

NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

An Overview of Electromagnetic Interference Problems in Spacecraft

In February 1968 an Electromagnetic Interference Workshop was held at the Jet Propulsion Laboratory in Pasadena to permit an exchange of information on electromagnetic interference problems encountered in aerospace programs. A particular feature of the workshop was that scientists having experiments on spacecraft were also participants. Twenty-one technical papers were presented by engineers and scientists from various NASA Centers and aerospace manufacturers.

The information contained in this Tech Brief reviews the contents of the Proceedings of this meeting which is available to interested parties. Several of the papers concerned the management aspects of EMC programs including the applicability of standard EMI specifications to aerospace programs. Six papers considered specifically the EMI problems associated with the scientific experiments carried by unmanned spacecraft. This included the problems in designing the experiments, integrating them on the spacecraft and interpreting the scientific data received from the flight spacecraft.

Three papers were concerned with electromagnetic compatibility prediction and analysis, one by means of an EMC computer model. Two papers reviewed

EMI problems caused by static electricity. Transient measurements were the subject of two presentations. The concept of single point grounding and the problems associated with such grounding as presented in two papers completed the program.

The experiences related at this workshop were primarily related to the Surveyor, Lunar Orbiter, OGO, ATS, and Mariner unmanned programs.

Notes:

1. The information contained in this disclosure may be of interest to spacecraft designers.
2. Documentation is available from:
Clearinghouse for Federal Scientific
and Technical Information
Springfield, Virginia 22151
Price \$3.00
Reference: TSP69-10362

Source: Joseph G. Bastow of
Caltech/JPL
under contract to
NASA Pasadena Office
(NPO-11170)

Category 01