

SPACE PROPULSION SYMPOSIUM (C4)
Propulsion Systems I (1)

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HOT-FIRE TEST OF A TURBOPUMP FOR A 30 TON CLASS ENGINE

Abstract

This paper describes the hot-fire test of a turbopump which can be applied to a 30-ton class gas generator cycle engine. The turbopump consists of an oxidizer pump, a fuel pump and a turbine. Liquid oxygen and kerosene were used for the pumps, while hot gas from gas generator was supplied to the turbine. The turbopump was operated stably at both on-design and off-design conditions, satisfying all the performance requirements. By analyzing non-dimensional performance parameters, it is shown that the test results using actual-fluid agreed well with the turbopump component test results using model-fluid.