
2-3-2. Analysis Procedure

After the MSI's have been selected, the following must be identified for each MSI:

- a) Function(s) - the normal characteristic actions of an item
- b) Functional Failure(s) - Failure of an item to perform its intended function within specified limits
- c) Failure Effect(s) - what is the result of a functional failure
- d) Failure Cause(s) - why the functional failure occurs

Defining some functional failures may require a detailed understanding of the system and its design principles. For example, for system components having single element dual load path features, such as concentric tubes or back-to-back plates, the function of both paths should be analyzed individually. The degradation and/or failure of one path may not be evident.

When listing functions, functional failures, failure effects, and failure causes, care should be taken to identify the functions of all protective devices. These include devices with the following functions:

- a) to draw the attention of the operating crew to abnormal conditions
- b) to shut down equipment in the event of a failure
- c) to eliminate or relieve abnormal conditions which follow a failure
- d) to take over from a function that has failed

Protective function statements should describe the protective function itself, and should also include the words "if" or "in the event of" followed by a brief description of the events or circumstances that would activate or require activation of the protection. For example, "To open the relief valve to atmosphere in the event of system X pressure exceeding 300 psi."

Tasks and intervals required in the scheduled maintenance are identified using the procedures set forth herein. Both the economic and safety related tasks are included so as to produce ~~initial scheduled maintenance tasks/intervals~~.

All available Vendor Recommendations (VR) should be fully considered, discussed in the MWG meetings, and accepted only if they are applicable and effective according to MSG-3 criteria.

Prior to applying the MSG-3 logic diagram to an item, a preliminary work sheet will be completed that clearly defines the MSI, its function(s), functional failure(s), failure effect(s), failure cause(s) and any additional data pertinent to the item; e.g., ATA chapter reference, fleet applicability, manufacturer's part number, a brief description of the item, expected failure rate, hidden functions, need to be on M.E.L., redundancy (may be unit, system or system management), etc. This work sheet is to be designed to meet the user's requirements and will be included as part of the total MSG-3 documentation for the item.

The approach taken in the following procedure is to provide a logic path for each functional failure. Each functional failure and failure cause must be processed through the logic so that a judgment will be made as to the necessity of a task. The resultant tasks and intervals will form the ~~initial scheduled maintenance~~.

the minimum scheduled interval/tasking requirements

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