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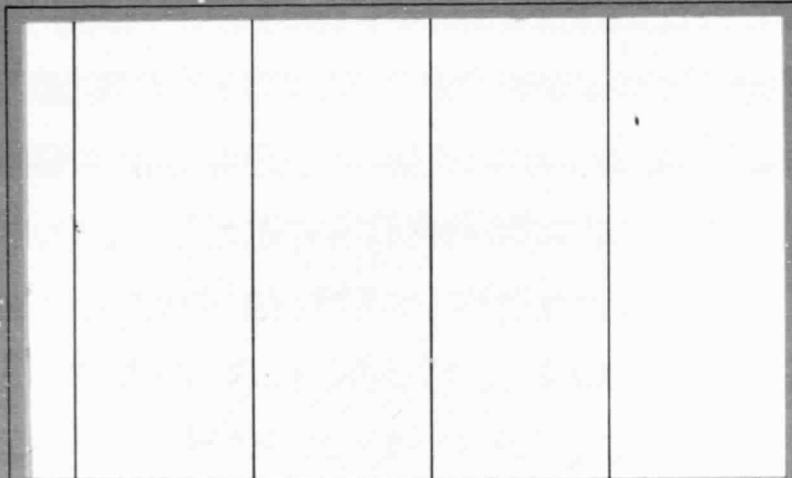
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# RESEARCH REPORT



# Battelle

Columbus Laboratories



FINAL REPORT  
on  
PHASE II STS NEW USER DEVELOPMENT PROGRAM:  
VOLUME V,  
INFORMATIONAL MATERIALS  
to  
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
GEORGE C. MARSHALL SPACE FLIGHT CENTER  
CONTRACT NUMBER NAS8-31621  
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## PREFACE

This Battelle report, entitled "Phase II STS New User Development Program", is submitted under NASA Contract No. NAS8-31621 and consists of five volumes as specified below:

- Volume I - Executive Summary
- Volume II - Narrative Report
- Volume III - The Implementation Plan
- Volume IV - Guidance/Instructions for Representatives
- Volume V - Informational Materials.

The five volumes make up the Phase II STS New User Development Program Final Report and summarize the results, conclusions and recommendations from the nine-month study performed by Battelle's Columbus Laboratories (BCL). This contract was administered by the NASA Marshall Space Flight Center, Huntsville, Alabama.

Battelle's Columbus Laboratories would like to acknowledge the efforts of W. Robert Nixon, Jr., of NASA/MSFC as the Contracting Officer Representative for the study program. The following BCL staff should be recognized for their technical contributions to this study:

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on  
PHASE II STS NEW USER DEVELOPMENT PROGRAM  
VOLUME V,  
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INTRODUCTION

The objective of the Phase II STS New User Development (NUD) program was to develop a NUD program implementation plan and attendant informational material which may be used by NASA and/or its contractors in subsequent phases of the STS NUD program. Included in the study, therefore, was a subtask to determine and develop the informational needs of a NUD program representative as he prepares for and, subsequently, conducts a call on a prospective new user of the STS. In this sense, the informational needs include both what he needs to know about a prospective user and what he needs to provide to the user. The procedure followed and the results of that subtask are reported in Volume II, Narrative Report, of this final report. Volume IV, Guidance/Instructions for Representatives, covers the type of information and background the representative needs to know about the prospective user and general guidance relative to conducting a call. It is the purpose of this volume (Volume V of the final report) to describe the informational material which should be provided to the user. Recommendations are made as to how the informational material should be derived and maintained, the timeliness or phasing of its use and the applicability of existing informational material.

## PROGRAM APPROACH

The STS New User Development (NUD) Function is shown in Figure 1. The effectiveness of the user development function in directly dealing with a prospective user is dependent upon the strategy derived for that specific user and the informational material provided to the user as the strategy is implemented. The informational material to be provided to a user should be considered in three categories. A set of standard or basic information, maintained to reflect current programmatic/operations/mission data, is needed to provide any or all users with the overview of the STS. This information is referred to as the "Basic Information Package". A second category of informational material is needed to specifically address the unique information needs of a selected user. This information is referred to as the "Customized User Information Package". In general, the major marketing call to a new user is made using the Basic and Customized packages. A third category of informational material may be required as a follow-up or response to the feedback from the initial user contact. The program approach to deriving and using the three categories of informational material is shown in Figure 2. The relationship to and influence from other NASA activities and information are also shown.

