

TECHNICAL MANUAL

AVIATION UNIT AND INTERMEDIATE MAINTENANCE MANUAL

**ARMY MODEL
AH-1P (PROD)
AH-1E (ECAS)
AH-1F (MODERNIZED COBRA)
HELICOPTERS**

"Approved for public release; distribution is unlimited."

**HEADQUARTERS, DEPARTMENT OF THE ARMY
8 MAY 1980**

TECHNICAL MANUAL

NO. 55-1520-236-23

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 8 May 1980

AVIATION UNIT AND INTERMEDIATE MAINTENANCE MANUAL
ARMY MODEL

AH-1P (PROD)
AH-1E (ECAS)
AH-1F (MODERNIZED COBRA)
HELICOPTERS

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help Improve this manual. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual directly to: Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited

TABLE OF CONTENTS

		PARAGRAPH	PAGE
VOLUME 1			
CHAPTER 1	AIRCRAFT GENERAL		
Section I	Servicing	1-1	1-1
Section II	Lubrication	1-28	1-41
Section III	Handling, jacking, mooring, hoisting, and sling loading	1-30	1-45
Section IV	Inspection requirements	1-55	1-58
Section V	Overhaul and retirement schedule	1-58	1-87
Section VI	Flight safety critical aircraft parts (FSCAP) program	1-59	1-89
CHAPTER 2	AIRFRAME		
Section I	Structural repair	2-1	2-1
Section II	Fuselage	2-41	2-113
Section III	Tailboom	2-281	2-229
Section IV	Wing	2-335	2-245
Section V	Deleted	2-352	2-258
CHAPTER 3	LANDING GEAR		
Section I	Landing Gear	3-1	3-1
Section II	Skids/Struts (Not Applicable)		3-29
Section III	Floats (Not Applicable)		3-29
Section IV	Skis (Not Applicable)		3-29
Section V	Brakes (Not Applicable)		3-29
CHAPTER 4	POWER PLANT		
Section I	Power plant	4-1	4-1
Section II	Cooling system (Not Applicable)		4-17

		PARAGRAPH	PAGE
Section III	Air induction system	4-24	4-18
Section IV	Exhaust system	4-39	4-36
Section V	Oil system	4-59	4-50.2
Section VI	Ignition system (Not Applicable)		4-69
Section VII	Power lever controls	4-98	4-69
Section VIII	Quick change assembly	4-114	4-79
CHAPTER 5	ROTORS		
Section I	Main rotor system	5-3	5-1
Section II	Main rotor hub and blades	5-8	5-2.2
Section III	Main rotor controls	5-47	5-103
Section IV	Tail rotor system	5-72	5-138
Section V	Tail rotor hub and blade assembly	5-79	5-141
Section VI	Tail rotor hub and controls	5-89	5-148
Section VII	Tail rotor blades	5-107	5-170
Section VIII	Tracking and balancing procedures	5-114	5-181
CHAPTER 6	DRIVE TRAIN SYSTEM		
Section I	Drive train	6-1	6-1
Section II	Main driveshaft	6-5	6-7
Section III	Main transmission	6-20	6-24
Section IV	Tail rotor driveshaft	6-75	6-75
Section V	Intermediate gearbox	6-96	6-86
Section VI	Tail rotor gearbox	6-113	6-103
Section VII	Transmission oil system	6-129	6-120.1
VOLUME II			
CHAPTER 7	HYDRAULIC AND PNEUMATIC SYSTEMS		7-1
CHAPTER 8	INSTRUMENTS SYSTEM		
Section I	Instrument maintenance	8-1	8-1
Section II	Engine instruments	8-10	8-7
Section III	Flight instruments	8-114	8-25
Section IV	Navigation instruments	8-185	8-36
Section V	Miscellaneous instruments	8-198	8-38
Section VI	Instrument panels	8-285	8-52
CHAPTER 9	ELECTRICAL SYSTEMS		
Section I	Electrical systems maintenance	9-1	9-1
Section II	Direct current power distribution system	9-37	9-27
Section III	Alternating current power distribution system	9-119	9-56
Section IV	Starting system	9-238	9-73
Section V	Ignition system	9-246	9-75
Section VI	Lighting provisions	9-254	9-76
Section VII	Miscellaneous equipment	9-340	9-102
Section VIII	P Armament systems circuitry	9-412	9-122

		PARAGRAPH	PAGE
Section IX	E Armament systems circuitry	9-442	9-154
Section X	M Armament and fire control systems circuitry	9-496	9-185
CHAPTER 10	FUEL SYSTEMS		
Section I	Fuel systems	10-1	10-1
Section II	Fuel cells	10-73	10-17
CHAPTER 11	FLIGHT CONTROLS		
Section I	Flight controls	11-1	11-1
Section II	Flight controls components	11-145	11-81
CHAPTER 12	UTILITY SYSTEMS		
Section I	Fire detection system	12-1	12-1
Section II	Rain removal system	12-9	12-4
Section III	Defroster system	12-10	12-4
Section IV	Low G Warning System	12-11	12-5
CHAPTER 13	ENVIRONMENTAL CONTROL SYSTEM		
Section I	Heating systems	13-1	13-1
Section II	Air cooling systems	13-125	13-37
CHAPTER 14	HOIST AND WINCHES (Not Applicable)	14-1	14-1
CHAPTER 15	AUXILIARY POWER PLANT (Not Applicable)	15-1	15-1
CHAPTER 16	MISSION EQUIPMENT	16-1	16-1
CHAPTER 17	EMERGENCY EQUIPMENT	17-1	17-1
APPENDIX A	REFERENCES		A-1
APPENDIX B	MAINTENANCE ALLOCATION CHART		B-1
APPENDIX C	AIRCRAFT INVENTORY MASTER GUIDE		C-1
VOLUME III			
APPENDIX D	ILLUSTRATED FIELD MANUFACTURE LIST		D-1
APPENDIX E	STORAGE OF AIRCRAFT		
Section I	General information	E-1	E-1
Section II	Flyable storage	E-6	E-2
Section III	Short term storage	E-10	E-4
Section IV	Intermediate storage	E-14	E-11
APPENDIX F	WIRING DIAGRAMS		F-1
APPENDIX G	WIRE LISTS		G-1
INDEX			Index-1
VOLUME IV			
FOLDOUTS			FO-1
VOLUME V			
FOLDOUTS			FO-143

LIST OF ILLUSTRATIONS

NUMBER	TITLE	PAGE
1-1	Servicing Points Diagram	1-2
1-1.1	Receiver and Cap Assembly	1-2.3
1-2	Deleted	
1-3	Deleted	
1-4	Deleted	
1-5	Lubrication Chart	1-42
1-6	Ground Handling Diagram	1-46
1-7	Work Aid for Towing Ground Handling Gear	1-48
1-8	Jacking and Mooring Fittings	1-50
1-9	Covers Diagram	1-53
1-9.1	AH-1 Paved Surface Mooring Configuration	1-54.2
1-10	Mooring Diagram	1-55
1-11	Maintenance Hoist, T101520	1-57
1-12	Inspection Area Diagram (Typical)	1-59
2-1	Fuselage Components and Tailboom	2-2.1
2-2	Structural Panels	2-4
2-3	Non-Structural Access Panels, Doors, and Fairings	2-8
2-4	Principal Dimensions - Airframe	2-14
2-5	Reference Lines - Airframe	2-16
2-6	Cleaning Chart	2-23
2-7	Type A - Damage, Body Panel Repairs	2-36
2-8	Type B - Damage, Body Panel Repairs	2-37
2-9	Type C - Damage, Body Panel Repairs	2-38
2-10	Type D - Damage, Body Panel Repairs	2-40
2-11	Primary Structural Caps - Left Side	2-42
2-12	Primary Structural Caps - Right Side	2-43
2-13	Pilot and Gunner Floor Panels	2-44
2-14	Bulkhead at Station 93.0	2-45
2-15	Bulkhead at Station 148.5 and 171.61	2-46
2-15.1	Ammo Floor Scuff Doubler Installation	2-46.1
2-16	Bulkhead at Stations 186.25 and 213.94	2-47
2-17	Bulkhead at Stations 250.0 and 268.5	2-48
2-18	R&L Main Beam Panels at Station 148.5 to 186.25	2-49
2-19	R&L Main Beam Panels at Station 213.94 to 250.0	2-50
2-20	Panel at Forward Fuel Cell at R.S. and Gunner Floor	2-51
2-21	R&L Beam Panels at Station 250 to B.S. 41.32	2-52
2-22	Ammo Floor, Support Panel and Forward Fuel Cell Panel at Station 213.9	2-53
2-23	Forward Fuel Cell Floor - Lower Panel Station 86 to 213	2-54
2-24	Lower Aft Fuel Cell Panel at Station 250 to B.S. 41.32	2-55
2-25	Engine Deck Installation at Station 213.94 to 298.75	2-56
2-26	Forward Fuel Cell Panels - Main Beam at Station 186 to 214	2-57
2-27	Edge Repair for Honeycomb Panels with Glass Skin Opposite Titanium	2-58
2-28	Edge Repair for Honeycomb Panels with Aluminum Alloy with Glass Edging	2-60
2-29	Edge Repair for Honeycomb Panels with Glass Finish at Channel	2-61
2-30	Typical Rivet Pattern for Channel Section Repair	2-62
2-31	Potted - Injection - Grommet Type Fasteners	2-64
2-31.1	HMPP Cowling Nut Plate Replacement	2-66.1
2-31.2	Stringer Repair	2-66.2
2-32	Longeron Damage Limits	2-82
2-33	Typical Tailboom Bulkhead Damage Limits	2-85
2-34	Tail Rotor Driveshaft Covers	2-87
2-35	Driveshaft Cover Hinges and Angles Damage	2-88
2-36	Damage Limits - Tailboom Attach Fitting	2-89
2-37	Damage Limits - Bearing Hanger Support Fitting	2-90

