SUBJECT INDEX: MIL-HDBK-338 ELECTRONIC RELIABILITY DESIGN HANDBOOK
The information and data contained herein have been compiled from government and nongovernment technical reports and from material supplied by various manufacturers and are intended to be used for reference purposes. Neither the United States Government nor IIT Research Institute warrant the accuracy of this information and data. The user is further cautioned that the data contained herein may not be used in lieu of other contractually cited references and specifications.

Publication of this information is not an expression of the opinion of The United States Government or of IIT Research Institute as to the quality or durability of any product mentioned herein and any use for advertising or promotional purposes of this information in conjunction with the name of The United States Government or IIT Research Institute without written permission is expressly prohibited.
SUBJECT INDEX TO
MIL-HDBK-338 ELECTRONIC RELIABILITY DESIGN HANDBOOK
1989

Prepared by:
Reliability Analysis Center
PO Box 4700
Rome, NY 13440-5700

Under contract to:
Rome Air Development Center
Griffiss AFB, NY 13441-5000

Reliability Analysis Center
A DoD Information Analysis Center

Approved for Public Release, Distribution Unlimited
The Reliability Analysis Center (RAC) is a Department of Defense Information Analysis Center sponsored by the Defense Logistics Agency, managed by the Rome Air Development Center (RADC), and operated at RADC by IIT Research Institute (IITRI). RAC is chartered to collect, analyze and disseminate reliability information pertaining to electronic systems and parts used therein. The present scope includes integrated circuits, hybrids, discrete semiconductors, microwave devices, optoelectronics and non-electronic parts employed in military, space and commercial applications.

Data is collected on a continuous basis from a broad range of sources, including testing laboratories, device and equipment manufacturers, government laboratories and equipment users (government and non-government). Automatic distribution lists, voluntary data submittals and field failure reporting systems supplement an intensive data solicitation program.

Reliability data and analysis documents covering most of the device types mentioned above are available from the RAC. Also, RAC provides reliability consulting, training, technical and bibliographic inquiry services which are discussed at the end of this document.

REQUEST FOR TECHNICAL ASSISTANCE AND INFORMATION ON AVAILABLE RAC SERVICES AND PUBLICATIONS MAY BE DIRECTED TO:

Reliability Analysis Center
P.O. Box 4700
Rome, NY 13440-8200

Technical Inquiries (315) 337-9933
Non-Technical Inquiries: (315) 330-4151
Autovon: 587-4151
TeleFax: (315) 337-9932

ALL OTHER REQUESTS SHOULD BE DIRECTED TO:

Rome Air Development Center
RBE/Preston R. MacDiarmid
Griffiss AFB, NY 13441-5700

Telephone: (315) 330-4920
Autovon: 587-4920

© 1988, IIT Research Institute
All Rights Reserved
Index to MIL-HDBK-338

MIL-HDBK-338, entitled "Electronic Reliability Design Handbook" is a very comprehensive handbook for use by design engineers, reliability engineers and managers to design, produce and deploy reliable and maintainable electronic systems. The handbook itself contains no subject index and can therefore be very awkward to use. The intent of this subject index is to provide a means by which specific topics and subjects can be located within the handbook. Next to each index term is the volume and page that the topic appears on.

(Price $25.00). DTIC will provide microfiche copies at standard microfiche price.

7. COSATI CODES

18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)

Index

Reliability Design

(Continued)
MIL-HDBK-338, "Electronic Reliability Design Handbook" is a comprehensive 1500 page handbook for use by design engineers, reliability engineers and managers to specify, design, produce, acquire and deploy reliable and maintainable electronic systems. The handbook itself contains no subject index and is therefore very awkward to use.

The intent of this subject index is to provide a means by which specific topics can be located within Volume I (release IA) and Volume II of the handbook. Next to each index term is the volume and page number(s) on which the topic appears.
ACCELERATION

EFFECTS ON SWITCHES II,5-192
ACCEPT-REJECT CRITERIA I,11-55
ACCEPTABLE QUALITY LEVEL (AQL) II,4-16
ACCEPTANCE TEST, SOFTWARE I,12-73
ACCESSIBILITY II,3-1
ACHIEVED AVAILABILITY I,5-65
ACQUISITION COSTS I,4-2
ACQUISITION POLICIES I,10-97
ACTIVE REDUNDANCY I,7-49
ACTIVE TIME I,3-6, I,3-9
ADMINISTRATIVE DOWN TIME I,3-10
ADMINISTRATIVE TIME I,3-6, I,3-10
AF REG.800-14 I,10-101
AFMAP I,7-119
AGREE II,1-4
AGREE APPORTIONMENT TECHNIQUE I,6-14
AIR FORCE LOGISTICS SUPPORT COST MODEL I,10-111
AIR IONIZERS II,6-20
ALERT TIME I,3-6, I,3-10
ALLOCATIONS, RELIABILITY WITHOUT REPAIR I,6-18
ALPOS I,10-129
AMD 2900 II,5-67
ANALOGOUS COST METHOD, LIFE CYCLE COST I,10-106
ANALYTIC METHODOLOGY FOR SYSTEM EVALUATION D CONTROL (AMSEC) I,10-130
APPORTIONMENT/ALLOCATION (SEE R&M APPORTIONMENT/ALLOCATION)
ARC SUPPRESSION TECHNIQUES FOR RELAYS II,5-180
ARINC APPORTIONMENT TECHNIQUE I,6-17
AROEY, RELIABILITY GROWTH MODELS I,8B-10
ARRHENIUS MODEL II,4-17
ASSESSMENTS BASED ON PREDICTION AND TESTING I,8-102
ATTRIBUTES SAMPLING, MIL-STD-105 I,8A-10
AVAILABILITY I,3-3, I,3-8, I,4-13, I,10-1, I,10-12, I,10-14, I,10-15, I,10-55, I,10-58,
I,10-69, II,3-1
ALLOCATION I,10-69
ACHIEVED I,5-65
AVERAGE AND POINTWISE I,10-24
COSTING I,10-116
FAILURE RATE AND REPAIR RATE I,10-61
INSTANTANEOUS I,5-63
INTRINSIC I,3-5, I,3-8, I,5-65
MISSION I,5-63
MTBF AND MTR I,10-61
NOMOGRAPH I,10-62, I,12-44
SINGLE UNIT I,5-72, I,10-21
STEADY STATE I,5-64
SURFACE I,10-120
AVAILABILITY BASED ON EXPONENTIAL FAILURE AND REPAIR DISTRIBUTIONS I,10-32
AVAILABILITY COMPUTER PROGRAMS I,10-57
AVAILABILITY DEMONSTRATION I,10-82
FIXED SAMPLE SIZE PLANS I,10-82
FIXED-TIME SAMPLE PLANS I,10-85
AVAILABILITY MODELING (MARKOV PROCESS) I,5-65
AVAILABILITY MODELS I,10-19
AVERAGE OR INTERVAL AVAILABILITY I,10-23
R&M PARAMETERS NOT DEFINED IN TERMS OF TIME I,10-38
REDUNDANT SYSTEMS I,10-28
SERIES SYSTEM WITH REPAIRABLE/REPLACEABLE UNITS I,10-25
SINGLE UNIT SYSTEM (POINT AVAILABILITY) I,10-19
AVAILABILITY THEORY I,5-63
AVAILABILITY MODELING (MARKOV PROCESS APPROACH) I,5-65
BASIC CONCEPTS I,5-63
AVAILABILITY WITH REPAIR I,5-71
AVALANCHE DEGRADATION (THERMAL SECONDARY BREAKDOWN) II,6-14
AVERAGE AND POINTWISE AVAILABILITY I,10-24
AVIONICS FIELD RELIABILITY VERSUS UNIT PRODUCTION COST I,4-7
AVIONICS LABORATORY PREDICTIVE OPERATIONS AND SUPPORT COST MODEL I,10-129

B

BALANCED DESIGN APPROACH I,12-8
BARLOW AND SCHEUER, RELIABILITY GROWTH MODELS I,8B-2
BARLOW, PROSCHAN AND SCHEUER, RELIABILITY GROWTH MODELS I,8B-3
BASE FAILURE RATES FOR GROUP I TRANSISTORS (SILICON, NPN) II,6-28
BASIC RELIABILITY AND MAINTAINABILITY FUNCTIONS I,5-39
BASIC RELIABILITY CONCEPTS I,5-6
BASIC STEPS IN THE PDR CYCLE I,7-152, I,7-156
BASIC SYSTEM TERMS I,3-8
BASIC TOPOGRAPHS I,7-141
BASIC TRANSISTOR CIRCUIT I,7-63
BATHTUB (LIFE CHARACTERISTIC) CURVE II,4-4, II,7-1
BAYES
SEQUENTIAL TESTS I,8A-45
SIMPLE POSTERIOR DISTRIBUTION I,5-35
SIMPLE PRIOR DISTRIBUTION I,5-34
THEOREM I,5-32
TREE DIAGRAM EXAMPLE I,5-36
BAYESIAN INTERACTIVE GRAPHICS RELIABILITY ASSESSMENT PROCEDURE (BIGRAP) I,6-56
BAYESIAN STATISTICS (CONTINUOUS DISTRIBUTION) I,5-36
BAYESIAN STATISTICS (DISCRETE DISTRIBUTION) I,5-34
BAYESIAN STATISTICS I,5-32
BIGRAP I,6-56
BIMODAL REDUNDANCY I,7-61, I,7A-27
BIMODAL REDUNDANCY -- QUAD CONFIGURATION I,7-61
BINOMIAL DISTRIBUTION I,5-17
BINOMIAL MODEL I,9-21
BINOMIAL TEST I,8A-14
BINOMIAL DISTRIBUTION I,8-45
BIPOLAR TRANSISTOR IS CURRENT-DRIVEN, MOSFET IS VOLTAGE-DRIVEN II,5-84
BIT-SLICE PROCESSORS II,5-64
BLOCK DIAGRAM OF A SERIES SYSTEM I,10-67
BLOCK DIAGRAM, RELIABILITY I,6-30, I,6-31
BOARD LAYOUT OF ICS II,5-24
BOOLEAN REDUCTION OF LOGIC ELEMENTS I,7-17
BREAKDOWN VOLTAGE I,7-37
BROWN & LIPOW MODEL I,9-21
BUBBLE MEMORIES II,5-63
BUDGETED GROWTH FOR A NON-HOMOGENEOUS PROGRAM I,8-106
BULK BREAKDOWN II,6-16
BURN-IN II,5-22, I,11-22, II,3-1
CABAPILITY II,5-1
CABLES II,5-208
APPLICATION II,5-209
COAXIAL (RF) CABLE II,5-209
CONDUCTOR SIZE II,5-209
DEFINITIONS II,5-210
INTERCONNECTION CABLE AND WIRE II,5-209
INTRODUCTION II,5-208
MULTICONDUCTOR CABLE II,5-209
PART SELECTION AND CONTROL II,5-208
POLYVINYL CHLORIDE INSULATION II,5-208
SELECTION AND APPLICATION CONSIDERATIONS II,5-208
SELECTION CRITERIA II,5-208
SOLID OR STRANDED CONDUCTOR II,5-209
CAPACITORS II,5-208
CAPACITORS II,5-144
ALTITUDE EFFECTS II,5-160
ALUMINUM ELECTROLYTIC CAPACITORS II,5-145
ALUMINUM ELECTROLYTIC, GENERAL APPLICATION CONSIDERATIONS II,5-156
CAPACITOR SELECTION II,5-146
CERAMIC II,5-144
CERAMIC DIELECTRIC, GENERAL APPLICATION CONSIDERATIONS II,5-154
DERATING II,5-167
DERATING FACTORS II,5-166
ELECTROLYTIC II,5-145
ELECTROLYTIC, GENERAL APPLICATION CONSIDERATIONS II,5-155
FAILURE RATES II,A-2
GENERAL APPLICATION CONSIDERATIONS II,5-153
GLASS II,5-144
INTRODUCTION II,5-144
MICA DIELECTRIC, GENERAL APPLICATION CONSIDERATIONS II,5-154
MIL-C-10950, SPECIAL CONSIDERATIONS II,5-158
MIL-C-11015, SPECIAL CONSIDERATIONS II,5-158
MIL-C-14409, SPECIAL CONSIDERATIONS II,5-158
MIL-C-19978, SPECIAL CONSIDERATIONS II,5-159
MIL-C-20, SPECIAL CONSIDERATIONS II,5-157
MIL-C-23183, SPECIAL CONSIDERATIONS II,5-160
MIL-C-23269, SPECIAL CONSIDERATIONS II,5-161
MIL-C-39001, SPECIAL CONSIDERATIONS II,5-161
MIL-C-39003, SPECIAL CONSIDERATIONS II,5-161
MIL-C-39006, SPECIAL CONSIDERATIONS II,5-162
MIL-C-39014, SPECIAL CONSIDERATIONS II,5-164
MIL-C-39018, SPECIAL CONSIDERATIONS II,5-164
MIL-C-39022, SPECIAL CONSIDERATIONS II,5-165
MIL-C-55365, SPECIAL CONSIDERATIONS II,5-165
MIL-C-55514, SPECIAL CONSIDERATIONS II,5-166
MIL-C-55681, SPECIAL CONSIDERATIONS II,5-166
MIL-C-81, SPECIAL CONSIDERATIONS II,5-158
NONSOLID TANTALUM II,5-145
OPERATING FREQUENCY LIMITS II,5-153
PAPER/PLASTIC/PAPER-PLASTIC DIELECTRIC,
GENERAL APPLICATION CONSIDERATIONS II,5-156
PARAMETER CHANGE WITH TIME (TYPICAL) I,7-27
PART SELECTION AND CONTROL II,5-144
SELECTION AND USAGE GUIDE FOR CAPACITORS II,5-147
SELECTION CRITERIA II,5-146
SOLID TANTALUM II,5-144
STANDARD CAPACITORS II, 5-145
SWITCHED DATA APPLICATIONS II, 5-30
TANTALUM, GENERAL APPLICATION CONSIDERATIONS II, 5-155
TANTALUM, RELIABILITY CONSIDERATIONS II, 5-156
USAGE FACTORS II, 5-146
CATCHING DIODE REDUCES TRANSIENT STRESS I, 7-38
CATHODE RAY TUBE II, B-1
CAUSE-CONSEQUENCE CHARTS I, 7-94
CDR I, 7-155
CFR I, 5-23
CHANCE FAILURES I, 5-23
CHART FOR 95% CONFIDENCE LIMITS I, 8-46
CHECKOUT II, 3-1
CHEMICAL EFFECTS, ELECTRICAL CONNECTORS II, 5-203
CHI-SQUARE I, 8-59
CHI-SQUARE (2) TEST I, 8-54
CHI-SQUARE DISTRIBUTION I, 8-40
CHIEF PROGRAMMER TEAM ORGANIZATIONAL STRUCTURE I, 9-40
CHIP CARRIERS II, 5-17, II, 5-23
CIRCUIT ANALYSIS TECHNIQUES I, 7-34
CIRCUIT DESIGN WITH DISCRETE COMPONENTS I, 7-37
CLASS B DEVICES, SCREENING TEST COSTS II, 7-26
CLASS JANS ORDER OF PROCEDURE DIAGRAM II, 7-9
CLIMATIC EXTREMES FOR MILITARY EQUIPMENT I, 7B-1
CLOCK SPIKE PROBLEMS IN P-CHANNEL SHIFT REGISTERS I, 7-36
CLOSED LOOP FAILURE REPORTING AND CORRECTIVE ACTION SYSTEM I, 8-3, II, 9-3
CLUE APPLICATION, FTA I, 7-140
CMOS HANDLING PRECAUTIONS I, 7-23, II, 5-98
CMOS PROTECTION I, 7-23, II, 5-98
CODED QUALITY INSPECTION LEVELS I, 11-82
COLDWALL-COOLED CARD MOUNTING II, 6-44
COLLECTOR SUPPLY VOLTAGE I, 7-39
COMBINATORIAL MODELS I, 9-16
COMBINED CONFIGURATION NETWORK MODELING I, 5-28
COMPARISON OF CUMULATIVE LIFE CYCLE COSTS I, 8-91
COMPARISON OF DESIGN ANALYSIS METHODS I, 7-145
COMPARISON OF RELIABILITY GROWTH/RELIABILITY DEMONSTRATION TESTING I, 8-109
COMPARISON OF SCREENING METHODS II, 7-22
COMPARISON OF TEST METHODS II, 7-31
COMPARISON OF TEST TYPE WITH HIT RATE II, 7-32
COMPARISON OF TWO SOFTWARE SYSTEMS BY "STRUCTUREDNESS" I, 9-6
COMPARISON OF VARIABILITY ANALYSIS METHODS I, 7-30
COMPUTER AIDED DESIGN I, 7-33
ASTAP I, 7-33
BELAC I, 7-33
CIRC I, 7-33
CIRCUS 2 I, 7-33
ECAP I, 7-33
MARATHA I, 7-33
SCEPTRE I, 7-33
SYSCAP I, 7-33
COMPUTER PROGRAM LIFE CYCLE (FROM AF REG. 800-14) I, 10-101
COMPUTER PROGRAMS
AVAILABILITY - RELIABILITY ANALYSIS I, 10-55
COMPUTER SOFTWARE MANAGEMENT I, 10-56
FAULT TREE ANALYSIS I, 7-132
GENERAL EFFECTIVENESS METHODOLOGY (GEM) I, 10-54
LCC I, 10-127
DEPOT MAINTENANCE REQUIREMENT AREAS  I,11-87

DERATING  I,7-4, II,3-1
GRAPH, TYPICAL DERATING  II,6-29
CAPACITORS  II,5-166
CONNECTORS AT ALTITUDE  II,5-205
CONNECTORS AT SEA LEVEL  II,5-205
CRITERIA FOR MAGNETIC DEVICES  II,5-173
DIGITAL MICROCIRCUITS  II,5-73
DIODES  II,5-93
DISCRETE SEMICONDUCTOR DEVICES  II,5-94
ELECTRICAL CONNECTORS  II,5-205
HYBRID DEVICES  II,5-73
LINEAR MICROCIRCUITS  II,5-72
MAGNETIC DEVICES  II,5-173
MECHANICAL AND STRUCTURAL COMPONENTS  I,7-8
MICROCIRCUITS  II,5-73
RELAYS  II,-178
RELAYS  II,5-178
SWITCHES  II,5-193
TRANSISTORS  II,5-94
TRANSISTORS  II,5-95
WIRE SIZE USED IN MAGNETIC DEVICES  II,5-174

DERATING CURVE
1N3263 POWER DIODE  II,6-31
MIL-R-11804 RESISTOR  II,5-121
MIL-R-12934 RESISTOR  II,5-122
MIL-R-18546 RESISTOR  II,5-123
MIL-R-19 RESISTOR  II,5-117
MIL-R-22 RESISTOR  II,5-118
MIL-R-22097 RESISTOR  II,5-124
MIL-R-26 RESISTOR  II,5-119
MIL-R-39008 RESISTOR  II,5-131
MIL-R-39009 RESISTOR  II,5-132
MIL-R-39015 RESISTOR  II,5-133
MIL-R-39017 RESISTOR  II,5-135
MIL-R-39023 RESISTOR  II,5-136
MIL-R-39035 RESISTOR  II,5-138
MIL-R-55182 RESISTOR  II,5-139
MIL-R-55342 RESISTOR  II,5-140
MIL-R-83401 RESISTOR  II,5-13
MIL-R-94 RESISTOR  II,5-120
MIL-T-23648 THERMISTOR  II,5-143

DERATING OF MECHANICAL AND STRUCTURAL COMPONENTS  I,7-8

DERIVATION OF CONTROL LIMITS FOR INTERFACING PARAMETERS  I,11-61

DESIGN
ADEQUACY  I,3-3, I,3-9
CONSIDERATIONS  II,5-1
ERRORS, MINIMIZING  I,7-33
GUIDELINES  I,7-1
GUIDELINES TO REDUCE COMPONENT OVER-HEATING  II,6-8
LIMITATIONS  I,7-37
REDUNDANCY CONSIDERATIONS  I,7-49
RELIABILITY TASKS FOR THE CDR  I,7-155
RELIABILITY TASKS FOR THE PDR  I,7-153
SIMPLIFICATION  I,7-13
SIMPLIFICATION  I,7-13
VERIFICATION  I,7-148
TRANSISTOR DERATINGS II,5-94
TRANSISTOR MAXIMUM POWER DISSIPATION II,5-81
TRANSISTOR MAXIMUM VOLTAGES II,5-81
VARACTORS II,5-80
DISSIPATION PER UNIT AREA FOR COMMON COOLING TECHNIQUES II,6-38
DISTRIBUTION GRAPHICAL EVALUATION I,8-17
DISTRIBUTION OF MAINTENANCE TASK STEPS I,11-61
DOD-C-85045 CABLES, FIBER OPTICS, GENERAL SPECIFICATIONS II,5-212
DOD DOLLAR CONVERSION INDICES I,10-117
DOD-HDBK-263 ELECTROSTATIC DISCHARGE CONTROL HANDBOOK I,7-18
DOD-STD-1678 FIBER OPTICS TEST METHODS II,5-212
DOD-STD-1686 ELECTROSTATIC DISCHARGE CONTROL PROGRAM I,7-18
DOWNTIME I,3-6
DRAIN-SOURCE BLOCKING CHARACTERISTIC II,5-85
DUAL-IN-LINE PACKAGE II,5-17
DUANE CHART I,8-73
DUANE POSTULATE I,8-71
DUANE, RELIABILITY GROWTH MODELS I,8B-6
DUPLICATE PARALLEL REDUNDANCY (OPERATIVE CASE) I,6A-10
DYNAMIC PROGRAMMING
APPORTIONMENT FORMULATION I,6A-6
APPROACH I,6-24
FORMULATION EXAMPLE I,6A-8
REPRESENTATION FOR N-STAGE I,6A-2