### Basic Information Package

A set of basic information, maintained to reflect current data, is needed to provide an overview of the STS, policy related to its use and charge, mission availabilities, uses and space facilities provided, etc. This basic package will include film, brochures, and presentation material and will be continuously coordinated with NASA public relations activities, use area development programs, and the STS operations. The preparation of the material should have the user needs and interests in mind, primarily. If an analogy can be made, the material should tend to be of a Consumer's Report nature as compared to hardware specifications. The STS Users Handbook, being developed by NASA/JSC, will be a key part of the basic information package and, by structure, will lead a user to the element of the STS he will interface with

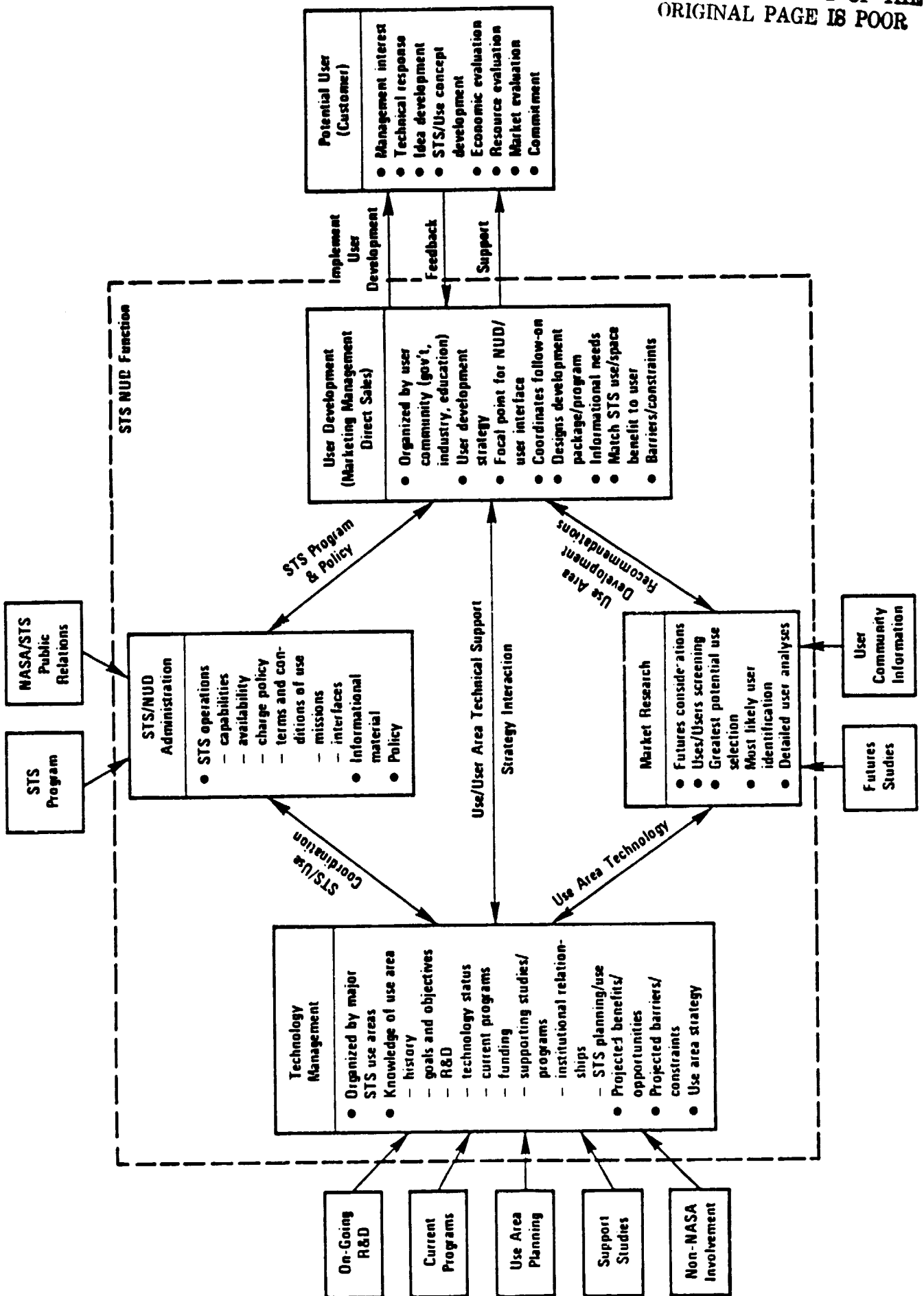


FIGURE 1. STS/NEW USER DEVELOPMENT PLAN



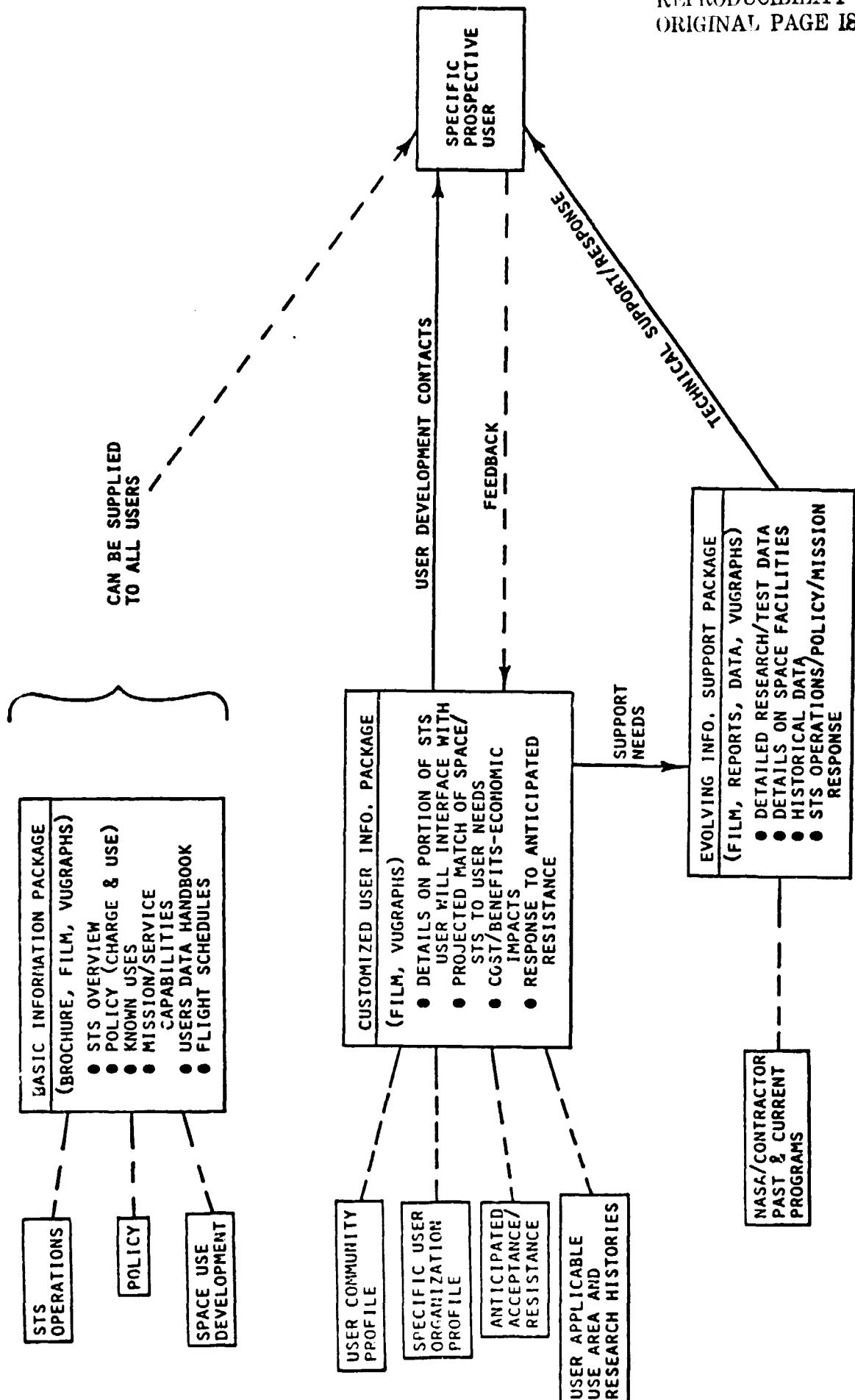


FIGURE 2. STS NUD INFORMATIONAL MATERIALS PROGRAM

and to more detailed design-like data. In general, the types of information to be covered should include:

- Overview of STS concept/program/missions/physical components
- Summary of planned STS use areas/identified space applications
- Cost per flight
- User charge/sharing policy
- Methods of determining charge/design tradeoffs related to charge
- Terms and conditions of use
- STS planned availability/accessibility
- Method of interfacing with STS (applicable technology and operations)
- STS benefits/constraints
- ELV to STS transition plan
- Means of potential early involvement for user
- Specific follow-on steps
- Informational contacts within NASA.
- Long Range, future space planning (e.g., space station).

It is realized that the basic package may be overdesigned for certain users who are currently involved in space operations. The user development strategy will consider the role of a user and the need for what information and how much should be presented.

