



AEROSPACE INFORMATION REPORT

AIR4896™**REV. A**Issued 1995-12
Stabilized 2023-07

Superseding AIR4896

Recommended RMS Terms and Parameters

RATIONALE

This document is redundant to ARP5638A and has been merged into that document. This document can now be stabilized for historical purposes.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE G-41 Reliability Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

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Documents

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1. SCOPE:

The terms used in most engineering technologies tend to be physical characteristics such as speed, rate of turn, and fuel consumption. While they may require very careful definition and control of the way in which they are measured, the terms themselves are not subject to different interpretations. Reliability, maintainability and supportability (RMS) however, use terms that are mathematically defined. As a result, there are more than 2000 terms defined in just the documents reviewed so far, many of which have multiple interpretations.

This proliferation of definitions of the terms leads to problems when one attempts to compare the performance of one system to another. For example, the RMS performance of a transport aircraft from the commercial arena is measured using metrics that are not the same as those for a fighter or attack aircraft from a military service. It is accepted that some of the metrics may be unique because of the nature of the missions, but it is the strong conviction of the Government and Industry practitioners who make up the SAE Committee G-11 that there should be some fundamental definitions used for all hardware systems.

Accordingly, in early 1986 the SAE G-11R (Resources) subcommittee was formed and tasked to review relevant RMS documents, extract any applicable terms, and through a system of logical selection compile a series of terms and definitions that would be recommended for the Aerospace Community. There are undoubtedly many more documents that need to be reviewed for the definitions they contain, for example, we have specifically excluded "software reliability" from this edition. Also, there is a need to reconcile the terms and their definitions with those commonly used in the commercial aircraft business. It is planned that the SAE subcommittee work shall continue to result in future revisions that will broaden the scope of the document. This is the document that has been prepared by the SAE G-11R subcommittee. Future updates of this document will continue to reflect the converging of defense and commercial technology and standards.

2. REFERENCES:

2.1 Military Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

DOD-HDBK-344	Environmental Stress Screening of Electronic Equipment
DOD-I-7730.25	Materiel Condition Reporting for Mission-Essential Systems
DOD-STD-1701	Hardware Diagnostic Test Systems
DOD 5000.40(D)	Reliability and Maintainability (P&L)
MIL-E-005007E	Engines, Aircraft, Turbojet and Turbofan, General Specification for
MIL-E-008593E	Engines, Aircraft, Turboshaft and Turboprop, General Specification for
MIL-E-11991E	Electronic, Electrical and Electro-Mechanical Equipment Guide
MIL-E-4158E	Electronic Equipment, Ground General Specification for
MIL-E-5400T	Electronic Equipment, Aerospace, General Specification
MIL-F-18870E	Fire Control Equipment, Naval Shipboard, General Specification for
MIL-HDBK-108	Quality Control and Reliability Sampling Procedures and Tables
MIL-HDBK-109	Quality Control and Reliability - Statistical Procedures for Determining Validity

2.1 (Continued):

MIL-HDBK-189	Reliability Growth Management
MIL-HDBK-217E	Reliability Prediction of Electronic Equipment
MIL-HDBK-251	Reliability/Design Thermal Applications
MIL-HDBK-263	Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment
MIL-HDBK-338	Electronic Reliability Design Handbook
MIL-HDBK-472	Maintainability Prediction
MIL-M-24365A	Maintenance Engineering Analysis: Establishment of, and Procedures and Formats for
MIL-M-38510H	Microcircuits, General Specification for
MIL-P-11268L	Parts, Materials, and Processes Used in Electronic Equipment
MIL-Q-9858A	Quality Program Requirements
MIL-S-19500G	Semiconductor Devices, General Specification for
MIL-STD-109B	Quality Assurance Terms and Definitions
MIL-STD-1304A	Reports: Reliability and Maintainability Engineering Data
MIL-STD-1309C	Definitions of Terms for Test Measurement and Diagnostic Equipment
MIL-STD-1390B	Level of Repair
MIL-STD-1472C	Human Engineering Design Criteria for Military Systems
MIL-STD-1543A	Reliability Program Requirements for Space and Missile Systems
MIL-STD-1562P	Lists of Standard Microcircuits
MIL-STD-1626	Filling Out Management Information System, General Requirements
MIL-STD-1629A	Procedures for Performing a Failure Mode, Effects and Criticality Analysis
MIL-STD-1635	Reliability Growth Testing
MIL-STD-1686	Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment
MIL-STD-1843	Reliability-Centered Maintenance for Aircraft, Engines & Equipment
MIL-STD-2068	Reliability Development Testing
MIL-STD-2070	Procedure for Performing a FMECA for Aeronautical Equipment
MIL-STD-2074	Failure Classification for Reliability Testing
MIL-STD-2080A	Maintenance Engineering Planning and Analysis for Aeronautical Systems
MIL-STD-2155	Failure Reporting, Analysis and Corrective Action System
MIL-STD-2164	Environmental Stress Screening Process for Electronic Equipment
MIL-STD-2165	Testability Program for Electronic Systems and Equipment
MIL-STD-280A	Definitions of Item Levels, Item Exchangeability, Models and Related Terms
MIL-STD-415D	Test Provisions for Electronic Systems and Associated Equipment, Design Criteria
MIL-STD-454K	Standard General Requirements for Electronic Equipment (RQMT 35 Reliability)
MIL-STD-470A	Maintainability Program for Systems & Equipment
MIL-STD-471A	Maintainability Verification/Demonstration/Evaluation
MIL-STD-690B	Failure Rate Sampling Plans and Procedures
MIL-STD-701M	Lists of Standard Semiconductor Devices
MIL-STD-721C	Definitions of Terms for Reliability and Maintainability
MIL-STD-750C	Test Methods for Semiconductor Devices
MIL-STD-756B	Reliability Modeling and Prediction

2.1 (Continued):

MIL-STD-780F	Work Unit Codes for Aeronautical Equipment, Uniform Numbering System
MIL-STD-781D	Reliability Testing for Engineering Development, Qualification & Production
MIL-STD-785B	Reliability Programs for System and Equipment Development and Production
MIL-STD-790D	Reliability Assurance Program for Electronic Parts Specification
MIL-STD-810D	Environmental Test Methods and Engineering Guidelines
MIL-STD-882B	System Safety Program Requirements
MIL-STD-883C	Test Methods and Procedures for Microelectronics
MIL-STD-965A	Parts Control Program
MIL-T-28800D	Test Equipment for Use with Electrical and Electronic Equipment, General Specification
MIL-E-16400H	Electronic, Interior Communication and Navigation Equipment, Naval Ship and Shore

2.2 Other Documents:

NAVAIR 01-1A-32	Reliability Engineering Handbook
NAVAIR 01-1A-33	Maintainability Engineering Handbook
00-40 (PT1) (ARMP1)	R&M P1: Management Responsibilities & Requirements for Programmes & Plans
AFP 57-9	Defining Logistics Requirements in Statement of Operational Needs
OPNAVINST 4790.2D	The Naval Aviation Maintenance Program
WATOG	World Airlines Technical Operations Glossary

3. APPROACH:

3.1 Discussion of Data Base Generation:

Existing military and commercial documents (see Section 2), both domestic and foreign, which contain RMS terms and definitions were reviewed. These terms and their definitions were extracted from the documents to form the total data base.

Several actions were then taken to refine the data base:

- a. Terms/Definitions that were not applicable to RMS were removed.
- b. All applicable RMS terms were annotated as parametric or nonparametric.
- c. The applicable RMS Terms were then reviewed and those recommended were so annotated.
- d. In cases where a recommended term had multiple definitions, a preferred definition was selected.

The step-by-step approach to the selection and recommendation process is given in the next section.

3.2 Selection/Recommendation Process:

3.2.1 Selection of Terms Applicable to RMS: Terms identified in the selected documents were reviewed for their applicability to the RMS fields and retained in the data base.

The criteria applied for retention in the data base of applicable terms are:

- a. Those with definitions specific to, or closely associated with the RMS disciplines.
- b. Those whose definitions are needed to support or qualify the definitions of specific RMS terms.
- c. The following types of terms were excluded from the data base of applicable terms:
 - (1) Common Engineering terms, e.g. fatigue, angle of incidence
 - (2) Most statistical terms

3.2.2 Identification of Parametric Terms: The data base was then annotated as to whether the terms were parametric or not.

For a term to be classified as parametric, it had to meet the following criteria:

- a. It must quantify a reliability, maintainability, or supportability characteristic.
- b. The value must be measurable during some phase of a system's life cycle. This must be accomplished through collection and analysis of data from actual operation and/or maintenance of the system.
- c. It must be statistical in nature to reflect variability in an R, M, or S characteristic. A specified value such as mandatory overhaul time is not considered a parametric term.
- d. It must be normalized to a measurable base, e.g., "maintenance man hours per flight hour" is parametric but "maintenance man hours" is not.