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
2-38	Damage Limits - Intermediate Gearbox Support Installation	2-91
2-39	Damage Limits - Tail Rotor Drive Support Fitting	2-92
2-40	Vertical Fin Honeycomb Panels Damage	2-96
2-41	Edge Repair on Vertical Fin	2-100
2-42	Tailboom Longerons	2-101
2-43	Longeron Repair	2-102
2-43.1	Longeron Material Chart	2-104
2-44	Damage Skin, Frame, and Bulkhead Repair	2-104.1
2-45	Repair - Damaged Ribs - Bulkhead	2-105
2-46	Repair - Bulkhead Flanged Member	2-106
2-46.1	Tailboom Structural Material	2-106.1
2-47	Repair - Bulkhead "T" Cap - Extensive Damage	2-107
2-48	Injection Tape Fastener (Insert) in Vertical Fin Panel	2-111
2-48.1	Vertical Fin Ballast Weight Panel	2-112.2
2-49	Sheet Metal Panels and Skin	2-115
2-50	  Fairing - Cowling for Pylon, Transmission, Engine, and Tailpipe	2-123
2-51	 Fairing and Cowling - Pylon, Transmission, Engine and IR Suppressor	2-126
2-52	IR Suppressor Cowling Installation	2-132
2-53	Firewalls and Driveshaft Fireshield Installation	2-139
2-54	Forward Engine Firewall Assembly (Prior to Incorporation of MWO 55-1520-236-50-12)	2-142
2-54.1	  Forward Engine Firewall Assembly (After Incorporation of MWO 55-1520-236-50-12)	2-144.3
2-55	Aft Engine Firewall and Cowl Support	2-146
2-56	Tail Rotor Driveshaft Fireshield Assembly	2-152
2-57	Engine Air Induction Baffle Installation (Prior to Incorporation of MWO 55-1520-236-50-12)	2-154
2-57.1	  Centrisep Particle Separator Engine Air Induction Baffle Installation (After Incorporation of MWO 55-1520-236-50-12)	2-154.1
2-58	Engine Air Induction Baffle Assembly (Prior to Incorporation of MWO 55-1520-236-50-12)	2-155
2-58.1	  Centrisep Particle Separator Engine Air Induction Baffle Assembly (After Incorporation of MWO 55-1520-236-50-12)	2-158.1
2-59	Pilot Door - Installation	2-161
2-60	Gunner Door - Installation	2-164
2-61	Pilot Door - Assembly	2-167
2-62	Gunner Door - Assembly	2-169
2-63	Gunner Door Latch Assembly	2-170
2-64	Canopy Window and Windshield - Installation	2-176
2-65	Canopy Frame - Installation	2-178
2-66	Pilot Seat - Installation	2-179
2-67	Gunner Seat - Installation	2-180
2-68	Pilot Seat - Assembly	2-183
2-69	Engine Armor - Installation	2-188
2-70	Soundproofing Blanket - Installation	2-190.1
2-70.1	Wire Strike Protection System	2-190.2
2-70.2	Damage Limits - Wire Strike Deflector	2-191
2-71	Engine Mount Installation	2-192
2-72	Damage Limits - Aft Engine Mount Assembly (Tripod)	2-196
2-73	Damage Limits - Fittings for Aft Engine Mount (Tripod)	2-199
2-74	Aft Engine Mount (Tripod) Assembly	2-200
2-75	Damage Limits - Engine Mount Pillow Blocks (Left and Right)	2-202
2-76	Diagonal Brace Tube - Installation	2-204
2-77	Pylon Support - Installation	2-206
2-77.1	Pylon Mount Bolt Inspection Criteria	2-206.1

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
2-78	Access Hole for Damper to Damper Support Fitting Mount Bolts	2-209
2-79	Fifth Mount and Fifth Mount Support Fitting - Installation	2-210
2-79.1	Bushing and Bearing Tool Kit LT-40	2-212.2
2-79.2	Fifth Mount Assembly	2-212.3
2-79.3	Fifth Mount Bushing and Bearing Removal	2-212.3
2-79.4	Fifth Mount Bushing and Bearing Installation	2-212.4
2-79.5	Fifth Mount Bush Staking	2-212.4
2-80	Damper - Internal Yielding Inspection	2-214
2-81	Transmission Damper - Assembly	2-215
2-82	Damper Seal - Installation Tool	2-216
2-83	Damper Barrel Shim - Replacement	2-217
2-84	Damper Upper Shim - Replacement	2-218
2-85	Damper Lower Shim - Replacement	2-219
2-86	Hydraulic Fitting Supports - Installation	2-221
2-87	Damper Support Fitting - Elongated Holes	2-223
2-88	Damage Limits - Fifth Mount Support Fitting	2-224
2-89	Tow, Jack, and Mooring Fitting	2-226
2-90	Aft Section Assembly	2-230
2-91	Tail Boom Support Stand - Workaid	2-231
2-92	Tailboom Installation	2-232
2-92.1	Tailboom Installation	2-232.1
2-93	Tailboom and Elevator Skins	2-234
2-94	Tailboom and Synchronized Elevator - Structure	2-237
2-95	Tailskid - Installation	2-240
2-96	Aft Ballast - Installation	2-242
2-97	Synchronized Elevators - Installation	2-244
2-98	Wing Assembly - Installation	2-246
2-99	Wing Bushings - Limits Chart	2-250
2-100	Wing Skin Repair (External Hole)	2-251
2-101	Wing Skin Repair (External Crack)	2-252
2-102	Wing Skin Repair (Close to Frame, Spar, or Ribs)	2-253
2-103	Wing Skins, Fairings, Covers, Doors	2-254
2-104	Wing Fairing Repair (Leading - Trailing Edge)	2-256
2-105	Deleted	
3-1	Landing Gear and Support Installation	3-2
3-1.1	Crosstube Shim Fabrication	3-4.1
3-2	Crosstube - Deflection Inspection	3-5
3-3	Damage Limits - Crosstubes	3-6
3-4	Skid Tube - Repairs	3-9
3-4.1	Skid Shoes - Standard, Heavy Duty	3-10.2
3-5	Crosstube Fairing Assembly	3-12
3-6	Landing Gear Support Spacer Installation	3-15

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
3-7	Ground Handling Gear – Assembly	3-17
3-8	Ground Handling Gear Pump, P/N BU0953B – Assembly	3-19
3-9	Ground Handling Gear Pump, P/N HP9902-41-10	3-21
3-10	Work Aid – Packing Nut Tool Removal/Installation – Fabrication Instructions	3-23
3-11	Ground Handling Wheels – Adjustment Dimensions	3-25
4-1	Power Plant Installation – Right Side	4-2
4-2	Power Plant Installation – Left Side	4-2.2
4-3	Engine Vibration Test Equipment Cabling Tiedown	4-4
4-3.1	Deleted	
4-4	Engine Installation	4-7
4-5	Engine Mount Fittings (Trunnions) Installation	4-13
4-6	Damage Limits – Aft Engine Mount Fittings (Trunnions) and Bearings	4-16
4-7	Particle Separator and FOD Screen Installation (Prior to Incorporation of MWO 55-1520-236-50-12)	4-19
4-7.1	E M Centrisep Particle Separator Installation (After Incorporation of MWO 55-1520-236-50-12)	4-22.2
4-8	Particle Separator–Air Flow Diagram (Prior to Incorporation of MWO 55-1520-236-50-12)	4-23
4-8.1	E M Centrisep Particle Separator Air Flow Diagram (After Incorporation of MWO 55-1520-236-50-12)	4-24.1
4-9	Particle Separator and FOD Screen Assemblies (Prior to Incorporation of MWO 55-1520-236-50-12)	4-26
4-10	Inlet Vane Reinforcement Doubler – Fabrication	4-30
4-10.1	E M Centrisep Particle Separator Repair/Replacement (After Incorporation of MWO 55-1520-236-50-12)	4-30.1
4-11	FOD (Foreign Object Damage) Screen Installation	4-34
4-12	P E Exhaust System Components	4-37
4-13	P E Engine Tailpipe Repair	4-38
4-14	Engine Deck and Firewall Sealing	4-40
4-15	P E Exhaust System Components with IR Suppression Installation	4-41
4-15.1	Hot Metal Plus Plume Suppressor	4-44.10
4-15.2	Outer Body Half – Section	4-44.11
4-16	Repair Procedures – Infrared Suppression System	4-45
4-17	M Exhaust System Components with IR Suppression – Installation	4-47
4-17.1	M Suppressor Major Structural Elements	4-50
4-18	Engine Oil System Installation	4-50.1
4-18.1	ODDS Oil Separator and Oil Filter Installation (MWO 1-1520-236-50-30)	4-50.3
4-19	Engine Oil System Schematic	4-54.3
4-19.1	Oil Separator (Lubriclone) Assembly	4-54.4
4-19.2	Deleted	
4-19.3	Engine External Oil Filter	4-54.6
4-20	Oil Tank Installation	4-57

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
4-21	Engine Oil Cooler Installation	4-60
4-22	Oil Cooler Cleaning Schematic	4-61
4-23	Engine Oil Cooler Turbine Fan	4-64
4-24	Oil Cooler Turbine Fan Assembly	4-66
4-25	Power Lever Control System Installation	4-70
4-26	Engine Idle Stop Installation	4-73
4-27	Droop Compensator Controls Installation	4-75
4-28	Rigging Procedures - Droop Compensator Controls	4-79
4-29	Engine Shipping Container	4-81
4-30	Ignition Unit	4-83
4-31	Aft Engine Trunnion Installation	4-84
4-32	Trunnion, Cambox, and Linear Actuator Installation	4-85
4-33	Power Turbine Tachometer Generator, Oil Pressure Transducer, Oil Pressure Switch, and Fuel Pressure Switch Installation	4-86