ECAP (ELECTRONIC CIRCUIT ANALYSIS PROGRAM) I,7-119
EFFECTIVENESS OF ENVIRONMENTAL SCREENS I,11-30
EIA STANDARD RS-455 II,5-212, II,5-213
ELECTRICAL CHARACTERISTIC TESTS (300 CLASS) II,1-26
ELECTRICAL CONNECTORS II,5-194
ALTITUDE DERATING II,5-204
CHEMICAL EFFECTS II,5-203
CYCLING EFFECTS II,5-203
DERATING II,5-204
ELECTRICAL EFFECTS II,5-201
ENVIRONMENTAL CONSIDERATIONS II,5-201
HIGH TEMPERATURE EFFECTS II,5-201
INSERT TEMPERATURE II,5-204
LOW TEMPERATURE EFFECTS II,5-203
MAXIMUM OPERATING TEMPERATURES II,5-201
MECHANICAL CONSIDERATIONS II,5-20
MECHANICAL EFFECTS II,5-201
OPERATION IN PARALLEL II,5-204
PIN CURRENT II,5-204
POTTING II,5-204
PROTECTIVE MEASURES II,5-204
SELECTION AND CONTROL II,5-194
THERMAL EFFECTS II,5-201
VOLTAGE BETWEEN CONTACTS II,5-204
ELECTRICAL SYMBOLS FOR BIPOLAR AND MOSFET II,5-83
ELECTRO OPTICS, REFERENCES II,5-214
ELECTRO OPTICS/FIBER OPTICS II,5-211
INTRODUCTION II,5-211
SPECIFICATIONS AND STANDARDS II,5-212
ELECTRO-OPTICS, SPECIFICATIONS AND STANDARDS RELEVANT TO MILITARY APPLICATIONS II,5-212
ELECTROMAGNETIC RADIATION PROTECTION  I,7-83
ELECTRON TUBES II,5-206
   FAILURE MODES AND MECHANISMS II,5-206
   FAILURE RATES II,5-206
   INTRODUCTION II,5-206
   SELECTION CRITERIA II,5-206
ELECTRONIC EQUIPMENT RELIABILITY CLASSIFICATIONS  I,6-34
ELECTRONIC RELIABILITY DESIGN HANDBOOK
   APPLICATION I,1-1
   GENERAL STATEMENTS I,1-1
   INTRODUCTION AND BACKGROUND I,4-1
   ORGANIZATION I,1-1
   PURPOSE I,1-1
   SCOPE I,1-1
ELECTRONICS-X PROJECT I,4-3
ELECTROSTATIC DISCHARGE (ESD) I-6-148, I,7-18
ELECTROSTATIC DETECTORS II,6-20
ENVIRONMENT AND SYSTEM USE CONDITIONS CHECK LIST (TYPICAL) I,7B-14
ENVIRONMENT REGION, ASSOCIATION OF FACTOR IMPORTANCE WITH I,7B-18
ENVIRONMENTAL ANALYSIS I,7B-16
ENVIRONMENTAL CONSIDERATIONS
   CHECKLIST (TYPICAL) I,7B-2
   DESIGN I,7B-1
   ELECTRICAL CONNECTORS II,5-201
   ENVIRONMENTAL FACTORS I,7B-1
   ENVIRONMENTAL STRENGTH I,7B-1
   MIL-STD-1670 (ENVIRONMENTAL CRITERIA AND GUIDELINES FOR AIR LAUNCHED WEAPONS) I,7B-13
   MIL-STD-210 (CLIMATIC EXTREMES FOR MILITARY EQUIPMENT) I,7B-1
   SWITCHES II,5-191
   SYSTEM USE CONDITIONS AND ENVIRONMENT I,7B-13
   ENVIRONMENTAL COVERAGE CHECKLIST (TYPICAL) I,7B-2
   ENVIRONMENTAL CRITERIA, AIR- LAUNCHED WEAPON SAMPLE I,7B-19
   ENVIRONMENTAL DESIGN I,7-75
   ALTITUDE II,5-160, II,5-192
   DESIGNING FOR THE ENVIRONMENT I,7-75
   ELECTROMAGNETIC RADIATION PROTECTION I,7-83
   EXPLOSION PROOFING I,7-82
   INTRODUCTION I,7-75
   LOW TEMPERATURE PROTECTION METHODS I,7-77
   MOISTURE PROTECTION I,7-80
   NUCLEAR RADIATION I,7-85
   SAND AND DUST PROTECTION I,7-81
   SHOCK AND VIBRATION PROTECTION I,7-78
   TEMPERATURE PROTECTION I,7-76
ENVIRONMENTAL EFFECTS I,7-87, I,7B-8, II,6-1
ENVIRONMENTAL PAIRS I,7B-4
ENVIRONMENTAL SCREENS I,11-30
ENVIRONMENTAL STRESS SCREENING (ESS) I,11-29, I,12-37
ENVIRONMENTAL TEST CYCLE I,11-53
ENVIRONMENTAL TESTS (100 CLASS) II,1-26
ELECTRICAL CONNECTORS INTRODUCTION II,5-194
EQUAL APPORTIONMENT TECHNIQUE I,6-13
EQUIPOTTENTIAL BONDING II,6-17
EQUIVALENT NON-REDUNDANT UNIT I,6-68
EQUIVALENT THERMAL CIRCUIT OF A DISCRETE ELECTRONIC PART II,6-36
ERROR SEEDING SOFTWARE I,9-20
ERRORS, SOFTWARE SPECIFICATION I,9-13
ERSION 3  RELIABILITY GOAL STATUS  I, 6-53
ESD  I, 7-16, II, 6-13
ESD, SAMPLE TRIBOELECTRIC SERIES  II, 6-19
EVALUATION CRITERIA (CONTRACTOR SELECTION)  I, 12-99
EXAMPLE OF MAINTENANCE RESPONSIBILITY FLOW CHART  I, 11-89
EXAMPLE OF THE "D" TEST (KOLOMOROV-SMIRNOV TEST)  I, 8-51
EXAMPLES OF CATEGORIES OF SNEAK CIRCUITS  I, 7-138
EXPECTED VALUE AVAILABILITY  I, 5-63
EXPENDITURES DURING LIFE CYCLE  I, 12-9
EXPLOSION PROOFING  I, 7-82
EXPLOSION RESISTANCE EFFECTS ON SWITCHES  II, 5-192
EXPONENTIAL APPROXIMATION  I, 5-61
EXPONENTIAL APPROXIMATION OF LOGNORMAL MAINTAINABILITY FUNCTIONS  I, 5-62
EXPONENTIAL DISTRIBUTION  I, 5-13, I, 5-23, I, 5-59, I, 6-3, I, 6-29, I, 8A-15,
I, 8A-23, II, 4-5
CONFIDENCE LIMITS  I, 8-39, II, 4-14
FAILURES IN TIME  I, 8-25
MIL-STD-781 I, 8A-36
EXPONENTIAL FAILURE AND REPAIR DISTRIBUTIONS  I, 10-32
EXPONENTIAL RELIABILITY FUNCTION  I, 8-29
EXPONENTIAL RELIABILITY FUNCTION, THEORETICAL  I, 8-26
EXPONENTIAL SURVIVAL CURVE  I, 8-25, I, 8-27
EYRING MODEL  II, 4-17

FACTORS AFFECTING PART FAILURE RATE  II, A-1
FACTORS EFFECTING UNRELIABILITY  I, 7-12
FACTORS FOR IC'S  II, A-4
FACTORS FOR SEMICONDUCTOR DEVICES  II, A-3
FACTORS INFLUENCING SYSTEM EFFECTIVENESS  I, 4-14
INTERRELATIONSHIPS AMONG SYSTEM PROPERTIES  I, 4-15
OPERATIONAL READINESS  I, 4-16
SYSTEM PERFORMANCE (DESIGN ADEQUACY)  I, 4-15
FAILURE  II, 3-2
FAILURE ANALYSIS  II, 3-2, II, 9-11
APPARATUS  II, 9-16
APPROACH FLOW DIAGRAM II, 9-13
FLOW DIAGRAM, GENERALIZED  II, 9-15
LABORATORY EQUIPMENT REQUIREMENTS II, 9-13
REPORT FORM (SAMPLE) II, 9-6
FAILURE DATA  I, 8-18
FAILURE, DEFINITION  I, 6-7
FAILURE DENSITY AND RELIABILITY FUNCTIONS OF DISCRETE DISTRIBUTIONS  I, 5-9
FAILURE DENSITY FUNCTIONS  I, 5-4, I, 5-8, I, 5-9
FAILURE, DEPENDENT  II, 3-2
FAILURE EFFECTS ANALYSIS FORM  I, 7-107
FAILURE-FREE CYCLES  I, 11-27
FAILURE FREQUENCY STABILIZATION  I, 5-25
FAILURE, INDEPENDENT  II, 3-2
FAILURE MECHANISM FOR DIGITAL AND LINEAR DEVICES  II, 8-7
FAILURE MECHANISM ANALYSIS, SOLID TANTALUM CAPACITORS  II, 8-11
FAILURE MECHANISM ANALYSIS, TANTALUM FOIL CAPACITORS  II, 8-12
FAILURE MODE AND EFFECTS ANALYSIS (FMEA)  I, 7-94, I, 7-100
FAILURE MODES IN THE OPERATIVE REDUNDANT CASE  I, 7A-16
AFMAP (AUTOMATED FAILURE MODE ANALYSIS PROGRAM)  I, 7-119
COMPUTER ANALYSIS  I, 7-119
ECAP (ELECTRONIC CIRCUIT ANALYSIS PROGRAM) I,7-119
EXAMPLE I,7-118
IM 045-NAA I,7-119
IM 063-NAAL I,7-119
IM 066-NAA I,7-119
INTRODUCTION I,7-100
NET-1 I,7-119
PHASE 1 PROCEDURES I,7-103
PHASE 2 PROCEDURES I,7-113
SUMMARY I,7-121
FAILURE MODES I,11-69
AFFECTED BY VARIOUS USE AND STORAGE CONDITIONS II,8-13
DISTRIBUTION I,7-108
EFFECTS, AND CRITICALITY ANALYSIS (FMECA) I,12-35
ENCOUNTERED WITH ELECTRONIC COMPONENTS DURING STORAGE II,8-3
MECHANISMS OF MOS SSI/MSI DEVICES II,8-8
MECHANISMS, MAGNETIC DEVICES II,5-172
PRINTED CIRCUITRY II,5-220
SHIPMENT AND STORAGE I,11-68
FAILURE MODE ANALYSIS PROGRAM I,7-119
FAILURE, RANDOM II,3-2
FAILURE RATES (SEE PART FAILURE RATES ALSO)
FAILURE RATE II,6-3, I,12-27, II,3-2
ACTIVATION ENERGY II,4-18
FACTORS FOR MONOLITHIC AND HYBRID MICROcircuits II,4-2
FACTORS FOR SEMICONDUCTOR DEVICES II,4-3
TEMPERATURE DEPENDENCE ARRHENIUS MODEL II,4-17
TEMPERATURE DEPENDENCE EYRING MODEL II,4-17
TEMPERATURE RELATIONSHIP OF NPN TRANSISTORS I,7-7
FAILURE RATE VS. DEVELOPMENT TIME FOR WEIBULL FAILURE RATE I,8-76
FAILURE REPORT FORM I,8-4
FAILURE REPORT FORM (SAMPLE) II,9-5
FAILURE REPORTING I,12-94, II,9-1
FAILURE REPORTING AND ANALYSIS II,9-1
AIR FORCE DATA REPORTING SYSTEMS II,9-8
ARMY DATA REPORTING SYSTEMS II,9-8
CLOSED LOOP FAILURE REPORTING/CORRECTIVE ACTIONS SYSTEMS II,9-1
COMMON CAUSES OF PARTS FAILURE II,9-18
CUSTOMER DATA REPORTING SYSTEMS II,9-4
DATA COLLECTION AND RETENTION II,9-4
DEPARTMENT OF DEFENSE (DOD) II,9-10
FAILURE ANALYSIS II,9-11
FAILURE ANALYSIS APPARATUS II,9-16
FAILURE ANALYSIS, INFORMATION OBTAINED FROM II,9-17
FAILURE CATEGORIES II,9-18
FAILURE REPORTING II,9-1
FAILURE REPORTING SYSTEMS II,9-3
FORMS, FAILURE REPORTING II,9-4
GENERAL CONSIDERATIONS II,9-12
MARINE CORPS DATA REPORTING SYSTEMS II,9-9
NAVY DATA REPORTING SYSTEMS II,9-9
RELIABILITY IMPROVEMENT WARRANTIES (RIW) II,9-10
FAILURE REPORTING AND CORRECTIVE ACTION I,12-50
FAILURE REPORTING, AND AND CORRECTIVE ACTION SYSTEMS (FRACAS) I,8-1, I,8-2, I,8-3, I,12-34, II,9-3
FAILURE REVIEW BOARD (FRB) I,12-34
G

GaAs II,1-31
GAMMA DISTRIBUTION I,5-14, II,4-13
GASEOUS ARC DISCHARGE II,6-15
GATES II,5-51
GATE SPEED-UP CIRCUIT II,5-86
RELATIONSHIPS BETWEEN SWITCHING TIMES AND DRAIN CURRENT II,5-88
VALUES AND SWITCHING TIMES II,5-87
GEOMETRICAL INTERPRETATION OF A CONFIDENCE INTERVAL I,8-34
GOEL NHPP MODEL I,9-24
GOODNESS OF FIT TESTS I,8-47
GRAPHIC METHOD I,8-50
KOLMOGOROV-SMIRNOV I,8-49
GOVERNMENT DOCUMENTS I,2-1
GOVERNMENT/INDUSTRY DATA EXCHANGE PROGRAMS (GIDEP) II,1-5
GRAPHICAL EVALUATION I,8-17
GRAPHICAL METHODS I,8-6, I,8-10
GRAPHICAL POINT ESTIMATION FOR THE NORMAL DISTRIBUTION I,8-8
GRAPHICAL POINT ESTIMATION FOR THE WEIBULL DISTRIBUTION I,8-15
GRAPHICAL SOLUTION OF SEQUENTIAL BINOMIAL TEST I,8A-14
GROUND RULES FOR PARTS SELECTION AND CONTROL I,7-3
GROUNDING AND DECOUPLING II,5-25
GROWTH MODELS TAILORING I,8-104
GROWTH POTENTIAL I,8-100
GUARANTEE I,12-19
AVAILABILITY I,12-16
CHRONIC LINE REPLACEABLE UNIT (LRU) I,12-17
LOGIC SUPPORT COSTS I,12-16
MAXIMUM PARTS COST I,12-16
PLANS I,12-20
RELIABILITY I,12-16
GUARD I,8-92

H

HANDLING PRECAUTIONS, CMOS I,7-23
HARDWARE/SOFTWARE SNEAK ANALYSIS INTEGRATION I,7-143
HARDWARE/SOFTWARE SYSTEM LIFE CYCLE RELATIONSHIP I,9-4, I,12-66
HAZARD AND DENSITY FUNCTIONS I,8-21
HAZARD RATE AS A FUNCTION OF AGE FAILURE I,5-24
HAZARD RATE I,5-3
HAZARD RATE FUNCTIONS I,5-8, II,4-4
HEAT DISSIPATION FROM FIXED RESISTORS IN FREE AIR II,5-110
HEAT SINK II,6-37
HEAT TRANSFER, CONDUCTIVE COMPOUND II,6-42
HIGH DISSIPATION PARTS, EFFECTS OF CONVECTION ON PARTS II,6-39
HIGH LEVEL HIPO CHART I,9-30
HIGH TEMPERATURE EFFECTS, ELECTRICAL CONNECTORS II,5-201
HIGH-POWER PARTS MOUNTING TO INCREASE HEAT TRANSFER II,6-42
HIPO CHART I,9-30
HISTORY OF COMPONENT RELIABILITY
ADVISORY GROUP ON RELIABILITY OF ELECTRONIC EQUIPMENT, AGREE II,1-4
ARMY SIGNAL CORPS MICROMODULE PROGRAM (1958-1963) II,1-6
ARMY'S DIAMOND ORDINANCE FUZE LABORATORIES 2-D PROGRAM (1957-1959) II,1-6

14
EPilogue  II, 1-12
GOVERNMENT/INDUSTRY DATA EXCHANGE PROGRAMS (GIDEP) II, 1-5
NAVY'S PROJECT TINKERTOY (1950-1953) II, 1-6
RADC RELIABILITY NOTEBOOK II, 1-5
THE RELIABILITY DECADE (1950-1960) II, 1-4
VACUUM TUBE ERA (1940-1950) II, 1-3
VERY HIGH SPEED INTEGRATED CIRCUITS (VHSIC) (1980) II, 1-11
VERY LARGE SCALE INTEGRATED CIRCUITS (VLSI) (1980) II, 1-11
HOTSPOT TEMPERATURE OF CONNECTORS II, 5-202
HUMAN ENGINEERING I, 7-90, II, 3-2
HUMAN ERROR RATE I, 7-100
HUMAN FACTORS I, 7-86, II, 3-2
CHARACTERISTICS OF HUMANS AND MACHINES I, 7-96
DESIGN AND PRODUCTION I, 7-89
HUMAN ENGINEERING I, 7-90
THEORY I, 7-93
HUMAN PERFORMANCE RELIABILITY I, 7-91
INTERACTIONS AND TRADEOFFS I, 7-99
INTRODUCTION I, 7-86
LIST OF PREDICTIVE METHODS I, 7-92
MAINTAINABILITY METHODS I, 7-92
MAN/MACHINE ALLOCATION AND RELIABILITY I, 7-94
MIL-H-46855 I, 7-90
MIL-STD-1472 I, 7-90
RELIABILITY RELATIONSHIP I, 7-91
THEORY I, 7-93
THERP (TECHNIQUE FOR HUMAN ERROR RATE PREDICTION) I, 7-100
HUMAN PERFORMANCE PREDICTIVE METHODS I, 7-92
HUMAN PERFORMANCE RELIABILITY I, 7-91
HUMANS AND MACHINES, CHARACTERISTICS I, 7-96
HYBRID DEVICES DERATING II, 5-73
HYBRID MICROCIRCUIT MOUNTING TO INCREASE HEAT TRANSFER II, 6-41
HYDRAULIC LEAKS I, 7-77
HYDRAULIC STIFFENING I, 7-77
HYPERGEOMETRIC I, 9-20
HYPOTHESIS TEST A I, 8-61
HYPOTHESIS TEST A I, 8-61
HYPOTHESIS TEST B I, 8-62
HYPOTHESIS TEST B I, 8-62
HYPOTHETICAL AVAILABILITY SURFACE I, 10-120
HYPOTHETICAL BUDGET CURVES I, 10-122
HYPOTHETICAL HISTORY OF A MACHINE GUN USAGE I, 10-39