It should be noted that values of parametric terms may also be qualified as "predicted", or used to develop test or evaluation plans but these have not been included in the data base, e.g., "predicted mean time to repair".

Those terms in the data base which do not meet all of the above criteria are classified as nonparametric.

3.2.3 Selection of Recommended Terms: The list of applicable terms was then reviewed and those to be recommended by the SAE were so annotated. Criteria for selection included how necessary the term is in the quantification of RMS performance. Terms included in this document are generic. For any particular application they may need to be tailored, for example, "mean time between failures" may be applied only to certain types of failure as appropriate, these tailorings are not included."

3.2.4 Selection of Preferred Definitions: For many terms, more than one definition was found in the selected documents. In these instances, one definition was selected as the preferred definition if it met the following criteria:

- a. Clarity
- b. Completeness
- c. General application (generic)

Where equivalent definitions were found in more than one document, one of which being a Military Standard, the preferred definition was that contained in the Military Standard.

When only one definition was found for a term, and that definition met the above criteria then it was not reviewed further and was included in the data base as preferred.

In some cases there were multiple definitions of which none met all of the above criteria. In these cases a preferred definition was created by the G-11R subcommittee; these can be identified by their having no source document annotated.

3.3 Subcommittee Consensus Process:

The SAE G-11R subcommittee consists of approximately 20 individuals from the United States, Canada, and Europe who represent a cross section of the airframe, engine and accessory industries plus the military services.

The intent was to achieve as wide as possible a perspective for the recommendation of terms from the 2000 RMS terms reviewed.

The approach taken to arrive at a final consensus was to divide the 2000 terms equally among several small working groups. The task of these groups was to make the selections and recommendations based upon the previously described process, and then to present their results to the main subcommittee. The main subcommittee then reviewed these results and made the final acceptance/rejection decisions.

The sheer size of this activity with the number of individual opinions on the classification of 2000 terms suggests an evolutionary process, and indeed this was the case.

Numerous working groups and review teams were formed to revisit the tasks as the criteria were refined.

This process continued until a consensus was reached by the main subcommittee.

4. HOW TO READ THIS REPORT:

4.1 Sample Report Page:

An excerpt from the list of recommended terms is provided in Figure 1. This figure identifies the headings and associated definitions of each field in the list of terms.

Field	Definition
Term:	Term being defined, with acronym.
Definition:	Verbatim definition as contained in the source document.
Formula:	Formula used to quantify the term.
Parameter?:	Indicates the G-11 R assessment as to whether the term is a parameter.
Document number:	Self-explanatory.
Document name:	Self-explanatory.

FIGURE 1 - Headings and Associated Definitions of Each Field

4.2 Contents of Published Report:

Appendix A of this report provides all the terms which are recommended by the SAE G-11 R subcommittee per the previously described criteria and selection process. The terms are provided in alphabetical order.

Appendix B of this document provides the total list of RMS terms that were reviewed by the SAE G-11 R subcommittee.

**PREPARED BY SAE SUBCOMMITTEE G-11 R, RESOURCES OF
COMMITTEE G-11, RELIABILITY, MAINTAINABILITY, AND SUPPORTABILITY (RMS)**

**APPENDIX
LIST OF RECOMMENDED TERMS**

Term: AVAILABILITY (A)

Definition: Availability is the probability that an item used under stated conditions will be ready to operate satisfactorily at any given time.

Formula: $A = \text{UPTIME} / (\text{UPTIME} + \text{DOWNTIME})$

Parameter?: Yes

Term: BREAK RATE

Definition: The probability that a system will return from an assigned mission with one or more previously working essential systems/subsystems inoperable (including ground and air aborts).

Formula: $\text{BREAK RATE} = \frac{\# \text{ MISSIONS WITH 1 OR MORE FAILURES OF ESSENTIAL ITEMS}}{\# \text{ MISSIONS ASSIGNED}}$

Parameter?: Yes

Term: BUILT IN TEST

Definition: An integral capability of the equipment which provides an on-board, automated test capability to detect, diagnose, and/or isolate system failures. The fault detection and, possibly, isolation capability is used for periodic or continuous monitoring of a system's operational health, and for observation and, possibly, diagnosis and/or conclude to maintenance action.

Parameter?: No

Term: CANNOT DUPLICATE

Definition: A fault indicated by BIT or other monitoring circuitry which cannot be confirmed at the next level of maintenance.

Parameter?: No

Document Number: MIL-STD-1309C

Document Name: DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT

Term: DIRECT MAINTENANCE MAN-HOURS

Definition: The total time in direct man-hours required to restore or maintain an item in serviceable condition.

Parameter?: No

Document Number: MIL-E-005007E

Document Name: ENGINES, AIRCRAFT, TURBOJET AND TURBOFAN, GENERAL SPECIFICATION FOR

Term: DIRECT MAINTENANCE MAN-HOURS PER MAINTENANCE ACTION (DMMH/MA)

Definition: A measure of the maintainability parameter related to item demand for maintenance manpower. The sum of direct maintenance man-hours divided by the total number of maintenance actions (preventative and corrective) during a stated period of time.

Formula: $DMMH/MA = \text{TOTAL DMMH} / \text{TOTAL MA'S}$

Parameter?: Yes

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: DOWNING EVENT

Definition: The event which causes an item to become unavailable to initiate its mission.

Parameter?: No

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: DOWNTIME

Definition: The time during which an item is not available for use for technical reasons.

Term: DOWNTIME, MEAN

Definition: The average elapsed time between loss of mission capable status and restoration of the system to mission capable status.

Formula: $MDT = \text{TOTAL DOWNTIME} / \# \text{ OF DOWNING EVENTS}$

Parameter?: Yes

Document Number: AFP 57-9

Document Name: DEFINING LOGISTICS REQUIREMENTS IN STATEMENT OF OPERATIONAL NEED

Term: EFFECTIVENESS, BUILT IN TEST

Definition: The product of two independent probabilities:

- a. $P_d(\text{BIT})$ = The probability that a failure will be detected by BIT.
- b. $P_i(\text{BIT})$ = The probability that the failure will be isolated to a stated ambiguity level by BIT.

Formula: $\text{EFFECTIVENESS, BIT} = P_d(\text{BIT}) * P_i(\text{BIT})$

Parameter?: Yes

Term: FAILURE

Definition: The inability of an item to perform within previously specified limits.

Parameter?: No

Document Number: MIL-HDBK-338

Document Name: ELECTRONIC RELIABILITY DESIGN HANDBOOK

Term: FAILURE RATE

Definition: The total number of failures within an item population divided by the total number of life units expended by that population during a particular measurement interval under stated conditions.

Formula: FAILURE RATE = # FAILURES / LIFE UNITS

Parameter?: Yes

Document Number: MIL-STD-721C

Document Name: DEFINITION OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: FAULT

Definition: A physical condition that causes a device, component, or element to fail to perform in a required manner; for example, a short circuit or a broken wire.

Parameter?: No

Document Number: MIL-STD-1309C

Document Name: DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT

Term: FAULT ISOLATION

Definition: The process of determining the location of a fault to the extent necessary to effect repair.

Parameter?: No

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: FIX RATE

Definition: The percent of items that return Not Mission Capable that are repaired (i.e., returned to Mission Capable status) in a specified number of clock hours, i.e., 70% in 4 h, 85% in 8 h.

Formula: $\text{FIX RATE} = \# \text{ A/C REPAIRED WITHIN SPECIFIED HOURS} / \# \text{ ITEMS REPAIRED}$

Parameter?: Yes

Term: LIFE CYCLE COST

Definition: The total cost of research, development, test, and evaluation; acquisition; operation and support and disposal of an item throughout its useful life.

Parameter?: Yes

Document Number: NAVAIR 01-1 A-32

Document Name: RELIABILITY ENGINEERING HANDBOOK

Term: LIFE UNITS

Definition: A measure of use duration applicable to the item (such as operating hours, cycles, distance, rounds fired, attempts to operate).

Parameter?: No

Document Number: DOD 5000.40(D)

Document Name: RELIABILITY & MAINTAINABILITY (P&L)

Term: MAINTENANCE

Definition: All actions (corrective and preventive) necessary for retaining an item in or restoring it to a specified condition.

Parameter?: No

Document Number: NAVAIR 01-1A-32

Document Name: RELIABILITY ENGINEERING HANDBOOK

Term: MAINTENANCE ACTION

Definition: An element of a maintenance event. One or more tasks (i.e., fault localization, fault isolation, servicing and inspection) necessary to retain an item in or restore it to a specified condition.

Parameter?: No

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MAINTENANCE EVENT

Definition: One or more maintenance actions required to effect corrective and preventive maintenance due to any type of failure or malfunction, false alarm or scheduled maintenance plan.