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
4-34	Starter Generator and Gas Producer Tachometer Generator	4-87
4-35	Installation – Engine Torque Transducer Hose	4-89
4-36	Installation – Fuel Drain and Bleed Lines	4-91
4-37	Installation – Starter Fuel Filter and Oil Bypass Valve Hose	4-92
4-38	Installation – Bleed Air Tubing	4-93
4-39	Installation – Oil Hose	4-95
4-40	Installation – Heat Shield Tailpipe and Ejector	4-96
4-41	Electrical Cable Installation – Engine Left Side	4-97
4-42	Electrical Cable Installation – Engine Right Side	4-100
5-1	Main Rotor System	5-2
5-2	Main Rotor Installation	5-4
5-3	Main Rotor System Torque Values	5-6
5-4	Tool Application – Grip Lock Installation on Pitch Horn	5-7
5-4.1	Barrel Jack Installation	5-8
5-4.2	Barrel Jack Work Aid	5-8.1
5-5	Tool Application – Main Rotor Mast Nut Removal/Installation	5-8.2
5-6	Tool Application Alignment of Main Rotor Hub and Blade	5-9
5-7	Damage Limits – Cone Set	5-11
5-8	Pitch Link Assembly Adjustments	5-13
5-9	Pitch Link Assembly	5-14
5-10	Main Rotor Hub and Blade Assembly	5-16
5-11	Work Aid for Main Rotor Blade Bolt Removal Fabrication Instructions (AVIM)	5-17
5-12	Work Aid Application Main Rotor Blade Retaining Bolt Removal	5-18
5-13	B540 Main Rotor Blade	5-23
5-14	B540 Main Rotor Blade Authorized Patch Area (AVIM)	5-25
5-15	B540 Main Rotor Blade Trim Tab Installation	5-27
5-16	K747 Main Rotor Blade (Part Numbers K747-003-205, -209, -303)	5-30.1
5-16.1	K747 Main Rotor Blade (Part Numbers K747-003-309, -401, -403)	5-31
5-17	External Appearance Changes to K747-003-205/-309, -209/-401, and -303/-403 Blades Resulting from Improved Weight Retention Features	5-32
5-18	Internal Modification Incorporated in K747-003-205/-309, -209/-401, and -303/-403 Blades for Improved Weight Retention	5-33
5-19	Damage Limits – Root Fittings (K747 Blade)	5-36.2
5-19.1	Damage Limits – Root Fittings – Part Number K747-083-1 (K747 Blade)	5-37
5-20	Damage Limits – Drag Strut (P/N K747-072-1) (K747 Blade)	5-38
5-20.1	Damage Limits – Drag Strut – Part Number K747-082-1 (K747 Blade)	5-38.1
5-21	Inspection of K747-003-205/-309, -209/-401, -303/-403 Blades for Loss of Blade Weight Retention Integrity	5-39
5-22	Proximity Limits for Patches – K747 Main Rotor Blades	5-40
5-23	Balance Adjustment for Patches (K747 Blade)	5-43
5-24	Root Fitting Assembly (K747-205, -209, -303 Blades)	5-52
5-24.1	Root Fitting Assembly (-309, -401, -403 Blades)	5-52.1
5-24.2	Drag Strut Assembly (-309, -401, -403 Blades)	5-52.3
5-25	Application of Skin Patch (K747 Blade)	5-54
5-26	Curing Patch with Blade Repair Fixture (K747 Blade)	5-56
5-27	Installation of Plug Patch (K747 Blade)	5-60

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
5-28	Typical Double Plug Patch Repair (K747 Blade)	5-67
5-28.1	Application of Trailing Edge Doubler Patch (K747 Blade)	5-68
5-28.2	Spline Repair (K747 Blade)	5-71
5-28.3	Rebonding Delaminated Leading Edge Erosion Guard (K747 Blade)	5-72.1
5-28.4	Typical Repair of Fluorocarbon Erosion Guard Nicks and Cuts Using Kit, P/N 747-207	5-72.3
5-28.5	Application of Leading Edge Erosion Guard Patch (K747 Blade)	5-72.5
5-28.6	Placement of Erosion Guard Replacement Part (Kit, P/N K747-206-1) Method for Determining Current Boot Material and Thickness (K747 Blade Series)	5-72.7
5-28.7	K747 Blade Uralite Repair	5-72.10
5-28.8	Application of Vacuum Bagging Materials and Placement of Erosion Guard	5-72.11
5-28.9	Repair Parts and Specimen Orientation (Kit, P/N 747-206)	5-72.15
5-28.10	Vacuum Bagging for Installation of Erosion Guard Repair Kit, P/N K747-206	5-72.18
5-28.11	Improvised Mold for Casting a Small Section of Leading Edge Filler	5-72.21
5-28.12	Repair Parts Orientation Use for Removal and Installation of Stainless Steel Erosion Guard - K747-003-303/-403 and -303/-403 Field Modified Blades	5-72.23
5-28.13	Preparation of K747-003-303/-403 Blade for Application of Sealant	5-72.24
5-28.14	Application of Sealant to Stainless Steel Guard for K747-003-303/-403 Blade	5-72.26
5-28.15	Stainless Steel Erosion Guard Holding Fixture	5-72.27
5-28.16	Masking for Paint Touch-Up After Installation of Kit K747-206	5-72.31
5-29	Main Rotor Hub Yoke Extension and Grip Assembly	5-72.35
5-30	Main Rotor Hub Yoke and Trunnion	5-74
5-31	Main Rotor Bearing Wear Patterns	5-77
5-32	Damage Limits - Main Rotor Hub Yoke Extension	5-78
5-33	Damage Limits - Main Rotor Hub Bolt Holes	5-79
5-34	Damage Limits - Main Rotor Hub Yoke	5-81
5-35	Damage Limits - Main Rotor Hub Grip	5-82
5-36	Damage Limits - Main Rotor Hub Strap Fitting	5-83
5-37	Damage Limits - Pitch Horn Bushing	5-85
5-38	Damage Limits - Main Rotor Hub Pitch Horn 209-010-109-5 (Prior to Accomplishment of MWO 55-1520-244-50-6)	5-86
5-38.1	Damage Limits - Main Rotor Hub Pitch Horn 209-010-109-109 (After Accomplishment of MWO 55-1520-244-50-6 and MWO 55-1520-244-50-9)	5-86.1
5-39	Damage Limits - Main Rotor Drag Brace	5-87
5-40	Damage Limits - Main Rotor Hub Trunnion	5-88
5-40.1	Damage Limits - Hub Moment Spring Plate	5-88.1
5-40.2	Damage Limits - Hub Moment Spring Strap	5-88.2
5-41	Damage Limits - Main Rotor Hub Elastomeric Bearing	5-89
5-42	Main Rotor Hub Yoke Chafing Pad Installation Dimensions	5-90
5-42.1	Main Rotor Hub Yoke Buffer Installation - Dimensions	5-90
5-43	Tool Application - Bearing Removal From Housing	5-90.2
5-44	Tool Application - Bearing Removal From Grip	5-92
5-45	Tool Application - Bearing and Seal Installation in Grip	5-93
5-46	Tool Application - Main Rotor Hub Trunnion Centering	5-96
5-47	Tool Application - Grip Spacing Adjustment	5-97
5-48	Main Rotor Hub Grip Dust Seal to Radius Ring Dimension	5-99
5-49	Rotor Balancing Kit P/N 7A050	5-101
5-50	Tool Application - Main Rotor Hub Balancing	5-102
5-51	Main Rotor Controls Installation	5-104
5-52	Tool Application - Spline Plate Wear Measurement	5-107
5-52.1	Hub Moment Spring Support Assembly - Installation (MWO 55-1520-244-50-3 Incorporated) ...	5-108

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
5-53	Collective Lever Trust Washer Wear Limits	5-108.1
5-53.1	Rod End Clevis Movement	5-108.4
5-53.2	Rod End Bearing	5-108.5
5-54	Damage Limits – Pitch Link Assembly (Prior to Accomplishment of MWO 55-1520-244-50-9)	5-109
5-54.1	Damage Limits – Pitch Link Assembly 209-010-520-103 (After Accomplishment of MWO 55-1520-244-50-9)	5-110.1
5-55	Damage Limits – Spline Plate	5-110.2
5-56	Damage Limits – Collective Lever	5-111
5-57	Damage Limits – Collective Lever Idle Link	5-112
5-58	Collective Lever Idle Link Assembly	5-113
5-59	Damage Limits – Swashplate Anti-Drive Link	5-114
5-60	Swashplate Anti-Drive Link	5-115
5-61	Damage Limits – Swashplate Anti-Drive Assembly Bellcrank	5-116
5-62	Damage Limits – Swashplate Anti-Drive Assembly Support	5-117
5-63	Swashplate Anti-Drive Assembly	5-118
5-63.1	Damage Limits – Hub Moment Spring Support Set, P/N 209-011-212-101 (MWO 55-1520-244-50-3 Incorporated)	5-120.2
5-63.2	Damage Limits – Hub Moment Spring	5-120.3
5-64	Scissors and Sleeve Assembly	5-121
5-65	Damage Limits – Hub, Sleeve, Scissors and Link	5-124
5-65.1	Installation of Shims	5-130.1
5-65.2	Collet Work Aid	5-130.1
5-66	Swashplate and Support Assembly	5-132
5-67	Damage Limits – Swashplate and Support Assembly	5-135
5-68	Tail Rotor Installation	5-139
5-69	Tail Rotor Hub and Blade Assembly	5-144
5-70	Tool Application – Tail Rotor Hub and Blade Assembly Balancing	5-146
5-71	Tail Rotor Hub Assembly	5-150
5-72	Damage Limits – Tail Rotor Hub Yoke	5-151
5-73	Damage Limits – Tail Rotor Hub Trunnion Set	5-152
5-74	Bearing Staking Tool P/N T101577	5-153
5-75	Tool Application – Bearing Installation (Staking) in Tail Rotor Yoke	5-155
5-76	Tail Rotor Controls – Crosshead, Weights, Links and Control Tube	5-156
5-77	Damage Limits – Tail Rotor Control Crosshead	5-160
5-78	Damage Limits – Tail Rotor Control Counterweight Bellcrank	5-161
5-79	Damage Limits – Tail Rotor Controls Pitch Link	5-162
5-80	Damage Limits – Tail Rotor Control Counterweight Link	5-163
5-81	Damage Limits – Tail Rotor Control Counterweight Support	5-164
5-82	Damage Limits – Tail Rotor Control Tube	5-165
5-83	Damage Limits – Link Assembly	5-166
5-84	Damage Limits – Idler	5-167
5-85	Damage Limits – Lever	5-168