I

IBM MODEL, ROSNER, RELIABILITY GROWTH MODELS I, 8B-7
ICE DAMAGE I, 7-77
IDEAL OPERATING CHARACTERISTIC CURVE II, 4-15, I, 8-62
IMPACT OF DESIGN AND PRODUCTION ACTIVITIES ON EQUIPMENT RELIABILITY I, 11-15
IMPATT II, 5-92
INACTIVE TIME I, 3-6, I, 3-9
INDUCTIVE TEST CIRCUIT, CLAMPED II, 5-89
INFANT MORTALITY I, 5-22, II, 3-2
INFANT MORTALITY, FOUR TYPES OF FAILURES I, 11-11
COMPUTERIZED MODELS AVIONICS LABORATORY PREDICTIVE OPERATIONS AND
SUPPORT (ALPOS) COST MODEL I,10-129
COMPUTERIZED MODELS COMPUTER MODEL FOR ANALYSIS OF ARMY AIRCRAFT
RAM IMPROVEMENT PROPOSALS I,10-130
COMPUTERIZED MODELS COST OPTIMIZING SYSTEM TO EVALUATE
RELIABILITY (COSTER) I,10-128
COMPUTERIZED MODELS IN CURRENT USE I,10-127
COMPUTERIZED MODELS LOGISTICS COST ANALYSIS MODEL 5 I,10-130
COMPUTERIZED MODELS OPERATING AND SUPPORT COST MODEL I,10-129
COMPUTERIZED MODELS PERSHING PROJECT OFFICE I,10-129
COMPUTERIZED MODELS RELIABILITY AND COST MODEL I,10-128
COMPUTERIZED MODELS SAVE (SYSTEMS AVIONICS VALUE ESTIMATION) MODEL
FOR LOGISTIC SUPPORT COSTS I,10-129
COMPUTERIZED MODELS STEP (STANDARDIZATION EVALUATION PROGRAM) I,10-129
COMPUTERIZED MODELS GUIDELINES I,10-127
GUIDELINES I,10-97
GUIDELINES I,10-97
MODELS I,10-94
LEARNING FACTORS II,A-4
LEARNING FACTORS/Failure RATE MULTIPLIERS FOR MICROCIRCUITS II,A-4
LEAKAGE CURRENT I,7-43
LEWIS AND SHEDLER, RELIABILITY GROWTH MODELS I,8B-7
LIFE CHARACTERISTIC (BATHTUB) CURVE II,7-1
LIFE CHARACTERISTIC CURVE I,11-12
LIFE CYCLE I,12-2
RELATIONSHIP, HARDWARE/SOFTWARE SYSTEM I,9-4
LIFE CYCLE COMPONENT COST II,1-16
LIFE CYCLE COST (LCC) I,12-9
ACQUISITION POLICIES I,10-97
ACTIVITIES I,12-13
AIR FORCE LOGISTICS SUPPORT COST MODEL I,10-111
ANALOGOUS COST METHOD I,10-106
BREAKDOWN I,10-95
BREAKDOWN STRUCTURE I,10-99, I,10-102
CERS WITH DISCOUNTING AND ESCALATING I,10-113
COMBINED DISCOUNTING AND ESCALATING I,10-114
COMPUTER PROGRAM LIFE CYCLE (FROM AF REG. 800-14) I,10-101
COMPUTERIZED MODELS IN CURRENT USE I,10-127
CONCEPTS I,12-12
CONCEPTS I,10-90
COST CALCULATION FORM I,10-115
COST ESTIMATING RELATIONSHIPS (CERS) I,10-106
COSTING SYSTEM AVAILABILITY I,10-116
CUMULATIVE I,8-91
DESIGN ACTIONS I,10-97
DISCOUNTED PRESENT VALUE CALCULATION I,10-113
DOD DOLLAR CONVERSION INDICES I,10-117
DOD LCC BREAKDOWN STRUCTURES (LCCBSS) I,10-101, I,10-99
EFFECT OF EARLY DECISIONS I,12-9
ELEMENT MATRIX CONCEPT I,10-99
ESCALATING I,10-114
EXAMPLES OF DETAILED COST ESTIMATING RELATIONSHIPS I,10-110
GENERAL R&M TRADEOFF METHODOLOGY I,10-123
GENERIC LIFE CYCLE COST BREAKDOWN STRUCTURE I,10-102
LARGE GROUND BASED RADAR SYSTEM LCC BREAKDOWN STRUCTURE I,10-103
LCC BREAKDOWN STRUCTURES I,10-99
LCC GUIDELINES I,10-97
LCC MODELS I,10-94
LCC REVISITED  I,10-125
LCCBBSS USED IN THE MILITARY SERVICES  I,10-104
LIFE CYCLE COST BREAKDOWN  I,10-95
LIFE CYCLE COST ELEMENT MATRIX CONCEPT (REF. 29)  I,10-99
OPERATIONS AND SUPPORT  I,10-115
PARAMETRIC COST METHOD  I,10-106
RELIABILITY GROWTH  I,8-90
RESEARCH AND DEVELOPMENT ACTIONS  I,10-97
SOFTWARE LIFE CYCLE COST BREAKDOWN STRUCTURE  I,10-105
THE GEOMETRY OF SYSTEM R&M TRADEOFFS  I,10-119
TYPICAL STANDARD COST FACTORS  I,10-107
LIFE CYCLE COSTS VS. RELIABILITY  I,10-96
LIFE CYCLE DEGRADATION  I,11-2
LIFE CYCLE EXPENDITURES  I,12-9
LIFE SUPPORT  II,3-3
LINEAR IC'S  II,5-38
LINEAR MICROCIRCUIT DERATING  II,5-72
LITTLEWOOD MODELS  I,9-23
LLOYD AND LIPOW, RELIABILITY GROWTH MODELS  I,8B-1, I,8B-10
LOAD-SHARING REDUNDANT CONFIGURATIONS  I,7A-40
LOG-NORMAL DISTRIBUTION  II,4-6
LOGIC BLOCK DIAGRAM  I,7-104, I,7-115
RADAR EXAMPLE  I,7-115
SYSTEM I,7-104
UNIT I,7-105
LOGIC REPRESENTATION OF E=AB+ACD+BCD  I,7-15
LOGIC REPRESENTATION OF E=AB+CD  I,7-15
LOGISTIC SUPPORT COST  I,10-12
LOGISTIC SUPPORT COSTS (NON-STANDARD PARTS)  II,1-17
LOGISTICS COST ANALYSIS MODEL 5  I,10-130
LOGISTICS PLANNING  I,12-50
LOGNORMAL DISTRIBUTION  I,5-2, I,5-12, II,4-6
LOGNORMAL MAINTAINABILITY FUNCTIONS  I,5-62
LOT TOLERANCE PERCENT DEFECTIVE (LTPDP)  II,4-17
LOW TEMPERATURE EFFECTS, ELECTRICAL CONNECTORS  II,5-203
LOW TEMPERATURE PROTECTION METHODS  I,7-77
LOWER TEST MTBF  I,6-3
LSI MICROCIRCUITS  II,5-61
LSI TECHNOLOGY CHARACTERISTICS  II,5-21A

M

MAGNETIC DEVICES  II,5-169
CONSTRUCTION GRADE  II,5-173
CURRENT DERATING FOR WIRE SIZE USED IN CONSTRUCTION  II,5-174
DERATING CRITERIA FOR TRANSFORMERS, INDUCTORS AND COILS  II,5-173
DERATING REQUIREMENTS  II,5-173
FAILURE MODES AND MECHANISMS  II,5-172
GENERAL APPLICATION CONSIDERATIONS  II,5-173
INSULATION BREAKDOWN  II,5-172
INTRODUCTION  II,5-169
MAGNETIC CORE CHARACTERISTICS  II,5-172
OPEN CONDUCTOR  II,5-172
PARAMETER VARIATION  II,5-172
RESISTANCE CHANGE WITH TEMPERATURE  II,5-173
SELECTION AND USAGE GUIDELINES  II,5-170
SHIELDING  II,5-173

18
TEMPERATURE CLASS II, 5-173
MAGNETRON II, B-2
MAINTAINABILITY I, 3-4, I, 3-9, I, 10-58, II, 3-3
ANALYSIS I, 12-49
AVAILABILITY RELATIONSHIPS I, 10-60
CONTROL I, 12-50
CONTROL PARAMETERS I, 11-59
DESIGN ATTRIBUTES I, 11-59
DESIGN CRITERIA I, 12-51
DESIGN REVIEWS I, 12-51
DESIGN SUPPORT I, 12-49
DESIGN TRADEOFFS I, 12-51
DIDS I, 12-80
FUNCTION M(T) I, 5-52
MEASUREMENT, BASIC METHODS I, 5-41
METHODS FOR HUMAN FACTORS I, 7-92
MILESTONES, LIFE CYCLE PHASE I, 12-52
MODELS, STATISTICAL DISTRIBUTIONS I, 5-40
PREDICTION I, 12-51
PROGRAM ELEMENTS I, 12-52
PROGRAM PLAN I, 12-49
PROGRAM TASKS I, 12-48
REQUIREMENTS FOR SUBSYSTEM OR EQUIPMENT SPECIFICATIONS, EXAMPLE I, 12-46
REQUIREMENTS IN SUBCONTRACTOR AND VENDOR CONTRACT SPECIFICATIONS I, 12-51
REQUIREMENTS, EXAMPLE OF SPECIFIED INTERMEDIATE LEVEL I, 12-47
SPECIFICATION REQUIREMENTS I, 12-45
STATUS REPORTS I, 12-52
TASKS IN THE SYSTEM LIFE CYCLE I, 12-53
TASKS VS. LIFE CYCLE PHASE I, 12-52
TESTING I, 12-50
TRADEOFFS I, 5-77
MAINTAINABILITY ASSURANCE TASKS IN THE PRODUCTION PHASE I, 11-60
MAINTAINABILITY CONSIDERATIONS I, 12-41
DEMONSTRATE ACHIEVEMENT OF MAINTAINABILITY REQUIREMENTS I, 12-52
ESTABLISH DATA COLLECTION, ANALYSIS, AND CORRECTIVE ACTION SYSTEM I, 12-52
ESTABLISH MAINTAINABILITY DESIGN CRITERIA I, 12-51
EXAMPLE OF A SPECIFICATION FOR A PERMISSIBLE PREVENTIVE MAINTENANCE DOWNTIME I, 12-47
EXAMPLE OF A SPECIFICATION FOR UNINTERRUPTED OPERATIONAL CAPABILITY WITHOUT MAINTAINABILITY CONSIDERATIONS PREVENTIVE MAINTENANCE I, 12-48
EXAMPLE OF A SPECIFIED LIMITATION IN MAINTENANCE MANHOUR REQUIREMENTS I, 12-48
EXAMPLE OF MAINTAINABILITY REQUIREMENTS FOR SUBSYSTEM OR EQUIPMENT SPECIFICATIONS I, 12-46
EXAMPLE OF SPECIFIED INTERMEDIATE LEVEL MAINTAINABILITY REQUIREMENTS I, 12-47
INCORPORATE AND ENFORCE MAINTAINABILITY REQUIREMENTS IN SUBCONTRACTOR AND VENDOR CONTRACT SPECIFICATIONS I, 12-51
INTEGRATE OTHER ITEMS I, 12-51
MAINTAINABILITY ANALYSIS I, 12-50
MAINTAINABILITY PROGRAM PLAN I, 12-49
MAINTAINABILITY PROGRAM TASKS I, 12-48
MAINTAINABILITY SPECIFICATION REQUIREMENTS I, 12-45
MAINTAINABILITY TASKS VS. LIFE CYCLE PHASE I, 12-52
PARTicipate in DESIGN REVIEWS I, 12-51
PERFORM DESIGN TRADEOFFS I, 12-51
PREDICT MAINTAINABILITY PARAMETER VALUES I, 12-51
PREPARE INPUTS TO THE DETAILED MAINTENANCE CONCEPT AND DETAILED
MAINTENANCE PLAN I, 12-50
PREPARE MAINTAINABILITY STATUS REPORTS I, 12-52
R&M MILESTONES VS. SYSTEM LIFE CYCLE PHASE I, 12-52
RELATIVE EMPHASIS ON MAINTAINABILITY PROGRAM ELEMENTS I, 12-52
SCHEDULE OF CONCEPTUAL PHASE RELIABILITY AND MAINTAINABILITY TASKS I, 12-56
SCHEDULE OF FULL-SCALE DEVELOPMENT PHASE TASKS I, 12-59
SCHEDULE OF PRODUCTION PHASE TASKS I, 12-62
SCHEDULE OF VALIDATION PHASE RELIABILITY AND MAINTAINABILITY TASKS I, 12-57
MAINTAINABILITY CONTROL PRODUCTION I, 11-58
MAINTAINABILITY FUNCTION DERIVED FROM TIME-TO-REPAIR DISTRIBUTION I, 5-41, I, 12-46
MAINTAINABILITY PROGRAM TASKS
CONCEPTUAL PHASE I, 12-52
DEVELOPMENT PHASE I, 12-59
PRODUCTION PHASE I, 12-62
VALIDATION PHASE I, 12-57
MAINTAINABILITY THEORY I, 5-38
BASIC CONCEPTS I, 5-38
MAXIMUM TIME TO REPAIR I, 5-40
MEAN TIME TO REPAIR, MTTR I, 5-40
MEDIAN TIME TO REPAIR I, 5-40
STATISTICAL DISTRIBUTIONS USED IN MAINTAINABILITY MODELS I, 5-40
MAINTENANCE II, 3-3
CONCEPT I, 12-50
CORRECTIVE II, 3-3
DEGRADATION CONTROL (DURING DEPOT OPERATIONS) I, 11-85
DOCUMENTATION REQUIREMENTS I, 11-88
MANHOUR REQUIREMENTS, EXAMPLE OF A SPECIFIED LIMITATION IN I, 12-48
MANPOWER COST I, 10-12
PLAN I, 12-50
PLAN FOR DEGRADATION CONTROL, IMPORTANCE I, 11-87
PREVENTIVE II, 3-3
REQUIREMENT AREAS, DEPOT I, 11-87
STEPS IN EXAMPLE REPLACEMENT ACTION I, 11-61
TASK STEPS I, 11-61
TIME I, 3-6, I, 3-9
MAINTENANCE-MANHOURS-PER-MAINTENANCE-ACTION, DIRECT (DMMH/MA) I, 10-15
MAJORITY VOTE REDUNDANCY (TWO OUT OF THREE) DIVIDE BY 8 COUNTER CIRCUIT I, 7-68
MAJORITY VOTING REDUNDANCY I, 7-65, I, 7A-35
MAN/MACHINE INTERACTION I, 7-94
MAN/MACHINE RELIABILITY PREDICTION I, 7-98
MANAGEMENT ACTIVITIES I, 4-10
MARKOV GRAPH FOR SINGLE UNIT I, 5-66
MARKOV-PROCESS I, 5-65, II, 8-25
MATERIALS AND PROCESSES USED IN SEMI-CONDUCTOR FABRICATION II, 1-20
MAXIMUM POWER DISSIPATION II, 5-36
MAXIMUM TIME TO REPAIR I, 5-40
MEAN FLIGHT HOURS BETWEEN FAILURES (MFHBF) I, 4-6
MEAN LIFE I, 6-1
MEAN LIFE ESTIMATION BY USE OF PERCENTILES II, 4-10
MEAN TIME BETWEEN FAILURE (MTBF) I, 5-6, I, 12-27, II, 3-3
MEAN TIME BETWEEN FAILURE-VERIFICATION TEST I, 12-16
MEAN-TIME-BETWEEN-DOWNING-EVENTS (MTBDE) I, 10-15
MEAN-TIME-BETWEEN-MAINTENANCE-ACTIONS (MTBMA) I, 10-15, II, 3-3
MEAN TIME TO FAILURE (MTTF) I, 5-5, II, 3-4
MEAN TIME TO REPAIR (MTRR) I, 5-40, II, 3-4
MEAN-TIME-TO-RESTORE-SYSTEM (MTTRS) I, 10-15
MECHANICAL EQUIPMENT, STATISTICAL DISTRIBUTIONS USED IN I, 5-11

