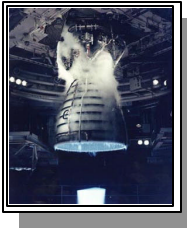




SSME 0523 Test 902-772 Incident Investigation Summary

October 10, 2000



Space Shuttle Main Engine

SSME 0523, 902-772 Incident Investigation



SSME 0523 was assembled to perform a series of tests to demonstrate the capability of the HPFTP/AT to operate safely at the HPFT discharge temperature redline values.

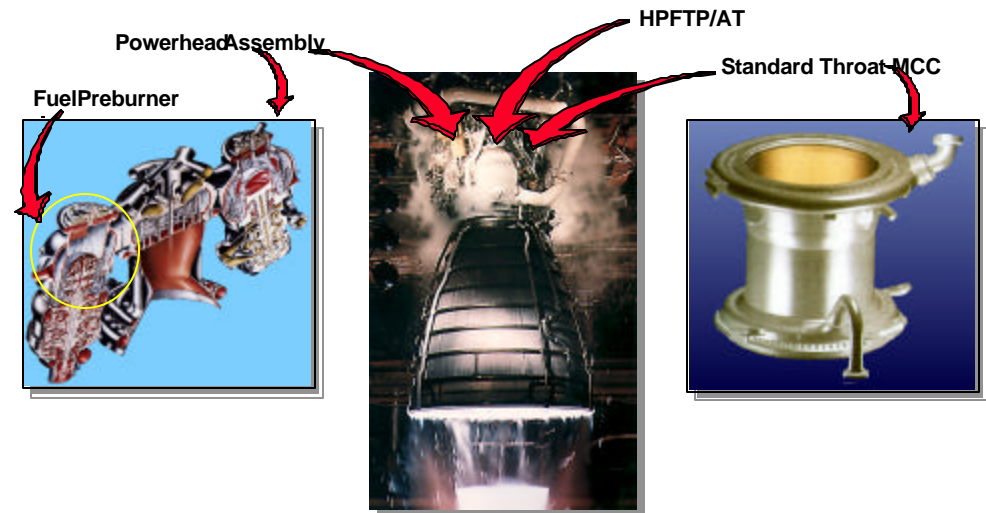
SSME 0523 engine configuration was a hybrid Block I/II configuration with standard throat Main Combustion Chamber (MCC) and a Pratt and Whitney HPFTP/AT.

The test objective of the first test was to characterize the effects of Coolant Control Valve (CCV) position on High Pressure Fuel Turbine discharge temperature.

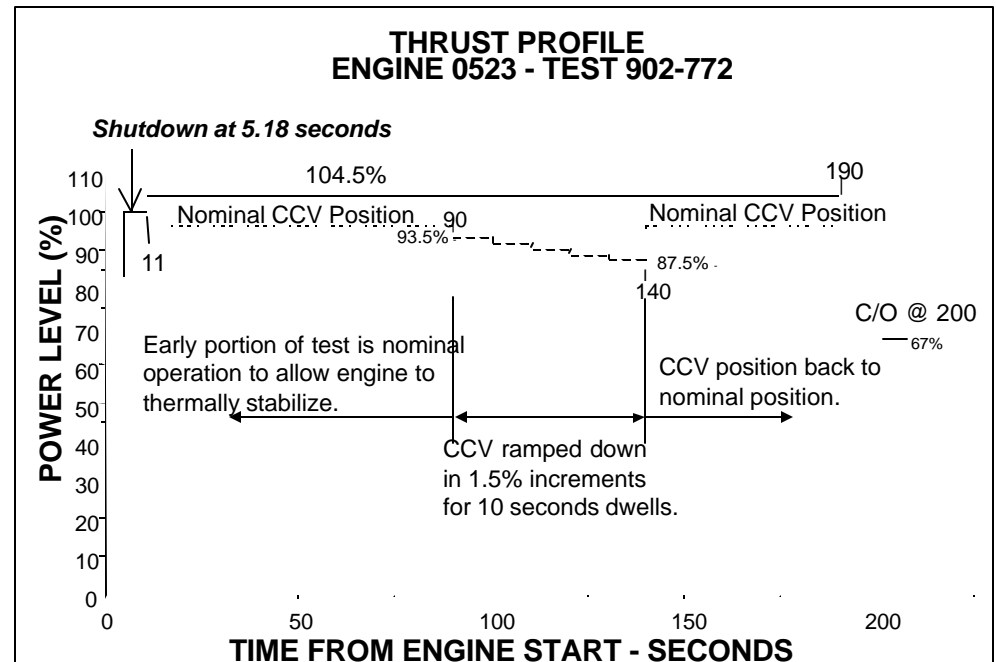
Nominal operation planned for the first 90 seconds.

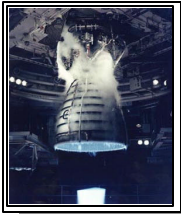
Test 902-772 was run on June 16, 2000.

Test prematurely cutoff at 5.18 seconds due to a violation of the High Pressure Fuel Turbine discharge temperature Launch Commit Criteria (LCC).



Engine Configuration (Hybrid Block I/II)





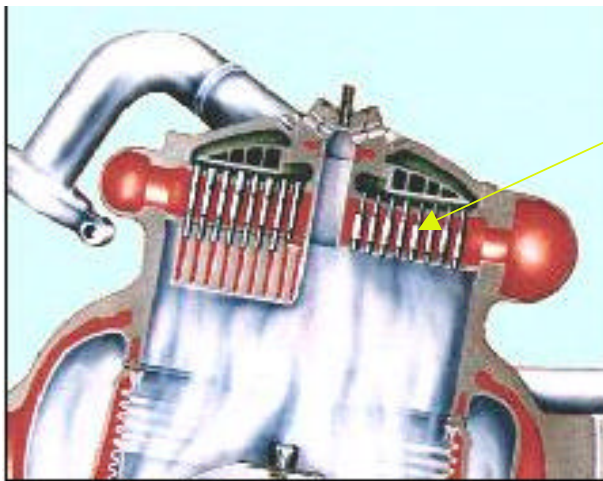
Space Shuttle Main Engine

SSME 0523, 902-772 Incident Investigation



Summary of Engine Damage

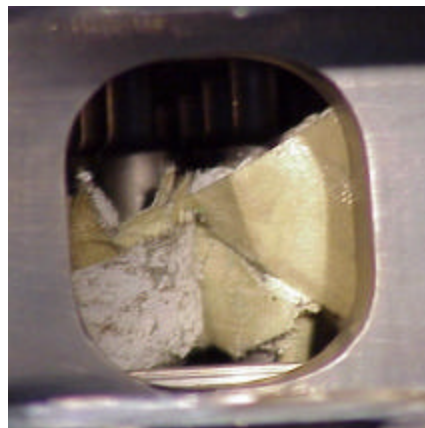
Findings: Minor damage to the fuel preburner and standard throat main combustion chamber



Fuel Cavity

Borescope inspection, destructive evaluation, and engine disassembly revealed gross contamination in the fuel cavity of the fuel and oxidizer preburners.

Contamination identified to be Permacel P-670 (LOX) tape.



Window 4



Window 5

Window
4
and
5