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
5-86	Damage Limits – Tail Rotor Retention Nut	5-169
5-87	Tail Rotor Blade Pitch Horn Installation	5-171
5-88	Tail Rotor Blade Assembly	5-172
5-89	Tail Rotor Blade Station Diagram and Scratch –Type Damage Area Locations	5-173
5-90	Tail Rotor Blade – Area Authorized for Patch – Type Repair	5-174
5-91	Tail Rotor Blade Butt Area Repair	5-176
5-92	Damage Limits – Tail Rotor Blade Pitch Horn	5-178
5-93	Main Rotor Tracking Chart	5-182
5-94	Vertical Vibration Correction Chart	5-183
5-95	Vertical and Lateral Vibration Chart for K747 Rotor Blades	5-185
5-96	Lateral Vibration Correction Chart for B-540 Rotor Blades	5-187
5-97	Tracking Main Rotor	5-188
5-98	Tracking Main Rotor	5-189
5-99	Vibrex 4591 System Components and Carrying Case	5-191
5-100	A Main Rotor Balance Chart	5-194
5-101	Reading a Main Rotor Balance Chart	5-195
5-102	Reading a Main Rotor Balance Chart with an Incorrect “Clock Angle”	5-196
5-103	Reading the Tail – Rotor Charts	5-198
5-104	Magnetic Pickup and Double Interrupter Installation	5-200
5-105	Magnetic Pickup/Interrupter Installation	5-201
5-106	Magnetic Pickup Cable Installation	5-202
5-107	Balancer Installation	5-203
5-108	Lateral Accelerometer Installation	5-204

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
5-109	Vertical Accelerometer Installation	5-205
5-110	Deleted	
5-111	Tip Targets Installation	5-208
5-112	Reflective Target Installation	5-209
5-113	Reading the Main Rotor Chart	5-210
5-114	Reading the Main Rotor Tracking Chart	5-212
5-115	Accelerometer Cable Installation (Typical)	5-214
5-116	Tracking Tail Rotor	5-215
5-117	Balancing Tail Rotor	5-217
6-1	Drive Train (Typical)	6-4
6-2	Gearbox Oil Contamination – Description and Corrective Action	6-5
6-2.1	Typical Oil System Debris at 6X Magnification	6-6.3
6-2.1	Deleted	
6-3	Main Driveshaft Installation	6-8
6-4	Tool Application – Transmission Positioning Jacks P/N T101440 (T35)	6-10
6-5	Tool Application – Engine to Transmission Driveshaft Alignment P/N T101419 (T35)	6-11
6-6	Main Driveshaft Assembly	6-13
6-7	Inspection and Lubrication of Main Driveshaft	6-14.1
6-7.1	Main Driveshaft Internal Corrosion Area	6-17
6-8	Coupling Wear Criteria for Driveshaft	6-18
6-9	Damage Limits – Main Driveshaft Assembly	6-20
6-9.1	Main Driveshaft	6-20.1
6-9.2	Main Driveshaft Installation and Removal Tool	6-20.2
6-9.3	Work Aid Tool Installed on Main Driveshaft	6-20.2
6-9.4	Main Driveshaft Damage Limits	6-20.3
6-10	Transmission Quills	6-25
6-11	Transmission Installation	6-27
6-12	Transmission Buildup	6-29
6-13	P Transducer Bracket Installation	6-32
6-14	Damage Limits – Transmission	6-34
6-15	Transmission Shipping Covers, Caps, and Plugs	6-41
6-15.1	Lift Link Attaching Point	6-44.1
6-16	Main Input Quill Assembly	6-45
6-16.1	Transmission Input Quill Work Aid (Sheet 1 of 2)	6-46.1
6-16.2	Transmission Input Quill Work Aid (Sheet 2 of 2)	6-46.2
6-16.3	Input Drive Quill Wear Sleeve Replacement	6-46.3
6-17	Work Aid – Main Input Drive Quill Installation	6-47
6-18	Damage Limits – Tail Rotor Drive Quill	6-50
6-19	Tail Rotor Drive Quill Assembly	6-53
6-20	Hydraulic Pump and Tachometer Drive Quill Assembly	6-56
6-21	Fan Drive Quill Assembly	6-58
6-22	Work Aid – Quill Installation	6-59
6-23	E M Alternator Drive Quill Assembly	6-62
6-24	Main Rotor Mast Assembly	6-64
6-24.1	Inspection of Buffers and Plates	6-65
6-24.2	Workaid for Mast Buffer	6-66
6-25	Damage Limits – Main Rotor Mast Assembly	6-66.1
6-26	Deformation Limits – Main Rotor Mast	6-68
6-27	Damage Limits – Main Rotor Mast Bearing and Mast Bearing Retaining Plate	6-69
6-28	Transmission Top Case Dimension Check	6-73
6-29	Tail Rotor Driveshaft Installation	6-76
6-30	Tail Rotor Driveshaft Inspection Diagram	6-77
6-31	Tail Rotor Driveshaft Hanger Assembly	6-81

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
6-32	Coupling Teeth Wear Patterns	6-82
6-33	Work Aid – Driveshaft Hanger Support Alignment	6-85
6-34	Intermediate Gearbox Installation	6-87
6-35	Intermediate Gearbox Quill, Seals, and Couplings (Typical)	6-88
6-35.1	Intermediate and Tail Rotor Gearbox Troubleshooting Chart	6-90.2
6-36	Damage Limits – Intermediate Gearbox	6-91
6-37	Oil Filler Cap Assembly	6-99
6-38	Tail Rotor Drive Gearbox Installation	6-103
6-39	Tail Rotor Drive Gearbox Assembly	6-105
6-40	Tail Rotor Drive Gearbox Input Quill	6-106
6-41	Damage Limits – Tail Rotor Drive Gearbox	6-108
6-42	Roller Bearing Wear Patterns	6-115
6-43	Tail Rotor Drive Gearbox Gear Patterns	6-116
6-44	Tool Application – Removal/Installation of Tail Rotor Drive Gearbox Input Quill Retainer Bolt	6-119
6-45	Tool Application – Removal/Installation of Tail Rotor Drive Gearbox Input Quill Retainer Nut	6-120
6-45.1	Driveshaft/Spherical Couplings	6-120.2
6-45.2	Coupling Inspection	6-120.2
6-46	Transmission Oil System Schematic (Typical)	6-126
6-47	Transmission Oil System Installation	6-127
6-48	Transmission Oil Pump	6-129
6-49	Transmission Oil Pump – Test Setup	6-131
6-50	Transmission Oil Cooler Installation	6-132
6-50.1	Oil Cooler Cleaning Schematic	6-132.2
6-51	Oil Cooler Automatic Emergency Bypass Valve Assembly	6-135
6-52	Damage Limits – Inlet Fitting	6-137
6-53	Damage Limits – Return Bypass Fitting	6-138
6-54	Damage Limits – Inlet Bypass Piston	6-139
6-55	Damage Limits – Piston	6-140

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
6-56	Damage Limits – Nozzles	6-141
6-57	Damage Limits – Sleeve	6-142
6-58	Damage Limits – Universal Fitting Bolt and Elbow	6-143
6-59	Damage Limits – Housing Assembly	6-144
6-60	Damage Limits – Plunger	6-146
6-61	Damage Limits – Elbow Fitting	6-147
6-62	Fittings – Repair	6-148
6-63	Nozzles – Repair	6-149
6-64	Plunger – Repair	6-149
6-65	Work Aid Application – Plunger and Piston	6-150
6-66	Oil Cooler Automatic Emergency Bypass Valve – Bench Test Schematic	6-151
6-67	Transmission External Oil Filter Installation (Typical)	6-153
6-67.1	Transmission External Oil Filter Installation (After Incorporation of MWO 1-1520-236-50-30)	6-154.3
6-67.2	Transmission External Oil Filter (After Incorporation of MWO 1-1520-236-50-30)	6-154.4
6-68	Transmission Oil Filter (Primary) Assembly	6-155
6-69	Transmission Oil Manifold Installation	6-158
6-70	Transmission Oil Pressure Relief Valve Assembly	6-159
7-1	P Hydraulic System	7-3
7-2	P Emergency (Electric Motor Driven) Hydraulic System	7-8
7-3	Dual Hydraulic Servo Cylinders Installation	7-9
7-4	Hydraulic Reservoirs	7-28
7-5	P Hydraulic Reservoir – Emergency System	7-29
7-6	Hydraulic Reservoir Assembly	7-31
7-7	Emergency Electric Motor Driven Hydraulic Pump Installation	7-37
7-8	Filter Element Installation	7-41
7-9	Non-Cleanable Filter Elements	7-42
7-10	P Accumulator and Lockout Valve Installation	7-43
7-11	Work Aid for Dual Hydraulic Cylinder Removal and Installation	7-46
7-12	Dual Hydraulic Cylinder	7-47
7-13	Tool Application - Cylinder Assembly Torque Fixture, Part Numbers T41000310 - and T100619-2	7-49
7-14	Damage Limits for Hydraulic Cylinder Bearing Housing	7-52
7-15	Dual Hydraulic Cylinder Assembly (Typical)	7-53
7-16	Flight Control Hydraulic Cylinder and Servo Actuator Valve	7-55
7-17	P Dual Hydraulic Cylinder Valve Connections	7-59
7-18	Dual Hydraulic Cylinders to Swashplate and Collective Lever Installation	7-61
7-19	Dual Hydraulic Cylinder Servo Valve Installation	7-62
7-20	(SCAS) Servo Actuator Assembly	7-63
7-21	Tail Rotor Control Cylinder and Support Installation	7-66
7-22	Tail Rotor Control Cylinder and Support Assembly	7-67
7-22.1	Hydraulic Servocylinder, Part No. 1660 Series (Typical), Exploded View	7-68.4