20
MEDIAN TIME TO REPAIR  I,5-40
MEMORY/LSI FAILURE MODES AND MECHANISMS II,8-8
METALLIZATION MELT II,6-15
MFHBF I,4-6
MICROCIRCUITS II,5-12
A/D CONVERSION II,5-46
AMD 2900 FAMILY II,5-67
APPLICATION CONSIDERATIONS II,5-17
APPLICATION OF LINEAR IC'S II,5-38
APPLICATION OF LSI MICROCIRCUITS II,5-61
BIPOLAR DEVICE TECHNOLOGIES II,5-13
BIT-SLICE PROCESSORS II,5-64
BUBBLE MEMORIES II,5-63
CONSIDERATIONS IN THE BOARD LAYOUT OF ICS II,5-24
DECOUPLING AND GROUNDING II,5-32
DEFECTS/SCREENS II,7-18
DERATING II,5-73
DIGITAL MICROCIRCUIT APPLICATIONS II,5-51
DIGITAL MICROCIRCUIT DERATING II,5-72
DIGITAL MICROCIRCUITS II,5-51
FABRICATION AND DESIGN II,5-18
HYBRID DEVICES DERATING II,5-73
IC PACKAGE TYPES II,5-17
INTEL 8048/8035/8748 II,5-67
INTEL 8086 II,5-68
LINEAR ICS II,5-38
MAXIMUM POWER DISSIPATION II,5-36
MICROCIRCUIT SELECTION GUIDELINES II,5-1
MICROCOMPUTERS II,5-66
MICROPROCESSORS II,5-66
MIL-STD-883 TEST METHODS II,7-16
MONOLITHIC MICROCIRCUIT TECHNOLOGY II,5-12
MOS TECHNOLOGY FAMILIES II,5-16
MOTOROLA 6800 II,5-69
MOTOROLA MC 68000 II,5-69
MOUNTING AND CONNECTIONS II,5-22
NOISE TYPE AND DESIGN CONSIDERATIONS II,5-24
OPERATING ICS WITH OR WITHOUT HEAT SINKS II,5-36
POWER DISSIPATION IN ICS II,5-34
PRINTED CIRCUIT BOARDS II,5-34
RCA CDP 1802 II,5-69
SELECTION GUIDELINES II,5-12
SELECTION OF PROCESSING UNITS II,5-64
SPEED AND APPLICATIONS II,5-21
SPEED AND POWER TRADEOFFS II,5-19
TESTING II,7-27
TEXAS INSTRUMENTS SBP 9989 II,5-70
THERMAL RESISTANCE II,5-36
TI 9900A II,5-70
ZILOG 28 FAMILY II,5-71
ZILOG 280 II,5-71
ZILOG 28000 FAMILY II,5-71
MICROCOMPUTERS II,5-64, II,5-66
MICROPROCESSORS II,5-64, II,5-66
MICROWAVE SEMICONDUCTOR DEVICES II,5-91
CHARACTERISTICS II,5-91
SI VS GAAS FOR MICROWAVE APPLICATIONS II,5-91
THE GUNN OR TRANSFERRED ELECTRON DEVICE (TED) II,5-92
THE IMPATT DEVICE II, 5-92
MICROWAVE TUBE II, 5-10
MIL SPECIFICATIONS FOR RELAYS II, 5-177
MIL SPECIFICATIONS, SEE SPECIFICATIONS AND STANDARDS ALSO
MIL-C-10950 II, 5-147, II, 5-158
MIL-C-11015 II, 5-148, II, 5-158
MIL-C-11272 II, 5-147
MIL-C-12889 II, 5-148
MIL-C-14409 II, 5-152, II, 5-158, II, 5-167
MIL-C-15305 II, 5-171
MIL-C-17 II, 5-209
MIL-C-18312 II, 5-148
MIL-C-19547 II, 5-209
MIL-C-19978 II, 5-148, II, 5-159, II, 5-167, II, 5-160
MIL-C-20 II, 5-149, II, 5-157, II, 5-167
MIL-C-21097 II, 5-198, II, 5-215
MIL-C-21609 II, 5-209
MIL-C-22931 II, 5-209
MIL-C-22992 II, 5-196
MIL-C-23183 II, 5-160
MIL-C-23269 II, 5-147, II, 5-18, II, 5-161, II, 5-167
MIL-C-23437 II, 5-209
MIL-C-23806 II, 5-209
MIL-C-24308 II, 5-196
MIL-C-25 II, 5-148
MIL-C-26482 II, 5-195
MIL-C-27072 II, 5-209
MIL-C-27500 II, 5-209
MIL-C-28731 II, 5-197
MIL-C-28748 II, 5-197
MIL-C-28804 II, 5-197
MIL-C-3432 II, 5-209
MIL-C-3655 II, 5-198
MIL-C-3899 II, 5-197
MIL-C-38999 II, 5-195
MIL-C-39001 II, 5-147, II, 5-161, II, 5-167
MIL-C-39003 II, 5-149, II, 5-161, II, 5-167
MIL-C-39006 II, 5-150, II, 5-162, II, 5-167
MIL-C-39010 II, 5-169, II, 5-171
MIL-C-39012 II, 5-198
MIL-C-39014 II, 5-149, II, 5-164, II, 5-167
MIL-C-39018 II, 5-164, II, 5-166
MIL-C-39022 II, 5-151, II, 5-165, II, 5-167
MIL-C-39024 II, 5-197
MIL-C-3965 II, 5-149
MIL-C-442 II, 5-209
MIL-C-5 II, 5-147
MIL-C-5015 II, 5-195
MIL-C-55021 II, 5-209
MIL-C-55302 II, 5-199, II, 5-216
MIL-C-55365 II, 5-151, II, 5-165
MIL-C-55514 II, 5-151, II, 5-166, II, 5-167
MIL-C-55581 II, 5-151, II, 5-166
MIL-C-62 II, 5-149
MIL-C-7078 II, 5-209
MIL-C-81 II, 5-151, II, 5-167
MIL-C-81659 II, 5-197
MIL-C-83421 II, 5-167
| MIL-C-83723   | II, 5-196, II, 5-197 |
| MIL-E-1       | II, 5-207          |
| MIL-E-16400   | I, 7-2, II, 5-223  |
| MIL-E-4158    | I, 7-2             |
| MIL-E-5086    | II, 5-209          |
| MIL-E-5400    | I, 7-2, II, 5-223  |
| MIL-F-14256   | II, 5-217          |
| MIL-H-46855   | I, 7-90            |
| MIL-HDBK-189  | I, 8-92            |
| MIL-HDBK-217  | I, 6-37, I, 7-20, I, 7-130, II, 5-10, II, 5-193, II, 5-206 |
| MIL-HDBK-217D | I, 6-45            |
| MIL-HDBK-246  | II, 5-222          |
| MIL-HDBK-251  | I, 7-78            |
| MIL-I-45208   | I, 11-6            |
| MIL-I-46058   | II, 5-215          |
| MIL-L-3890    | II, 5-209          |
| MIL-M-28787   | I, 7-18, II, 5-222 |
| MIL-M-83436   | II, 5-220          |
| MIL-P-11268   | II, 5-194          |
| MIL-P-13949   | II, 5-215          |
| MIL-P-28809   | II, 5-215          |
| MIL-P-50884   | II, 5-215          |
| MIL-P-55110   | II, 5-216, II, 5-220 |
| MIL-P-81728   | II, 5-215          |
| MIL-Q-9858    | I, 11-4            |
| MIL-R-10509   | II, 5-104          |
| MIL-R-11      | II, 5-104          |
| MIL-R-11804   | II, 5-104, II, 5-121 |
| MIL-R-12934   | II, 5-122          |
| MIL-R-18546   | II, 5-123          |
| MIL-R-19      | II, 5-106, II, 5-116, II, 5-117 |
| MIL-R-22      | II, 5-106, II, 5-118 |
| MIL-R-22097   | II, 5-107, II, 5-124 |
| MIL-R-22684   | II, 5-104          |
| MIL-R-23285   | II, 5-106, II, 5-125, II, 5-126 |
| MIL-R-23648   | II, 5-143          |
| MIL-R-26      | II, 5-104, II, 5-119 |
| MIL-R-27208   | II, 5-107, II, 5-127 |
| MIL-R-27777   | II, 5-177          |
| MIL-R-28750   | II, 5-177          |
| MIL-R-39002   | II, 5-107, II, 5-128 |
| MIL-R-39005   | II, 5-104, II, 5-129 |
| MIL-R-39007   | II, 5-104, II, 5-130 |
| MIL-R-39008   | II, 5-105, II, 5-131 |
| MIL-R-39009   | II, 5-105, II, 5-123, II, 5-132 |
| MIL-R-39015   | II, 5-107, II, 5-127, II, 5-133 |
| MIL-R-39016   | II, 5-177          |
| MIL-R-39017   | II, 5-105, II, 5-134, II-135 |
| MIL-R-39023   | II, 5-136          |
| MIL-R-39035   | II, 5-107, II, 5-124, II, 5-137, II, 5-138 |
| MIL-R-55182   | II, 5-105, II, 5-139 |
| MIL-R-55342   | II, 5-140          |
| MIL-R-55432   | II, 5-105          |
| MIL-R-5757    | II, 5-177          |
| MIL-R-6106    | II, 5-177          |
| MIL-R-83401   | II, 5-106, II, 5-141, II, 5-142 |
| MIL-R-83516   | II, 5-177          |
| MIL-R-83726   | II, 5-177          |
| MIL-R-93   | II, 5-104 |
| MIL-R-94   | II, 5-120 |
| MIL-S-12285| II, 5-186 |
| MIL-S-15291| II, 5-187 |
| MIL-S-15743| II, 5-186 |
| MIL-S-18396| II, 5-186 |
| MIL-S-19500| I, 7-6, I, 7-7, II, 5-76, II, 5-212 |
| MIL-S-21604| II, 5-186 |
| MIL-S-22710| II, 5-187 |
| MIL-S-22885| II, 5-185 |
| MIL-S-24236| II, 5-185 |
| MIL-S-24317| II, 5-185 |
| MIL-S-3786 | II, 5-187 |
| MIL-S-3950 | II, 5-187 |
| MIL-S-45743| II, 5-217 |
| MIL-S-46844| II, 5-217 |
| MIL-S-5432 | II, 5-188 |
| MIL-S-55433| II, 5-188 |
| MIL-S-6807 | II, 5-187 |
| MIL-S-83502| II, 5-199 |
| MIL-S-83505| II, 5-199 |
| MIL-S-83734| II, 5-199 |
| MIL-S-8805 | II, 5-187 |
| MIL-S-8834 | II, 5-187 |
| MIL-S-9395 | II, 5-187 |
| MIL-STD-105| I, 8A-10 |
| MIL-STD-1130| II, 5-220 |
| MIL-STD-1132| II, 5-5, II, 5-186 |
| MIL-STD-1286| II, 5-169 |
| MIL-STD-1346| II, 5-175, II, 5-177 |
| MIL-STD-1353| II, 5-194 |
| MIL-STD-1378| II, 5-222 |
| MIL-STD-1389| II, 5-222 |
| MIL-STD-1472| I, 7-90 |
| MIL-STD-1547| II, 5-76 |
| MIL-STD-1562| II, 5-5 |
| MIL-STD-1634| II, 5-222 |
| MIL-STD-1670| I, 7B-13 |
| MIL-STD-198 | II, 5-5, II, 5-103, II, 5-111, II, 5-146 |
| MIL-STD-200 | II, 5-207 |
| MIL-STD-202 | II, 5-5, II, 5-191, II, 7-5 |
| MIL-STD-2068| I, 8-88 |
| MIL-STD-210 | I, 6-5, I, 7B-1 |
| MIL-STD-275 | II, 5-216 |
| MIL-STD-414 | I, 8A-32 |
| MIL-STD-701 | II, 5-5 |
| MIL-STD-721 | I, 3-7 |
| MIL-STD-750 | II, 5-5, II, 7-10 |
| MIL-STD-756 | I, 6-61 |
| MIL-STD-781 | I, 6-3 |
| MIL-STD-781C| I, 11-52 |
| MIL-STD-785 | I, 8-1 |
| MIL-STD-785B| I, 12-33 |
| MIL-STD-883 | II, 5-4, II, 7-16, II, 7-25 |
| MIL-STD-965 | II, 5-2 |
| MIL-T-21038| II, 5-169, II, 5-171 |
| MIL-T-23648| II, 5-107, II, 5-143 |
MIL-T-27 II,5-169, II,5-170
MIL-T-55631 II,5-169, II,5-171
MIL-T-83720 II,5-169
MIL-T-83721 II,5-169, II,5-171
MIL-W-16878 II,5-209
MIL-W-19150 II,5-209
MIL-W-22759 II,5-209
MIL-W-25038 II,5-209
MIL-W-7072 II,5-209
MIL-W-76 II,5-209
MIL-W-81044 II,5-209
MIL-W-81381 II,5-209
MIL-W-8777 II,5-209
MILS MODEL I,9-22
MINIMAL PATH AND MINIMAL CUT TECHNIQUES I,6-55
MINIMIZATION OF EFFORT ALGORITHM I,6-20
MINIMIZING DESIGN ERRORS I,7-33
MISSION II,3-4
    AVAILABILITY I,5-63
    OPERATING TIME I,5-64
    PROFIT I,6-7
    RELIABILITY I,3-2, I,3-8, I,10-14, I,10-15, I,10-42
    RELIABILITY AND DEPENDABILITY MODELS I,10-41
    SUCCESS I,10-12
    TIME I,3-6, I,3-10
MISSION-TIME-BETWEEN-CRITICAL-FAILURES (MTBCF) I,10-15
MISSION-TIME-TO-RESTORE-FUNCTIONS (MTTRF) I,10-15
MODE II,4-3
MODELS - DETERMINISTIC, MATHEMATICAL, PROBABILISTIC, STOCHASTIC I,5-1
MODIFICATION TIME I,3-6, I,3-9
MOISTURE EFFECTS ON SWITCHES II,'5-192'
MOISTURE PROTECTION I,7-80
MOMENT ANALYSIS I,7-28, I,7-31
MONITOR/CONTROL OF SUBCONTRACTORS AND SUPPLIERS I,12-34
MONTE CARLO ANALYSIS I,7-28
MOS (METAL OXIDE SEMICONDUCTOR) I,7-35
MOS SSI/MSI DEVICE REPORTED FAILURE MODES AND MECHANISMS II,8-8
MOS TECHNOLOGY FAMILIES II,5-16
MOSFET II,5-84
    CAPACITIVE SPEED-UP CIRCUIT II,5-86
    CAUTION II,5-90
    MAXIMUM OPERATING FREQUENCY II,5-87
    PARALLELING II,5-90
    SAFE OPERATING AREA II,5-90
    TEMPERATURE STABILITY II,5-90
MOTOROLA 6800 II,5-69
MOUNTING AND CONNECTIONS, MICROCIRCUITS II,5-22
MOUNTING TECHNIQUES FOR RESISTORS II,5-31
MOUNTING TO INCREASE HEAT TRANSFER, HIGH POWER PARTS II,6-41
MOUNTING TO INCREASE HEAT TRANSFER, HYBRIDS II,6-41
MPCAG (MILITARY PARTS CONTROL ADVISORY GROUP) II,5-3
MRAP/SRAP I,5-5
MTBF (MEAN TIME BETWEEN FAILURES) I,4-6, I,5-6
MTBF APPROXIMATION I,11-17
MTBF VERSUS ACTIVE ELEMENTS FOR VARIOUS RELIABILITY CLASSES I,6-35
MTTF (EXPECTED VALUE) I,5-6
MTTR (MEAN TIME TO REPAIR) I,5-52
MULTICONDUCTOR CABLE II,5-208
MULTILAYER PC BOARD COOLING TECHNIQUES II, 6-43
MULTILAYER PRINTED WIRING BOARDS II, 5-219
MULTIPLE REDUNDANCY I, 7A-8
MULTIPLE REDUNDANT ARRAY OF M ELEMENTS I, 7A-10
MUSA MODEL I, 9-21

N

NAC TP-526, SEM MICROPROCESSOR APPLICATION HANDBOOK II, 5-222
NAC TP-528, SEM MEMORY APPLICATION HANDBOOK II, 5-222
NAC TP-529, SEM THERMAL APPLICATION HANDBOOK II, 5-222
NAC TP-531, SEM MODULE DESCRIPTIONS HANDBOOK II, 5-222
NAC TP-532, SEM HARDWARE CATALOG II, 5-223
NAVY STANDARD ELECTRONIC MODULES (SEM) I, 7-18, II, 5-221
NAVY STANDARD ELECTRONIC MODULES (SEM) PROGRAM (MIL-M-28787) I, 7-18
NETWORK TREE PRODUCTION II, 7-139
NEW TECHNOLOGIES II, 1-31
NEW-GENERATION COST PROGRESSION I, 1-4
NOISE II, 5-24
NOISE FIGURE PERFORMANCE OF GAAS LABORATORY DEVICES II, 1-34
NOISE GENERATION DUE TO POOR TRANSMISSION-LINE RETURNS II, 5-26
NOISE TYPE AND DESIGN CONSIDERATIONS II, 5-24
NONEXponential FAILURE DENSITIES MODIFICATIONS I, 6-47
NON-PARAMETRIC AND THEORETICAL NORMAL RELIABILITY FUNCTIONS I, 8-30
NONOPERATING FAILURE RATES I, 6-49
NON-REDUNDANT UNIT, EQUIVALENT I, 6-68
NON-REDUNDANT VOLTAGE SUPPLIES I, 7-62
NON-REPAIRABLE EQUIPMENT SITUATIONS II, 1-15
NON-STANDARD PARTS DOCUMENT COSTS II, 1-17
NONOPERATING FAILURE RATES, MODIFICATION TO INCLUDE I, 6-49
NONREDUNDANT RF AMPLIFIER CHANNEL I, 7-71
NONREDUNDANT RF RECEIVER CHANNELS I, 7-74
NONREDUNDANT TRANSISTOR CIRCUIT, COMPARISON WITH QUAD I, 7-66
NONREDUNDANT VS REDUNDANT CONFIGURATION I, 7-70
NORMAL (GAUSSIAN) STRESS-STRENGTH DISTRIBUTIONS AND UNRELIABILITY IN DESIGN I, 7-11
NORMAL CURVE I, 5A-3
NORMAL DISTRIBUTION I, 5-7, I, 5-56, I, 8-61, I, 8A-1, I, 8A-17, I, 8A-26,
I, 8A-31, I, 8A-38, II, 4-2, II, 4-6
CONFIDENCE LIMITS I, 8-35
FAILURES IN TIME I, 8-25
GRAPHICAL POINT ESTIMATION I, 8-8
RELIABILITY CALCULATIONS USING I, 5-10
NORMAL RELIABILITY FUNCTION, COMPUTATION FOR I, 8-28
NORMAL RELIABILITY FUNCTIONS I, 8-30
NORMAL SURVIVAL CURVE I, 8-25, I, 8-27
NOT OPERATING TIME I, 3-6, I, 3-10
NTIA-SP-79-4 II, 5-212, II, 5-214
NUCLEAR RADIATION I, 7-65

O

O&M DOLLAR CONVERSION INDICES, DOD I, 10-117
OBSERVED AND THEORETICAL EXPONENTIAL SURVIVAL CURVES I, 8-27
OBSERVED AND THEORETICAL NORMAL SURVIVAL CURVES I, 8-27
OC CURVE CHARACTERISTICS I, 8-64

26
OPERABLE II, 3-4
OPERATING AND SUPPORT COST MODEL I, 10-129
OPERATING CHARACTERISTICS CURVE I, 8-62, I, 8-63, II, 4-15, II, 4-16
OPERATING TIME I, 5-64
OPERATIONAL II, 3-4
OPERATIONAL EFFECTIVENESS I, 4-13
OPERATIONAL MAINTAINABILITY I, 10-42
OPERATIONAL R&M ASSESSMENT AND IMPROVEMENT I, 11-83
DATA COLLECTION AND ANALYSIS (DURING FIELD DEPLOYMENT) I, 11-93
DEPOT MAINTENANCE REQUIREMENT AREAS I, 11-87
FACTORS CONTRIBUTING TO R&M DEGRADATION DURING FIELD OPERATION I, 11-84
IMPORTANCE OF A MAINTENANCE PLAN FOR DEGRADATION CONTROL I, 11-87
MAINTENANCE DEGRADATION CONTROL (DURING DEPOT OPERATIONS) I, 11-85
MAINTENANCE DOCUMENTATION REQUIREMENTS I, 11-88
RELIABILITY CENTERED MAINTENANCE CONCEPT I, 11-91
SYSTEM R&M ASSESSMENT I, 11-95
SYSTEM R&M IMPROVEMENT I, 11-97
SYSTEM R&M IMPROVEMENT PROGRAM I, 11-98
OPERATIONAL READINESS I, 3-2, I, 3-8, I, 4-16, I, 10-14, I, 10-15
OPERATIONAL READINESS MODELS I, 10-43, I, 10-45, I, 10-46, I, 10-48
OPERATIONAL READINESS PROBABILITY I, 10-53
OPERATIVE REDUNDANCY I, 7A-16, I, 7A-25, I, 7A-44
OPTIMIZATION OF SYSTEM EFFECTIVENESS I, 4-16
OPTIMIZATION PROCESS I, 4-17
OPTIMIZATION TECHNIQUES I, 4-19
ORACLE (OPTIMIZED RELIABILITY AND COMPONENT LIFE ESTIMATES) I, 10-54, I, 6-51
OUTPUT RESPONSE I, 7-93
OVERSTRESS PROTECTION OF ELECTRONIC COMPONENTS I, 7-18

P

PACKAGE TYPES II, 5-17
PACKAGING I, 11-68, II, 1-24
PACKAGING TRADE-OFFS II, 6-10
PACKING I, 11-68
PARALLEL CONFIGURATION MODELING I, 5-27
PARALLEL ELEMENT CIRCUIT I, 7A-32
PARALLEL ELEMENTS I, 7A-18
PARALLEL ELEMENTS RELATED TO FAILURE-MODE PROBABILITIES I, 7A-20
PARALLEL NETWORK I, 7-45
PARALLEL REDUNDANCY I, 7-58, I, 7A-11
PARALLEL REDUNDANCY, DUPLICATE (OPERATIVE CASE) I, 7A-10
PARALLEL SERIES REDUNDANCY CIRCUIT EXAMPLE I, 7-57
PARALLEL SERIES REDUNDANCY RELIABILITY GAIN I, 7-55
PARALLEL-SERIES CONFIGURATION I, 7A-4, I, 7A-26
PARALLEL-SERIES ELEMENTS I, 7A-24
PARAMETER CHANGE WITH STRESS AND TIME, RESISTORS I, 7-29
PARAMETER CHANGE WITH TIME, RESISTORS I, 7-26
PARAMETER CHANGE WITH TIME, CAPACITORS I, 7-27
PARAMETER DEGRADATION I, 7-20
PARAMETER DEGRADATION AND ANALYSIS I, 7-20
PARAMETER VARIATION ANALYSIS I, 7-28, I, 7-31, I, 7-94
PARAMETER VARIATIONS OF MAGNETIC DEVICES DURING USEFUL LIFE II, 5-172
PART COUNT TECHNIQUE I, 6-27, I, 6-39
PART FAILURE MODE DISTRIBUTION I, 7-108
PART FAILURE RATES II, 3-1
CAPACITORS II, A-2
ELECTRON TUBES II, B-1

27
FACTORS AFFECTING FAILURE RATES OF PARTS II,A-1
FAILURE RATE FACTORS FOR MONOLITHIC MICROCIRCUITS II,A-4
FAILURE RATE FACTORS FOR SEMICONDUCTOR DEVICES II,A-3
LEARNING FACTORS/Failure RATE MULTIPLIERS FOR MICROCIRCUITS II,A-4
RELAYS, SWITCHES AND CONNECTORS II,A-2
RESISTORS II,A-2
PART SELECTION AND CONTROL I,7-1, I,7-3, I,12-36, II,5-1, II,5-3
CABLES II,5-208
CAPACITORS II,5-144
CRITICAL PARTS II,5-7
DISCRETE SEMICONDUCTOR DEVICES II,5-75
ELECTRICAL CONNECTORS II,5-194
ELECTRO OPTICS/FIBER OPTICS II,5-211
FAILURE RATE PREDICTION II,5-10
GROUND RULES I,7-3
GROUND RULES II,5-1
MAGNETIC DEVICES II,5-169
MPCAG II,5-3
MRAP/SRAP II,5-5
PART APPLICATION II,5-7
PART APPROVAL II,5-6
PART AVAILABILITY II,5-2
PART CONTROL II,5-1
PART CRITICALITY II,5-2
PART JUSTIFICATION II,5-6
PART PARAMETERS II,5-7
PART SELECTION II,5-2
PART TEST METHODS II,5-5
PARTS SELECTION GUIDELINES II,5-12
PREFERRED PARTS II,5-5
PRINTED CIRCUITRY II,5-215
RELAYS II,5-175
RESISTORS II,5-103
STANDARD ELECTRONIC MODULE (SEM) PROGRAM II,5-221
SWITCHES II,5-105
PART TYPE VS. SCREENING DESIGNATOR II,1-14
PARTIAL REDUNDANCY I,5-18, I,7A-9
PARTS SELECTION AND CONTROL, GROUND RULES I,7-3
PASSIVE COOLING TECHNIQUES I,7-76
PASSIVE PARTS II,7-4
PCB TEMP-CYCLE ENVIRONMENTAL PROFILE I,11-37
PDR I,7-152
PERCENTILE USED TO ESTIMATE MEAN LIFE II,4-10
PERFORMANCE LIMITS I,6-6
PERMISSIBLE FAILURE AND REPAIR RATES I,10-79
PERSHING PROJECT I,10-129
PHASE LOCK LOOP BLOCK DIAGRAM II,5-49
PHOTOFABRICATION II,1-20
PHOTOLITHOGRAPHY II,1-22
PHYSICAL CHARACTERISTIC TESTS (200 CLASS) II,1-26
PIN RATING, CONNECTORS II,5-204
POISSON DISTRIBUTION I,5-20
POISSON PROCESSES, RELIABILITY GROWTH MODELS I,8B-5
POSITIVE VOLTAGE REGULATOR II,5-42
POSTERIOR DISTRIBUTION I,5-35
POTTING, ELECTRICAL CONNECTORS II,5-204
POWER DISSIPATION IN ICS II,5-34
POWER DISSIPATION LIMITATIONS I,7-37
PROPERTIES OF SILICON AND GAAS AT 300°C K II,1-31

