NATIONAL TEST BED CONCEPT

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NASA-WHITE SANDS TEST FACILITY

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ISSUES

- HIGH COST OF PROPULSION TESTING
- ATTRITION OBsolescence AND NONEXISTENCE OF PROPULSION TEST FACILITIES
- ATTRITION OF TECHNICAL SKILLS AND EXPERTISE OF PROPULSION TEST PERSONNEL
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HIGH COST OF PROPULSION TESTING

- COUNTER-PRODUCTIVE COMPETITION BETWEEN CENTERS

- USE OF OTHER GOVERNMENT FACILITIES
  - VERY HIGH COST OF TESTING
  - SCHEDULE CONFLICTS
  - LIMITED TECHNICAL SKILL/KNOWLEDGE TRANSFER

- FUNDING OF FACILITIES/EQUIPMENT IN PRIVATE SECTOR
  - BIASES COMPETITION ON NEW PROGRAMS
  - DIFFICULT FOR OTHER CONTRACTORS TO USE
  - DIFFICULT TO RELOCATE
  - HIGH COST OF TESTING AND MAINTENANCE

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ATTRITION, OBSOLESCENCE, AND NON-EXISTENCE OF PROPULSION TEST FACILITIES

- ENVIRONMENTAL RESTRICTIONS/IMPACTS

- ENCROACHMENT BY PRIVATE SECTOR

- AGING AND/OR OBSOLETE

- INEFFICIENT

- LIMITED OR NONEXISTENT CAPABILITIES
ATTRITION OF TECHNICAL SKILLS AND EXPERTISE OF PROPULSION TEST PERSONNEL

• LOSS OF SKILLS AND EXPERTISE DURING LONG-LIFE PROGRAMS
• LITTLE EXPERIENCE GAINED/TRANSFERRED WHEN TESTING AT OTHER GOVERNMENT FACILITIES
• INADEQUATE TRANSFER OF PRACTICAL KNOWLEDGE AND OPPORTUNITY FOR HANDS-ON EXPERIENCE
• DECLINING NUMBER OF TECHNICAL PERSONNEL AVAILABLE

OBJECTIVES

• DEVELOP WITHIN NASA A NATIONAL TEST BED FOR PROPULSION SYSTEM TESTING

• EFFICIENTLY UTILIZE NASA'S LIMITED FUNDING FOR FUTURE PROPULSION SYSTEM DEVELOPMENT AND SUSTAINED FLIGHT SUPPORT

• ENSURE ADEQUATE TEST FACILITIES ARE AVAILABLE WITHIN NASA TO SUPPORT FUTURE PROPULSION SYSTEMS

• DEVELOP AND MAINTAIN WITHIN NASA AND THE PRIVATE SECTOR THE TECHNICAL SKILLS AND EXPERTISE FOR FUTURE PROPULSION SYSTEM DEVELOPMENT
• ESTABLISH WITHIN NASA HQ ONE ORGANIZATION RESPONSIBLE FOR ADMINISTERING ALL NASA PROPULSION TESTING

• ESTABLISH AN INDEPENDENT REVIEW ORGANIZATION TO:
  - INVENTORY EXISTING NASA TEST FACILITIES AND THEIR CAPABILITIES
  - DETERMINE THEIR FUTURE USABILITY
  - COMPARE THEIR CAPABILITIES/USABILITY TO THE NEED FOR FUTURE PROPULSION SYSTEM TESTING
  - RECOMMEND TYPE/SIZE PROPULSION SYSTEM BEST TESTED AT EACH FACILITY
  - RECOMMEND MODIFICATIONS/ADDITIONS TO BE MADE TO EACH FACILITY

• ESTABLISH A NATIONAL TEST BED FOR PROPULSION SYSTEM TESTING
  - FACILITIES WHICH WILL BE INCLUDED
  - TYPE/SIZE OF PROPULSION SYSTEMS WHICH WILL BE TESTED AT EACH
  - MODIFICATIONS/ADDITIONS WHICH WILL BE MADE TO EACH AND WHEN

• ESTABLISH A "JANNAF LIKE" FORUM OF REPRESENTATIVES FROM THESE TEST FACILITIES TO ENHANCE THE TRANSFER OF PROPULSION TEST TECHNOLOGY AND INFORMATION

• ESTABLISH AND FUND A PROGRAM TO STIMULATE INTEREST AT ALL LEVELS OF EDUCATION IN MATH, SCIENCE, AND SPACE
MAJOR MILESTONES

- NASA HQ COMMITMENT TO A NATIONAL TEST BED FOR PROPULSION TESTING - LATE FY 90

- NASA HQ COMMITMENT/FUNDING TO AN EDUCATIONAL PROGRAM TO STIMULATE INTEREST AT ALL LEVELS IN MATH, SCIENCE, AND SPACE - LATE FY 90

- REVIEW COMPLETED, NATIONAL TEST BED ESTABLISHED, RESPONSIBILITIES ASSIGNED - LATE FY 91

- JOINT NASA "JANNAF LIKE" WORKING GROUPS FORMED AND FUNCTIONING - EARLY FY 92

- MODIFICATIONS AND ADDITIONS TO EXISTING TEST FACILITIES - FY 92-96