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
7-22.2	Hydraulic Servocylinder, Part No. 1660 Series (Typical), Exploded View	7-68.6
7-23	Solenoid Valve P/N 204-076-504-3 Installation	7-73
7-24	Solenoid Valve P/N 204-076-504-3 FSCM 94641 P/N 1-U-1025-63 Assembly	7-75
7-25	Functional Test Setup for Solenoid Valve P/N 204-076-504-3 FSCM 94641 P/N 1-U-1025-63	7-80
7-26	Flow Diagram for Solenoid Valve P/N 204-076-504-3 FSCM 94641 P/N 1-U-1025-63	7-81
7-27	Pressure Drop Test Setup for Solenoid Valve P/N 204-076-504-3 FSCM 94641 P/N 1-U-1025-63	7-81
7-28	Solenoid Valves (SCAS System) - Installation	7-84
7-29	P Solenoid Valve P/N 7U7464 Installation	7-92
7-30	P Solenoid Valve P/N 7U7464 Assembly	7-95
7-31	P Functional Test Setup for Solenoid Valve P/N 7U7464	7-98
7-32	P Flow Diagram for Solenoid Valve P/N 7U7464	7-98
7-33	P Pressure Drop Test Setup for Solenoid Valve P/N 7U7464	7-99
7-34	Servo Actuator (Electrohydraulic) - Wing Pylon Armament	7-102
7-35	Work Aid for Wing Pylon Armament Servo Actuator Disassembly Assembly	7-104
7-36	Work Aid for Seal Installation on Wing Pylon Armament Servo Actuator	7-105
7-37	Sheet for Recording Test Data for Wing Pylon Armament Servo Actuator	7-107
7-38	Schematic Diagram Wing Pylon Armament Servo Actuator Connections for Bench Test .	7-108
7-38	Tool Application Wing Pylon Armament Servo Actuator Test Fixture	7-109
7-40	E M Hydraulic System	7-111
7-41	E M Emergency (Electric) Motor Driven Hydraulic System	7-117
7-42	E M Solenoid Valves P/N 204-076-504-3 Installation	7-144
7-43	E M Solenoid Valves (SCAS System) - Installation	7-149
8-1	P E Instrument System Equipment Location	8-2
8-2	Pitot - Static System	8-26.3
8-2.1	Connection for Pitot Leak Check (Typical)	8-26.4
8-2.2	Connection for Static Leak Check (Typical)	8-26.5
8-3	Test Circuit Setup for Fuel Tank Unit Capacitance and Resistance Tests	8-42
8-4	Test Circuit Setup for Fuel Quantity Indicator Bench Test	8-43
8-5	Circuit Arrangement and Adapter Cable for Fuel Quantity Adjustment Procedures on Installed System	8-44
8-5.1	Fuel Quantity Test Set P/N PSD60-1AF	8-44.4
8-5.2	Fuel Quantity "T" Cable P/N PSDAF-537	8-44.5
8-5.3	Fuel Quantity Calibration Worksheet	8-44.6
8-6	Volt-Ammeter Test Set-up	8-49
9-1	P Simplified Electrical Bus Wiring Schematic	9-2
9-2	E M Simplified Electrical Bus Wiring Schematic	9-3
9-3	P Electrical Equipment Location Forward Section	9-4
9-4	P Electrical Equipment Location Pilot Section	9-6

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
9 - 5	P Electrical Equipment Location Gunner Section	9-8
9 - 6	E Electrical Equipment Location Aft Section	9-10
9 - 7	E Electrical Equipment Location Forward Section	9-13
9 - 8	E Electrical Equipment Location Pilot Section	9-13
9 - 9	E Electrical Equipment Location Gunner Section	9-18
9-10	E Electrical Equipment Location Aft Section	9-20
9-11	Environmental Connector Test Adapter	9-23
9-12	P Standby Inverter Adjustment	9-66
9-13	P Pilot Caution Panel	9-80.1
9-14	E Pilot Caution Panel	9-80.1
9-14.1	Deleted	
9-15	M Pilot Caution Panel	9-81
9-15.1	Deleted	
9-16	P Gunner Caution Panel	9-82.1
9-17	E M Gunner Caution Panel	9-82.1
9-17.1	Deleted	
9-17.2	Pilots Caution Panel Assembly	9-88.7
9-17.3	Pilots Caution Panel Subassembly	9-88.8
9-17.4	Housing Subassembly	9-88.11
9-17.5	Cover Assembly	9-88.11
9-17.6	Indicating Light Circuit Card	9-88.12
9-17.7	Contact Assembly	9-88.16
9-17.8	Polarizing Keys Location	9-88.17
9-17.9	Removal of Finish for Electrical Bonding	9-88.19

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
9-17.10	Position of Contacts in Latch Base.....	9-88.23
9-17.11	Gunners Caution Panel Schematic Diagram	9-88.25
9-17.12	Gunners Caution Panel	9-88.32
9-17.13	Gunners Caution Panel Wiring Connections	9-88.35
9-18	Bench Test Set-Up for RPM Limits Warning Detector	9-93
9-19	P Armament Equipment Location	9-128
9-20	P TOW Missile Launcher Positions	9-131
9-21	P Wing Stores Armament Test Panel	9-139
9-22	P Wing Stores Armament Test Panel Schematic	9-140
9-23	E Armament Equipment Location	9-155
9-24	E TOW Missile Launcher Positions	9-164
9-25	E DU Digital Display Test	9-173
9-26	E LRU Fault Identification and Location Test	9-173
9-27	E XM18 Minigun Circuitry Test Panel	9-175
9-28	E Wing Stores Circuitry Test Panel	9-180
9-29	M TOW Missile Launcher Positions	9-195
9-30	M DU Digital Display Test	9-204
9-31	M LRU Fault Identification and Location Test	9-204
9-32	M XM18 Minigun Circuitry Test Panel	9-206
9-33	M Wing Stores Circuitry Teat Panel	9-211
10-1	Fuel Systems Schematic	10-3
10-2	Fuel System	10-4
10-3	Fuel Shutoff Valve.. ..	10-9
10-4	Fuel Boost Pump	10-12.1
10-4.1	Fuel Boost Pump Cartridge	10-12.2
10-4.2	Work Aid for Fuel Pump Cartridge Removal	10-12.3
10-5	Collapsing Forward Fuel Cell	10-22
10-6	Installed Forward Fuel Cell ..	10-24
10-7	Collapsing Aft Fuel Cell	10-26
11-1	Collective Controls	11-4
11-2	Pilot Collective Stick Installation	11-8
11-3	Pilot Collective Stick Assembly	11-9
11-4	Bearing Installation - Pilot Throttle Grip	11-14
11-6	Friction Lining Repair	11-16
11-6	Throttle Lever Bearing Installation	11-17
11-7	Collective Friction Tube Repairs	11-18
11-8	Pilot Collective Stick Adjustments	11-20
11-9	Gunner Collective Stick Installation	11-22
11-10	Gunner Collective Stick-Assembly	11-25
11-11	Gunner Collective Stick Adjustment	11-27
11-12	Force-And-Aft Cyclic Controls ..	11-30
11-13	Lateral Cyclic Controls	11-32
11-14	Work Aid for Rigging Swashplat8e.	11-34