Parameter?: No

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MAINTENANCE MAN-HOURS PER LIFE UNIT

Definition: A measure of the total maintenance manpower burden required to maintain an item. It is expressed as the cumulative number of man-hours of maintenance expended in direct labor during a given period of the life units divided by the cumulative number of end item life units during the same period.

Formula: $MMH/LU = \text{TOTAL MAINTENANCE MAN-HOURS} / \text{TOTAL LIFE UNITS}$

Parameter?: Yes

Term: MAINTENANCE TIME, ELAPSED (EMT)

Definition: For the purposes of maintenance data reporting (MDR), EMT is defined as the actual clock time, in hours and tenths, that maintenance was being performed on a job. EMT does not include the clock hours and tenths for cure time, charging time, or leak test when they are being conducted without maintenance personnel actually monitoring the work. Although the EMT is directly related to job man-hours, it is not to be confused with total man-hours required to complete a job. For example, if five persons complete a job in 2 h of continuous work, the EMT = 2 h and the man-hours = 10.

Parameter?: No

Document Number: OPNAVINST 4790.2

Document Name: THE NAVAL AVIATION MAINTENANCE PROGRAM

Term: MAINTENANCE, CORRECTIVE

Definition: All actions performed as a result of failure, to restore an item to a specified condition. Corrective maintenance can include any or all of the following steps: localization, isolation, disassembly, interchange, reassembly, alignment, and checkout.

Parameter?: No

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MAINTENANCE, PREVENTIVE

Definition: Tests, measurements, replacements, adjustments, repairs, and similar activities carried out with the intention of preventing faults or malfunctions from occurring during subsequent operation. Preventive maintenance is designed to keep hardware and software in proper operating condition and may be performed on a scheduled basis.

Parameter?: No

Document Number: MIL-STD-1309C

Document Name: DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT

Term: MAN-HOURS

Definition: The total number of accumulated direct labor hours (in hours and tenths) expended in performing a maintenance action. Direct maintenance man-hours are man-hours expended by assigned personnel to complete the work described on the source document. This includes the functions of preparation, inspection, disassembly, adjustment, fault correction, replacement or reassembly of parts, and calibration/tests required in restoring the item to a serviceable status. It also includes such associated tasks as checking out and returning tools, looking up part numbers in the Illustrated Parts Breakdown (IPB), transmitting required information to material control, and completing documentation of the Visual Information Display System/Maintenance Action Form (VIDS/MAF) or Support Action Form (SAF).

Parameter?: No

Document Number: OPNAVINST 4790.2

Document Name: THE NAVAL AVIATION MAINTENANCE PROGRAM

Term: MAN-HOURS, MAINTENANCE

Definition: The man-hours required to complete the maintenance task.

Parameter?: No

Document Number: WATOG

Document Name: WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY

Term: MEAN CORRECTIVE MAINTENANCE TIME

Definition: The mean elapsed time required to complete a corrective maintenance action, i.e., total corrective maintenance down time divided by total corrective maintenance actions over a stated period of time.

Formula:
$$\text{MCT} = \text{TOTAL CORRECTIVE MAINTENANCE DOWN TIME} / \text{TOTAL CORRECTIVE MAINTENANCE ACTIONS}$$

Parameter?: Yes

Term: MEAN MAINTENANCE TIME (MMT)

Definition: The measure of item maintainability taking into account maintenance policy. The sum of elapsed corrective and preventive maintenance times divided by the sum of preventive and corrective maintenance events during a stated period of time.

Formula:
$$\text{MMT} = \text{SUM OF ELAPSED PREV AND CORR MAINT TIME} / \text{SUM OF PREV AND CORR MAINT EVENTS}$$

Parameter?: Yes

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MEAN TIME BETWEEN DEMANDS (MTBD)

Definition: The total number of system life units divided by the total number of demands on the supply system during a stated period of time.

Formula:
$$\text{MTBD} = \text{TOTAL SYSTEM LIFE UNITS} / \text{TOTAL \# OF ITEM DEMANDS}$$

Parameter?: Yes

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MEAN TIME BETWEEN FAILURES (MTBF)

Definition: A reliability figure calculated by dividing total life units accrued in a period by the number of failures that occurred during the period.

Formula:
$$\text{MTBF} = \text{TOTAL LIFE UNITS IN PERIOD} / \text{NUMBER OF FAILURES IN PERIOD}$$

Parameter?: Yes

Term: MEAN TIME BETWEEN MAINTENANCE (MTBM)

Definition: A measure of reliability taking into account maintenance policy. The total number of life units expended by a given time divided by the total number of maintenance events (scheduled and unscheduled) due to that item.

Formula: $MTBM = \text{TOTAL LIFE UNITS} / \text{TOTAL MAINTENANCE EVENTS}$

Parameter?: Yes

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MEAN TIME BETWEEN REMOVALS (MTBR)

Definition: A measure of the system reliability parameter related to demand for logistic support. The total number of system life units divided by the total number of items removed from that system during a stated period of time. This term is defined to exclude removals performed to facilitate other maintenance and removals for product improvement.

Formula: $MTBR = \text{TOTAL LIFE UNITS} / \text{TOTAL NUMBER OF REMOVALS}$

Parameter?: Yes

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MEAN TIME TO RESTORE SYSTEM (MTTRS)

Definition: A measure of the system maintainability parameter related to availability and readiness. The total corrective maintenance time associated with downing events, divided by the total number of downing events during a stated period of time. (Excludes time for off-system maintenance and repair of detached components.)

Formula:
$$\text{MTTRS} = \text{TOTAL CORRECTIVE MAINTENANCE TIME (DOWNING EVENTS)} / \text{TOTAL NUMBER OF DOWNING EVENTS}$$

Parameter?: Yes

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MEAN TIME TO SERVICE (MTTS)

Definition: A measure of an on-system maintainability characteristic related to servicing that is calculated by dividing the total scheduled crew/operator/driver servicing time by the number of times the item was serviced.

Formula:
$$\text{MTTS} = \text{TOTAL SERVICING TIME} / \text{NUMBER OF TIMES SERVICED}$$

Parameter?: Yes

Document Number: MIL-STD-721C

Document Name: DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY

Term: MISSION CAPABLE RATE

Definition: The percent of possessed time that a system is capable of performing at least one of its assigned missions.

Parameter?: Yes

Document Number: AFP 57-9

Document Name: DEFINING LOGISTICS REQUIREMENTS IN STATEMENT OF OPERATIONAL NEED

Term: PERCENT BIT CANNOT DUPLICATE

Formula: $\%CND = 100 \times \text{NUMBER OF BIT CND'S} / \text{TOTAL NUMBER OF BIT INDICATIONS}^*$

* Excludes false alarms that do not generate maintenance actions.

A BIT CND is an on-equipment BIT indication of a malfunction that cannot be confirmed by subsequent troubleshooting by maintenance personnel.

Parameter?: Yes

Document Number: AFP 57-9

Document Name: DEFINING LOGISTICS REQUIREMENTS IN STATEMENT OF OPERATIONAL NEEDS

Term: PERCENT BUILT IN TEST FALSE ALARM

Formula: $\%FA = 100 \times \text{NUMBER OF BIT INDICATIONS NOT RESULTING IN MAINTENANCE ACTIONS} / \text{TOTAL NUMBER OF BIT INDICATIONS}$

A BIT FA is an indication of a failure that is not accompanied by system degradation or failure.

Parameter?: Yes

Term: PERCENT BUILT IN TEST FAULT DETECTION

Definition: The total number of faults detected by BIT divided by the total number of faults x 100.

Formula: $FD = \text{TOTAL FAULTS DETECTED BY BIT} / \text{TOTAL FAULTS} \times 100$

Parameter?: Yes

Document Number: AFP 57-9

Document Name: DEFINING LOGISTICS REQUIREMENTS IN STATEMENT OF OPERATIONAL NEEDS

Term: PERCENT BUILT IN TEST FAULT ISOLATION

Definition: In defining this term it is essential to recognize that it is just as operationally valuable for BIT to fault isolate on an aircrew reported fault or manually detected fault as it is for BIT to fault isolate BIT detected faults. Hence, the definition is:

Formula: $\%FI = \text{\# OF ISOLATIONS IN WHICH BIT EFFECTIVELY CONTRIBUTED} / \text{\# OF CONFIRMED FAILURES DETECTED VIA ALL METHODS} \times 100$

Effective isolation should be defined, for example, to mean that the fault is unambiguously isolated to a single item node (driver, receiver, connector, wire), or to a specified maximum number of items (an ambiguity group of x items).

Parameter?: Yes

Document Number: AFP 57-9

Document Name: DEFINING LOGISTICS REQUIREMENTS IN STATEMENT OF OPERATIONAL NEED

Term: RELIABILITY

Definition: The probability that an item will perform a required function, under specified conditions, without failure, for a specified number of life units.

Term: RELIABILITY, DISPATCH

Definition: The percentage of flights which depart without incurring a delay (technical) or cancellation (technical).