PROTECTION METHODS

LOW TEMPERATURE I,7-77
SHIPMENT AND STORAGE I,11-70
TRANSIENTS I,7-18, II,5-93
PULSE WAVEFORM, TRANSIENT II,5-101

Q

QQ-S-571 SOLDER II,5-217
QUAD REDUNDANT TRANSISTOR CIRCUIT I,7-64
QUALITY CONTROL (QC) I,5-18, I,11-3, II,4-14
QUALITY DEFECTS, STORAGE-INDUCED I,11-74
QUALITY ENGINEERING I,11-3, I,11-5, I,11-7
QUALITY INSPECTION LEVELS I,11-82
QUALITY PROGRAM ELEMENTS I,11-4

R

R&M ACTIVITIES SYSTEM LIFE CYCLE I,12-2
R&M AND COST METHODS I,0-93
R&M APPORTIONMENT/ALLOCATION I,6-12
AGREE APPORTIONMENT TECHNIQUE I,6-14
ALLOCATION, STATE OF ART CONSTRAINTS I,10-78
APPORTIONMENT FACTORS I,6-16
APPORTIONMENT FORMULATION I,6A-6
ARINC APPORTIONMENT TECHNIQUE I,6-17
AVAILABILITY, FAILURE AND REPAIR RATES I,10-61. I,10-69
DYNAMIC PROGRAMMING I,6A-1
DYNAMIC PROGRAMMING APPROACH I,6-24, I,6A-6
EQUAL APPORTIONMENT TECHNIQUE I,6-13
EXAMPLE USING DYNAMIC PROGRAMMING I,6A-5
FEASIBILITY-OF-OBJECTIVES TECHNIQUE I,6-18
INTRODUCTION I,6-12
MAN/MACHINE INTERACTION I,7-94
MECHANICAL-ELECTRICAL SYSTEM I,6-21
MINIMIZATION OF EFFORT ALGORITHM I,6-20
PARALLEL REDUNDANT SYSTEMS I,10-76
SUBSYSTEMS OPERATING IN SERIES I,6A-3
R&M ASSESSMENT, SYSTEM I,11-95
R&M DATA ITEMS

MAINTAINABILITY DIDS I,12-80
R&M DIDS I,12-78
RELIABILITY DIDS I,12-78
SOFTWARE QUALITY ASSURANCE DIDS I,12-81
R&M DEGRADATION DURING FIELD OPERATION, CONTRIBUTING FACTORS I,11-84
R&M DIDS I,12-78
R&M IMPROVEMENT, SYSTEM I,11-97
R&M MANAGEMENT I,12-1

COMPUTER SOFTWARE R&M CONSIDERATIONS I,12-65
INTRODUCTION I,12-1
MAINTAINABILITY CONSIDERATIONS I,12-41
R&M DATA ITEMS I,12-76
R&M PLANNING AND BUDGETING I,12-4
R&M PROGRAM EVALUATION AND SURVEILLANCE I,12-97
R&M PROGRAM REQUIREMENTS BASED UPON THE TYPE OF PROCUREMENT I,12-88
RELIABILITY CONSIDERATIONS I,12-27
R&M MILESTONES VS. SYSTEM LIFE CYCLE PHASE  I,12-52
R&M MANAGEMENT  I,12-1
R&M PLANNING  I,12-4
  CONCEPTUAL PHASE PLANNING  I,12-4
  CONCEPTUAL PHASE TRADEOFF STUDIES  I,12-22
  COST FACTORS AND GUIDELINES  I,12-7
  DEPLOYMENT PHASE PLANNING  I,12-7
  DESIGN-TO-COST PROCEDURES  I,12-11
  FEATURES OF CURRENT WARRANTY-GUARANTEE PLANS  I,12-20
  FULL SCALE ENGINEERING DEVELOPMENT PHASE PLANNING  I,12-6
  LIFE CYCLE COST (LCC) CONCEPTS  I,12-12
  LIFE CYCLE COST ACTIVITIES  I,12-13
  PRODUCT PERFORMANCE AGREEMENTS  I,12-14
  PRODUCTION PHASE PLANNING  I,12-7
  TRADEOFFS  I,12-22, I,12-26
  TYPES OF DESIGN-TO-COST PROGRAMS  I,12-12
  TYPES OF PRODUCT PERFORMANCE AGREEMENTS  I,12-15
  VALIDATION PHASE PLANNING  I,12-5
  VALIDATION PHASE TRADEOFF STUDIES  I,12-25
  WARRANTY APPLICATION CRITERIA  I,12-21
  WARRANTY/GUARANTEE PLANS  I,12-19
R&M PROGRAM AND TEST MATRIX  I,12-96
R&M PROGRAM EVALUATION CRITERIA (CONTRACTOR SELECTION)  I,12-99
R&M PROGRAM EVALUATION GUIDELINES  I,12-101
R&M SYSTEM PARAMETERS  I,10-15
R&M TRADEOFF
  ALTERNATIVE DESIGN CONFIGURATIONS  I,10-65
  GEOMETRY OF  I,10-119
  METHODOLOGY  I,10-123
  TECHNIQUES  I,5-73
RADAR SYSTEM HIERARCHY (PARTIAL LISTING)  I,6-28
RADC ORACLE (OPTIMIZED RELIABILITY AND COMPONENT LIFE ESTIMATES)  I,6-51
RADC RELIABILITY NOTEBOOK  II,1-5
RAM - RELIABILITY ANALYSIS MODEL  I,6-55
RATING  II,3-4
RCA CDP 1802  II,5-69
RDT&E DOLLAR CONVERSION INDICES, DOD  I,10-117
REACTION TIME  I,3-6
RECTIFIERS  II,5-78
REDUNDANCY  I,7-45, II,3-4
  ACTIVE  I,7-48
  ADAPTIVE MAJORITY LOGIC  I,7-50
  BIMODAL PARALLEL/SERIES  I,7-48
  BIMODAL SERIES/PARALLEL  I,7-48
  BIMODAL REDUNDANCY -- QUAD CONFIGURATION  I,7-61
  COMBINATIONS  I,7A-3
  COMPUTATIONS, PROBABILITY NOTATION FOR  I,7A-3
  CONTINUOUS MONITORING  I,7A-43
  DEPENDENT FAILURE PROBABILITIES  I,7A-36
  DESIGN EXAMPLES  I,7-58
  DESIGN, REDUNDANCY CONSIDERATIONS  I,7-49
  DUPLEX  I,7-48
  EQUIPMENTS  I,5-20
  FAILURE MODES IN THE OPERATIVE REDUNDANT CASE  I,7A-16
  FURTHER REDUNDANCY CONSIDERATIONS  I,7-73
  GATE CONNECTOR  I,7-50
  IN TIME DEPENDENT SITUATIONS  I,7-47
  INTERVAL MONITORING  I,7A-46

32
LOAD-SHARING I,7A-7
LEVELS I,7A-1
MAJORITY VOTE REDUNDANCY I,7-50, I,7-65
MULTIPLE REDUNDANCY I,7A-8
NETWORK, SERIES-PARALLEL I,7-46
OPERATING I,7-50, I,7A-7
OPERATIVE OR ACTIVE REDUNDANT CONFIGURATIONS I,7A-8
OPERATIVE REDUNDANCY, SWITCHING REQUIRED I,7A-25
OPTIMUM ALLOCATION OF REDUNDANCY I,7A-39
OPTIMUM NUMBER OF PARALLEL ELEMENTS I,7A-18
PARALLEL ELEMENTS I,7A-18
PARALLEL REDUNDANCY I,7-45
PARALLEL-SERIES ELEMENTS I,7A-24
PARTIAL REDUNDANCY I,5-21, I,7A-9
PROBABILITY NOTATION FOR REDUNDANCY COMPUTATIONS I,7A-3
REDUNDANCY COMBINATIONS I,7A-3
REDUNDANCY-WITH-REPAIR I,7A-8, I,7A-42
SERIES ELEMENTS I,7A-21
SERIES-PARALLEL ELEMENTS I,7A-22
SERIES-PARALLEL NETWORK I,7-46
SIMPLE PARALLEL REDUNDANCY I,7-58
STANDBY REDUNDANCY I,7-48, I,7-49, I,7-50, I,7-69, I,7A-8, I,7A-34
STATES OF OPERATION OF A THREE PARALLEL ELEMENT CIRCUIT I,7A-32
STATES OF OPERATION OF A THREE PARALLEL ELEMENT CIRCUIT I,7A-32
SWITCHING I,7A-7
TECHNIQUES I,7-48
TECHNIQUES I,7-49
THREE PARALLEL ELEMENTS I,7A-30
TIME DEPENDENT CONSIDERATIONS I,7A-5
TRADE-OFF PROCESS I,7-56
TWO PARALLEL ELEMENTS I,7A-28
TYPES AND CLASSIFICATIONS OF REDUNDANCY I,7A-7
VOTING REDUNDANCY I,7A-32, I,7A-8
WITH REPAIR I,7-53, I,7A-42
WITH REPAIR, OPERATIVE I,7A-44
WITH REPAIR, STANDBY I,7A-45
WITH SWITCHING I,7-54
WITH SWITCHING I,7A-29
REDUNDANT
ARRAY I,7A-10, I,7A-14, I,7A-17
CIRCUIT SWITCHED GROUND I,7-137
CONFIGURATION OF N = 3 ELEMENTS, WITH K = 2 REQUIRED FOR SUCCESS I,7A-12
CONFIGURATION, LOAD-SHARING I,7A-40
CONFIGURATIONS I,7A-12
CONFIGURATIONS RESULTING FROM ALLOCATION STUDY I,7A-41
CONFIGURATIONS WITH SWITCHING, THREE-ELEMENT I,7A-31
RF RECEIVER CHANNELS I,7-74
SYSTEM AVAILABILITY I,10-32
SYSTEMS I,5-21, I,10-28
TRANSISTOR CIRCUIT, QUAD I,7-64, I,7-66
VOLTAGE REGULATOR SUPPLY I,7-60, I,7-62
REDUNDANT VS NONREDUNDANT CONFIGURATION I,7-70
REFERENCED DOCUMENTS I,2-1, II,2-1
REFERENCES
DESIGN GUIDELINES I,7-162
ELECTRO OPTICS/FIBER OPTICS II,5-214
FAILURE REPORTING AND ANALYSIS II,9-18
HISTORY OF COMPONENT RELIABILITY II,1-12, II,1-35
MICROCIRCUITS II, 5-74
PRINTED CIRCUITRY II, 5-220
PRODUCTION AND USE (DEPLOYMENT) R&M I, 11-101
R&M MANAGEMENT CONSIDERATIONS I, 12-113
RELAYS II, 5-184
RELIABILITY AND MAINTAINABILITY THEORY I, 5-78
RELIABILITY DATA COLLECTION AND ANALYSIS, DEMONSTRATION, AND GROWTH I, 8-111
RELIABILITY SPECIFICATION, ALLOCATION AND PREDICTION I, 6-71
SOFTWARE RELIABILITY I, 9-43
STANDARD ELECTRONIC MODULE (SEM) PROGRAM II, 5-223
SYSTEM EFFECTIVENESS I, 4-20
SYSTEMS RELIABILITY ENGINEERING I, 10-132
REGULATED VOLTAGE SUPPLY I, 7-59
REJECT-ACCEPT CRITERIA I, 11-55
RELATIVE FAILURE RATE DIFFERENCES II, 7-6
RELAY
DRIVERS I, 7-38
FAILURE RATES II, A-2
MIL SPECIFICATIONS II, 5-177
SELECTION CRITERIA II, 5-177
RELAYS II, A-2, II, 5-175
APPLYATION CONSIDERATIONS II, 5-177
DERATING II, 5-178
DEVICE SELECTION II, 5-175
ELECTROMECANICAL RELAY II, 5-181
ENVIRONMENT II, 5-178
INTRODUCTION II, 5-175
LOADS II, 5-178
MECHANICAL, DIRECT CURRENT ARC SUPPRESSION TECHNIQUES II, 5-180
MECHANICAL, EFFECT OF CURRENT ON OPERATING LIFE II, 5-179
PART SELECTION AND CONTROL II, 5-175
REFERENCES II, 5-184
RELAY SELECTION CRITERIA II, 5-178, II, 5-176
SOLID STATE RELAYS II, 5-181
RELIABILITY I, 3-8, I, 4-1, I, 4-8, I, 10-58, II, 3-4
RELIABILITY ACCEPTANCE TESTING I, 11-50
RELIABILITY ALLOCICATION I, 6-12, I, 6A-1
RELIABILITY APPORTIONMENT I, 6-12
RELIABILITY DEFINITIONS I, 6-2, I, 6-10
RELIABILITY DESIGN CHECKLIST I, 7C-1
RELIABILITY AND MAINTAINABILITY TASKS I, 5-1, I, 12-56, I, 12-57
AVAILABILITY THEORY I, 5-63
INTRODUCTION I, 5-1
MAINTAINABILITY THEORY I, 5-38
R&M TRADE-OFF TECHNIQUES I, 5-73
RELIABILITY THEORY I, 5-2
RELIABILITY AND QUALITY DURING SHIPMENT AND STORAGE I, 11-66, I, 11-81
COMPONENT FAILURE MODES I, 11-69
DATA COLLECTION AND ANALYSIS I, 11-83
DEGRADATION I, 11-66
FAILURE MODES ENCOUNTERED WITH I, 11-69
PROTECTION METHODS I, 11-68
STORAGE SERVICEABILITY STANDARDS I, 11-71
STORAGE-INDUCED QUALITY DEFECTS I, 11-74
RELIABILITY BLOCK DIAGRAM
DEPICTING REDUNDANCY AT VARIOUS LEVELS I, 7A-2
DEVELOPMENT AS DESIGN BECOMES KNOWN I, 6-30, I, 6-31
OF HYPOTHETICAL ROCKET MOTOR FIRING CIRCUIT I, 7-127

