

PREGÃO ELETRÔNICO 07/2023

NUP: 64020.004960/2023-98

Aquisição de materiais do PIT AvEx 2024 para o 4º BavEx e Dst AvEx

VOLUME VII

4º Batalhão de Aviação do Exército
fl. 1201

MINISTÉRIO DA DEFESA
EXÉRCITO BRASILEIRO
4º BATALHÃO DE AVIAÇÃO DO EXÉRCITO
ESQUADRÃO CORONEL RICARDO PAVANELLO

TERMO DE ABERTURA DE VOLUME VII

Processo 64020.004690/2023-98

Em conformidade com o disposto na Portaria Normativa MD nº 1243/2006, procedemos a abertura do volume nº VII do Processo Administrativo referente a licitação acima indicada.

Manaus-AM, 23 de fevereiro de 2024.

[redacted] **SOUSA – Maj**
Chefe da Seção de Aquisições, Licitações e Contratos

4º Batalhão de Aviação do Exército
1202

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
*221	6830-00-782-2641 6830-01-028-9402	Nitrogen A-A-59503 (CAGE 58536)	187 cu ft cyl 226 cu ft cyl
*221A	8010-00-664-7468	Paint, Heat Resistant Aluminum TT-P-28 (CAGE 81348)	qt
221B	8010-01-357-4155	Paint, Heat Resisting GES-69AR (CAGE 58913)	kt
*222	8010-01-131-6254	Paint, Polyurethane MIL-DTL-53039, Type 2 Color: No. 37030, Black (CAGE 81349)	kt
*222A	8010-01-131-6255	Paint, Polyurethane MIL-DTL-53039, Type 2 Color: No. 34031, Dark Green (CAGE 81349)	kt
*223	8010-01-146-2646	Paint, Polyurethane MIL-DTL-53039, Type 2 Color: No. 37038, Black (CAGE 81349)	kt
*224	8010-01-146-2649	Paint, Polyurethane MIL-DTL-53039, Type 2 Color: No. 36231, Dark Gull Gray (CAGE 81349)	kt
*225	8010-01-144-9872	Paint, Polyurethane MIL-DTL-53039, Type 2 Color: No. 37875, Insignia White (CAGE 81349)	kt
*226	8010-01-144-9873	Paint, Polyurethane MIL-DTL-53039, Type 2 Color: No. 31136, Insignia Red (CAGE 81349)	kt
*227	8010-01-055-2319	Paint, Polyurethane MIL-DTL-53039, Type 2 Color: No. 34088, Olive Drab (CAGE 81349)	kt

*** Read the associated hazardous material warning for this item. Warnings are called out in Paragraph D-1.3 of this Appendix.**

This document contains export-controlled information. See WARNING on first page.

4º Batalhão de Aviação do Exército 1203

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
*227A	8010-01-235-8059	Paint, Polyurethane MIL-DTL-53039, Type 2 Color: No. 33538, Orange Yellow (CAGE 81349)	kt
*228		Deleted (Refer to Item 240A)	
229	8010-00-815-2970	Paint Remover MIL-R-25134 (CAGE 81349)	1 gal
*230	8010-00-142-9273 8010-00-926-1488 8010-00-926-1489	Paint Remover MIL-R-81294 (CAGE 81349)	pt 5 gal 55 gal
*231	8010-00-515-2258	Paint Remover TT-R-248 (CAGE 81348)	5 gal
231A	8010-01-485-2312	Paint Remover PR-3133 (CAGE 5HCF1)	1 gal
232	8010-00-558-7026	Paint Thinner A-A-2904 (CAGE 58536)	5 gal
*233	3680-00-237-3457	Parting Compound 225 (CAGE 22401)	cn
233A	9150-00-223-4119	Penetrating Oil VV-P-216 (CAGE 81348)	ea
*234	9150-00-250-0926	Petrolatum VV-P-236 (CAGE 81348)	1.75 lbs
234A	9330-01-196-5436	Plastic Sheet A4000 (CAGE 53912)	rl
235	9330-00-260-3800	Plastic Sheet M24768/16-S-14 (CAGE 81349)	sh
235A	9330-01-473-7822	Plastic Sheet 51789/52006 (CAGE 0NMM3)	sh
236		Deleted (Refer to Item 237B)	