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
11-15	Swashplate Rigging Dimensions	11-35
11-16	Pilot Cyclic Stick Installation.	11-36
11-17	Pilot Cyclic Stick Assembly	11-40
11-18	Collar and Bushing Installation.	11-42
11-19	Pilot Cyclic Stick Friction Adjustment	11-44
11-20	Gunner Cyclic Stick Installation	11-46
11-21	Gunner Cyclic Stick Assembly	11-48
11-22	Fore-And-Aft Cyclic Jackshaft Installation,	11-51
11-23	Force Gradient Assembly	11-56.1
11-24	Tail Rotor Controls	11-57
11-25	Tail Rotor Pedal Installation	11-62
11-26	P Stability and Control Augmentation System (SCAS)	11-70
11-27	E Stability and Control Augmentation System (SCAS)	11-71
11-27.1	SCAS Transducer Calibration	11-74.2
11-28	Elevator Control System	11-76
11-29	Elevator Installation	11-79
11-30	Damage Limits - Fixed Length Flight Control Tubes and Links {Typical}.	11-82
11-31	Control System Linkage Installation	11-85
11-32	Damage Limits -Anti-Torque System	11-95
11-33	Damage Limits - Elevator Control System	11-102
11-34	Damage Limits -Collective Control System	11-104
11-35	Damage Limits -Cyclic Control System	11-110
11-36	Flight Control System Bearings	11-118
11-37	Lateral Cyclic and Collective Controls Power Cylinder Support Installation	11-119
11-38	Fore-And-Aft Cyclic Controls Power Cylinder Support Installation	11-120
11-39	Damage Limits -Power Cylinder Supports	11-121
12-1	Engine Fire Detection System	12-3
12-2	Low G Warning System	12-5
12-3	Low G Warning Assembly 8A10	12-9
12-4	Accelerometer 8A11	12-10
12-5	Low G Warning Light/Switch 8DS25	12-12
12-6	Converter 8M1	12-13
13-1	Environmental Control System	13-3
13-2	Environmental Control Unit	13-5
13-3	Environmental Control System Schematic...	13-7
13-4	Temperature Control Valve	13-8
13-5	Temperature Control Valve Schematic	13-9
13-6	ECU Cooling Turbine	13-12
13-6.1	ECU Cooling Turbine Lubrication	13-12.1
13-7	Pressure Regulator and Shutoff Valve.	13-14
13-8	Pressure Regulator and Shutoff Valve Schematic	13-16
13-9	Blower Impeller Assembly	13-18
13-10	Vent Air Control Valve-Installation	13-21
13-11	Vent Air Control Valve	13-22
13-12	Vent Air Control Valve Test Set-Up	13-24
13-13	Rain Removal Manifold	13-28
13-14	Rain Removal Thermal Switch-Installation	13-30
13-15	Rain Removal Nozzle and Cleared Air Pattern	13-31
13-16	Rain Removal Valve	13-34
13-17	Limits Chart- Air Distribution Valve	13-36
13-18	Tool Application -Teflon Lip Seal Installation	13-38
16-1	E M Turret Installation	16-4
16-2	Special Tools for Ejector Racks	16-12

LIST OF ILLUSTRATIONS (CON'T)

NUMBER	TITLE	PAGE
16-3	Outboard Ejector Rack Installation	16-21
16-4	Ejector Rack Alignment	16-24
16-5	Outboard Ejector Rack Assembly	16-27
16-6	Inboard Ejector Rack Installation	16-32
16-6.1	Contact Profusion Inside Breech	16-32.1
16-6.2	Wiring Harness Assembly	16-32.2
16-7	Inboard Ejector Rack Assembly	16-34
16-8	Wing Stores Pylon and Fairings	16-35
17-1	Canopy Removal System	17-2
17-2	Damage Limits -Linear Shaped Charge Assembly	17-4
C-1	Inventory item List	C-3
F-1	Wiring Identification Chart	F-5
F-1.1	Symbols Chart	F-6
F-1.2	P Altimeter Vibrator System Wiring Diagram	F-45
F-2	P External Power System Wiring Diagram	F-47
F-3	P Starter System Wiring Diagram.	F-49
F-4	P Ignition System Wiring Diagram	F-50
F-5	P Anticollision and Position Lights System Wiring Diagram	F-51
F-6	P Searchlight System Wiring Diagram	F-52
F-7	P Engine De-Ice System Wiring Diagram	F-53
F-8	P Fuel Valve and Oil Valve System Wiring Diagram	F-54
F-9	P Fuel Boost System Wiring Diagram	F-55
F-10	P Governor Control System Wiring System	F-56
F-11	P Idle Stop System Wiring Diagram	F-57
F-12	P Force Trim System Wiring Diagram	F-58
F-13	P Environmental Control System Wiring Diagram	F-59
F-14	P Pitot Heater System Wiring Diagram	F-60
F-15	P TOW Blower Cooling System Wiring Diagram	F-61
F-16	P Attitude Indicating System Wiring Diagram	F-63
F-17	P FUEL Quantity Indicating System Wiring Diagram	F-64
F-17.1	P Turn and Slip Indicating System Wiring Diagram	F-65
F-18	P Radio Blower Cooling System Wiring Diagram	F-65
F-18.1	P Armament Relay Location	F-66
F-19	E AC Electrical Load Chart	F-67
F-20	E Altimeter Vibrator System Wiring Diagram	F-83
F-21	E External Power System Wiring Diagram	F-85
F-22	E Starter System Wiring Diagram.	F-87
F-23	E Searchlight System Wiring Diagram	F-89
F-24	E Engine De-Ice System Wiring Diagram	F-90
F-25	E Fuel Valve and Engine Oil Valve System Wiring Diagram	F-91
F-26	E Fuel Boost System Wiring Diagram	F-92
F-27	E Governor Control System Wiring Diagram	F-93
F-28	E Idle Stop System Wiring Diagram	F-94
F-29	E Force Trim System Wiring Diagram	F-95
F-30	E Environmental Control System Wiring Diagram	F-97
F-31	E Pitot Heater System Wiring Diagram	F-98
F-32	E TOW Blower Cooling System Wiring Diagram	F-99
F-33	E Radio Blower Cooling System Wiring Diagram	F-100
F-34	E Attitude Indicating System Wiring Diagram	F-101
F-35	E Fuel Quantity indicating System Wiring Diagram	F-102
F-36	E Tachometer Indicating System Wiring Diagram	F-103
F-37	E Turn and Slip Indicating System Wiring Diagram	F-105

LIST OF ILLUSTRATIONS (CON'T)

NUMBER		TITLE	PAGE
F-38	E	Electrical Equipment Component Replacement Wiring Diagram	F-106
F-38.1	E	Armament Relay Location	F-106.1
F-39	M	AC Electrical Load Chart	F-108
F-40	M	DC Electrical Load Chart	F-109
F-41	M	Tachometer Indicating System.	F-110
F-42	M	Pressure indicating Systems	F-121
F-43	M	Temperature Indicating Systems	F-131
F-44	M	Attitude Indicating System (Equipment Location)	F-141
F-45	M	Turn and Slip Indicating System	F-147
F-46	M	Fuel Quantity Indicating System	F-151
F-47	M	Altimeter Vibrator System	F-160
F-48	M	DC Generator Power System (Equipment Location)	F-167
F-49	M	Battery System (Equipment Location)	F-177
F-50	M	External Power Provisions	F-184
F-5 1	M	DC Power Distribution and Interconnect Logic (Equipment Location)	F-189
F-52	M	AC Power System (Equipment Location)	F-197
F-53	M	Starter System	F-207
F-54	M	Ignition System	F-213
F-55	M	Interior Lights System (Equipment Location)	F-221
F-56	M	Caution Lights System (Equipment Location)	F-235
F-57	M	RPM Limit Warning System (Equipment Location)	F-259
F-58	M	Position Lights System	F-269
F-59	M	Anticollision Light System	F-276
F-60	M	Searchlight System	F-279
F-61	M	Engine De-Ice System	F-284
F-62	M	Fuel Valve and Engine Oil Bypass Valve Systems	F-292
F-63	M	Fuel Boost System	F-300
F-64	M	Governor Control System	F-307
F-65	M	Idle Stop System	F-316
F-66	M	Force Trim System	F-322
F-67	M	Hydraulic Control System (Equipment Location)	F-331
F-68	M	Environmental Control System.	F-341
F-69	M	Pitot HeaterSystem	F-350
F-70	M	TOW Blower Cooling System	F-354
F-71	M	Radio Blower Cooling System.. . . .	F-361
F-72	M	Universal Turret Subsystem (Equipment Location)	F-367
F-73	M	TOW Missile Armament Subsystem (Equipment Location)	F-383
F-74	M	Fire Control System (Equipment Location)	F-399
F-75	M	Wing Stores Armament Subsystem (Equipment Location)	F-413
F-76	M	Electrical Equipment Component Replacement	F-425
F-77	M	Electrical Equipment Component Replacement (After MWO 55-1520-236-50-4)	F-466
F-78	MCN	C-NITE Subsystem (Equipment Location)	F-469
F-79	MCN	C-NITE Electrical Equipment Component Replacement	F-471
F-80	MCN	FLIR Subsystem Jumper Cable Assemblies	F-472
FO-1	P	Hydraulic System Schematic	FO-1
FO-2	E M	Hydraulic System Schematic	FO-2
FO-3		Balancer and Strobex Description	FO-3
FO-4	P	AC Electrical Load Chart	FO-4
FO-5	P	AC Electrical Load Chart	FO-5
FO-6	P	AC Electrical Load Chart	FO-6

LIST OF ILLUSTRATIONS (CON'T)

NUMBER		TITLE	PAGE
FO-7	P	AC Electrical Load Chart	FO-7
FO-8	P	DC Electrical Load Chart.	FO-8
FO-9	P	DC Electrical Load Chart	FO-9
FO-10	P	DC Electrical Load Chart	FO-10
FO-11	P	DC Electrical Load Chart.	FO-11
FO-12	P	DC Electricd Load Chart	FO-12
FO-13	P	DC Electrical Load Chart.	FO-13
FO-14	P	DC Electrical Load Chart	FO-14
FO-15	P	DC Electrical Load Chart	FO-15
FO-16	P	DC Electrical Load Chart	FO-16
FO-17	P	Battery System	FO-17

