

**NSWC Crane
Aerospace Cell Test History Database**

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Aerospace Cell Test History Database Purpose/Function

Electronic Storage of Aerospace Cell Test Data obtained from Crane Division, Naval Surface Warfare Center Automated Test Systems.

Provides Electronic Read Access to the Data Stored in the Database.

Provides Search and Sort capabilities to Identify Project Specific Data.

Provides Capability to Download a Data File for Review and Analysis on Customer Equipment.

The Aerospace Cell Test History Database was developed to provide project engineers and scientists ready access to the data obtained from testing of aerospace cell designs at Naval Surface Warfare Center, Crane Division.



Aerospace Cell Test History Database Intended Use/Users

Project Engineers

- Monitoring Test Progress

- Gathering Data for Program Reviews

- Analysis of Test Data

Designers

- Evaluation of Designs under Specific Test Conditions

- Development and Evaluation of Models

- Evaluation of Large Test History Database

The database is intended for use by all Aerospace engineers and scientists involved in the design of power systems for satellites. Specifically, the database will provide a tool for project engineers to review the progress of their test at Crane and to have ready access to data for evaluation. Additionally, the database will provide a history of test results that designers can draw upon to answer questions about cell performance under certain test conditions and aid in selection of a cell for a satellite battery.



Aerospace Cell Test History Database

Tasking and Funding

Battery Program

NASA Battery ~~Steering Committee~~

Shahid Habib - NASA Headquarters

Pat O'Donnell - NASA Lewis Research Center

Michelle Manzo - NASA Lewis Research Center

Naval Surface Warfare Center, Crane Division

Aerospace Power Systems Branch - Code 6095

Harry Brown - Manager

Bruce Moore - Project Engineer

Evan Hand - Software Development

The tasking and funding for the establishment of this database is provided by the NASA Battery ~~Steering Committee~~ *Program* with program direction by NASA Lewis Research Center. The hardware and software design and implementation is being done by personnel in the Aerospace Power Systems Branch at Crane.



Aerospace Cell Test History Database

Database Development Plan

Phase I

Determine Requirements and Demonstrate Performance

Phase II

System Development. Software Development and Hardware Expansion.

Phase III

System Startup. Remote Access by Aerospace engineers and scientists.

The database was developed in 3 Phases. The requirements and demonstration phase was completed in September 1992. Phase II began in FY 93 and for the most part is complete. The initial version of the software is installed, the hardware is in place, and automated transfer of data from the test systems to the database has begun. Transfer of Historical data is in process. Trial access by Crane personnel and selected NASA engineers is being permitted with system startup later this FISCAL year.



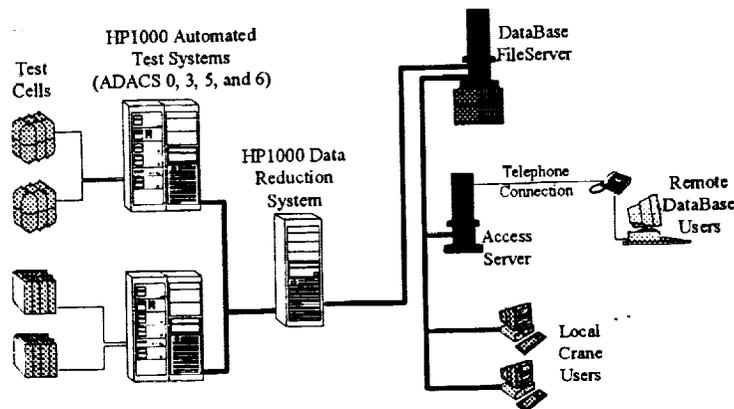
Aerospace Cell Test History Database Database Considerations

- Hardware Based on Standard PC Computers
 - High Availability of Repair Parts
 - Existing PC Knowledge Base
 - Good Upgrade Path
- Software Developed with Off the Shelf Products
 - Database Software - DBase IV
 - Network - Novell Netware 3.11
 - Access Server - Novell Orlan/PC
- Ease Of Access
 - Accessible by Standard Modem Connections

From the Phase I requirements the database considerations were developed.



Aerospace Cell Test History Database Database Configuration



The data is stored on a File Server having 12 gigabytes of hard disk (DATABASE FILE SERVER). The FILE SERVER receives the data from the tests systems over a network connection (BATTERY TEST SYSTEMS). The network also provide access via the Branch local network. Remote access is obtained from a user PC through a modem to an ACCESS SERVER. The planned capability is to have six telephone lines accessing the system.



Aerospace Cell Test History Database Database Features

- Availability of Current Test Data
- Telephone and Internet Accessibility
- 5 Years of Historical Test Data Online
- DBase IV Search and Formatting Capabilities
- Compatibility with Other Software Products
- Users can Write their own DBase Applications
- Access Server Allows Fast Remote Applications

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Some of the Features built into the database are:



Aerospace Cell Test History Database Database Security

- Security Class "C2" - Controlled Access Protection
 - User/Group Login Control
 - User Passwords Required
 - Password Aging
 - Access Audit Recording
- All Data has Project/Group Ownership
- Novell OnLan/PC Access Server
- Scheduled Backups to DAT Tape

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Security of the system is provided.

DEMONSTRATION - In the next few viewgraphs, I will show some the screens that you will see when using the system.

THESE VIEWGRAPHS WERE NOT INCLUDED IN THE PROCEEDINGS



Aerospace Cell Test History Database Database Report/Output Compatability

Output can be Tailored to Users Needs
DBase Applications can be Written by Users
Formatted Reports
Formatted Text Report Files
Export Data Files in Different Application Formats
DBase IV, Lotus123, Multiplan, Visicalc
Other Application Programs can Import DBase Files
Excel, Lotus123

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The output you obtain from the database can be used in many ways. Some of the more common that we anticipate are:



Aerospace Cell Test History Database Customer Access

To Get Database Access

Get User ID and Password from Crane

Complete Security Agreement with Crane

Have Access to "Hayes Compatable" Modem

Crane POC

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To gain access to the database you must agree to abide by the government regulation on electronic data transfer, agree to protect the data and to not publish or divulge any data, results or analysis without the consent of the program manger or owner of the project. If these conditions are acceptable, you may request access from (SEE Viewgraph) You also must get specific access approval from the project manager or owner of the data.

