NAME OF SYSTEM:

Failure Rate Data Dissemination (FARADA)

ORIGINATOR:

Fleet Missile Systems Analysis and Evaluation Group

Naval Ordnance System Command

Corona Naval Weapons Center

Corona, California 91720

OBJECTIVE. To operate a technical information storage and dissemination system that will assist in improving the reliability of military hardware.

BACKGROUND. The Naval Ordnance Systems Command, acting for the Naval Material Command, is responsible for material support aspects, including the production of hardware for the entire range of military and space equipment. A specific duty relating to these responsibilities is the monitoring of the reliability engineering aspects in these many space systems.

For many years, hardware reliability reporting was handled on a decentralized basis by various Navy Bureaus. As a natural outgrowth of emerging improvements in methods for gathering, processing, and transmitting information, the Navy several years ago assigned this responsibility to the Data Management Division of the Fleet Missile Systems Analysis and Evaluation Group. Since then the FARADA system has become so meaningful that the Army, the Air Force, and the National Aeronautical and Space Administration (NASA) have been cosponsoring and funding the program.

THE NEW METHOD. The FARADA system collects and disseminates information on the failure rate and failure mode of the various materials manufactured for military and space use. The report breaks down the material into such categories as part, component, module, and assembly. The source data handled within the system emanates from the operational users throughout the military service and NASA. Guidance information for participants includes appropriate forms covering each category of part or mode failure.

Completed forms showing failure rate data are forwarded on a scheduled basis to the Data Management Division, where data is converted to machine language and stored on magnetic tape for processing on a UNIVAC computer. Every 90 days an updated report is produced and sent to users.

The system collection of data comprises one FARADA *Standard Operating Procedure* handbook and five *Failure Rate Data* handbooks. The latter contains more than 38,000 line entries of tabulated failure rate data and 2,000 line entries of failure mode data. Information tables are also kept current on 400 different failure stress curves. Background information is also maintained that describes the more specific aspects of the data displayed, such as location, use, quantities, type of maintenance, and failure criteria. The present growth rate of published and distributed data is about 20 percent per year.

The system's output consists of photoreduced handbook pages derived from computer printout and systems background information pages for insertion into the set of five handbook binders. In addition to paper output format, the entire tabulated data output is available to program participants in the form of computer tapes.

The primary users of the FARADA Program are approximately 250 prime and major subcontractors engaged in either military or NASA efforts. In addition, about 80 Government activities and 15 educational institutions participate in the program as secondary users. The information and data is used by design engineers and reliability engineers in making reliability predictions. Surveys show that 99 percent of the primary participants use the FARADA data in the intended or designed manner.

REMARKS. The computer, with its large memory capacity and its data manipulating ability, is used to good advantage in the FARADA System. The output data needs only to be reduced in size before transmission to the hundreds of users. The ability to provide selected users with magnetic tape copies of data reports eliminates multicopy packaging and the problem of slow mail delivery.

The computer's capabilities greatly aid in improving the reliability of operating systems and equipment, improving logistics planning, and reducing technical data research time.

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