34
RELIABILITY COMPUTATION FROM 1,6-54 TO FAULT TREE LOGIC DIAGRAMS 1,7-124, I,7-125 WITH REDUNDANT ELEMENTS I,6-68 RELIABILITY CENTERED MAINTENANCE CONCEPT I,11-91 RELIABILITY COMPARISON OF REDUNDANT AND NONREDUNDANT CONFIGURATIONS I,7-70 IF RECEIVER CHANNELS I,7-74 VOLTAGE SUPPLIES I,7-62 RELIABILITY CONCEPTS I,5-6 RELIABILITY CONSIDERATIONS ANALYSIS OF RELIABILITY TASK EMPHASIS I,12-43 COST EFFECTIVENESS INFLUENCES I,12-40 ELECTRONIC PARTS/CIRCUIT TOLERANCE ANALYSIS I,12-36 ENVIRONMENTAL STRESS SCREENING (ESS) I,12-37 FAILURE MODES, EFFECTS, AND CRITICALITY ANALYSIS (FMECA) I,12-35 FAILURE REPORTING, ANALYSES, AND CORRECTIVE ACTION SYSTEMS (FRACAS) I,12-34 FAILURE REVIEW BOARD (FRB) I,12-34 MONITOR/CONTROL OF SUBCONTRACTORS AND SUPPLIERS I,12-34 PARTS SELECTION/APPLICATION CRITERIA I,12-36 PRODUCTION RELIABILITY ACCEPTANCE TEST (PRAT) I,12-39 PROGRAM REVIEWS I,12-34 RELIABILITY CRITICAL ITEMS I,12-37 RELIABILITY DEVELOPMENT/GROWTH TESTING (RDGT) I,12-37 RELIABILITY MODELING I,12-35 RELIABILITY PREDICTION I,12-35 RELIABILITY PROGRAM ELEMENTS I,12-39 RELIABILITY PROGRAM PLAN I,12-32 RELIABILITY PROGRAM TASKS I,12-31 RELIABILITY QUALIFICATION TEST (RQT) I,12-39 RELIABILITY SPECIFICATION REQUIREMENTS I,12-27 SATISFACTORYLY PERFORMANCE LIMITS I,12-30 SNEAK CIRCUIT ANALYSES (SCA) I,12-36 RELIABILITY CONTROL, PRODUCTION I,11-3 RELIABILITY CRITICAL ITEMS I,12-37 RELIABILITY DATA ANALYSIS I,8-5 ANAlytical METHOD EXAMplE (WEIBULL DISTRIBUTION) I,8-52 CENSORED DATA I,8-28 CHI-SQUARE (2) TEST I,8-54 COMPARISON OF K-S ('D' TEST) AND 2 (CHI-SQUARE) TESTS I,8-59 COMPUTATION OF EXPONENTIAL RELIABILITY FUNCTION I,8-26 COMPUTATION OF NORMAL RELIABILITY FUNCTION I,8-28 CONFIDENCE INTERVAL I,8-38 CONFIDENCE LIMITS - EXPONENTIAL DISTRIBUTION I,8-39 CONFIDENCE LIMITS - NORMAL DISTRIBUTION I,8-35 CONFIDENCE LIMITS AND INTERVALS I,8-32 CONFIDENCE-INTERVAL ESTIMATES, BINOMIAL DISTRIBUTION I,8-45 EXAMPLE OF DATA ON TIMES TO FAILURE OF 20 ITEMS I,8-7 EXAMPLES OF GRAPHICAL METHODS I,8-10 FAILURE DATA FOR TEN HYPOTHETICAL ELECTRONIC COMPONENTS I,8-19 GRAPHICAL METHODS I,8-10 GRAPHICAL METHODS I,8-6 KOLMOGOROV-SMIRNOV (K-S) TEST I,8-48 RANKING OF DATA I,8-6 RELIABILITY FUNCTION (SURVIVAL CURVES) I,8-19 STATISTICAL ANALYSIS I,8-16 THEORETICAL RELIABILITY PARAMETER DISTRIBUTION I,8-47 TREATMENT OF FAILURE DATA I,8-18
RELIABILITY DATA COLLECTION AND ANALYSIS I, 8-1
RELIABILITY DEGRADATION DURING PRODUCTION - INFANT MORTALITY I, 11-11
RELIABILITY DEMONSTRATION I, 6-9, I, 8-1, I, 8-60, I, 8A-1
ACTUAL OPERATING CHARACTERISTIC CURVE I, 8-63
ATTRIBUTES AND VARIABLES I, 8-66
ATTRIBUTES DEMONSTRATION TESTS I, 8A-1
ATTRIBUTES PLANS FOR LARGE LOTS I, 8A-5
ATTRIBUTES PLANS FOR SMALL LOTS I, 8A-1
ATTRIBUTES SAMPLING USING MIL-STD-105 I, 8A-10
BAYES SEQUENTIAL TESTS I, 8A-45
DETERMINANTS OF SAMPLE SIZE I, 8-66
EXPONENTIAL DISTRIBUTION I, 8A-36
EXPONENTIAL DISTRIBUTION I, 8A-15, I, 8A-24
FAILURE TRUNCATED TESTS I, 8A-24
FIXED SAMPLE AND SEQUENTIAL TESTS I, 8-66
HYPOTHESIS TEST A I, 8-61
HYPOTHESIS TEST B I, 8-62
IDEAL OPERATING CHARACTERISTIC (OC) CURVE I, 8-62
INTERFERENCE DEMONSTRATION TESTS I, 8A-42
INTRODUCTION I, 8-60
METHOD(S) I, 6-9
MIL-STD-105 I, 8A-10
NORMAL DISTRIBUTION I, 8A-27
NORMAL DISTRIBUTION I, 8A-32
NORMAL DISTRIBUTION I, 8A-17, I, 8A-39
NORMAL DISTRIBUTION I, 8-61
OC CURVE CHARACTERISTICS I, 8-64
OPERATING CHARACTERISTIC CURVE I, 8-63
PARAMETERIZATION OF RELIABILITY I, 8-67
POISSON APPROXIMATION METHOD I, 8A-7
SAMPLE MEAN I, 8-61
SEQUENTIAL BINOMIAL TEST PLANS I, 8A-12
SEQUENTIAL TESTS I, 8A-36
SUMMARY I, 8-67
TEST PLANS I, 8A-1
TESTS DESIGNED AROUND SAMPLE SIZE I, 8-66
TIME TRUNCATED DEMONSTRATION TEST PLANS I, 8A-15
VARIABLES DEMONSTRATION TESTS I, 8A-15
WEIBULL DISTRIBUTION I, 8A-21
WEIBULL DISTRIBUTION I, 8A-34
RELIABILITY DEMONSTRATION VS. RELIABILITY GROWTH TEST I, 8-109
RELIABILITY DESIGN CHECKLIST I-7C
RELIABILITY DESIGN CONSIDERATIONS II, 5-1
RELIABILITY DEVELOPMENT/GROWTH TESTING (RDGT) I, 12-37
RELIABILITY DIDS I, 12-78
RELIABILITY ENGINEERING DESIGN GUIDELINES (SEE DESIGN GUIDELINES) I, 7-1
RELIABILITY FOR N STANDBY REDUNDANT ELEMENTS I, 7A-37
RELIABILITY FUNCTION AND THEORETICAL EXPONENTIAL RELIABILITY FUNCTION I, 8-29
RELIABILITY FUNCTIONS I, 5-2, I, 5-8, I, 5-9, I, 8-23
RELIABILITY FUNCTIONS FOR INTERVAL MONITORING AND REPAIR I, 7A-47
RELIABILITY FUNCTIONS FOR PARTIAL REDUNDANT ARRAY I, 7A-17
RELIABILITY GAIN FOR REPAIR OF SIMPLE PARALLEL ELEMENT AT FAILURE I, 7-54
RELIABILITY GROWTH I, 8-1, I, 8-68, I, 8-90, I, 8-97
AERONAUTICAL REQUIREMENTS I, 8-89
APPLICATION EXAMPLE I, 8-77
ASSESSMENT I, 8-105
BASED ON SPECIFIC PROBLEM RESOLUTIONS I, 8-109
BUDGET I, 8-101
COMPARISON OF RELIABILITY GROWTH MODELS I,8-79
CONCEPT I,8-69
CURVE, EXAMPLE I,8-95
DUANE CHART WITH PLOT OF CURRENT MTBF I,8-73
EQUIPMENT CATEGORIES I,8-81
EVALUATING SYSTEM GROWTH POTENTIAL I,8-100
EVALUATING THE RELIABILITY STATUS I,8-101
INFORMATION SOURCES THAT INITIATE RELIABILITY GROWTH I,8-94, I,8-97
INTRODUCTION I,8-68, I,8-90
MANAGEMENT MODEL (ASSESSMENT) I,8-94
MANAGEMENT MODEL (MONITORING) I,8-92
MANAGEMENT PROGRAM I,8-71
MANAGEMENT OF THE RELIABILITY GROWTH PROCESS I,8-92
MIL-HDBK-189 I,8-92
MODEL TYPES I,8-99
MODELING I,8-71
MODELS UTILIZED IN RELIABILITY GROWTH MANAGEMENT I,8-98
PARTIAL SYSTEM IMPROVEMENT I,8-106
PLANNING I,8-71
PLOT I,8-72, I,8-87
PROCESS I,8-70
PROJECTIVE ASSESSMENT I,8-108
RELATIONSHIPS AMONG GROWTH INFORMATION SOURCES I,8-96
SYSTEM/EQUIPMENT DESCRIPTION I,8-80
TAILORING GROWTH MODELS I,8-104
RELIABILITY GROWTH MODELS I,8-99, I,8B-1
COMPARISON I,8-79
CONTINUOUS I,8B-5
DISCRETE I,8B-1
INTRODUCTION I,8B-1
MODEL 01, LLOYD AND LIPOW (REF. 30) I,8B-1
MODEL 02, LLOYD AND LIPOW (REF. 30) I,8B-1
MODEL 03, WOLMAN (REF. 31) I,8B-2
MODEL 04, BARLOW AND SCEUER (REF. 39) I,8B-2
MODEL 05, VIRENE (40) I,8B-2
MODEL 06, BARLOW, PROSCHAN AND SCEUER (REF. 34) I,8B-3
MODEL 07, BARLOW, PROSCHAN AND SCEUER (REF. 34) I,8B-3
MODEL 08, SINGPURWALLA (REF. 35) I,8B-4
MODEL 09, DUANE (REF. 16) I,8B-6
MODEL 10, CROW (REF. 44) I,8B-7
MODEL 11, LEWIS AND SHEDLER (45) I,8B-7
MODEL 12, IBM MODEL, ROSNER (REF. 39) I,8B-7
MODEL 13, EXPONENTIAL-SINGLE TERM POWER SERIES MODEL I,8B-9
MODEL 14, LLOYD AND LIPOW (REF. 30) I,8B-10
MODEL 15, AROEF (REF. 41) I,8B-10
MODEL 16, SIMPLE EXPONENTIAL MODEL I,8B-11
POISSON PROCESSES I,8B-5
RELIABILITY GROWTH TESTING I,8-85
ECONOMICS OF RELIABILITY GROWTH TESTING I,8-90
INTRODUCTION I,8-85
MIL-STD-2068 I,8-88
RELIABILITY GROWTH APPROACH I,8-85
WHEN RELIABILITY GROWTH TESTING IS PERFORMED I,8-85
RELIABILITY IMPROVEMENT POTENTIAL AT REDUCED TEMPERATURES II,6-6
RELIABILITY IMPROVEMENT TECHNIQUES IN ELECTRONIC EQUIPMENT I,7-87
RELIABILITY IMPROVEMENT TECHNIQUES FOR ENVIRONMENTAL PROTECTION II,6-1
RELIABILITY IMPROVEMENT WARRANTY (RIW) I,12-19, II,9-10
RELIABILITY LIFE CYCLE DEGRADATION AND GROWTH CONTROL I,11-2
RELIABILITY MAINTAINABILITY AVAILABILITY RELATIONSHIPS  I,10-60
RELIABILITY MAINTAINABILITY TRADEOFFS  I,5-77, I,10-64
RELIABILITY MODELING  I,12-35
   COMBINED CONFIGURATION NETWORK  I,5-28
   PARALLEL CONFIGURATION  I,5-27
   SERIES CONFIGURATION  I,5-26
   SIMPLE STRUCTURES K-OUT-OF-N CONFIGURATION  I,5-30
   SIMPLE STRUCTURES PARALLEL CONFIGURATION  I,5-27
   SIMPLE STRUCTURES SERIES CONFIGURATION  I,5-26
RELIABILITY PREDICTION  I,6-25, I,12-35
   ALLOCATION PROCEDURE  I,6-57
   APRDCT (APPORTIONMENT/PREDICTION)  I,6-54
BAYESIAN INTERACTIVE GRAPHICS RELIABILITY ASSESSMENT PROCEDURE (BIGRAP)  I,6-56
   COMPUTER SOFTWARE MANAGEMENT & INFORMATION CENTER (COSMIC)  I,6-53
   COMPUTERIZED RELIABILITY PREDICTION METHODS  I,6-51
   COSMIC  I,6-54, I,6-55, I,6-56
   ERSION 3 RELIABILITY GOAL STATUS  I,6-53
INTRODUCTION AND GENERAL INFORMATION  I,6-25
   MATHEMATICAL MODELS FOR RELIABILITY PREDICTION  I,6-27
   MIL-HDBK-217 RELIABILITY PREDICTION OF ELECTRONIC EQUIPMENT  I,6-37
   MIL-STD-756 RELIABILITY MODELING AND PREDICTION  I,6-61
   MINIMAL PATH AND MINIMAL CUT TECHNIQUES  I,6-55
   NONEXPONENTIAL FAILURE DENSITIES (GENERAL CASE)  I,6-47
   NONOPERATING FAILURE RATES  I,6-49
   ORACLE  I,6-51
   PART COUNT TECHNIQUE  I,6-39
   PREDICTION BY FUNCTION TECHNIQUE  I,6-36
   RADC ORACLE  I,6-51
   RAM - RELIABILITY ANALYSIS MODEL  I,6-55
   RELIABILITY COMPUTATION FROM RELIABILITY BLOCK DIAGRAMS  I,6-54
   SCOPE  I,6-54
   SIMILAR COMPLEXITY TECHNIQUES  I,6-34
   SIMILAR EQUIPMENT TECHNIQUES  I,6-33
   SPARCS - 2  I,6-53
   STRESS ANALYSIS TECHNIQUE  I,6-41
   SUMMARY OF COMPUTER PROGRAMS  I,6-52
   WORKSHEET FOR STRESS ANALYSIS  I,6-63
RELIABILITY PROGRAM ELEMENTS  I,12-38
RELIABILITY PROGRAM PLAN  I,12-32
RELIABILITY PROGRAM TASKS  I,12-31
RELIABILITY QUALIFICATION TEST (RQT)  I,12-39
RELIABILITY REQUIREMENTS  I,6-1, I,6-3, I,12-27
RELIABILITY SCREENS II,7-2
RELIABILITY SPECIFICATION  I,6-1, I,6-4, I,12-29, I,12-43
   ALLOCATION AND PREDICTION  I,6-1
   CLEAR DEFINITION OF FAILURE  I,6-7
   DESCRIPTION OF METHOD(S) FOR RELIABILITY DEMONSTRATION  I,6-9
   ENVIRONMENT AND/OR USE CONDITIONS  I,6-5
   METHODS  I,6-4, I,12-29
   MIL-STD-210 CLIMATIC EXTREMES FOR MILITARY EQUIPMENT  I,6-5
   MIL-STD-781 RELIABILITY DESIGN QUALIFICATION AND PRODUCTION ACCEPTANCE TESTS  I,6-3
   MISSION PROFILE  I,6-7
   RELIABILITY DEMONSTRATION  I,6-9
   RELIABILITY REQUIREMENTS  I,6-1
   REQUIREMENTS  I,12-27
   SPECIFYING THE RELIABILITY REQUIREMENT  I,6-1

38
TIME MEASURE I, 6-7
RELIABILITY TASK EMPHASIS I, 8-110
RELIABILITY TESTING OPTIONS I, 5-2, II, 4-1
RELIABILITY THEORY I, 5-2, II, 4-1
BASIC CONCEPTS I, 5-2
BAYESIAN STATISTICS IN RELIABILITY ANALYSIS I, 5-32
FAILURE MODELING I, 5-22
MEAN TIME BETWEEN FAILURE (MTBF) I, 5-6
MEAN TIME TO FAILURE (MTTF) I, 5-5
RELIABILITY MODELING OF SIMPLE STRUCTURES I, 5-25
STATISTICAL DISTRIBUTIONS USED IN RELIABILITY MODELS I, 5-7
RELIABLE CIRCUIT DESIGN I, 7-13
RELIABLE COMPONENTS, NEED FOR II, 1-14
RENEWAL PROCESS IN TERMS OF ROUNDS FIRED I, 10-39
REPAIR RATES I, 5-40, I, 10-69
REPAIR/EXCHANGE AGREEMENTS I, 12-15
REPAIRABILITY I, 3-4, 9
REPAIRABLE/REPLACEABLE UNITS I, 10-25
REPLACEMENT ACTION I, 11-61
REQUIREMENTS DEFINITION, SOFTWARE R & M I, 12-71
RESISTORS II, 5-103, II, A-2
COMPARISON CHART II, 5-28
COMPOSITION RESISTORS, GENERAL APPLICATION CONSIDERATIONS II, 5-112
DERATING CURVES, MIL-SPECIFICATION II, 5-119
FAILURE RATES II, A-2
FILM RESISTOR, GENERAL APPLICATION CONSIDERATIONS II, 5-113
FORM FACTORS AND PREFERRED RESISTANCE VALUE II, 5-111
GENERAL APPLICATION DATA II, 5-108
INTRODUCTION II, 5-103
MIL-R-23285, RESISTANCE TAPERS II, 5-125
MIL-R-39017, HIGH FREQUENCY OPERATION II, 5-134
MOUNTING II, 5-108
MOUNTING TECHNIQUES II, 5-31
PARAMETER CHANGE WITH STRESS AND TIME I, 7-29
PARAMETER CHANGE WITH TIME (TYPICAL) I, 7-26
PART SELECTION AND CONTROL II, 5-103
PRECISION, TEMPERATURE CONSIDERATIONS II, 5-31
SELECTION II, 5-103
SELECTION CRITERIA II, 5-103
SPECIAL APPLICATION CONSIDERATIONS II, 5-116
TEMPERATURE EFFECTS II, 5-109
USAGE AND SELECTION GUIDELINES II, 5-104
VARIABLE RESISTOR APPLICATIONS II, 5-111
WIREWOUND RESISTORS, GENERAL APPLICATION CONSIDERATIONS II, 5-114
REVIEW, DESIGN VERIFICATION I, 7-148
REVIEW, RELIABILITY VERIFICATION I, 7-148
REWARRANTY OF REPAIRED/OVERHAULED EQUIPMENT I, 12-15
RIW (RELIABILITY IMPROVEMENT WARRANTY) II, 9-10

S

SAFETY II, 3-4
SAFETY, COMPONENT II, 1-14
SAMPLE AND HOLD CIRCUIT II, 5-41
SAMPLE ENVIRONMENTAL TEST CYCLE I, 11-53
SAMPLE PROCESS FLOW DIAGRAM I, 11-20
SAMPLE RELIABILITY CALCULATION I, 6-43
SAMPLE SIZE I, 8-66

39
SAMPLING PLANS II,4-15
SAND AND DUST EFFECTS ON SWITCHES II,5-192
SAND AND DUST PROTECTION I,7-81
SATISFACTORY PERFORMANCE LIMITS I,6-6, I,12-30
SAVE (SYSTEMS AVIONICS VALUE ESTIMATION) MODEL FOR LOGISTIC SUPPORT COSTS I,10-129
SCHOTTKY BARRIER RECTIFIERS II,5-79
SCHEMATIC (SYSTEM FOR COMPUTING OPERATIONAL PROBABILITY EQUATIONS) I,6-54
SCR II,5-80
SCR PROTECTION I,7-22, II,5-97
SCREEN TEST EFFECTIVENESS I,11-43
SCREEN TESTING I,11-24, I,11-25, I,11-27
SCREEN TESTING WITHIN THE MANUFACTURING PROCESS I,11-25
SCREENING I,11-22
- AT MODULE AND UNIT/SYSTEM LEVEL I,11-29
- COST EFFECTIVENESS II,7-25
- GUIDELINES I,11-31
- GUIDELINES MATRIX I,11-44, I,11-46
- INTERCONNECTION DEFECTS I,11-40
- INTERMEDIATE LEVEL I,11-31
- METHODS COMPARISON II,7-22
- MODEL I,11-44
- RANDOM VIBRATIONS I,11-27
- SEQUENCE-METHOD 5004-MIL-STD-883 II,7-25
- STRENGTH I,11-31
- TEST COST FOR CLASS B DEVICES II,7-26
- TEST EFFECTIVENESS I,11-43
- TEST PLANNING I,11-42
SCREENS, UNIT/EQUIPMENT AND SYSTEM LEVEL I,11-40
SECONDARY BREAKDOWN II,5-82
SELECTION AND USAGE GUIDE FOR CAPACITORS II,5-146
SELECTION AND USAGE GUIDE FOR CONNECTORS II,5-194
SELECTION AND USAGE GUIDELINES FOR MAGNETIC DEVICES II,5-170
SELECTION CRITERIA
- CABLES II,5-208
- CAPACITOR II,5-146
- CONNECTORS II,5-194
- ELECTRON TUBES II,5-207
- MAGNETIC DEVICES II,5-169
- RELAYS II,5-177
- RESISTOR II,5-103
- SEMICONDUCTORS II,5-75
- SWITCHES II,5-186
SELECTION GUIDELINES FOR SWITCHES II,5-187
SELECTION GUIDELINES, MICROCIRCUITS II,5-12
SELECTION-FUNCTION GUIDE FOR RELAYS II,5-176
SEM PROGRAM I,7-18, II,5-222
SEMICONDUCTOR
- CLASSES II,1-19
- DEVICE MATERIALS AND PROCESSING II,1-20
- DEVICES, CLASSES II,1-18
- FABRICATION II,1-20
- SELECTION CRITERIA II,5-75
- TECHNOLOGY AND MATERIALS II,1-21, II,1-18
- SEMICONDUCTORS (SEE DISCRETE SEMICONDUCTOR DEVICES) II,5-75
SEQUENTIAL BINOMIAL TEST PLANS I,8A-12
SEQUENTIAL TESTS I,8-66, I,8A-36
SERIES
SOFTWARE FAULT TOLERANCE
SOFTWARE CONSTRUCTION
SOFTWARE DESIGN
SOFTWARE ERROR CLASSIFICATION
SOFTWARE ERRORS AND THEIR SOURCES
SOFTWARE FAILURE DATA
SOFTWARE RELIABILITY PROVISIONS, TECHNIQUES AND TOOLS
SOFTWARE RELIABILITY TOOLS AND TECHNIQUES
SPECIFICATION ERRORS
SPECIFICATIONS
STRUCTURED PROGRAMMING
STRUCTURED PROGRAMMING CONSTRUCTS
STRUCTURED WORKTHROUGH PROCEDURE
SUMMARY OF FAILURE RATE BASED MODELS
SYNTAX ERRORS
SYSTEM ANALYSIS
SYSTEM INTEGRATION AND TEST
SYSTEM/SUBSYSTEM SPECIFICATION
TECHNICAL MANUALS
TEST ANALYSIS REPORT
TEST PATH TRACING
TEST PLAN
THE MUSA MODEL
THE SOFTWARE PROBLEM
USERS MANUAL
SOFTWARE SNEAK
SOFTWARE TOPOGRAPHS
SOLDER AND FLUX
SOLDERING
SOLID TANTALUM CAPACITORS, FAILURE MECHANISM ANALYSIS
SOWS ELEMENT CONTENT
SPARCS - 2 (SIMULATION PROGRAM FOR ASSESSING THE RELIABILITY OF COMPLEX SYSTEMS)
SPARES PROVISIONING
DIGITAL PWB QUANTITIES
DISTRIBUTION OF TIMES TO REPAIR
MARKOV-PROCESS
OVERLAP REGION OF D1 AND D2
RADAR MAIN ASSEMBLIES
REPAIR LINE COMMITMENTS
SERVICING POLICY
SUPPLY PIPELINE
TRAFFIC PATTERN AND STOCK LEVEL
TRANSITION MATRIX
SPECIFICATION FOR A PERMISSIBLE PREVENTIVE MAINTENANCE DOWNTIME
SPECIFICATION FOR UNINTERRUPTED OPERATIONAL CAPABILITY WITHOUT PM
SPECIFICATIONS AND STANDARDS I, 2-1, II, 2-1
DOD-C-85045 CABLES, FIBER OPTICS, GENERAL SPECIFICATIONS II, 5-212
DOD-HDBR-263 ELECTROSTATIC DISCHARGE CONTROL HANDBOOK I, 7-18
DOD-STD-1678 FIBER OPTICS TEST METHODS II, 5-212
DOD-STD-1678 FIBER OPTICS TEST METHODS AND INSTRUMENTATION II, 5-212, II, 5-213
DOD-STD-1686 ELECTROSTATIC DISCHARGE CONTROL PROGRAM I, 7-18
EIA STANDARD RS-455 AND ADDENDUMS II, 5-213
FEDERAL II, 2-1
HANDBOOKS II, 2-12
IPC-CF-150 COPPER FOIL FOR PRINTED WIRING APPLICATION II, 5-216
IPC-T-50 TERMS AND DEFINITIONS FOR INTERCONNECTING AND PACKAGING ELECTRONIC CIRCUITS II, 5-216, II, 5-217
MIL-C-10950, CAPACITORS, FIXED, MICA DIELECTRIC, BUTTON STYLE (STYLE CB) II, 5-147, II, 5-158
MIL-C-11015, CAPACITORS, FIXED, CERAMIC DIELECTRIC (GENERAL PURPOSE) (STYLE CK) II, 5-148, II, 5-158
MIL-C-11272 GLASS DIELECTRIC INACTIVE FOR NEW DESIGN. USE MIL-C-23269 II, 5-147
MIL-C-12889 BYPASS RADIO-INTERFERENCE II, 5-148
MIL-C-14409 CAPACITORS, VARIABLE (PISTON TYPE, TABULAR TRIMMER), (STYLE PC) II, 5-152, II, 5-158
MIL-C-15305 COIL, FIXED AND VARIABLE, RF, GENERAL SPECIFICATION FOR II, 5-171, II, 5-169
MIL-C-18312 METALLIZED PAPER II, 5-148
MIL-C-19978, CAPACITORS, FIXED, PLASTIC (OR PAPER-PLASTIC), DIELECTRIC II, 5-148, II, 5-159
MIL-C-20, CAPACITORS, FIXED, CERAMIC DIELECTRIC II, 5-149, II, 5-157
MIL-C-21097 CONNECTORS, ELECTRICAL, PRINTED WIRING BOARD, GENERAL PURPOSE II, 5-198, II, 5-215
MIL-C-22992 NONREMOVAL SOLDER CLASS C CONTACTS II, 5-196
MIL-C-23183, CAPACITORS, FIXED OR VARIABLE, GAS OR VACUUM DIELECTRIC, CERAMIC, CERAMIC OR GLASS ENVELOPE (STYLE C9) II, 5-160
MIL-C-23269, CAPACITORS, FIXED, GLASS DIELECTRIC, ESTABLISHED RELIABILITY (STYLE C9R) II, 5-147, II, 5-161
MIL-C-24308 MINIATURE RECTANGULAR CONNECTORS 20 OR 22D II, 5-196
MIL-C-25 CAPACITOR, PAPER, TYPE CP II, 5-148
MIL-C-26482 ENVIRONMENT RESISTING, QUICK DISCONNECT, MINIATURE, CIRCULAR ELECTRIC CONNECTORS II, 5-171, II, 5-195
MIL-C-28731 RECTANGULAR ELECTRICAL CONNECTORS II, 5-197
MIL-C-28748 STANDARD RECTANGULAR CONNECTORS II, 5-197
MIL-C-28804 HIGH DENSITY, POLARIZED CENTER JACKSCREW ENVIRONMENT RESISTING CONNECTORS II, 5-197
MIL-C-3655 PLUG AND RECEPTACLE, ELECTRICAL COAXIAL, CONNECTORS WEATHERPROOF II, 5-198
MIL-C-38999 ELECTRICAL CONNECTORS II, 5-195
MIL-C-39001, CAPACITORS, FIXED, MICA DIELECTRIC, ER (STYLE CMR) II, 5-161
MIL-C-39003, CAPACITORS, FIXED (SOLID TANTALUM), ER (STYLE CSR) II, 5-161
MIL-C-39006, CAPACITORS, FIXED, ELECTROLYTIC (NON-SOLID ELECTROLYTE) TANTALUM, ESTABLISHED RELIABILITY (STYLE CLR) II, 5-150, II, 5-162
MIL-C-39010 COILS, RF, ER II, 5-170, II, 5-171
MIL-C-39012 FLEXIBLE RADIO FREQUENCY CABLE AND COAXIAL TRANSMISSION LINE CONNECTORS II, 5-198
MIL-C-39014, CAPACITORS, FIXED, CERAMIC DIELECTRIC (GENERAL PURPOSE), ESTABLISHED RELIABILITY (STYLE CKR) II, 5-149, II, 5-164
MIL-C-39018, CAPACITORS, FIXED, (ALUMINUM OXIDE) (STYLES CU AND CUR) II, 5-150, II, 5-164
MIL-C-39022, CAPACITORS, FIXED, METALLIZED, PAPER PLASTIC FILM OR PLASTIC DIELECTRIC II, 5-151, II, 5-165
MIL-C-39024 TEST POINT II, 5-197
MIL-C-3965 ELECTROLYTIC II, 5-149
MIL-C-5 MICA DIELECTRIC CM05 CM07 II, 5-147
MIL-C-5015 CONNECTORS, CYLINDRICAL II, 5-195
MIL-C-55302 CONNECTORS, PRINTED CIRCUIT SUBASSEMBLY AND ACCESSORIES II, 5-199, II, 5-216
MIL-C-55363, CAPACITORS, CHIP, FIXED, TANTALUM, ESTABLISHED RELIABILITY (STYLE CWR) II, 5-151, II, 5-165
MIL-C-55514, CAPACITORS, FIXED, PLASTIC (OR METALLIZED PLASTIC) DIELECTRIC, DC (IN NON-METAL CASES), ESTABLISHED RELIABILITY (STYLE CFR) II, 5-151, II, 5-166
MIL-C-55681, CAPACITORS, CHIP, MULTILAYER, FIXED, CERAMIC DIELECTRIC, ESTABLISHED RELIABILITY (STYLE CDR) II, 5-151, II, 5-166
MIL-C-62 ELECTROLYTIC (DRY) II, 5-149
MIL-C-81, CAPACITORS, VARIABLE, CERAMIC DIELECTRIC (STYLE CV) II, 5-151, II, 5-158
MIL-C-81659 RECTANGULAR CONNECTORS SERIES 2 II, 5-197
MIL-C-83723 ENVIRONMENT RESISTING, CIRCULAR, ELECTRICAL CONNECTORS II, 5-196
MIL-C-83733 MINIATURE RECTANGULAR CONNECTORS II, 5-197
MIL-E-1, "ELECTRON TUBES, GENERAL SPECIFICATION FOR." II, 5-207
MIL-F-14256 FLUX, SOLDERING, LIQUID (ROSN BASE) II, 5-217
MIL-HDBK-217 RELIABILITY PREDICTION OF ELECTRONIC EQUIPMENT I, 6-37, II, 5-9
MIL-HDBK-246 PROGRAM MANAGERS' GUIDE FOR THE STANDARD ELECTRONIC MODULES PROGRAM II, 5-222
MIL-I-45208 INSPECTION SYSTEM REQUIREMENTS I, 11-6
MIL-I-46058 INSULATING COMPOUND, ELECTRICAL (FOR COATING PRINTED CIRCUIT ASSEMBLIES) II, 5-215
MIL-M-28787 STANDARD ELECTRONIC MODULES, GENERAL SPECIFICATION FOR II, 5-222
MIL-P-11268(EL), "PARTS, MATERIALS AND PROCESSES USED IN ELECTRONIC EQUIPMENT." II, 5-194
MIL-P-13949 PLASTIC SHEET, LAMINATED METAL CLAD FOR PRINTED WIRING II, 5-215
MIL-P-28809 PRINTED WIRING ASSEMBLIES II, 5-215
MIL-P-50884 PRINTED WIRING FLEXIBLE, GENERAL SPECIFICATION FOR II, 5-215
MIL-P-55110 PRINTED WIRING BOARDS II, 5-216
MIL-P-81728 PLATING TIN-LEAD (ELECTRODEPOSITED) II, 5-215
MIL-Q-9859 QUALITY PROGRAM ELEMENTS I, 11-4
MIL-R-10509 FILM SEE DATA ON MIL-R-55182 II, 5-104
MIL-R-11 COMPOSITION, INACTIVE FOR NEW DESIGN. USE MIL-R-39008 II, 5-104
MIL-R-11804, RESISTORS, FIXED, FILM (POWER TYPE) (STYLE RD, UNINSULATED) II, 5-104, II, 5-121
MIL-R-12934, RESISTORS, VARIABLE, WIREWOUND, PRECISION (STYLE RR) II, 5-106, II, 5-122
MIL-R-18546, FIXED, WIREWOUND, (POWER TYPE, CHASSIS MOUNTED) II, 5-104, II, 5-123
MIL-R-19, RESISTORS, VARIABLE, WIREWOUND (LOW OPERATING TEMPERATURE) (STYLE RA) II, 5-106, II, 5-116
MIL-R-22, RESISTORS, VARIABLE, WIREWOUND (POWER TYPE) (STYLE RP) (UNENCLOSED) II, 5-106, II, 5-118
MIL-R-22097, RESISTORS, VARIABLE, NONWIREWOUND (ADJUSTMENT TYPE) (ST 'E RJ) II, 5-107, II, 5-124
MIL-R-22684 FILM (INSULATED) INACTIVE FOR NEW DESIGN. USE MIL-R-39017 II, 5-104

