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TEST CASE FOR SRB SEP SEQ SCHEDULER / SRB SEPARATION SEQUENCE

GENERAL

These two modules are grouped together for testing because of the close interaction between them.

They are available during the ascent phase, in Major Mode 102; which commences with SRB ignition and ends with separation.

The Separation Scheduler functions to insure that the Separation Sequence is initiated when certain conditions of elapsed time, engine tail-off or PASS action, are met. The Separation Sequence, when invoked, assures that the commands associated with separation are issued/terminated in properly timed sequence. It also monitors certain dynamic properties and inhibits the automatic separation process when stated limits are exceeded. The inhibited state is announced to the crew, who have an over-ride option. Once it is established that separation has been accomplished, either by PASS or BFS, the Scheduler and Sequencer are detached from the system.

SCHEDULER

Until SRB SEP INITIATION TIME, no processing is undertaken by the scheduler.

When this time has been reached a 'separation commanded' flag is examined. If TRUE, certain 'clean-up' commands are issued/terminated, and the modules are detached. If FALSE, hardware signals are tested for evidence of prior separation.

If separation is indicated a 'clean-up' is done and the modules are detached. Where no separation is apparent, elapsed time is compared with SRB SEP BACKUP CUE TIME.

When this time has been met, and with BFS engaged, an internal signal is set 'enabling' the sequencing module. If the cue-time has not yet elapsed a check of chamber pressures is undertaken to detect engine tail-off.

With both engine pressure readings below 50 PSIA, and with BFS engaged, the sequence is enabled. If either pressure is above this minimum, the scheduler simply cycles again.