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
FO-18	P Generator and DC Bus System	FO-18
FO-19	P AC Power Supply	FO-19
FO-19	P Interior Lights System	FO-20
FO-21	P Interior Lights System	FO-21
FO-21.1	P Interior Lights System	FO-21.1
FO-22	P Interior Lights System	FO-22
FO-22.1	P Interior Lights System	FO-22.1
FO-23	P Caution Lights System	FO-23
FO-24	P Caution Lights System	FO-24
FO-25t	P RPM Limit Warning System	FO-25
FO-26	P Hydraulic Control System	FO-26
FO-27	P Armament Turret System	FO-27
FO-28	P Armament Turret System	FO-28
FO-29	P Armament Turret System	FO-29
FO-30	P Armament Wing Stores System	FO-30
FO-31	P Armament Wing Stores System	FO-31
FO-32	P Armament Wing Stores System	FO-32
FO-33	P Armament TOW Missile Wiring Diagram	FO-33
FO-34	P Armament TOW Missile Wiring Diagram	FO-34
FO-35	P Armament TOW Missile Wiring Diagram	FO-35
FO-36	P Armament TOW Missile Wiring Diagram	FO-36
FO-37	P Pressure Indicating System	FO-37
FO-38	P Tachometer Indicating Systems	FO-38
FO-39	P Temperature Indicating Systems	FO-39
FO-40	P RPM Limit Warning Test Set Schematic	FO-40
FO-41	E AC Electrical Load Chart	FO-41
FO-42	E DC Electrical Load Chart	FO-42
FO-43	E DC Electrical Load Chart	FO-43
FO-44	E Battery System	FO-44
FO-45	E DC Generator Power System	FO-45
FO-46	E DC Power Distribution and Interconnect Logic	FO-46
FO-47	E DC Power Distribution and Interconnect Logic	FO-47
FO-48	E AC Power System	FO-48
FO-49	E Ignition System	FO-49

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
FO-50	E Interior Lights System	FO-50
FO-50.1	E Interior Lights System	FO-50.1
FO-51	E Interior Lights System	FO-51
FO-51.1	E Interior Lights System	FO-51.1
FO-52	E Interior Lights System	FO-52
FO-53	E Caution Lights System	FO-53
FO-54	E Caution Lights System	FO-54
FO-54.1	E Caution Lights System (After Incorporation of MWO 1-1520-236-50-30)	FO-54.1
FO-54.2	E Caution Lights System (After Incorporation of MWO 1-1520-236-50-30)	FO-54.2
FO-54.3	E Caution Lights System (After Incorporation of MWO 1-1520-236-50-30)	FO-54.3
FO-54.4	E Caution Lights System (After Incorporation of MWO 1-1520-236-50-30)	FO-54.4
FO-55	E RPM Limit Warning System	FO-55
FO-56	E Anticollision and Position Lights System	FO-56
FO-57	E Hydraulic Control System	FO-57
FO-58	E Turret System	FO-58
FO-59	E Turret System	FO-59
FO-60	E Turret System	FO-60
FO-61	E Turret System	FO-61
FO-62	E Turret System	FO-62
FO-63	E Turret System	FO-63
FO-64	E Turret System	FO-64
FO-65	E Wing Stores System	FO-65
FO-66	E Wing Stores System	FO-66
FO-67	E Wing Stores System	FO-67
FO-68	E TOW Missile System	FO-68
FO-69	E TOW Missile System	FO-69
FO-70	E TOW Missile System	FO-70
FO-71	E TOW Missile System	FO-71
FO-72	E TOW Missile System	FO-72
FO-73	E TOW Missile System	FO-73
FO-74	E TOW Missile System	FO-74
FO-75	E TOW Missile System	FO-75
FO-76	E TOW Missile System	FO-76
FO-77	E TOW Missile System	FO-77

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
FO-78	E Pressure Indicating System	FO-78
FO-79	E Temperature Indicating System	FO-79
FO-80	E Electrical Equipment Component Replacement	FO-80
FO-81	E Electrical Equipment Component Replacement	FO-81
FO-81.1	E Electrical Equipment Component Replacement	FO-81.1
FO-82	E Electrical Equipment Component Replacement	FO-82
FO-83	E Electrical Equipment Component Replacement	FO-83
FO-84	E Electrical Equipment Component Replacement	FO-84
FO-85	E Electrical Equipment Component Replacement	FO-85
FO-86	E Electrical Equipment Component Replacement	FO-86
FO-87	E Electrical Equipment Component Replacement	FO-87
FO-88	E Electrical Equipment Component Replacement	FO-88
FO-89	E Electrical Equipment Component Replacement	FO-89
FO-90	E Electrical Equipment Component Replacement	FO-90
FO-91	M Pressure Indicating System	FO-91
FO-92	M Temperature Indicating Systems	FO-92
FO-93	M Attitude Indicating System	FO-93
FO-94	M DC Generator Power System	FO-94
FO-95	M Battery System	FO-95
FO-96	M DC Power Distribution and Interconnect Logic	FO-96
FO-97	M DC Power Distribution and Interconnect Logic	FO-97
FO-98	M AC Power System	FO-98
FO-99	M Ignition System	FO-99
FO-100	M Interior Lights System	FO-100
FO-100.1	M Interior Lights System	FO-100.1
FO-101	M Interior Lights System	FO-101
FO-101.1	M Interior Lights System	FO-101.1
FO-102	M Interior Lights System	FO-102
FO-102.1	M Interior Lights System	FO-102.1
FO-103	M Interior Lights System	FO-103
FO-104	M Caution Lights System	FO-104
FO-105	M Caution Lights System	FO-105
FO-106	M RPM Limit Warning System	FO-106
FO-107	M RPM Limit Warning Test Set Schematic	FO-107
FO-108	M Hydraulic Control System	FO-108
FO-109	M Universal Turret Subsystem	FO-109
FO-110	M Universal Turret Subsystem	FO-110

LIST OF ILLUSTRATIONS (CON'T)

	TITLE	PAGE
FO-111	M Universal Turret Subsystem	FO-111
FO-112	M Universal Turret Subsystem	FO-112
FO-113	M Universal Turret Subsystem	FO-113
FO-114	M Universal Turret Subsystem	FO-114
FO-115	M Universal Turret Subsystem	FO-115
FO-116	M Universal Turret Subsystem	FO-116
FO-117	M Universal Turret Subsystem	FO-117
FO-118	M Universal Turret Subsystem	FO-118
FO-119	M TOW Missile Armament Subsystem	FO-119
FO-120	M TOW Missile Armament Subsystem	FO-120
FO-121	M TOW Missile Armament Subsystem	FO-121
FO-122	M TOW Missile Armament Subsystem	FO-122
FO-123	M TOW Missile Armament Subsystem	FO-123
FO-124	M TOW Missile Armament Subsystem	FO-124
FO-125	M TOW Missile Armament Subsystem	FO-125
FO-126	M TOW Missile Armament Subsystem	FO-126
FO-127	M TOW Missile Armament Subsystem	FO-127
FO-128	M TOW Missile Armament Subsystem	FO-128
FO-129	M TOW Missile Armament Subsystem	FO-129
FO-130	M Fire Control System	FO-130
FO-131	M Fire Control System	FO-131
FO-132	M Fire Control System	FO-132
FO-133	M Fire Control System	FO-133
FO-134	M Wing Stores Armament Subsystem	FO-134
FO-135	M Wing Stores Armament Subsystem	FO-135
FO-136	M Wing Stores Armament Subsystem	FO-136
FO-137	M Electrical Equipment Component Replacement	FO-137
FO-138	M Electrical Equipment Component Replacement	FO-138
FO-139	M Electrical Equipment Component Replacement	FO-139
FO-140	M Electrical Equipment Component Replacement	FO-140
FO-141	M Electrical Equipment Component Replacement	FO-141
FO-142	M Electrical Equipment Component Replacement	FO-142
FO-143	M C N TOW Missile Armament Subsystem	FO-143
FO-144	M C N Fire Control System	FO-199
FO-145	E M Low G Warning System	FO-211
FO-146	M AIM-1/EXL Laser Gunsight System	FO-213
FO-147	M GPS Trimpack System	FO-215

LIST OF TABLES

NUMBER	TITLE	PAGE
1-1	Engine Fuel Specifications	1-3
1-2	Approved Fuels	1-4
1-3	Consumable Maintenance Supplies and Materials	1-10.1
1-4	Special Tools and Test Equipment	1-19
1-5	Support Equipment	1-24.1
1-6	Root Mean Square/Abrasive Chart Equivalency	1-24.1
1-7	Deleted	
1-8	Deleted	
1-9	Deleted	
1-10	Deleted	
1-11	Adhesive Mix Ratio, Pot Life, and Cure Cycles	1-24.2
1-11.1	Mooring Hardware Chart	1-54.1
1-12	Flight Safety Critical Aircraft Parts	1-89
2-1	Main Beam Panels (Structural)	2-13
2-2	Structural Repair Materials	2-17
2-3	Forward Fuselage - Classification of Damage	2-26
2-4	Tailboom - Classification of Damage	2-69
2-5	Wing - Classification of Damage	2-248
4-1	Repair Methods - IR Suppression System (AVIM)	4-43
4-1.1	IR Suppressor Damage and Repair Limits (Non Structural Area)	4-44.4
4-1.2	IR Suppressor Damage and Repair Limits (Major Structural Elements Only)	4-44.8
4-2	Troubleshooting Engine Oil System	4-51
4-2.1	Oil Debris Classification Chart	4-54.5
4-3	Dimension Tolerance - Turbine Fan	4-67
5-1	Difference Between Models	5-34
5-1.1	Classification of Damage - K747 Main Rotor Blades	5-45
5-1.2	Classification of Damage - K747 Main Rotor Blades	5-49
5-2	Plug Patch Data	5-58
5-3	Troubleshooting - Tail Rotor System	5-140
5-4	Troubleshooting the VIBREX4591 System with the VIBREX Tester, Model 11	5-218
6-1	Troubleshooting - Drive Train System	6-1
6-1.1	Oil Debris Classification Chart (Aircraft without ODDS)	6-6.2
6-1.2	Oil Debris Classification Chart (Aircraft with ODDS)	6-6.4
6-2	Gearbox Oil Debris Classification	6-90.1
6-3	Troubleshooting - Transmission Oil System	6-122
7-1	Maximum Allowable Leakage for Hydraulic System	7-11
7-2	P Emergency Hydraulic System Operational Switching Sequence	7-15
7-3	P Troubleshooting of Hydraulic System	7-20
7-4	Torque Values for Fluid Connections	7-34
7-4.1	Inspection Criteria	7-68.3
7-4.2	Troubleshooting Chart	7-68.6
7-4.3	Leading Particulars (T/R Control Cylinder)	7-68.7
7-5	Leading Particulars for Solenoid Valve P/N 204-076-504-3 FSCM 94641 (1-U-1025-63)	7-71