45
MIL-R-23285, RESISTORS, VARIABLE, NONWIREWOUND
(STYLE RV) II,5-106, II,5-125

MIL-R-26, RESISTORS, FIXED, WIREWOUND (POWER TYPE)
(STYLE RW) II,5-104, II,5-119

MIL-R-27208, RESISTORS, VARIABLE, WIREWOUND (ADJUSTMENT TYPE)
(STYLE RT) II,5-107, II,5-127

MIL-R-39002, RESISTORS, VARIABLE, WIREWOUND, SEMIPRECISION
(STYLE RK) II,5-107, II,5-128

MIL-R-39005, RESISTORS, FIXED, WIREWOUND (ACCURATE) ESTABLISHED
RELIABILITY (STYLE RBR) II,5-104, II,5-129

MIL-R-39007, RESISTORS, FIXED, WIREWOUND (POWER TYPE),
ESTABLISHED RELIABILITY (STYLE RWR) II,5-104, II,5-130

MIL-R-39008, RESISTORS, FIXED, COMPOSITION (INSULATED)
ESTABLISHED RELIABILITY (STYLE RCR) II,5-105, II,5-131

MIL-R-39009, RESISTORS, FIXED, WIREWOUND (POWER TYPE,
CHASSIS MOUNTED) ESTABLISHED RELIABILITY
(STYLE RER) II,5-105, II,5-132

MIL-R-39015, RESISTORS, VARIABLE, WIREWOUND (LEAD SCREW
ACTUATED) ESTABLISHED RELIABILITY
(STYLE RRT) II,5-107, II,5-133

MIL-R-39016, RELAYS, ELECTROMAGNETIC, ESTABLISHED RELIABILITY,
GENERAL SPECIFICATION FOR II,5-177

MIL-R-39017, RESISTORS, FIXED, FILM (INSULATED), ESTABLISHED
RELIABILITY (STYLE RLR) I,5-105, II,5-134

MIL-R-39023, RESISTORS, VARIABLE, NONWIREWOUND, PRECISION
(STYLE RQ) II,5-136

MIL-R-39035, RESISTORS, VARIABLE, NONWIREWOUND (LEAD-SCREW ACTUATED)
ESTABLISHED RELIABILITY (STYLE RJR) II,5-107, II,5-137

MIL-R-55182, RESISTORS, FIXED, FILM, ESTABLISHED RELIABILITY
(STYLE RNR) II,5-105, II,5-139

MIL-R-55342, RESISTORS, FIXED, FILM, CHIP, ESTABLISHED RELIABILITY II,5-140

MIL-R-55432 RESISTORS, FILM, CHIP RH0502 II,5-105

MIL-R-83401, RESISTOR NETWORKS, FIXED, FILM (STYLE RZ) II,5-106, II,5-141

MIL-R-93 RESISTORS, WIRE-WOUND INACTIVE FOR NEW DESIGN.
USE MIL-R-39005 II,5-104

MIL-R-94, RESISTORS, VARIABLE, COMPOSITION (STYLE RV) II,5-106, II,5-120

MIL-S-12285 SWITCH, THERMOSTATIC II,5-186

MIL-S-15291 SNAP ACTION II,5-187

MIL-S-15743 SWITCHES, ROTARY, ENCLOSED II,5-186

MIL-S-18396 SWITCHES, METER AND CONTROL, NAVAL SHIPYARD II,5-186

MIL-S-19500 SEMICONDUCTOR DEVICES,
GENERAL SPECIFICATIONS I,7-6, II,5-212, II,5-76

MIL-S-21604 SWITCHES, ROTARY, MULTIPOLE AND SELECTOR TYPE II,5-186

MIL-S-22710 PRINTED CIRCUIT, THU'BWHEEL, IN-LINE, AND PUSHBUTTON II,5-187

MIL-S-22885 PUSH-BUTTON ILLUMINATED II,5-185

MIL-S-24236 THERMOSTATIC II,5-188

MIL-S-24317 MULTISTATION II,5-188

MIL-S-28827 SWITCHES LIQUID, HERMETICALLY SEALED II,5-188

MIL-S-3786 ROTARY SWITCHES LOW CURRENT II,5-187

MIL-S-3950 TOGGLE SWITCHES II,5-187

MIL-S-45743 SOLDERING, MANUAL TYPE, HIGH RELIABILITY,
ELECTRICAL, ELECTRONIC, INSTRUMENT, COMMUNICATION
AND RADAR FOR AEROSPACE II,5-217

MIL-S-46844 SOLDER BATH SOLDERING OF PRINTED WIRING ASSEMBLIES II,5-217

MIL-S-5423 SWITCHES TOGGLE, PUSH-BUTTON AND ROTARY II,5-187

MIL-S-55433 REED SWITCHES II,5-188

MIL-S-6807 ROTARY SWITCHES SELECTOR II,5-187

MIL-S-83502 ROUND, TO, PLUG-IN SOCKETS II,5-199
MIL-S-83505 INDIVIDUAL LEAD SOCKETS II,5-199
MIL-S-83734 PLUG-IN ELECTRONIC COMPONENT SOCKETS II,5-199
MIL-S-8805 PUSH SWITCHES II,5-187
MIL-S-8834 II,5-187
MIL-S-9395 PRESSURE SWITCHES II,5-187
MIL-STD-105 SAMPLING PROCEDURES & TABLES FOR INSPECTION
BY ATTRIBUTES I,8A-10
MIL-STD-1132, SWITCHES AND ASSOCIATED HARDWARE II,5-4, II,5-186
MIL-STD-1286 TRANSFORMERS, INDUCTORS AND COILS,
SELECTION AND USE OF II,5-169
MIL-STD-1346, RELAYS, SELECTION AND USE OF II,5-177
MIL-STD-1353, SELECTION AND USE OF ELECTRICAL CONNECTORS II,5-194
MIL-STD-1378 REQUIREMENTS FOR EMPLOYING STANDARD
ELECTRONIC MODULES II,5-222
MIL-STD-1389 DESIGN REQUIREMENTS FOR STANDARD ELECTRONIC MODULES II,5-222
MIL-STD-1547, PARTS MATERIALS AND PROCESSES FOR SPACE AND
LAUNCH VEHICLES II,5-76
MIL-STD-1562, STANDARD MICROCircuits, LISTS OF II,5-4
MIL-STD-1634 MODULE DESCRIPTION FOR THE SEM PROGRAM II,5-222
MIL-STD-198 CAPACITORS, SELECTION AND USE OF II,5-4, II,5-146
MIL-STD-199 RESISTORS, SELECTION AND USE OF I,5-104, II,5-4, II,5-111
MIL-STD-200, "ELECTRON TUBES, SELECTION OF." II,5-207
MIL-STD-202 TEST METHODS FOR COMPONENT PARTS II,1-26, II,5-4
MIL-STD-210CLIMATIC EXTREMES FOR MILITARY EQUIPMENT I,6-5, I,7B-1
MIL-STD-275 PRINTED WIRING FOR ELECTRONIC EQUIPMENT II,5-216
MIL-STD-454, STANDARD GENERAL REQUIREMENTS FOR ELECTRONIC
EQUIPMENT II,5-177, II,5-186, II,5-194, II,5-207,
II,5-208, II,5-216, II,5-217
MIL-STD-701, STANDARD SEMICONDUCTOR DEVICES, LISTS OF II,5-4, II,5-76
MIL-STD-750 TEST METHODS FOR SEMICONDUCTOR DEVICES II,1-27, I,5-76
MIL-STD-781 RELIABILITY MODELING AND PREDICTION I,6-61
MIL-STD-785 RELIABILITY PROGRAM FOR SYSTEMS AND EQUIPMENT I,12-33
MIL-STD-837, TEST METHODS AND PROCEDURES FOR MICROELECTRONIC
DEVICES II,1-27, II,5-4
MIL-STD-965, PARTS CONTROL PROGRAM II,5-2
MIL-T-21038 TRANSFORMERS, PULSE, LOW POWER, GENERAL
SPECIFICATION FOR II,5-169, II,5-171
MIL-T-23648, THERMISTOR (THERMALLY SENSITIVE RESISTOR) INSULATED
(STYLE RTH) II,5-107, II,5-143
MIL-T-27 TRANSFORMERS AND INDUCTORS, AUDIO, POWER AND HIGH POWER PULSE,
GENERAL SPECIFICATION FOR II,5-169, II,5-170
MIL-T-55631 TRANSFORMERS, IF, RF, AND DISCRIMINATOR,
GENERAL SPECIFICATION FOR II,5-169, II,5-171
MIL-T-83720 TRANSFORMERS AND INDUCTORS, NONEXPLOSIVE,
GENERAL SPECIFICATION FOR II,5-169
MIL-T-83721 TRANSFORMERS, VARIABLE, POWER,
GENERAL SPECIFICATION FOR II,5-169, II,5-171
MILITARY II,2-1
NAC TP-526 SEM PROGRAM MICROPROCESSOR APPLICATIONS HANDBOOK II,5-222
NAC TP-528 SEM PROGRAM MEMORY APPLICATION HANDBOOK II,5-222
NAC TP-529 SEM THERMAL APPLICATION HANDBOOK II,5-222
NAC TP-531 IN PROCESS MODULE DESCRIPTIONS HANDBOOK II,5-222
NAC TP-532 SEM HARDWARE CATALOG II,5-232
NTIA-SP-79-4 OPTICAL WAVEGUIDE COMMUNICATIONS GLOSSARY II,5-214
PROGRAM MODULE TESTING II,5-222
QQ-S-571 SOLDER, TIN ALLOY, TIN LEAD ALLOY, AND LEAD ALLOYS II,5-217
REPORT 393-2 SEM SYSTEMS APPLICATIONS REPORT II,5-212
STANDARD RS-455 II,5-212
WC-596 PLUG, RECEPTACLES AND CABLE OUTLET, ELECTRICAL POWER CONNECTORS II,5-199
SPECIFIED INTERMEDIATE LEVEL MAINTAINABILITY REQUIREMENTS I,12-47
SPECIFIED LIMITATION IN MAINTENANCE MANHOUR REQUIREMENTS I,12-48
SPEED/POWER CAPABILITIES OF DIGITAL TECHNOLOGIES II,1-33
SPIKE PROBLEMS I,7-36
SSI-MSI LOGIC PERFORMANCE VS POWER II,5-20
STANDARD COMPONENTS AND CIRCUITS I,7-16
STANDARD COST FACTORS, TYPICAL I,10-107
STANDARD DEVIATION II,4-3
STANDARD ELECTRONIC MODULE (SEM) PROGRAM I,7-18, II,5-221
QUALITY AND RELIABILITY II,5-223
PART SELECTION AND CONTROL II,5-221
REFERENCES II,5-223
STANDARD ELECTRONIC MODULES, SELECTION AND USE CRITERIA II,5-222
STANDARD NORMAL CURVE AT Z, ORDINATES F(Z) I,5A-3
STANDARD NORMAL DISTRIBUTION FUNCTION VALUES I,5A-1
STANDBY REDUNDANCY I,7A-34, I,7A-37, I,7A-38, I,7A-49, I,7-69,
STANDBY REDUNDANCY—WITH—REPAIR (CONTINUOUS MONITORING) I,7A-45
STANDBY REDUNDANT TWO CHANNEL R RECEIVER I,7-72
STATE TRANSFORMATIONS FOR STAGES 1, 2, AND 3 I,6A-9
STATISTICAL ANALYSIS INTRODUCTION I,8-16
STATISTICAL ANALYSIS I,8-16
STATISTICAL DISTRIBUTIONS I,5-7
STATISTICAL DISTRIBUTIONS USED IN MAINTAINABILITY MODELS I,5-40
AIRBORNE FIRE CONTROL SYSTEM I,5-13
BINOMIAL DISTRIBUTION I,5-17
CALCULATIONS TO DETERMINE T' AND T I,5-47
COMPUTER EXAMPLE I,5-14
CONTINUOUS DISTRIBUTIONS I,5-7
DISCRETE DISTRIBUTIONS I,5-17
EXPONENTIAL APPROXIMATION I,5-61
EXPONENTIAL DISTRIBUTION I,5-13, I,5-59
FATIGUE FAILURE I,5-12
GAMMA DISTRIBUTION I,5-14
LOGNORMAL DISTRIBUTION I,5-12, I,5-42
MAINTAINABILITY FUNCTION M(T) I,5-52
MECHANICAL EQUIPMENT I,5-11
MEDIAN TIME TO REPAIR I,5-52
MICROWAVE TUBE I,5-10
MISSILE SYSTEM I,5-15
MTTR (MEAN TIME TO REPAIR) I,5-52
NORMAL (OR GAUSSIAN) DISTRIBUTION I,5-7
NORMAL DISTRIBUTION I,5-56
PERMISSIBLE NUMBER OF FAILURES I,5-21
POISSON DISTRIBUTION I,5-20
PROBABILITY DENSITY FUNCTION I,5-46
QUALITY CONTROL I,5-18
REDUNDANT SYSTEM I,5-21
RELIABILITY I,5-18
RELIABILITY CALCULATIONS USING THE NORMAL DISTRIBUTION I,5-10
TIME TO REPAIR DATA I,5-45
WEIBULL DISTRIBUTION I,5-16, I,5-17
STATISTICAL QUALITY CONTROL II,4-14
STEADY STATE AVAILABILITY I,5-64
STEP (STANDARDIZATION EVALUATION PROGRAM) I,10-129
STEP MTBF APPROXIMATION I,11-17

