GLOSSARY

-A-

ALPHA (α): The probability, expressed as a decimal, that a given part will fail in the identified mode. The sum of all alphas for a component will equal one (1).

-B-

BETA (β): The conditional probability that the *effect* of a failure mode will occur, expressed as a decimal. If a failure is to occur, what is the probability that the outcome will occur.

BROWNOUT: Occurs during a power failure when some power supply is retained, but the voltage level is below the minimum level specified for the system. A very dim household light is a symptom of a brownout.

-C-

COMPENSATING PROVISION: Actions available or that can be taken to negate or reduce the effect of a failure on a system.

CORRECTIVE ACTION: A documented design, process or procedure change used to eliminate the cause of a failure or design deficiency.

CRITICALITY: A relative measure of the consequences of a failure mode and the frequency of its occurrence.

CRITICALITY ANALYSIS (CA): A procedure by which each potential failure mode is ranked according to the combined influence of severity and probability of occurrence.

-D-

DETECTION METHOD: The method by which a failure can be discovered by the system operator under normal system operation or by a maintenance crew carrying out a specific diagnostic action.

-E-

END EFFECT: The consequence a failure mode has upon the operation, function or status at the highest indenture level.

-F-

FAILURE CAUSE: The physical or chemical processes, design defects, quality defects, part misapplication or other processes which are the basic reason for failure or which can initiate the physical process by which deterioration proceeds to failure.

FAILURE EFFECT: The consequence a failure mode has upon the operation, function or status of a system or equipment.

FAILURE MODE: The way in which a failure is observed, describes the way the failure occurs, and its impact on equipment operation.

FAILURE RATE: The mean (arithmetic average, also known as the forced outage rate) is the number of failures of a component and/or system per unit exposure time. The most common unit in reliability analyses is hours (h) or years (y). Therefore, the failure rate is expressed in failures per hour (f/h) or failures per year (f/y)

FAULT ISOLATION: The process of determining the location of a fault to the indenture level necessary to affect repair.

-I-

INDENTURE LEVELS: The levels which identify or describe the relative complexity of an assembly or function.

ITEM CRITICALITY NUMBER (Cr): A relative measure of consequence of an item failure and its frequency of occurrence. This factor is not applicable to a qualitative analysis.

-L-

LOCAL EFFECT: The consequence a failure mode has on the operation, function or status of the specific item being analyzed.

-M-

MEAN TIME TO REPAIR (MTTR). The mean time to replace or repair a failed component. Logistics delay time associated with the repair, such as parts acquisitions, crew mobilization, are not included. It can be estimated by dividing the summation of repair times by the number of repairs and, therefore, is practically the average repair time. The most common unit in reliability analyses is hours (h/f).

MISSION PHASE OPERATIONAL MODE: The statement of the mission phase and mode of operation of the system or equipment in which the failure occurs.

-N-

NEXT HIGHER LEVEL EFFECT: The consequence a failure mode has on the operation, functions, or status of the items in the next higher indenture level above the specific item being analyzed.

-Q-

QUALITATIVE ANALYSIS: A means of conducting an analysis without data. Team member subjectively rank probabilities of occurrence, typically 1-10, in place of failure rates.

QUANTITATIVE ANALYSIS: An analysis that is supported with data. Data is available for assigning failure rates and failure mode probabilities.

-R-

REDUNDANCY: The existence of more than one means for accomplishing a given function.

RISK PRIORITY NUMBER (RPN). The Risk Priority Number (RPN) is the product of the Severity (1-10) and the Occurrence (1-10) ranking. The Risk Priority Number is used to rank and identify the concerns or risks associated with the operation due to the design. RPN = (S) x (O).

-S-

SECONDARY EFFECTS: The results or consequences indirectly caused by the interaction of a damage mode with a system, subsystem or component of the system.

SEVERITY: Considers the worst possible consequence of a failure classified by the degree of injury, property damage, system damage and mission loss that could occur.

SINGLE POINT FAILURE: The failure of an item which can result in the failure of the system and is not compensated for by redundancy or alternative operational procedure.