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Zeichnungsamt 1204

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
236A	9330-01-182-2750 9330-01-341-7812 9339-01-358-7526	Plastic Sheet CADCO 0731 (CAGE 12626) KGOC20543S (CAGE 7Z980) A-A-2848 (CAGE 58536)	rl rl sh
237	9330-00-169-6407	Plastic Strip 8561 (CAGE 52152)	rl
237A	9330-01-208-1025	Plastic Strip Artus -.015 Pink-5x20 (CAGE 96013)	ea
237B	9330-00-982-5707	Plastic, Polyvinyl Sheet MIL-P-78 (CAGE 81349)	sh
238		Deleted (Refer to Item 211A)	
239		Deleted (Refer to Item 258A)	
*240	8010-01-131-6255	Polyurethane Coating MIL-C-46168 (CAGE 81349)	kt
*240A	8010-01-265-9127	Polyurethane Coating MIL-PRF-85285 (CAGE 81349)	kt
240B	8010-01-057-3599	Polyurethane Coating 23-T3-103 (CAGE OKXA5)	kt
*241	8010-00-181-8281	Polyurethane Coating MIL-C-83286 (CAGE 81349)	kt
241A	9320-01-247-7735	Polyurethane Tape, Abrasion Resistant SS9538-002 (CAGE 78286)	rl
241B		Polyurethane Tape, Abrasion Resistant SS9538-007 (CAGE 78286)	rl
241C	9330-01-202-8903	Polyurethane Tape WX-1206 (CAGE 61748)	rl

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4º Batalhão de Aviação do Exército

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
241D	8010-01-131-9195	Polyurethane Coating MIL-C-83286 (CAGE 81349)	kt
242	7510-01-326-1568	Pressure Sensitive Adhesive Tape 8663-SS-1-4 (CAGE 52152)	rl
243	9330-01-326-1821	Pressure Sensitive Adhesive Tape 8663-SS-1-8 (CAGE 52152)	rl
243A	9330-01-338-9994	Pressure Sensitive Adhesive Tape 8681HS (CAGE 52152)	rl
244	7510-01-326-1567	Pressure Sensitive Adhesive Tape 8663-2 (CAGE 52152)	rl
244A		Deleted (Refer to Item 241C)	
244B	7510-01-408-9946	Pressure Sensitive Adhesive Tape Flashbreaker 2 (CAGE 53912)	rl
244C	7510-00-079-7604	Pressure Sensitive Adhesive Tape 4516 (CAGE 52152)	rl
245	7510-00-551-9826	Pressure Sensitive Adhesive Tape A-A-113 (CAGE 58536)	rl
246		Deleted (Refer to Item 251B)	
247	7510-00-290-2026	Pressure Sensitive Adhesive Tape A-A-883 (CAGE 58536)	rl
248	7510-01-032-4082	Pressure Sensitive Adhesive Tape 4508 (CAGE 52152)	rl
249	7510-00-663-0195 7510-00-663-0196	Pressure Sensitive Adhesive Tape PPP-T-60 (CAGE 81348)	yd yd
250	7510-01-158-6603	Pressure Sensitive Adhesive Tape 218 (CAGE 52152)	rl

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4º Batalhão de Aviação do Exército
1206

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
250A	7510-00-079-7604	Pressure Sensitive Adhesive Tape 4516 (CAGE 52152)	rl
250B	5330-01-514-8772	Pressure Sensitive Adhesive Tape HT3000-100 (CAGE 1NPE1)	rl
250C	5330-01-513-0861	Pressure Sensitive Adhesive Tape HT3000-150 (CAGE 1NPE1)	rl
250D	5330-01-513-0876	Pressure Sensitive Adhesive Tape HT3000-200 (CAGE 1NPE1)	rl
250E	5970-01-623-9080	Pressure Sensitive Adhesive Tape 8663MB (CAGE 76381)	rl
251	7510-01-248-7514	Pressure Sensitive Adhesive Tape 5423 (CAGE 52152)	in.
251A		Pressure Sensitive Tape 5430 (CAGE 52152)	rl
251B	7510-01-200-0832	Pressure Sensitive Tape K1245 (CAGE 04963)	rl
252	4920-01-307-3169	Pressure Test Kit TO26A179-401 (CAGE 59297)	kt
253		Deleted (Refer to Item 106B)	
*254	8040-01-181-2355	Primer Accelerator No. 4 (CAGE 30676)	8 oz
255	8040-01-205-6819	Primer METLBOND 6726 (CAGE 04622)	gal
256		Deleted (Refer to Item 135A)	
*257		Deleted (Refer to Item 126B and 135)	
*258		Deleted (Refer to Item 126B and 135)	

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4º Batalhão de Aviação do Exército