Formula:
$$DR = \frac{\text{TOTAL DEPARTURES WITHOUT DELAY OR CANCELLATION}}{\text{TOTAL DEPARTURES}}$$

Parameter?: Yes

Document Number: WATOG

Document Name: WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY

Term: RELIABILITY, ENROUTE

Definition: The probability of successfully completing a flight plan without incurring a failure that would cause deviation from flight plan.

Formula:
$$ER = \frac{\text{TOTAL \# OF SUCCESSFUL FLIGHT PLANS}}{\text{TOTAL \# OF FLIGHT PLANS}}$$

Parameter?: Yes

Document Number: WATOG

Document Name: WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY

Term: RELIABILITY, MISSION

Definition: The probability that, under stated conditions, the system will operate in the mode for which it was designed (i.e., with no malfunctions) for the duration of the mission, given that it was operating in this mode at the beginning of the mission.

Term: REMOVAL RATE

Definition: The total number of removals within an item population, divided by the total number of life units expended by that population, during a particular measurement interval under stated conditions.

Formula: $RR = \text{TOTAL \# OF REMOVALS} / \text{TOTAL \# OF LIFE UNITS}$

Parameter?: Yes

Term: UP TIME

Definition: That element of ACTIVE TIME during which an item is in condition to perform its required function.

Parameter?: No

Document Number: MIL-STD-721

Document Name: DEFINITION OF TERMS FOR RELIABILITY AND MAINTAINABILITY

APPENDIX B
COMPLETE LIST OF RMS TERMS REVIEWED

No	Term	Acronym	Definition	Document	Document Name
1	ACCELERATED LIFE TEST		A test in which certain factors are increased or decreased beyond normal operating values to obtain observable deterioration in a reasonable period of time, and thereby afford some measure of the probable life under normal operating conditions or some measure of the durability of the equipment when exposed to the factors being aggravated.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
2	ACCELERATED SIMULATED MISSION ENDURANCE TEST	ASMET	An accelerated test derived from a real time representation (usually expressed in terms of power level angle versus time and engine inlet temperature and pressure conditions) of the mission profiles and mission mix for a specific aircraft application for a period of at least 1000 hours. The accelerated test is intended to produce: (1) hot parts damage equivalent to at least the hot parts life mission hours requirement and (2) critical parts LCF damage equivalent to at least one-half the cold parts mission hours requirement. The actual acceleration factor is a function of the derivation method provided by the strength and life analysis.	MIL-E-005007E(AS)	ENGINES, AIRCRAFT, TURBOJET AND TURBOFAN, GENERAL SPECIFICATION FOR
3A	ACCELERATED TEST		A test in which the applied stress level is chosen to exceed that stated in the reference conditions in order to shorten the time required to observe the stress response of the item, or magnify the response in a given time. To be valid, an accelerated test must not alter the basic modes and/or mechanisms of failure, or their relative prevalence.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
3B	ACCELERATED TEST		A test in which the applied stress level is chosen to exceed that stated in the reference conditions in order to shorten the time required to observe the stress response of the item, or magnify the response in a given time. To be valid, an accelerated test must not alter the basic modes and/or mechanisms of failure or their relative prevalence.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
4	ACCEPTABLE FAILURE RATE DURING PERIOD OF TIME		The "acceptable failure rate during period of time," θ_0 , is the maximum failure rate during period of time that can be considered satisfactory.	MIL-HDBK-108	QUALITY CONTROL AND RELIABILITY SAMPLING PROCEDURES AND TABLES
5	ACCEPTABLE MEAN LIFE	θ_0	The minimum mean time to failure which is considered satisfactory.	MIL-HDBK-108	QUALITY CONTROL AND RELIABILITY SAMPLING PROCEDURES AND TABLES
6	ACCEPTABLE PROPORTION OF LOT FAILING BEFORE SPECIFIED TIME	P_0	The maximum fraction of the lot that may fail before the specified time T and still result in the lot being considered satisfactory.	MIL-HDBK-108	QUALITY CONTROL AND RELIABILITY SAMPLING PROCEDURES AND TABLES
7A	ACCEPTANCE TEST	AT	A series of tests conducted on engines submitted for Using Service acceptance, under contract, to demonstrate correct assembly and performance to the extent specified in the engine specification.	MIL-E-005007E(AS)	ENGINES, AIRCRAFT, TURBOJET AND TURBOFAN, GENERAL SPECIFICATION FOR
7B	ACCEPTANCE TEST		Tests to determine conformance to design or specifications as a basis for acceptance. They may apply to parts, equipments, or systems.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
7C	ACCEPTANCE TEST		A test conducted under specified conditions by, or on behalf of, the government, using delivered or deliverable items, in order to determine the item's compliance with specified requirements. (Includes acceptance of first production units.)	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
8A	ACCESSIBILITY		A measure of the relative ease of admission to the various areas	MIL-HDBK-338	ELECTRONIC RELIABILITY DESIGN



No	Term	Acronym	Definition	Document	Document Name
			of an item.		HANDBOOK
88	ACCESSIBILITY		A measure of the relative ease of admission to the various areas of an item for the purpose of operation or maintenance.	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
8C	ACCESSIBILITY		The feature of design layout and installation which permits quick and easy admission (for performance of visual and manipulative maintenance) to the area in which maintenance must be performed.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
8D	ACCESSIBILITY		A design feature which affects the ease of admission to an area for the performance of visual and manipulative maintenance.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
8E	ACCESSIBLE		Except where stated to the contrary herein or where specific design values are given, an item is considered accessible only where it can be operated, manipulated, removed or replaced by the suitably clothed and equipped user with applicable 5th and 95th percentile body dimensions. Applicable body dimensions are those dimensions which are design-critical to the operation, manipulation, removal or replacement task. (For example, an adjustment control behind an aperture should be located sufficiently close to the aperture to enable a suitably clothed and equipped user with a 5th percentile female depth of reach to grasp and manipulate the adjustment control, while the opening should be sufficiently large to enable passage of similarly clothed and equipped 95th percentile male hand and arm dimensions.)	MIL-STD-1472C	HUMAN ENGINEERING DESIGN CRITERIA FOR MILITARY SYSTEMS, EQUIPMENT
9A	ACCESSORIES		Accessories are items of engine-mounted equipment not furnished by the engine manufacturer, which are required for aircraft operation or as auxiliaries for engine operation.	MIL-E-005007E(AS)	ENGINES, AIRCRAFT, TURBOJET AND TURBOFAN, GENERAL SPECIFICATION FOR
9B	ACCESSORY		An item used in conjunction with or to supplement an assembly, unit or set, contributing to the effectiveness thereof without extending or varying the basic function of the assembly, unit, or set. An accessory may be used for testing, adjusting or calibrating purposes.	MIL-STD-280A	DEFINITIONS OF ITEM LEVELS, ITEM EXCHANGEABILITY, MODELS AND RELATED TERMS
9C	ACCESSORY		A part, subassembly, or assembly designed for use in conjunction with or to supplement another assembly, unit, or set that contributes to the effectiveness without extending or varying the basic function of the assembly or set. An accessory may be used for testing, adjusting, or calibrating.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
9D	ACCESSORY		A part, subassembly, assembly or component designed for use in conjunction with or to supplement another item.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
10	ACCUMULATED HOURS		Hours that are expended against a job by individuals or shops within the same work center.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
11	ACHIEVED		Obtained as the result of measurement.	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
12	ACTIVE BUILT IN TEST		A type of built in test which is temporarily disruptive to the prime system operation through the injection of test stimuli into the system.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
13	ACTIVE MAINTENANCE TIME		The time during which corrective or preventive maintenance is being done on an item. Active maintenance time is comprised of the following task times: preparation time, fault location time,	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK



No	Term	Acronym	Definition	Document	Document Name
14	ACTIVE REPAIR TIME		item obtainment time, fault correction time, adjustment and calibration time, and checkout time. That portion of downtime during which one or more technicians are working on the system to effect a repair. This time includes preparation time, fault-location time, fault-correction time, and final checkout time for the system, and perhaps other subdivisions as required in special cases. Any item shipped with the engine which is neither an accessory nor a component.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
15	ADDITIONAL EQUIPMENT		To bring variable elements of an item within specified limits.	MIL-E-005007F(AS)	ENGINES, AIRCRAFT, TURBOJET AND TURBOFAN, GENERAL SPECIFICATION FOR
16	ADJUST/ALIGN/TRI H		Changing (by electronic, electrical or physical means) a variable in an item to cause a change in its output characteristics. An item used for experimentation or tests to (a) demonstrate the technical feasibility of a design, (b) determine, its ability to meet existing performance requirements, (c) secure engineering data for use in further development and, where appropriate, (d) establish the technical requirements for contract definition. Dependent upon the complexity of the equipment and the technological factors involved, it may be necessary to produce several successive models, to achieve additional objectives. The final advanced development model approaches the required form factor and employs standard parts (or nonstandard parts approved by the agency concerned). Serious consideration is given to military requirements such as reliability, maintainability, human factors and environmental conditions. A systematic evaluation of an item based on analysis of collected information from in-service experience, development tests or scientific handbooks. It assesses the item's resistance to a deterioration process with respect to increasing age.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
17	ADJUSTMENT		A systematic evaluation of an item based on analysis of collected information from in-service experience. It assesses the item's resistance to a deterioration process with respect to increasing age.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
18	ADVANCED DEVELOPMENT		The time before which inspection of the condition of an item is required, or beyond which inspection is considered to provide useful condition information. NOTE: Threshold age may be specified as an upper limit before which inspection must be performed, or may be specified as a lower limit below which an inspection is not considered to provide useful information. All equipment required on the aircraft to support the operation and maintenance of the aircraft and all its airborne equipment.	MIL-STD-280A	DEFINITIONS OF ITEM LEVELS, ITEM EXCHANGEABILITY, MODELS AND RELATED TERMS
19A	AGE EXPLORATION		The average number of aircraft used in aircraft operations and normal maintenance during a reporting period. NOTE: The number of aircraft in service is calculated from the aircraft days available for the period divided by the total number of days in the period. Aircraft days available include days required for normal maintenance and overhaul. That department of an aviation ship (aircraft carrier/amphibious	MIL-STD-1843 USAF	RELIABILITY-CENTERED MAINTENANCE FOR AIRCRAFT, ENGINES & EQUIPMENT
19B	AGE EXPLORATION			WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
20	AGE, THRESHOLD			WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
21	AIRBORNE SUPPORT EQUIPMENT	ASE		WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
22	AIRCRAFT IN SERVICE			WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
23	AIRCRAFT	AIMO		OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE

No	Term	Acronym	Definition	Document	Document Name
	INTERMEDIATE MAINTENANCE DEPARTMENT		assault ship/helicopter assault landing ship (CV/LPH/LHA)) or naval air station responsible for the check, test, repair, or manufacture of aeronautical components and SE for the supported aircraft.		PROGRAM
24	AIRCRAFT ON GROUND	AOG	The highest priority designation to process a requirement for a spare part(s) and/or maintenance action. Indicates that an aircraft is unable to continue or be returned to revenue service until the appropriate action is taken.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
25	AIRCRAFT STRUCTURAL INTEGRITY PROGRAM	ASIP	A time-phased set of required actions performed at the optimum time during the life cycle (design through phase-out) of an aircraft system to ensure the structural integrity (strength, rigidity, damage tolerance, durability and service life capability) of the aircraft.	MIL-STD-1843 USAF	RELIABILITY-CENTERED MAINTENANCE FOR AIRCRAFT, ENGINES & EQUIPMENT
26	AIRLINE OPERATING PROFILE		Information supplied by the airline to the equipment manufacturer for calculation of spares items needed to support the airline's fleet.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
27A	ALIGNMENT		A sequence of adjustments providing optimum performance characteristics.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
27B	ALIGNMENT		performing the adjustments that are necessary to return an item to specified operation.	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
28	ALLOCATION		The apportionment of numerical requirements to all levels within an equipment which will result in meeting the overall contractual reliability requirement.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
29	ALTERNATE		An item which fully meets required functional and structural specifications, but differs either in overall external dimensions, connections, installations and/or mounting provisions and required additional parts, rework, or modification to install in a specific application. Alternate procedures fully meet the required maintenance specification, but may require additional documentation, training, manning, special tooling and/or test equipment.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
30A	ANALYSIS, CRITICALITY	FMECA	An extension of failure mode and effect analysis wherein the degree of degradation of aircraft operating safety due to failure effects is predicted.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
30B	ANALYSIS, CRITICALITY	CA	A procedure by which each potential failure mode is ranked according to the combined influence of severity and probability of occurrence.	MIL-STD-1629A	PROCEDURES FOR PERFORMING A FAILURE MODE, EFFECTS AND CRITICALITY ANALYSIS
31	ANALYSIS, DAMAGE TOLERANCE		Application of engineering principles to determine periods of safe unrepai red service usage in the presence of assumed structural defects.	MIL-STD-1843 USAF	RELIABILITY-CENTERED MAINTENANCE FOR AIRCRAFT, ENGINES & EQUIPMENT
32	ANALYSIS, MAINTENANCE		The process of identifying required maintenance functions through analysis of a fixed or assumed design and determining the most effective means of accomplishing these functions.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
33	ANALYSIS, PERFORMANCE		The assessment of the performance level of an item, aircraft or fleet from performance data or measurements or statistical information.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
34	ANALYSIS, RELIABILITY		The assessment of probabilities to determine satisfactory performance of an item under specified conditions of use over a given service period by means of statistical studies.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
35	ANALYTICAL MAINTENANCE PROGRAM	AMP	A program that implements the Reliability Centered Maintenance (RCM) philosophy, for example, additional maintenance cannot improve the reliability inherent in the design of hardware.	OPNAVINST 4790-2D	THE NAVAL AVIATION MAINTENANCE PROGRAM



No	Term	Acronym	Definition	Document	Document Name
36	ARTICLE		Components, assemblies, subassemblies, and parts connected or associated together to perform an operational function.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
37	ATTRIBUTE		(Equipment or End Item) A characteristic or property that a product either does or does not have, e.g., shorts and opens in electronic parts, leaks in hydraulic lines, "stiction" in bearings.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
38	AUGMENTED SUPPORT		Support provided by the system contractor during the initial introduction of new development or production equipment, to furnish technical assistance, spares, and repair parts and to perform actual maintenance as required during the introductory period.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
39	AUTOMATIC SELF TEST		Self-test to that degree of fault detection and isolation which can be achieved entirely under computer control, without human intervention.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
40	AUTOMATIC TEST		That performance assessment, fault detection, diagnosis, isolation, and prognosis which is performed with a minimum of reliance on human intervention. This may include BIT.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
41	AUTOMATIC TEST EQUIPMENT	ATE	Equipment which automatically carries out a predetermined program of testing for possible malfunction with minimum reliance upon human intervention.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
42A	AUTOMATIC TESTING		Fault localization, failure prediction, or validation of satisfactory equipment operation by a device that is programmed to perform a series of self-sequencing tests. Once actuated, the device will continue its operations without the necessity of human direction.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
42B	AUTOMATIC TESTING		That discipline which concerns itself with the development, acquisition, and application of automatic test.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
43A	AVAILABILITY		A measure of the degree to which an item is in an operable and committable state at the start of a mission when the mission is called for at an unknown (random) time (includes operating time, active repair time, administrative time, and logistic time, but excludes mission time).	MIL-HDBK-338	ELECTRONIC RELIABILITY DESIGN HANDBOOK
43B	AVAILABILITY		A measure of the degree to which an item is in operable and committable state at the start of a mission, when the mission is called for at an unknown (random) point in time.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
43C	AVAILABILITY		A measure of the degree to which an item is in operable and committable state at the start of a mission when the mission is called for at an unknown (random) time. (Item state at start of a mission includes the combined effects of the readiness-related system R & M parameters, but excludes mission time.)	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
43D	AVAILABILITY	A	A complex function of equipment mean time between failures (MTBF), mean corrective maintenance time (Mct), duty cycle (d), failure detectability (k) of checkout and test equipment, mission time (tm), and the functional performance threshold (Gmin) at which the system can be classified as operationally ready for a particular mission assignment. Inherent availability is the probability that a system or equipment used under stated conditions in an ideal support environment will operate satisfactorily at any given time. Operational availability is the probability that a system or equipment used under stated conditions and in the actual support environment will operate satisfactorily at any given time.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
43E	AVAILABILITY		A measure of the degree to which an item is in an operable and committable state at the start of a mission when the mission is called for at an unknown (random) time (includes operating time, active repair time, administrative time, and logistic time, but excludes mission time).	00-40(PT1)(ARMP1)	REM P1: MANAGEMENT RESPONSIBILITIES & MAINTAINABILITY

