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# NASA TECH BRIEF

## *Marshall Space Flight Center*



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### Limited Life Item Management

Control plans, procedures and complete specifications have been developed for the management of age-sensitive hardware. Industrial and consumer items such as automobiles, household appliances, office equipment, machine tools, and farm equipment, all contain materials considered to have a limited life. Materials used in gaskets, seals, lubricants, hose assemblies, batteries, adhesives and fabrics are among those that, if not replaced at scheduled intervals, deteriorate and create safety hazards or cause system failure. A method of identifying limited life materials and related components, assigning responsibility, and scheduling replacement or service is necessary for establishing spare parts stock levels, maintenance schedules, material storage methods, and product warranty schedules.

The methods and specifications now available can be used as guidelines in controlling age-sensitive materials by defining the necessary tasks and delegating the responsibility for their accomplishment. The control plan identifies shelf life or age-control requirements for materials which are considered to be age sensitive, use sensitive, or time service or shelf life controlled items, and describes

the methods of arriving at the age controls through adherence to detailed specifications. The plan presents methods for determining the processes through which the useful life of materials might be extended by constantly reviewing the technical considerations underlying the present age limitations, and provides a procedural outline for the timely replacement of over-aged materials.

#### Note:

Requests for further information may be directed to:

Technology Utilization Officer  
Code A&TS-TU  
Marshall Space Flight Center  
Huntsville, Alabama 35812  
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#### Patent status:

No patent action is contemplated by NASA.

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Category 04,06



# NASA TECH BRIEF

## Muscat Space Flight Center

NASA Tech Briefs are published quarterly by the NASA Tech Briefs Program. They are issued to encourage the dissemination of technical information from NASA's research and development activities. The information is presented in a concise, readable format and is available to the public at a nominal cost.

Control plane motion is a critical aspect of the flight performance of a vehicle. The present paper describes a method for the design of a control system for a vehicle with a flexible structure. The method is based on the use of a modal analysis of the structure and the application of a control law to the resulting modal coordinates. The results show that the method is effective in reducing the effects of structural flexibility on the control system.

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