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AEROSPACE INFORMATION REPORT

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ENVIRONMENTAL CRITERIA AND TESTS FOR AEROSPACE GROUND EQUIPMENT IN SUPPORT OF SPACE SYSTEMS

FOREWORD

A group of knowledgeable specialists were called upon to provide a useful guide in preparing a specification for design of Aerospace Ground Equipment used in conjunction with space vehicle systems. The following information report is based on their experience in the equipment and operations areas. As more data becomes available and state-of-the-art launch operations advance, it is the intention of this Committee to continue to pursue this area to update these recommendations.

The Committee recognizes that an all inclusive approach for the entire spectrum of the space vehicle field is not possible. These data and information are to be identified with unmanned space vehicles and boosters of the Thor, Atlas, and Titan class. The recommended performance and system requirements are intended as typical or representative within the scope of this document.

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1. INTRODUCTION

- 1.1 Intended Use: This specification is intended to define design requirements and test procedures (1) to be followed in subjecting Aerospace Ground Equipment (AGE) for space systems to simulated and accelerated environmental conditions that will insure satisfactory operation and (2) to be followed in reducing deterioration when AGE is operated and/or stored at manufacturing facilities, test facilities, and launch ranges.

2. SCOPE

- 2.1 Scope: This specification establishes environmental criteria for designing Aerospace Ground Equipment (AGE) in support of space systems. The test levels in this specification have been elevated to compensate for absence of combined environments during test, and to allow for variations in equipment and operating conditions. Environmental requirements are summarized in Table 1.

- 2.2 Classification of Environments: Environments identified in this specification are defined in section 3. (Definitions) and classified as follows:

(a) Transportation, Handling, and Storage Environments (Nonoperating)

- (1) Controlled
- (2) Uncontrolled

(b) Sheltered Environments (Operating)

- (1) Controlled
- (2) Uncontrolled

(c) Unsheltered Environments (Operating)

- (1) Unexposed to Booster Blast
- (2) Exposed to Booster Blast

(d) Semisheltered Environments (Operating)

- (1) Sheltered and Uncontrolled
- (2) Unsheltered

3. DEFINITIONS

- 3.1 Equipment: Equipment is the general nomenclature used to describe parts, components, subsystems, or systems. Requirements and procedures stated herein shall be applicable to equipment purchased or manufactured for use as Aerospace Ground Equipment (AGE) for Space Systems and set forth in the individual equipment specification.

- 3.2 Individual Equipment Specification: Reference herein is related to detail design specifications and applicable drawings for the individual equipment.

- 3.3 Detail Design Specification: A detail design specification is defined as criteria for design requirements, physical properties and test requirements of equipment.

- 3.4 Environments: For the purpose of this specification, environments are defined as follows:

- 3.4.1 Transportation, Handling, and Storage Environments: This class of environment refers to packaged and unpackaged AGE; when in transit (shipping), handling during transfer (packaging, shipping, receiving, storing, and installation) and storage (awaiting installation and not in use). During these periods AGE is not operable and relegated to shipping containers, storage containers, packages, crates, wrappers, and covers, where applicable. AGE in this category will subsequently be unpackaged and operated in one of two types of environments - controlled or uncontrolled.



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