The preparation of the Basic Information Package should capitalize on existing material currently used to promote the STS and its elements. Consideration should be given to information from STS contractors, the European Space Agency, National Space Institute, and all NASA centers. The assembly of the material should be flexible enough to allow for ease in updating and duplicating specific elements of the package.

The Basic Information Package should be designed to be utilized by all STS program areas, NASA's Public Information Division and/or NASA's designated promotional agency for STS. The objective of this information package is to provide an overview of the STS program to as many potential users as possible. This package would be utilized in many different ways and is analogous to a "sales brochure". It should be designed to stimulate the potential user of STS into conceptualizing possible program applications.

Responsibility for the organization, packaging, and dissemination of this information program will be with the NUD organization. They will solicit support from the STS program office and other NASA support organizations. Special emphasis should be placed on the importance of obtaining the latest information affecting the STS program and correlating the input into the existing information packages as soon as possible. Outlining new use areas is a key to stimulating interest. The more extensive the list of planned or demonstrated uses of STS, the greater the chance of achieving user interest.

### Customized User Information Package

The second category of informational material to be provided a user is the "customized data" prepared specifically for a user. A presentation most likely would be designed for a user which recognizes his specific space market role, the projected use of space/STS beneficial to his needs, which element (orbiter, Spacelab, IUS, LDF, etc.) of the STS he most likely will interface with, some form of economic benefit projections, and a summarization of the applicable technology and research status. This information package can only be developed as a result of significant homework matching a STS service, a space application, and a beneficial economic projection to the user's need. The information must reflect what is known about the user and must coordinate the current research and use area developments within NASA as they apply to the user.

In developing the second major information package, it is important to note that for any particular potential user of STS the level of development of the Customized User Information Package is directly related to the background and history of the organization's space-related activities. Acceptance of the information presented will depend on the particular barriers and opportunities surrounding the use and the user. The development of this information package will be the responsibility of a team or task force effort involving NUD personnel familiar with the applicable use area, related technology and research programs. They will work together in developing briefing materials and information needs which are pertinent to the specific applications of STS/space that the prospective user is associated with. The objective of this information package is to provide specific answers to anticipated questions and known issues concerning the targeted organization. Demonstrated examples and details of applicable on-going programs

will be reported. A review of cost-effective programs similar to the interest of the potential user's use concept will be documented and presented.

The user development strategy and the organization, packaging, and dissemination of this information package will be the prime responsibility of the special task force established at the onset of the development of the "Customized User Information Package". Special consideration will be given to the distinguishing elements/features of the potential user organization and organizational strengths in the industry as outlined in various business profiles.

Special attention will be given to providing specialized information on the user's anticipated payload carrier or interface point with STS.

#### Evolving Information Support Package

Once there has been a general interest demonstrated by the potential user, it will be necessary for the NUD team to prepare and maintain an "Evolving Information Support Package". The majority of the content of this package will be generated during the development of the second package, "Customized User Information Package". The objective of this information package is to provide continuous technical information, in more detail, in support of the various technical sessions now needed to implement the continuing development of the new user. This information package, then, will provide the follow-up in direct response to problems identified, new ideas, and desire for more detailed data as the user development process evolves.

#### INFORMATIONAL MATERIAL EVALUATION BY TEST CASES

A major part of the Phase II study involved the conduct of test cases to evaluate the NUD Implementation Plan and informational material. The objective of the study subtask was to prepare and assemble the material which could be generally supplied to prospective users in the future and would be supplied to user organizations contacted as test cases. The general approach to this subtask was to assemble available material from NASA and several contractors to provide the overview of the STS and to supplement that material by specially prepared presentation material tailored to each test case.

Several brochures and promotional documents were obtained directly from contractors and, in some cases, coordinated through NASA. A Basic Information Package was put together primarily from a Rockwell International Space Division STS promotional package enclosed in a folded jacket. Several documents were added so that the total package included the following:

- "Space Shuttle Transportation System", July 1975, Rockwell International, Public Relations Department
- "Space Shuttle - For Down to Earth Benefits", Rockwell International Space Division
- "Space Shuttle - Model Information", Rockwell International Space Division
- "Space Shuttle - What It Will Do", Rockwell International Space Division
- "Space Shuttle", February 1975, NASA/JSC, U.S. Government Printing Office: 1975 - 671-199/1608
- "Data Guide for Space Processing Applications Payloads - Space Shuttle/Spacelab", TRW Systems Group
- "ESA Spacelab", European Space Agency
- Five 8-1/2" x 11" color photos of Shuttle, Spacelab.

