

MIL-STD-1540B (USAF)
 NOTICE 1
 31 JULY 1989

MILITARY STANDARD
 TEST REQUIREMENTS FOR SPACE VEHICLES

TO ALL HOLDERS OF MIL-STD-1540B (USAF)

1. THE FOLLOWING PAGES OF MIL-STD-1540B (USAF) HAVE BEEN REVISED AND SUPERSEDE THE PAGES LISTED:

<u>NEW PAGE</u>	<u>DATE</u>	<u>SUPERSEDED PAGE</u>	<u>DATE</u>
63	31 July 1989	63	10 October 1982
64	31 July 1989	64	10 October 1982

2. RETAIN THIS NOTICE AND INSERT BEFORE TABLE OF CONTENTS.
3. Holders of MIL-STD-1540B (USAF) will verify that page changes indicated above have been entered. This notice page will be retained as a check sheet. This issuance, together with appended pages, is a separate publication. Each notice is to be retained by stocking points until the Military Standard is completely revised or cancelled.

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Preparing Activity:
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(Project Number 1810-F040)
 Doc 1807b Arch 1301b

FSC 1810

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7.1.3 Acoustic Test, Space Vehicle Acceptance

7.1.3.1 Purpose. This test simulates the acoustic and vibration environment imposed on a space vehicle in flight in order to detect material and workmanship defects that might not be detected in a static test condition.

7.1.3.2 Test Description. Same as 6.2.3.2.

7.1.3.3 Test Levels and Duration. The acoustic spectrum shall represent the maximum predicted flight environment as defined in 3.20. The overall sound pressure level for acceptance testing shall not be less than 138 dB. The exposure time at full acceptance test level shall equal or exceed the maximum expected flight exposure time, but the test time shall not be less than 1 minute. Operating time should be divided approximately equally between redundant circuits. Where insufficient time is available at the full test level to test all redundant circuits, all functions, and all modes, extended testing at a level 6 dB lower shall be conducted as necessary to complete functional testing.

7.1.3.4 Supplementary Requirements. During the acoustic acceptance test all electrical and electronic components which are operating during the launch, ascent, or reentry phase shall be electrically energized and sequenced through operational modes to the maximum extent possible. Continuous monitoring of several perceptive parameters shall be provided to detect intermittent failures. Functional tests are required before and after the environmental exposure.

7.1.4 Vibration Test, Space Vehicle Acceptance

7.1.4.1 Purpose. This test simulates the dynamic vibration environment imposed on a vehicle in flight in order to detect material and workmanship defects. This test is only used for small vehicles with weights under 150 kg and compact shapes.

7.1.4.2 Test Description. Same as 6.2.4.2.

7.1.4.3 Test Levels and Duration. Random vibration test levels shall be at the maximum predicted environmental levels as defined in 3.23. Test duration shall be equal to or exceed the expected flight exposure time to the maximum predicted environment but not less than 1 minute in each of three axes. Different axes may have different levels applied. Sinusoidal test levels shall be at the maximum predicted environmental levels as defined in 3.24, and test duration shall be equal to the expected flight exposure to the maximum predicted environment. Where insufficient time is available at the full test level to test all redundant circuits, all functions, and all modes, extended testing at a level 6 dB lower shall be conducted as necessary to complete functional testing.

MIL-STD-1540B (USAF)

31 July 1989

7.1.4.4 Supplementary Requirements. Same as 6.2.4.4; except, only electrical and electronic components which are operating during the launch, ascent, or reentry phase need be electrically energized and sequenced through operational modes.

7.1.5 Pyro Shock Test, Space Vehicle Acceptance

7.1.5.1 Purpose. This test simulates the dynamic shock environment imposed on a space vehicle in flight in order to detect material and workmanship defects.

7.1.5.2 Test Description. Same as 6.2.5.2.

7.1.5.3 Test Levels and Duration. Pyrotechnic shock acceptance testing of space vehicles shall be required in those instances where the shock-producing mechanism can be readily refurbished for flight, as is often the case for explosive nuts, bolts, pinpullers, and clamps. One firing of those pyrotechnic devices causing significant shocks to critical and shock sensitive components shall be conducted. Firing of both primary and redundant pyros is required in the same relationship as they will be used in flight. However, where the pyrotechnic mechanism explosively severs structure by detonation of detonating fuse or shaped charge, such testing shall not be included or required. To aid in fault detection, the pyro shock test shall be conducted with subsystems operating and monitored to the maximum extent practical.

7.1.6 Pressure Test, Space Vehicle Acceptance

7.1.6.1 Purpose. This test demonstrates the capability of fluid subsystems to meet the flow, pressure, and leakage requirements specified in the space vehicle specification.

7.1.6.2 Test Description. Same as 6.2.6.2.

7.1.6.3 Test Levels and Duration. The leak checks shall be performed by pressurizing the subsystem to maximum operating pressure and holding at this pressure for a period commensurate with the leakage method being employed.

7.1.6.4 Supplementary Requirements. Same as 6.2.6.4.

7.1.7 Thermal Vacuum Test, Space Vehicle Acceptance

7.1.7.1 Purpose. This test detects material, process, and workmanship defects that would respond to thermal vacuum and thermal stress conditions and verifies thermal control.

7.1.7.2 Test Description. Same as 6.2.7.2.

7.1.7.3 Test Levels and Duration. Temperatures in various equipment areas shall be controlled by the external test environment and internal heating resulting from equipment