No	Term	Acronym	Definition	Document	Document Name
43F	AVAILABILITY	A	committable state at the start of a mission when the mission is called for at an unknown (random) time. The percent of possessed/authorized equipment that is capable of performing its intended function.	ATP 57-9	REQUIREMENTS FOR PROGRAMMES & PLANS DEFINING LOGISTICS REQUIREMENTS IN STATEMENT OF OPERATIONAL NEED
43G	AVAILABILITY		A measure of the degree to which an item is in the operable and committable state at the start of the mission, when the mission is called for at an unknown (random) point in time.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
44	AVERAGE LIFE		The mean value for a normal distribution of lives. The term is generally applied to mechanical failures resulting from "wear-out".	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
45	AVIONICS		The application of electronics to aviation and astronautics. NOTE: For purposes of the Naval Aviation Maintenance Program (NAMP), avionics is interpreted to include electronic, electrical, instrument, flight control, fire control, and bombing equipment and their subsystems taken either as independent equipment, groups of equipment, or integrated systems to accomplish assigned military missions.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
46	AWAITING INDUCTION		The condition that exist when an engine has been received from supply, and has not been inducted into the shop work-load cycle. Requires the use of shop facilities and precedes an in work/awaiting maintenance status.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
47	AWAITING MAINTENANCE TIME	AMM	That time during which an aircraft is Not Mission Capable Maintenance (NMCM) or Partial Mission Capable Maintenance (PMCM) and no maintenance is being performed on the systems causing the NMCM or PMCM status. Other maintenance upkeep not causing an NMCM or PMCM condition may be performed on the aircraft during this period.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
48	AWAITING PARTS	AUP	The condition that exists when materials required to complete a maintenance action are not available on station/ship.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
49	BASIC FAILURE RATE		The basic failure rate of a product derived from the catastrophic failure rate of its parts, before the application of use and tolerance factors. The failure rates contained in MIL-HDBK-217 are "base" failure rates.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
50	BASIC MISSION		The basic intended function or capability of the aircraft, such as bomber, fighter, patrol, observation, utility.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
51	BASIC RELIABILITY		The duration or probability of failure-free performance under stated conditions. Basic reliability terms, such as Mean Time Between Failures (MTBF) or Mean Cycles Between Failures (MCBF), shall include all item life units (not just mission time) and all failures within the items (not just mission-critical failures at the item level of assembly). Basic reliability requirements shall be capable of describing item demand for maintenance manpower (e.g., Mean Time Between Maintenance Actions (MTBMA)). The other system reliability parameters shall employ clearly defined subsets of all item life units and all failures.	MIL-STD-785B	RELIABILITY PROGRAMS FOR SYSTEM AND EQUIPMENT DEVELOPMENT AND PROD
52	BENCH CHECK		A physical inspection or functional test of an item removed for an alleged malfunction to determine if the part or item is serviceable/repairable. It also includes a determination of the extent of maintenance, repair, or possible overhaul required to return it to serviceable status.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM



No	Term	Acronym	Definition	Document	Document Name
53	BENCH CHECK		A functional check of an item in the shop to determine whether or not the item may be returned to service, or whether it requires adjustment, repair or overhaul.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
54	BENCH TEST		The subsection of aircraft, engines, accessories, equipment, and use of shop test equipment to ensure proper functioning.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
55	BEYOND CAPABILITY OF MAINTENANCE	BCM	A term/code used by intermediate (I-) level maintenance activities when repair is not authorized at this level, or when an activity is not capable of accomplishing the repair because of a lack of equipment, facilities, technical skills, technical data, or parts. This code will also be used when shop backlog precludes repair within time limits specified by existing directives.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
56	BREAK RATE		The percent of time an aircraft will return from an assigned mission with one or more previously working system/subsystems on the Mission Essential Subsystem List (MESL) inoperable (code 3 including ground and air aborts).	AFP 57-9	DEFINING LOGISTICS REQUIREMENTS IN STATEMENT OF OPERATIONAL NEEDS
57A	BUILT IN TEST	BIT	An integral capability of the mission equipment which provides an on-board, automated test capability to detect, diagnose, or isolate system failures. The fault detection and, possibly, isolation capability is used for periodic or continuous monitoring of a system's operational health, and for observation and, possibly, diagnosis as a prelude to maintenance action.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
57A	BUILT IN TEST EQUIPMENT	BITE	Any device which is part of an equipment or system and is used for the express purpose of testing the equipment or system. BITE is an identifiable unit of the equipment or system (13098). BITE normally implies an addition to the hardware for the purpose of the test.	MIL-STD-1388-1A	LOGISTIC SUPPORT ANALYSIS
57B	BUILT IN TEST	BIT	A test approach using self-contained hardware and/or software which is an integral part of the unit under test (UUT) used to test all or part of the UUT.	MIL-STD-1388-1A	LOGISTIC SUPPORT ANALYSIS
57B	BUILT IN TEST EQUIPMENT	BITE	Any device permanently mounted in the prime equipment and used for the express purpose of testing the prime equipment, either independently or in association with external test equipment.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
57C	BUILT IN TEST EQUIPMENT	BITE	Monitoring and test equipment installed in selected systems, subsystems, or components for use in fault isolation.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
58A	BURN IN		The operation of an item to stabilize its characteristics.	MIL-HDBK-338	ELECTRONIC RELIABILITY DESIGN HANDBOOK
58B	BURN IN		The operation of items prior to their end application to stabilize their characteristics and identify early failures.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
58C	BURN IN		The operation of an item under stress to stabilize its characteristics, not to be confused with DE-BUGGING.	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
58D	BURN IN		The operation of an item to stabilize its characteristics. Basically, a reliability conditioning procedure which is a method of aging an item by operating it under specified environmental and test conditions in accordance with an established procedure in order to eliminate early failures and age or stabilize the item prior to final test and shipment. To determine and make required corrections in calibration standards or Precision Measuring Equipment (PME). It consists of	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
59	CALIBRATE			OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM



No	Term	Acronym	Definition	Document	Document Name
60A	CALIBRATION		the comparison of two instruments, one of which is a certified calibration standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the other instrument or PHE being compared with the certified calibration standard. The comparison of a measurement system or device of unverified accuracy to a measurement system or device of known and greater accuracy, to detect and correct any variation from required performance specifications of the measurement system or device. A comparison of a measuring device with a known standard. Not to be confused with ALIGNMENT. (see MWIL-C-45662).	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
60B	CALIBRATION			MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
60C	CALIBRATION		The process by which calibration installations compare a calibration standard or PHE with a standard of higher accuracy to ensure that the former is within specified limits throughout its entire range. The calibration process involves the use of approved instrument calibration procedures. The application of specifically known and accurately measured input to ensure that an item will produce specifically known output which is accurately measured or indicated. Calibration includes adjustment or recording of corrections, as appropriate. The designated period of time between calibration services. During this time the instrument should remain within specific performance levels, with a specified probability, under normal conditions of handling and use. The specific steps and operations to be followed by activity personnel in the performance of an instrument calibration.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
60D	CALIBRATION			WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
61	CALIBRATION INTERVAL, OR CYCLE			MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
62	CALIBRATION PROCEDURE			MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
63	CANCELLATION (TECHNICAL)		Elimination of a scheduled trip because of a known or suspected malfunction and/or defect. NOTE: Cancellation of any or all of the flight legs of multi-leg trip constitutes only one cancellation. Removal of serviceable parts from one aircraft for installation on another.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
64	CANNIBALIZE			OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
65	CANNOT DUPLICATE	CND	A fault indicated by BIT or other monitoring circuitry which cannot be confirmed at the next level of maintenance.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
66A	CAPABILITY		A measure of the ability of an item to achieve mission objectives given the conditions during the mission.	MIL-HDBK-338	ELECTRONIC RELIABILITY DESIGN HANDBOOK
66B	CAPABILITY		A measure of the ability of an item to achieve mission objectives given the conditions during the mission.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
67	CAUSE, BASIC		The cause of a defect, failure or damage which results in malfunctioning of an item when: 1. being operated and maintained in a manner for which it was designed, and 2. the cause was not externally induced.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
68	CAUTION SIGNAL		A signal which alerts the operator to an impending dangerous condition requiring attention, but not necessarily immediate action.	MIL-STD-1472C	HUMAN ENGINEERING DESIGN CRITERIA FOR MILITARY SYSTEMS, EQUIPMENT
69	CENTRAL INTEGRATED TEST SYSTEM		An on-line test system which processes, records, or displays at a central location, information gathered by test point datasonors at more than one remotely located equipment or system under test (also called system integrated test system).	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT



No	Term	Acronym	Definition	Document	Document Name
70	CHANCE FAILURE		Any failure whose occurrence is unpredictable in an absolute sense but which is predictable only in a probabilistic or statistical sense.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
71A	CHARGEABLE		Within the responsibility of a given organizational entity (applied to terms such as FAILURES, MAINTENANCE TIME etc.).	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
71B	CHARGEABLE		Within the responsibility of a given organizational entity, whether government or commercial.	ODD 5000.40(D)	RELIABILITY & MAINTAINABILITY (P&L)
72	CHARGEABLE FAILURE		A relevant, independent failure of equipment under test and any dependent failures caused thereby which are classified as one failure and used to determine contractual compliance with acceptance and rejection criteria.	MIL-STD-781D	RELIABILITY TESTING FOR ENGINEERING DEVELOPMENT, QUALIFICATION & PRODUCTION
73	CHECK		An examination to determine functional capability or physical integrity of an item.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
74A	CHECK, FUNCTIONAL		A quantitative check to determine if one or more functions of an item performs within specified limits.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
74B	CHECK, FUNCTIONAL		A quantitative check to determine if functions of an item perform within specified limits.	MIL-STD-1843 USAF	RELIABILITY-CENTERED MAINTENANCE FOR AIRCRAFT, ENGINES & EQUIPMENT
75	CHECK, SCHEDULED MAINTENANCE		Any of the maintenance opportunities which are prepackaged and are accomplished on a regular basis.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
76	CHECK, OPERATIONAL		A task to determine if an item is fulfilling its intended purpose. The task does not require quantitative tolerances.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
77A	CHECKOUT		Tests or observations of an item to determine its conditions or status.	MIL-HDBK-338	ELECTRONIC RELIABILITY DESIGN HANDBOOK
77B	CHECKOUT		A sequence of tests for determining whether or not a device or system is capable of, or is actually performing, a required operation or function.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
77C	CHECKOUT		Tests or observations of an item to determine its condition or status.	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
77D	CHECKOUT		Man/machine task to determine that the equipment is operating satisfactorily and ready for return to service.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
77E	CHECKOUT		A sequence of functional or operational tests, or calibration, to determine the condition and status of a weapon system or its elements.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
78A	CHECKOUT TIME		The time required to determine whether designated characteristics of a system are within specified values.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
78B	CHECKOUT TIME		The time required to determine that a system or equipment is in satisfactory operating condition.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
78C	CHECKOUT TIME		The time required to check out the equipment, to complete the maintenance action or to otherwise verify that a system or equipment is in satisfactorily operating condition.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
79	CLOSED LOOP FAILURE		A controlled system assuring that all failures and faults are reported, analyzed (engineering or laboratory analysis),	MIL-STD-2155	FAILURE REPORTING, ANALYSIS AND CORRECTIVE ACTION SYSTEM

No	Term	Acronym	Definition	Document	Document Name
	REPORTING SYSTEM				
80	COMMAND AND CONTROL SYSTEM		positive corrective actions are identified to prevent recurrence, and that the adequacy of implemented corrective actions is verified by test.	MIL-STD-1472C	HUMAN ENGINEERING DESIGN CRITERIA FOR MILITARY SYSTEMS, EQUIPMENT
81	EQUIPMENT COMPENSATING PROVISION		The main mission element equipment and related ground equipment used in collecting, transmitting, processing, and displaying information for command and control.	MIL-STD-1629A	PROCEDURES FOR PERFORMING A FAILURE MODE, EFFECTS AND CRITICALITY ANALYSIS
82	COMPLAINT		Actions that are available or can be taken by an operator to negate or mitigate the effect of a failure on a system.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
83	COMPLAINTS, PILOT		A known or suspected malfunction or defect found by flight crew or maintenance personnel which is documented and requires maintenance action.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
84	CONCEPT, FLEET LEADER		Suspected or known malfunctions or unsatisfactory conditions entered by the flight crew into the aircraft log and which require maintenance action.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
85A	CONCEPTUAL (CONCEPT) PHASE		Inspections on specific aircraft selected from those which have the highest operating age/usage in order to identify the first evidence of deterioration in their condition caused by fatigue damage.	MIL-STD-470A	MAINTAINABILITY PROGRAM FOR SYSTEMS & EQUIPMENT
85B	CONCEPTUAL (CONCEPT) PHASE		The identification and exploration of alternative solutions or solution concepts to satisfy a validated need.	MIL-STD-785B	RELIABILITY PROGRAMS FOR SYSTEM AND EQUIPMENT DEVELOPMENT AND PRODUCTION
86	CONCURRENT FAULT SIMULATION		The identification and exploration of alternative solutions or solution concepts to satisfy a validated need.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
87	CONDEMN		Fault list type simulations during which fault lists, associated with each primitive block, are propagated by using the same elemental evaluator routines used by the failure free simulation. The concurrency consists in the fact that for each primitive scheduled to be evaluated, its failure free behavior is computed first-hand then its fault list is computed.	MIL-STD-1843 USAF	RELIABILITY-CENTERED MAINTENANCE FOR AIRCRAFT, ENGINES & EQUIPMENT
88	CONFIDENCE TEST		The removal from service of an item which cannot be economically repaired or reworked.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
89A	CONFIGURATION		(1) A test performed to provide a high degree of certainty that the unit under test (UUT) is operating acceptably. (2) A check of the performance of all test system stimulus and measurement functions, to detect degradation with respect to system specifications, and to inform the system operator.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
89B	CONFIGURATION		The functional and physical characteristics of material as described in technical documents and achieved in a product.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
90A	CONFIGURATION CONTROL		The functional and/or physical characteristics of hardware/software as set forth in technical documentation and achieved in a product.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
90B	CONFIGURATION CONTROL		The systematic evaluation, coordination, approval or disapproval, and implementation of all approved changes in the configuration of a configuration item, after formal establishment of its configuration identification.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
91	CONSTANT FAILURE		The systematic evaluation, coordination, approval or disapproval of proposed changes, and the implementation of all approved changes to the configuration of a configuration item, after formal establishment of its configuration identification.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK



No	Term	Acronym	Definition	Document	Document Name
	PERIOD		approximately uniform rate.		
92	CONSUMER'S RELIABILITY RISK (P)		The risk, or probability, that a product will be accepted by a reliability test when it should properly be rejected.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
93A	CONSUMER'S RISK (P)		The consumer's risk, β , is the probability of accepting lots with mean life Θ_0 . For the procedures of section 2C, part III, the consumer's risk may also be defined as the probability of accepting lots with unacceptable proportion of lot failing before specified time, P_1 .	MIL-HDBK-108	QUALITY CONTROL AND RELIABILITY SAMPLING PROCEDURES AND TABLES
93B	CONSUMER'S RISK (P)		The probability of accepting equipment with a true mean time between failures (MTBF) equal to the lower test MTBF (Θ_0). The probability of accepting equipment with a true MTBF less than the lower test MTBF (Θ_0) will be less than (β). The restriction of damage within a specified physical envelope following failure of an item.	MIL-STD-781D	RELIABILITY TESTING FOR ENGINEERING DEVELOPMENT, QUALIFICATION & PRODUCTION
94	CONTAINMENT			WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
95	CONTAMINANTS		Particles of foreign material which may or may not be visible to the unaided eye.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
96	CONTRACT MAINTENANCE		Maintenance of material by commercial organizations (including prime contractors) on a one-time or continuing basis, without distinction as to the level of maintenance accomplished.	MIL-M-2436SASHIPS	MAINTENANCE ENGINEERING ANALYSIS
97	CONTROL POINT		A design attribute to enhance testability by enabling, disabling, blocking, resetting and so forth, functions within a system to effect efficient test control.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
98	CONTROLLABILITY		An attribute of equipment design which defines or describes the extent to which signals of interest may be controlled.	MIL-STD-1309C	DEFINITIONS OF TERMS FOR TEST MEASUREMENT AND DIAGNOSTIC EQUIPMENT
99A	CONTROLLED TEST		A test designed to control or balance out the effects of environmental differences and to minimize the chance of bias in the selection, treatment, and analysis of test samples.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
99B	CONTROLLED TEST		A test designed to control or balance out the effects of environmental differences. The test minimizes the chance of bias in the selection, treatment, and analysis of test samples.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
100A	CORRECTIVE ACTION		A documented design, process, procedure, or materials change implemented and validated to correct the cause of failure or design deficiency.	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
100B	CORRECTIVE ACTION		A documented design, process, procedure, or materials change implemented and validated to correct the cause of failure or design deficiency.	MIL-STD-1629A	PROCEDURE FOR PERFORMING A FAILURE MODE, EFFECTS AND CRITICALITY ANAL
101	CORRECTIVE ACTION		The date or item serial number when corrective action will be or has been incorporated into the item.	MIL-STD-2155	FAILURE REPORTING, ANALYSIS AND CORRECTIVE ACTION SYSTEM
102	EFFECTIVITY CORRECTIVE DOWNTIME RATE	MDTCT	Corrective maintenance downtime per hour of operation.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
103	COST OF OWNERSHIP		The sum of acquisition plus the operation and support costs incurred during the period of ownership of the item. Acquisition includes one-time or non-recurring costs, such as purchase, initial provisioning, special tools and equipment, and disposal costs, if any. Operation and support costs include both direct and indirect operating costs.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
104	COST, DIRECT	DNC	Those maintenance labor and material costs directly expended in	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY



No	Term	Acronym	Definition	Document	Document Name
	MAINTENANCE		performing maintenance on an item or aircraft. NOTE: Does not include those indirect maintenance labor and material expenditures which contribute to the overall maintenance operations, line station servicing, administration, record keeping, supervision, tooling, test equipment, facilities, etc. Those costs incurred as a result of operating aircraft, including such costs as flight crew, fuel and oil, insurance, maintenance, landing fees and navigation charges. Those maintenance labor and material costs not considered to be direct maintenance costs, but which contribute to the overall maintenance program costs through overhead operations, administration, record keeping, supervision, tooling test equipment, facilities, etc.		GLOSSARY
105	COST, DIRECT OPERATING	DOC		WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
106	COST, INDIRECT MAINTENANCE	IMC		WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
107	COST, INDIRECT OPERATING	IOC		WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
108	CRITICAL DEFECT		A critical defect is a defect that judgment and experience indicate is likely to result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product; or a defect that judgment and experience indicate is likely to prevent performance of the tactical function of a major end item such as an aircraft or missile.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK
109	CRITICAL ITEM		Any item:(1) The failure of which would critically affect system safety, cause the system to become unavailable or unable to achieve mission objectives, or cause extensive/expensive maintenance and repair. NOTE: High value are reliability critical for design to life cycle cost. (2) The failure of which would prevent the acquisition of data to evaluate system safety, availability, mission success, or need for maintenance/repair. (3) Which has stringent performance requirement(s) in its intended application relative to state-of-the-art techniques for the item. (4) The sole failure of which causes system failure. (5) Which is stressed in excess of specified derating criteria. (6) Which has a known operating life, shelf life, or environmental exposure such as vibration, thermal, propellant; or a limitation which warrants controlled surveillance under specified conditions. (7) Which is known to require special handling, transportation, storage, or test precautions. (8) Which is difficult to procure or manufacture relative to state-of-the-art techniques. (9) Which has exhibited an unsatisfactory operating history. (10) Which does not have sufficient history of its own, or similarity to other A relative measure of the consequences of a failure mode and its frequency of occurrences.	00-40(PT1)(ARMP1)	R&M P1: MANAGEMENT RESPONSIBILITIES & REQUIREMENTS FOR PROGRAMMES & PLANS
110A	CRITICALITY			MIL-STD-1629A	PROCEDURES FOR PERFORMING A FAILURE MODE, EFFECTS AND CRITICALITY ANALYSIS
110B	CRITICALITY		A relative measure of the consequence of a failure mode and its frequency of occurrences.	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
110C	CRITICALITY		A measure of severity of a failure in relation to mission performance or hazards to material or personnel. Criticality classifications in accordance with MIL-STD-882 are: Class IV, Catastrophic - any single failure which is potentially fatal or	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK



Ho	Term	Acronym	Definition	Document	Document Name
			probably will result in loss of aircraft, missile, etc. Class III, Critical - any single failure which potentially results in loss of the mission or will potentially results in loss of the mission or will result in serious hazard or injury to personnel. Class II, Noncritical - any failure which degrades performance or results in degraded operation (such as loss of automatic functions) requiring special operating techniques or alternative modes of operation, which could be tolerated throughout a mission but should be corrected upon completion of the mission. Class I, Minor - any "nuisance" failure not serious enough to be classified Class II, III, or IV, but which requires corrective action. A measure of the severity of a failure in relation to mission performance and hazards to material or personnel.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
1100	CRITICALITY				
111	CYCLE, AIRCRAFT OPERATING		A completed take-off and landing sequence. NOTE: Touch and go landings are counted as Aircraft Operating Cycles.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
112	CYCLE, ENGINE OPERATING		A completed engine thermal cycle including the application of takeoff power.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
113	CYCLE, SUPERSONIC		A completed supersonic flight sequence comprising acceleration through Mach 1 and deceleration to subsonic flight. NOTE: One aircraft operating cycle can include more than one supersonic cycle.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
114	DAMAGE TOLERANCE		The ability of the airframe and engine structure to resist failure due to the presence of flaws, cracks, or other damage for a specific period of unrepaid usage.	MIL-STD-1843 USAF	RELIABILITY-CENTERED MAINTENANCE FOR AIRCRAFT, ENGINES & EQUIPMENT
115	DAMAGE TOLERANCE CRITICAL PART		A part whose structural failure could cause loss of aircraft. This implies that the safety-of-flight structure that is sized by damage tolerance requirements and meets the criteria for critical part selection is included in the damage tolerance critical parts list.	MIL-STD-1843 USAF	RELIABILITY-CENTERED MAINTENANCE FOR AIRCRAFT, ENGINES & EQUIPMENT
116	DAMAGE TOLERANT		A qualification standard for aircraft structure. An item is judged to be damage tolerant if it can sustain damage and the remaining structure can withstand reasonable loads without structural failure or excessive structural deformation until the damage is detected.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
117	DAMAGE, ACCIDENTAL		Physical deterioration of an item caused by contact or impact with an object or influence which may/may not be a part of the aircraft, or by improper manufacturing or maintenance practices.	MIL-STD-1843 USAF	RELIABILITY CENTERED MAINTENANCE FOR AIRCRAFT, ENGINES & EQUIPMENT
118	DAMAGE, ACCIDENTAL		Physical deterioration of an item caused by contact or impact with an object or influence which is not a part of the aircraft, or by improper manufacturing or maintenance practices.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
119	DAMAGE, ENVIRONMENTAL		Physical deterioration of an item's strength or resistance to failure as a result of chemical interaction with its climate or environment.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
120	DAMAGE, INGESTION		Internal damage to an engine caused by an outside object such OBJECT (FOD) as birds, stones, or other foreign objects.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
121A	DEBUGGING		A process to detect and remedy inadequacies, preferably prior to operational use. During this period, defective parts and workmanship errors are identified and corrected under test conditions that closely simulate field operational stresses.	NAVAIR 01-1A-32	RELIABILITY ENGINEERING HANDBOOK



Item No	Term	Acronym	Definition	Document	Document Name
121B	DEBUGGING		The debugging process in not, however, intended to detect inherent weaknesses in system design. These should have been eliminated in the preproduction stages by appropriate techniques. A process to detect and remedy inadequacies, preferably prior to operational use.	MIL-HDBK-338	ELECTRONIC RELIABILITY DESIGN HANDBOOK
121C	DEBUGGING		A process to detect and remedy inadequacies. Not to be confused with terms such as BURN-IN, FAULT ISOLATION or SCREENING.	MIL-STD-721C	DEFINITIONS OF TERMS FOR RELIABILITY AND MAINTAINABILITY
121D	DEBUGGING		A process of "shakedown operation" of a finished equipment to identify and correct design deficiencies, or workmanship errors, defective parts, etc., which may have escaped the quality control inspection procedures. Debugging is usually performed by the contractor prior to submission to Government acceptance test and is not normally part of the acceptance test. The debugging process is also useful in development for the detection and correction of inherent weakness in system design prior to submission for maintainability demonstration and design approval.	NAVAIR 01-1A-33	MAINTAINABILITY ENGINEERING HANDBOOK
121E	DEBUGGING		A process to detect and remedy inadequacies preferably prior to operational use.	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
122A	DEFECT		Any non-conformance of an item with specified requirements.	00-40(PT1)(ARMP1)	REM P1: MANAGEMENT RESPONSIBILITIES & REQUIREMENTS FOR PROGRAMMES & PLANS
122B	DEFECT		The causative element that results in a failure.	MIL-STD-2164	ENVIRONMENTAL STRESS SCREENING PROCESS FOR ELECTRONIC EQUIPMENT
122C	DEFECT		Any nonconformance of the unit or product with specified requirements. Defects will normally be grouped into one or more of the following classes but may be grouped into other classes or subclasses with these classes: a. DEFECT, CRITICAL - A defect that constitutes a hazardous or unsafe condition, or as determined by experience and judgement could conceivably become so, relative to its deleterious effect on the prime intended function, or mission capability of the aircraft or its operating personnel. b. DEFECT, MAJOR - A defect, other than critical, that could result in failure or materially reduce the usability of the unit or part for its intended purpose. c. DEFECT, MINOR - A defect that does not materially reduce the usability of the unit or part for its intended purpose, or is a departure from standards but which has no significant bearing on the effective use or operation of the unit or part. Any confirmed abnormal condition of an item whether or not this could eventually result in a failure.	OPNAVINST 4790.2D	THE NAVAL AVIATION MAINTENANCE PROGRAM
122D	DEFECT			WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY
123	DEFECT DENSITY		Average number of latent defects per item. Symbols used: DIN, DOUT, OR and DO for incoming, outgoing, remaining and observed defect density, respectively.	DOO-HDBK-344	ENVIRONMENTAL STRESS SCREENING OF ELECTRONIC EQUIPMENT
124	DEFECT FREE		That portion of the ESS sequence which must be completed without the disclosure of a defect (failure).	MIL-STD-2164	ENVIRONMENTAL STRESS SCREENING PROCESS FOR ELECTRONIC EQUIPMENT
125	DEFERABILITY		The possibility that an item can remain inoperable and/or defective within the terms of the Minimum Equipment List (MEL)	WATOG	WORLD AIRLINES TECHNICAL OPERATIONS GLOSSARY