A film on Shuttle and Spacelab was prepared by editing/splicing and combining a Rockwell International film (Film Report No. 5108, "The Space Division") and a European Space Agency (ESA) film. The resultant 12-minute film provided a very informative, effective overview of the STS and the Spacelab and provided credibility by showing orbiter hardware design and manufacture status. Kept current, such a film can be continuously effective. The film should be prepared with minimum contractor promotional material, current hardware status, and with a theme of telling the users what STS can do for them.

A presentation was prepared for each test case. VuGraphs were used for the presentation, and copies of the VuGraphs were bound and provided as a handout. The presentation material used included the basic material, standard for each test case, and supplementary material tailored for the specific user. In general, the basic information presented included the following:

- Introductory material on the program background, the Phase II study objectives and methods of approach, and the strategy of the test cases.
- STS material - this information (used in conjunction with the film) provided an overview of the STS (and its elements). Mission descriptions, flight rates, terms and conditions of use, charge policy, the STS operations organization, STS uses, and benefits to a user, were included.

Therefore, for the purpose of conducting the test cases, the Basic Information Package consisted of the information brochure, the film, and the STS portion of the presentation.

The remaining portion of the presentation to each test case organization provided the Customized User Information Package. This customized material included an outline of the recommended STS new user development approach and information making the approach applicable to the test case user. In the case of the semiconductor and pharmaceutical test cases, summary information was provided on the space processing program, process areas being researched, history of flight-demonstrated results, space facilities under design and benefits of the Spacelab. Additionally, information on a specific beneficial space product idea (silicon ribbon growth in space, high specificity separation of isoenzymes) was provided to describe the idea, the flight hardware (free flyer or electrophoretic separator), the market analysis and the economic assessment conducted. Finally, specific opportunities for early involvement of a user were described by summarizing programs such as the space processing sounding rocket program. Where appropriate, copies of the recent Announcement of Opportunity for the sounding rockets were reviewed and left with the user. Copies of a set of typical presentation VuGraphs have been included in Volume II, Appendix C, to provide an example of the test case presentation material.

The test cases, therefore, confirmed the validity and effectiveness of the conceptual approach to the STS NUD informational material. Both basic and customized material were used and were found to be informative, effective and interest stimulating. The general results of the evaluation of the material and some recommendations resulting from the test cases include the following:

- (1) Orientation Film - The 12-minute film highlighting the objectives of the STS program and the Spacelab was well received during the test cases. Well edited graphics and live footage provided a quick overview of the program's accomplishments and plans. The advantage of this information tool is the ability to compress the time requirement of presentations. Normally, what you present verbally in 30 minutes can be presented in approximately 10 minutes in a well edited film. The emphasis should be on the STS program, with no hidden political or contractor interest messages.
- (2) Information Brochure - A brochure on the STS program was found to be very useful. The nature of the information should provide the appropriate stimulus for the potential user to want to seek more information. The key elements of this package should include:
  - (a) STS overview
  - (b) Physical components
  - (c) Identified space applications
  - (d) Terms and conditions
  - (e) Charge policy
  - (f) Flight schedules
  - (g) User benefits
  - (h) Transitional planning.

The North American Rockwell information package, with additional Spacelab information (ESA and TRW) describing the Space Shuttle and its potential, was well received during the case studies. The majority of the attendees felt the format of TRW's data guide information piece was excellent (we would highly recommend a similar format). They also expressed a need for well done graphic support in future information design programs. The assembly of materials should be flexible enough for ease in updating and duplicating elements of the package. The information package should capitalize on existing materials presently being used to promote STS.

- (3) Overhead transparencies (VuGraph material) should outline the objectives of the presentation and provide supplemental information. Copies of each of the transparencies should be left with the potential user subsequent to the presentation for quick response. Every effort should be made not to make these transparencies too "busy". It is important to streamline this presentation.

#### NEW USER DEVELOPMENT INFORMATION CENTER

In designing, packaging, and disseminating the major program information packages, there will be a requirement to establish a specialized information center. This center will focus on the informational needs of the complete NUD function.

It is recommended that a New User Development Information Center (NUDIC) be located in the NUD program office; the Center would be responsible for collecting, indexing, and making available references or reference materials addressing the STS program. Its personnel would develop products such as "Basic Information Package", "Customized User Information Package", "Evolving Information Support Package", state-of-the-art reviews, presentation packages, compilations, analyses, etc.

The responsibility of developing such a center would rest in the NUD Function (User Development). The individuals assigned this responsibility should have a strong background in dealing with technical information and should be very familiar with current STS capabilities, services, operations and policies.

The design features of the NUDIC are critical if such a center becomes a reality. Compatibility with other NASA information center designs is important for quick exchange of information.