM-1 STATIC TEST

4 QUALIFICATION TEST OBJECTIVES, 192 INSTRUMENTATION CHANNELS

- Thermally-conditioned cold (40° F) to validate ballistic predictions
- Measure ballistic performance data
- Determine insulation/nozzle thermal performance factors
- Measure ablative nozzle erosion
- Determine nozzle plug performance
- Determine igniter insulator performance factors

FIRST STATIC TEST IN A TWO-MOTOR SERIES TO QUALIFY (QM-1) AND VALIDATE (VM-1) THE GEM 63XL BOOSTER FOR FLIGHT ON THE NEW VULCAN LAUNCH VEHICLE

QM-1

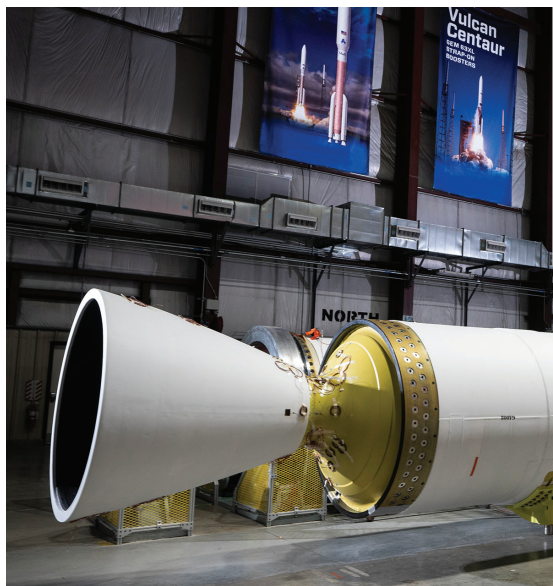
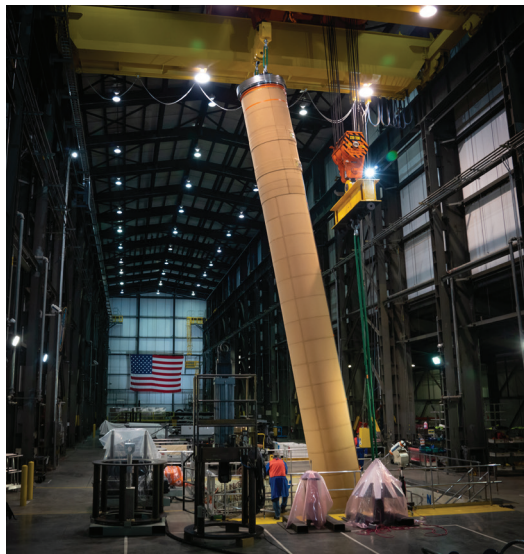
- Objective: Motor qualification test for ballistic performance and design, and process robustness

- Test Temperature: Cold 40°F

VM-1

- Objective: Risk mitigation for the U.S. Air Force through demonstration of a second static test

- Test Temperature: Hot 90°F



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