48
SYSTEM EFFECTIVENESS I,3-1, I,3-8, I,4-12, I,4-13, I,10-1, I,10-2
AVAILABILITY I,10-1
CALCULATIONS I,10-7
CAPABILITY I,10-1
COMPUTER PROGRAMS I,10-52
CONCEPTS I,10-2
DEPENDABILITY I,10-1, I,10-42
EVALUATION I,10-18
FACTORS INFLUENCING SYSTEM EFFECTIVENESS I,4-14
OPTIMIZATION I,4-16
R/M CONSIDERATIONS I,4-13
SYSTEM R&M PARAMETERS I,10-11
THE AIR FORCE (WSEIAC) CONCEPT (REF. 2) I,10-4
THE ARINC CONCEPT I,10-3
THE NAVY CONCEPT I,10-6
TRADEOFF TECHNIQUES I,10-56
SYSTEM EFFECTIVENESS MODELS I,10-8
SYSTEMS EFFECTIVENESS EVALUATION COMPUTER PROGRAM I,10-55
SYSTEM ENGINEERING PROCESS I,4-9
SYSTEM MANAGEMENT ACTIVITIES I,4-10
SYSTEM PERFORMANCE VARIABLES AND ATTRIBUTES I,6-10
SYSTEM R&M MODELING I,10-14
AVAILABILITY MODELS I,10-19
COMPUTER PROGRAMS, COMPLEX MODELS I,10-52
MISSION RELIABILITY AND DEPENDABILITY MODELS I,10-41
OPERATIONAL READINESS MODELS I,10-43
SYSTEM R&M PARAMETERS I,10-12, I,10-11, I,10-15
AVAILABILITY I,10-14, I,10-15
DEPENDABILITY I,10-15
DIRECT-MAINTENANCE-MANHOURS-PER-MAINTENANCE-ACTION (DMMH/MA) I,10-15
LOGISTIC SUPPORT COST I,10-12
MAINTENANCE MANPOWER COST I,10-12
MEAN-TIME-BETWEEN-DOWNING-EVENTS (MTBDE) I,10-15
MEAN-TIME-BETWEEN-MAINTENANCE-ACTIONS (MTBMA) I,10-15
MEAN-TIME-TO-RESTORE-SYSTEM (MTTRS) I,10-15
MISSION RELIABILITY I,10-15
MISSION SUCCESS I,10-12
MISSION-TIME-BETWEEN-CRITICAL-FAILURES (MTBCF) I,10-15
MISSION-TIME-TO-RESTORE-FUNCTIONS (MTTRF) I,10-15
OPERATIONAL READINESS I,10-15
READINESS OR AVAILABILITY I,10-12
SYSTEM REDUNDANCY I,7A-2
SYSTEM RELIABILITY
DEMONSTRATION I,10-81
PREDICTION I,10-81
SPECIFICATION I,10-81
SYSTEM RELIABILITY WITH STANDBY REDUNDANCY I,7A-37
SYSTEM RELIABILITY WITH OPERATIVE REDUNDANCY I,7A-12
SYSTEM REQUIREMENTS REVIEW I,9-27
SYSTEM SPECIFICATION REQUIREMENTS FOR AVIONICS, MISSILE SYSTEM, AND AIRCRAFT I,6-11
SYSTEMS RELIABILITY ENGINEERING I,10-1
ALLOCATION OF AVAILABILITY, AND FAILURE AND REPAIR RATES I,10-69
COMPLEX MODELS I,10-52
COST CONSIDERATIONS I,10-90
INTRODUCTION I,10-1
SYSTEM DESIGN CONSIDERATIONS I,10-86

50
TABLE OF EFFORT FUNCTIONS I, 6A-6
TANTALUM FOIL CAPACITORS, FAILURE MECHANISM ANALYSIS II, 8-12
TECHNICAL APPROACH TO STORAGE SERVICEABILITY STANDARDS I, 11-73
TEMP-CYCLE ENVIRONMENTAL PROFILE, PCB I, 11-37
TEMPERATURE II, 4-18
CONSTANT SCREEN I, 11-35
CONSIDERATIONS FOR PRECISION RESISTORS II, 5-31
CYCLING I, 11-36
CYCLING SCREEN I, 11-35
EFFECTS ON FAILURE RATE II, 4-17
EFFECTS, RESISTORS II, 5-109
PROFILE I, 6-8
PROTECTION I, 7-76
RANGE I, 11-27
RATE OF CHANGE I, 11-27
TEMPERATURE/Failure RATE RELATIONSHIP OF NPN TRANSISTORS I, 7-7
TEST, ANALYZE AND FIX (TAAF) I, 8-69
TEST CONDITIONING MATRIX (TAKEN FROM MIL-STD-781C) I, 11-52
TEST EFFECTIVENESS, SCREENING I, 11-43
TEST METHOD COMPARISON II, 7-31
TEST PATH TRACING I, 9-33
TEST PLAN, SOFTWARE R & M I, 12-75
TESTABILITY HAZARD I, 7-36
TESTING OF ELECTRONIC PARTS II, 1-25
TESTING OF LS-I RANDOM LOGIC II, 7-32
TEXAS INSTRUMENTS SBP 9989 II, 5-70
THE AVIONICS LABORATORY PREDICTIVE OPERATIONS AND SUPPORT (ALPOS) COST MODEL I, 10-129
THERMAL CIRCUIT OF A DISCRETE ELECTRONIC PART II, 6-36
THERMAL CIRCUIT OF A HEAT SINK II, 6-37
THERMAL CYCLE SCREENING I, 11-27
THERMAL EFFECTS ELECTRICAL CONNECTORS II, 5-201
THERMAL IMPACT ON RELIABILITY II, 6-46
THERMAL RESISTANCE II, 5-36
THERMAL SCREENS, ASSEMBLY LEVEL DEFECT TYPES PRECIPITATED I, 11-40
THERMAL SECONDARY BREAKDOWN (AVALANCHE DEGRADATION) II, 6-14
THERMAL SYSTEMS I, 7-76
THERMAL SYSTEMS MANAGEMENT PROGRESS FLOW CHART II, 6-47
THERMALLY CONDUCTIVE COMPOUND USE II, 6-42
THERP (TECHNIQUE FOR HUMAN ERROR RATE PREDICTION) I, 7-100
THICK FILM CIRCUITS II, 1-23
THIN FILM CIRCUITS II, 1-24
THREE PARALLEL ELEMENT CIRCUIT, STATES OF OPERATION I, 7A-32
THREE PARALLEL ELEMENTS I, 7A-30
THREE-ELEMENT REDUNDANT CONFIGURATIONS WITH SWITCHING I, 7A-31
THREE-ELEMENT VOTING REDUNDANCY I, 7A-33
TRIBOELECTRIC CHARGING II, 6-18
THYRATRON II,B-1
THYRISTORS II,5-80
TI 9900A II,5-70
TIGER I,10-54
TIME CATEGORIES I,3-9
- ACTIVE TIME I,3-9
- ADMINISTRATIVE TIME I,3-10
- ALERT TIME I,3-10
- CORRECTIVE MAINTENANCE TIME I,3-10
- DELAY TIME I,3-9
- DOWNTIME I,3-9
- INACTIVE TIME I,3-9
- MAINTENANCE TIME I,3-9
- MISSION TIME I,3-10
- MODIFICATION TIME I,3-9
- NOT OPERATING TIME I,3-10
- PREVENTIVE MAINTENANCE TIME I,3-10
- REACTION TIME I,3-10
- SUPPLY DELAY TIME I,3-9
- UPTIME I,3-9
TIME CONCEPTS, TIME RELATIONSHIPS (MIL-STD-721) I,3-7
TIME MEASURE I,6-7
TIME TEMPERATURE REGRESSION II,5-77
TIME TO FAILURE, RANKS AND PERCENTILES II,4-10
TIME TO REPAIR II,8-24
TIME TO REPAIR DATA I,5-45
TIME TO REPAIR DISTRIBUTION I,5-41, I,12-46
TIME TO REPAIR, MEAN I,5-40
TIME TO REPAIR, MEDIAN I,5-40
TOLERANCE ANALYSIS, ELECTRONIC PARTS/CIRCUIT I,12-36
TOPOGRAPHS, SOFTWARE I,7-142
TP-532 (NAC) SEM HARDWARE CATALOG II,5-222
TRADEOFFS, RELIABILITY-AVAILABILITY-MAINTAINABILITY I,10-42
TRADEOFF TECHNIQUES I,10-56
- ALTERNATIVE DESIGN TRADEOFF CONFIGURATIONS I,10-65
- COST COMPARISON OF ALTERNATIVE DESIGN CONFIGURATIONS I,10-65
- RELIABILITY - AVAILABILITY - MAINTAINABILITY I,10-58
TRANSFERRED ELECTRON DEVICE (TED) II,5-92
TRANSIENT AND OVERSTRESS PROTECTION I,7-18
TRANSIENT PROTECTION I,7-18
TRANSIENT STRESS I,7-38
TRANSISTOR MAXIMUM POWER DISSIPATION II,5-81
TRANSISTOR MAXIMUM VOLTAGES II,5-81
TRANSISTOR PROTECTION I,7-21, II,5-96
TRANSISTORS (SEE DISCRETE SEMICONDUCTOR DEVICES) II,5-81
TRANSISTORS (SILICON, NPN), STRESS/TEMPERATURE PLOT II,6-28
TRANSISTORS, ACTUAL CONSTANT JUNCTION TEMPERATURE CURVE II,6-31
TRAVELLING WAVE TUBES II,B-1
TRENDS IN MINIATURIZATION II,1-30
TRIBOELECTRIC SERIES II,6-19
TROUBLESHOOTING I,11-90
TRUNCATED TESTS I,8-44
TTL (TRANSISTOR-TRANSISTOR-LOGIC) I,7-35
TTL PROTECTION I,7-24, II,5-99
TWO PARALLEL ELEMENTS I,7A-28
TWO-DIMENSIONAL PROJECTION OF AVAILABILITY SURFACE I,10-120
TWO-SIDED CONFIDENCE LEVEL, INTERVAL, AND LIMITS I,8-37
TWYSTRON (HYBRID TWT-KLYSTRON) II,B-1
TYPICAL APPLICATIONS REQUIRING CAREFUL PRINTED CIRCUIT TECHNIQUES II,5-35
TYPICAL CHECKLIST FOR THE DESIGN REVIEW I,7-160
TYPICAL CIRCUIT ANALYSIS TECHNIQUES I,7-34
TYPICAL ITEMS TO BE COVERED IN A DESIGN REVIEW I,7-157
TYPICAL OPERATING CHARACTERISTIC CURVE I,8-63
TYPICAL OPERATING CHARACTERISTIC CURVE II,4-16
TYPICAL OPERATIONAL SEQUENCE FOR AIRBORNE FIRE CONTROL SYSTEM I,6-8
TYPICAL PRODUCTION PROCESS I,11-23
TYPICAL SWITCHING WAVEFORMS II,5-86

U

UNAVAILABILITY CURVES I,10-80
UNRELIABILITY IN DESIGN I,7-9, I,7-11
UNRELIABILITY, FACTORS EFFECTING I,7-12
UNRELIABILITY FUNCTION I,5-2
UPPER TEST MTBF I,6-3
UPTIME I,3-6, I,3-9
USAGE AND SELECTION GUIDELINES FOR RESISTORS II,5-104
USAGE AND SELECTION GUIDELINES FOR SWITCHES II,5-187
USEFUL II,3-5

V

VALIDATION PHASE PLANNING I,12-5
VALIDATION PHASE RELIABILITY AND MAINTAINABILITY DECISION POINTS I,12-58
VALIDATION PHASE RELIABILITY AND MAINTAINABILITY TASKS I,12-57
VALIDATION PHASE TRADEOFF STUDIES I,12-25
VALIDITY, TESTS FOR I,8-47
VAPOR PHASE SOLDERING II,5-218
VARACTORS II,5-80
VARIABILITY ANALYSIS METHODS I,7-30
VARIABLE RESISTORS II,5-111
VARIATIONS DUE TO LIFE AND ENVIRONMENTS OVER SPECIFICATIONS II,5-172
VARIOUS COOLING TECHNIQUES, LIMITATIONS II,6-39
VERY LARGE SCALE INTEGRATED CIRCUITS (VLSI) (1980) I,1-29, II,1-11
VIBRATION SCREEN
ASSEMBLY LEVEL DEFECT TYPES PRECIPITATED I,11-40
RANDOM I,11-32
SINGLE (FIXED) FREQUENCY I,11-34
SWEPT-SINE I,11-33
VIRENE, RELIABILITY GROWTH MODELS I,8B-2
VOLTAGE FOLLOWER CIRCUIT II,5-39
VOLTAGE REGULATOR II,5-42
VOLTAGE REGULATOR SUPPLY, REDUNDANT I,7-60, I,7-62
VOTING REDUNDANCY I,7-68, I,7A-32
VZAP I,7-19

W

WARRANTY I,12-19
WARRANTY APPLICATION CRITERIA I,12-21
WARRANTY/GUARANTEE PLANS I,12-19
WARRANTY OF SUPPLIES I, 12-1
WARRANTY OF TECHNICAL DATA I, 12-1
WAVE SOLDERING II, 5-218
WC-596 ELECTRICAL POWER CONNECTORS II, 5-199
WEAROUT II, 5-3
WEAROUT PERIOD I, 5-23
WEAR OUT FAILURE DISTRIBUTION I, 5-7
WEIBULL DISTRIBUTION I, 5-16, I, 8A-21, I, 8A-34, II, 4-7
WEIBULL DISTRIBUTION, EXAMPLE I, 8-52
WEIBULL DISTRIBUTION, GRAPHICAL POINT ESTIMATION I, 8-15
WEIBULL FAILURE RATE I, 8-76
WEIBULL PLOT EXAMPLE II, 4-11
WEIBULL PROBABILITY PAPER II, 4-8
WEIGHTED RESISTOR NETWORK II, 5-45
WEIGHTING CRITERIA TO DETERMINE RELATIVE PROGRAM EMPHASIS, QUANTITATIVE EXAMPLE OF I, 12-39
WIREWOUND RESISTORS II, 5-114
WOLMAN, RELIABILITY GROWTH MODELS I, 8B-2
WORST CASE ANALYSIS I, 7-28
WORST CASE METHOD OF VARIABILITY ANALYSIS I, 7-31
WSEIAC I, 10-4

ZILOG Z8 FAMILY II, 5-71
ZILOG Z80 II, 5-71
ZILOG Z8000 FAMILY II, 5-71
ADDITIONAL RAC SERVICES
## PRODUCT FEE SCHEDULE

<table>
<thead>
<tr>
<th>COMPONENT RELIABILITY DATABOOKS</th>
<th>Price Per Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S.</td>
</tr>
<tr>
<td>DSR-4 Discret Semiconductor Device Reliability - 1988</td>
<td>100.00</td>
</tr>
<tr>
<td>NPRD-3 Non-electronic Parts Reliability Data 1985 - (Printed Copy)</td>
<td>80.00</td>
</tr>
<tr>
<td>FNPRD-3 Diskette of NPRD-3 Data (IBM PC Compatible)</td>
<td>125.00</td>
</tr>
<tr>
<td>VZAP-2* Electrostatic Discharge Susceptibility Data - 1989</td>
<td>125.00</td>
</tr>
<tr>
<td>FVZAP-2* Diskette of VZAP-2 Data (IBM PC Compatible)</td>
<td>185.00</td>
</tr>
<tr>
<td>MDR-21 Trend Analysis Databook - 1985</td>
<td>95.00</td>
</tr>
<tr>
<td>MDR-21A Field Experience Data Book - 1985</td>
<td>125.00</td>
</tr>
<tr>
<td>FMDR-21A Diskette of MDR-21A Data (IBM PC Compatible)</td>
<td>175.00</td>
</tr>
<tr>
<td>MDR-22 Microcircuit Screening Analysis - 1987</td>
<td>125.00</td>
</tr>
<tr>
<td>MDR-22A Microcircuit Screening Data - 1987</td>
<td>75.00</td>
</tr>
<tr>
<td>NONOP-1 Nonoperating Reliability Data - 1987</td>
<td>150.00</td>
</tr>
<tr>
<td>TOOLKIT RADC Reliability Engineer’s Toolkit</td>
<td>10.00</td>
</tr>
</tbody>
</table>

*The complete set of VZAP-2 including the hard copy and diskette version 200.00 220.00

## EQUIPMENT DATABOOKS

<table>
<thead>
<tr>
<th></th>
<th>Price Per Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S.</td>
</tr>
<tr>
<td>EERD-2 Electronic Equipment Reliability Data - 1986</td>
<td>80.00</td>
</tr>
<tr>
<td>EEMD-1 Electronic Equipment Maintainability Data - 1980</td>
<td>60.00</td>
</tr>
</tbody>
</table>

## HANDBOOKS

<table>
<thead>
<tr>
<th></th>
<th>Price Per Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S.</td>
</tr>
<tr>
<td>RDH-376 Reliability Design Handbook</td>
<td>36.00</td>
</tr>
<tr>
<td>MFAT-1 Microelectronics Failure Analysis Techniques Procedural Guide</td>
<td>125.00</td>
</tr>
<tr>
<td>NPS-1 Analysis Techniques for Mechanical Reliability</td>
<td>56.00</td>
</tr>
<tr>
<td>PRIM-1 A Primer for DoD Reliability, Maintainability and Safety Standards</td>
<td>95.00</td>
</tr>
</tbody>
</table>

## PRODUCTS FOR PERSONAL COMPUTERS

<table>
<thead>
<tr>
<th></th>
<th>Price Per Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S.</td>
</tr>
<tr>
<td>RAC-NRPS Nonoperating Reliability Prediction Software (Price includes NONOP-1 listed above)</td>
<td>1400.00</td>
</tr>
</tbody>
</table>

## STATE-OF-THE-ART REPORTS

<table>
<thead>
<tr>
<th></th>
<th>Price Per Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S.</td>
</tr>
<tr>
<td>SOAR-2 Practical Statistical Analysis for the Reliability Engineer</td>
<td>36.00</td>
</tr>
<tr>
<td>SOAR-3 IC Quality Grades: Impact on System Reliability and Life Cycle Cost</td>
<td>46.00</td>
</tr>
<tr>
<td>SOAR-4 Confidence Bounds for System Reliability</td>
<td>46.00</td>
</tr>
<tr>
<td>SOAR-5 Surface Mount Technology: A Reliability Review</td>
<td>56.00</td>
</tr>
<tr>
<td>SOAR-6 ESD Control in the Manufacturing Environment</td>
<td>56.00</td>
</tr>
</tbody>
</table>

## TECHNICAL RELIABILITY STUDIES

<table>
<thead>
<tr>
<th></th>
<th>Price Per Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>U.S.</td>
</tr>
<tr>
<td>TRS-2 Search and Retrieval Index to IRPS Proceedings - 1968 to 1978</td>
<td>24.00</td>
</tr>
<tr>
<td>TRS-2A Search and Retrieval Index to IRPS Proceedings - 1979 to 1984</td>
<td>24.00</td>
</tr>
<tr>
<td>TRS-3A EOS/ESD Technology Abstracts - 1982</td>
<td>36.00</td>
</tr>
<tr>
<td>TRS-4 Search and Retrieval Index to EOS/ESD Proceedings - 1979 to 1984</td>
<td>36.00</td>
</tr>
<tr>
<td>TRS-5 Search and Retrieval Index to ISTFA Proceedings - 1978 to 1985</td>
<td>36.00</td>
</tr>
</tbody>
</table>

## ADDITIONAL RAC SERVICES

### Literature Searches

Literature Searches are conducted at a flat fee of $50. For best results, please call or write for assistance in formulating your search question. An extra charge, based on engineering time and costs, will be made for evaluating, extracting or summarizing information from the cited references.

### Consulting Services - Call for Quote!

Use order form and send payment, (check or money order), payable to IITRI/RAC.
**ORDER FORM**

**ORDERED BY:** (Please Print)

<table>
<thead>
<tr>
<th>QTY.</th>
<th>DESCRIPTION</th>
<th>UNIT PRICE U.S.</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**QUANTITY DISCOUNT - INSTRUCTIONS BELOW**

**TOTAL OF ORDER: 

MAKE CHECKS PAYABLE TO IITRI/RAC**

**Return to:**
Reliability Analysis Center
P.O. Box 4700 - Rome, NY 13440-8200

Place orders or obtain additional information directly from the Reliability Analysis Center. Specify the publications and services desired. Except for blanket purchase orders, prepayment is required. All Non-U.S. orders must be accompanied by a check drawn on a US bank. Please make checks payable to IITRI/RAC.

*Priority Handling - Add $15.00 per book (Non-U.S.) for Air Mail, add $3.00 per book (U.S.) for First Class.*

*Quantity Discounts - are available, when ordering 10 or more copies. For details call or write Gina Nash at the Reliability Analysis Center, P.O. Box 4700, Rome, NY 13440-8200 (315) 330-4151.*

*Military Agencies - Blanket Purchase Agreement, DD Form 1155, may be used for ordering RAC reports and/or services. Please indicate maximum dollar amount authorized and cutoff date on your order. Also specify services (i.e., publications, search services, etc.) to be provided. Identify vendor as IIT Research Institute/Reliability Analysis Center.*