LIST OF TABLES (CON'T)

NUMBER	TITLE	PAGE
7-6	Non-Destructive Test Requirements for Solenoid Valve P/N 204-076-504-3 FSCM 94641 P/N 1-U-1025-63 (AVIM)	7-76
7-7	Diametrical Clearance Requirements for Solenoid Valve P/N 204-076-504-3 FSCM 94641 P/N 1-U-1025-63 (AVIM)	7-77
7-8	Troubleshooting During Testing Solenoid Valve P/N 204-076-504-3 FSCM 94641 P/N 1-U-1025-63 (AVIM)	7-79
7-9	P Non-Destructive Test Requirements for Solenoid Valve P/N 7U7464 (AVIM)	7-84
7-10	P Diametrical Clearance Requirements for Solenoid Valve P/N 7U7464 (AVIM)	7-95
7-11	Troubleshooting During Testing of Solenoid Valve P/N 7U7464 (AVIM)	7-97
7-12	E M Emergency Hydraulic System Operational Switching Sequence	7-122
7-13	E M Troubleshooting Hydraulic System	7-125
7-14	Leading Particulars for Solenoid Valve P/N 204-076-504-3 FSCM 94641 P/N 1-U-1025-63	7-142
8-1	Troubleshooting - Tachometer Indicating System	8-8
8-2	Troubleshooting - Engine and Transmissiodn Oil Temperature and Pressure indicating System	8-14
8-3	Troubleshooting - Turbine Gas Temperature Indicating System	8-20
8-4	Troubleshooting - Torque Pressure Indicating System	8-22
8-4.1	Tolerance - ($\pm$ Knots)	8-26
8-4.2	Vertical Speed Tolerance Test Scale Accuracy	8-26.1
8-4.3	Vertical Speed Tolerance Test Scale Accuracy	8-26.1
8-5	Troubleshooting - Airspeed Indicators	8-29
8-6	Troubleshooting - Altimeters	8-30
8-7	Troubleshooting - Attitude Indicators	8-32
8-8	Troubleshooting - Vertical Speed Indicators	8-34
8-9	Troubleshooting - Free Air Temperature Gage	8-38
8-10	Troubleshooting - Fuel Quantity Indicating System	8-39
8-11	Fuel Tank Table of Limits	8-43
8-12	Troubleshooting - Voltmeter/Ammeter	8-48
8-13	P E Troubleshooting - Pilots Steering Indicator (PSI)	8-51
9-1	Troubleshooting - Battery System	9-29
9-2	Troubleshooting - External Power System	9-34
9-3	P Troubleshooting - Generator and DC Bus System	9-37
9-4	P M Troubleshooting - DC Generator Power System	9-41
9-4.1	Voltage Regulator Adjustment Settings	9-44.2
9-5	P M Troubleshooting - TRU Power System	9-46
9-6	P M DC Power Distribution and Interconnect Logic Chart	9-48
9-7	P M Troubleshooting - DC Power Distribution and Interconnect Logic	9-50
9-8	P Troubleshooting - Inverter System	9-58
9-9	P M Troubleshooting - AC Power System	9-62
9-10	Troubleshooting - Starting System	9-74

LIST OF TABLES (CON'T)

NUMBER	TITLE	PAGE
9-11	Troubleshooting – Ignition System	9-75
9-12	Troubleshooting – Cockpit Lights	9-77
9-12.1	Dimmer Control Input/Output Voltages	9-78.1
9-13	Troubleshooting – Console, Engine, Flight, and Tactical Instrument Lights	9-79
9-14	Pilots Caution Panel Lights	9-83
9-15	Gunners Caution Panel Lights	9-83
9-15.1	Troubleshooting Pilots Caution Panel	9-88.2
9-15.2	Pilots Caution Panel Wiring Chart	9-88.21
9-15.3	Gunners Caution Panel Fault Inputs	9-88.27
9-15.4	Troubleshooting – Gunners Caution Panel	9-88.28
9-15.5	Gunners Caution Panel Wiring Chart	9-88.36
9-16	Troubleshooting – RPM Limit Warning System	9-91
9-16.1	Troubleshooting – Skid Landing Light System	9-94.1
9-16.2	Troubleshooting – ODDS	9-94.3
9-17	Troubleshooting – Position Lights System	9-95
9-18	Troubleshooting – Anticollision Light	9-98
9-19	Troubleshooting – Searchlight System	9-100
9-20	Troubleshooting – Transmission Oil Level Light	9-102
9-21	Troubleshooting – Engine De-Icing Circuitry	9-103
9-22	Troubleshooting – Engine Oil Bypass valve Circuitry	9-105
9-23	Troubleshooting – Fuel Valve Circuitry	9-106
9-24	Troubleshooting – Fuel Boost Pumps Circuitry	9-107
9-25	Troubleshooting – Governor Control Circuitry	9-108
9-26	Troubleshooting – Idle Stop Solenoid System Circuitry	9-110
9-26.1	E M Troubleshooting Centrisep Particle Separator Circuitry (After Incorporation of MWO 55-1520-236-50-12).	9-110.1
9-27	Troubleshooting – Force Trim System Circuitry	9-111
9-28	Troubleshooting – Hydraulic Control System Circuitry	9-113
9-29	Troubleshooting – Environmental Control System Circuitry	9-115
9-30	Troubleshooting – Pitot Heating System Circuitry	9-117
9-31	Troubleshooting – TOW Blower Cooling System	9-118
9-32	Troubleshooting – Radio Blower Cooling System	9-121
9-32.1	P Relay Matrix, Pilot in Control Mode	9-122.1
9-32.2	P Relay Matrix, Pilot in Fixed Forward Mode	9-122.3
8-32.3	P Relay Matrix, Gunner in Control Mode – HSS Controlling Turret	9-122.5
9-32.4	P Relay Matrix, Gunner in Control Mode – TSU Controlling Turret	9-122-7
9-32.5	P Relay Matrix, Gunner Controlling TOW and Pilot Controlling Turret and Wing Stores Mode	9-122.9
9-32.6	P Relay Matrix, TSU Acquisition of Target with Gunner or Pilot HSS Mode	9-122.11
9-32.7	P Relay Matrix, Pilot Override Mode	9-122.13
9-32.8	P Relay Matrix, Gunner Jettison Mode	9-122.15

LIST OF TABLES (CON'T)

NUMBER	TITLE	PAGE
9-32.9	P Relay Matrix, Pilot Jettison Mode	9-122.16
9-33	P Wing Stores Jettison Checklist Chart	9-143
9-34	P Troubleshooting - Rocket Launcher Circuitry	9-145
9-35	P Troubleshooting - XM-18 Minigun Circuitry	9-150
9-36	P Troubleshooting - Wing Stores Jettison Circuitry	9-152
9-36.1	E Relay Matrix, Gunner in Control Mode - HSS Controlling Turret	9-156.1
9-36.2	E Relay Matrix, Gunner in Control Mode - TSU Controlling Turret	9-156.3
9-36.3	E Relay Matrix, Gunner Controlling TOW and Pilot Controlling Turret and Wing Stores Mode	9-156.5
9-36.4	E Relay Matrix, Pilot in Control Mode	9-156.7
9-36.5	E Relay Matrix, Pilot Override Mode	9-156.9
9-36.6	E Relay Matrix, TSU Acquisition of Target with Gunner or Pilot HSS Mode	9-156.11
9-36.7	E Relay Matrix, Gunner Jettison Mode	9-156.13
9-36.8	E Relay Matrix, Pilot Jettison Mode	9-156.14
9-37	E XM-18 Minigun Checkout Chart	9-176
9-38	E Troubleshooting - XM-18 Minigun Circuitry	9-177
9-39	E Wing Stores Jettison Checkout Chart	9-181
9-40	E Troubleshooting - Wing Stores Jettison Circuitry	9-183
9-41	M XM-18 Minigun Checkout Chart	9-207
9-42	M Troubleshooting - XM-18 Minigun Circuitry	9-208
9-43	M Wing Stores Jettison Checkout Chart	9-212
9-44	M Troubleshooting - Wing Stores Jettison Circuitry	9-214
10-1	Troubleshooting - Fuel System	10-1
11-1	Troubleshooting - Flight Control System	11-1
12-1	Troubleshooting - Engine Fire Detection System	12-1
12-2	Troubleshooting - Low G Warning System	12-6
13-1	Troubleshooting - ECU	13-1
13-2	Troubleshooting - Rain Removal Valve	13-32
16-1	P Troubleshooting Ejector Racks	16-13
16-2	E M Troubleshooting Ejector Racks	16-16
16-3	M Troubleshooting - AIM-1/EXL Laser Gunsight Subsystem	16-39
F-1	P Equipment List (Electrical)	F-9
F-2	P Equipment List (Armament)	F-15
F-3	E Equipment List (Electrical)	F-19
F-4	E Equipment List (Armament)	F-26
F-5	M Equipment List (Electrical)	F-32
F-6	M Equipment List (Armament)	F-39

By Order of the Secretary of the Army:

Official:

E. C. MEYER
General, United States Army
Chief of Staff

J. C. PENNINGTON
Major General, United States Army
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-31, Organizational Maintenance requirements for AH-1S (PROD) aircraft.

*US. GOVERNMENT PRINTING OFFICE 1980-665-134/2115