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
258A	8010-01-371-1952	Primer Coating Aeroglaze 9924 (CAGE 30676)	3 oz
*259	8010-01-040-0947	Primer Coating No. 81 (CAGE 52152)	15 oz
259A		Deleted (Refer to Item 25A)	
260		Deleted (Refer to Item 115A)	
261	6830-01-137-7971	Refrigerant A-A-58060 (CAGE 58536)	50 lb cyl
262	6830-01-370-8756	Refrigerant HFC-134A (CAGE 2S827)	125 lb cyl
263		Refrigerant SUVA 9000, R-407C (CAGE 82348)	gal
263A	9150-01-443-9390	Refrigerant Oil Icematic SW 32 (CAGE 2R128)	gal
264	1560-01-305-7910	Repair Plug Kit 052M002-501 (CAGE 59297)	kt
264A		Deleted (Refer to Item 302C)	
264B	1560-01-305-7911	Repair Plug Kit 052M003-501 (CAGE 59297)	kt
265	8415-00-266-8677	Rubber Gloves MIL-DTL-32066 (CAGE 81349)	pr
266		Deleted (Refer to Item 264B)	
267	9320-01-154-2225	Rubber Sheet MIL-C-3133, Grade SCE 3L (CAGE 81349)	sh
267A	9320-00-580-6756	Rubber Sheet, 0.063-inch thick MIL-C-3133, Grade SBE 11L (CAGE 81349)	sh

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4º Batalhão de Aviação do Exército
1208

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
267B		Rubber Sheet, 0.050-inch thick MIL-R-6855, Class 2, Grade 60 (CAGE 81349)	sh
268	9320-01-157-9070	Rubber Sheet, 0.062-inch thick MIL-R-6855, Class 2, Grade 60 (CAGE 81349)	sh
269	9320-00-241-9764	Rubber Sheet, 0.188-inch thick MIL-R-6855, Class 2, Grade 60 (CAGE 81349)	sh
269A	8305-01-163-1882	Satin Cloth 7781 (CAGE 95746)	yd
270	7920-00-934-3469	Scouring Pad LP50 (CAGE 81348)	bx
270A	7510-00-736-6407	Seal, Moisture CMC-3750 Tape B-540 (CAGE 85480)	rl
271		Deleted (Refer to Item 302A)	
271A	8030-01-014-5869	Sealing Compound 24231 (CAGE 05972)	bt
*271B	8030-01-383-4993	Sealing Compound AMS3284 (CAGE 81349)	bt
*272	8030-00-180-5931	Sealing Compound Epocast 169A-1/9615 (CAGE 99384)	kt
272A	8030-01-132-9624 8030-01-475-2444	Sealing Compound 243 (CAGE 05927)	bt
*273	8030-00-891-8358	Sealing Compound MIL-R-46082, Type 1 (CAGE 81349)	bt
*274	8030-00-181-7529	Sealing Compound MIL-R-46082, Type 2 (CAGE 81349)	bt

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4º Batalhão de Aviação do Exército 1209

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
*275	8030-00-433-4145	Sealing Compound MIL-S-11030, Type 3 (CAGE 81349)	ro
*276	8030-00-964-7537	Sealing Compound ASTM D5363, Grade C (CAGE 81346)	bt
*277	8030-00-081-2340	Sealing Compound ASTM D5363, Grade AA (CAGE 81346)	bt
*278	8030-00-081-2329	Sealing Compound ASTM D5363, Grade E (CAGE 81346)	bx
*279	8030-00-081-2336	Sealing Compound ASTM D5363, Grade AV (CAGE 81346)	bt
*280	8030-00-081-2335	Sealing Compound ASTM D5363, Grade B (CAGE 81346)	bt
*281	8030-00-081-2326	Sealing Compound ASTM D5363, Grade H (CAGE 81346)	bt
*282	8030-00-082-2508	Sealing Compound ASTM D5363, Grade T (CAGE 81346)	bt
*283	8030-00-081-2339	Sealing Compound ASTM D5363, Grade A (CAGE 81346)	bt
283A	8030-01-494-9650	Sealing Compound HT3326-5-50 (CAGE 1NPE1)	kt
*284	8030-00-664-4019	Sealing Compound MIL-S-4383 (CAGE 81349)	pt
*285	8030-00-111-2762	Sealing Compound MIL-S-46163, Type III, Grade R (CAGE 81349)	bt
*286	8030-00-111-2763	Sealing Compound MIL-S-46163, Type III, Grade R (CAGE 81349)	bx

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4º Batalhão de Aviação do Exército
1230

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
286A	8030-01-069-3046	Sealing Compound MIL-S-46163, Type II, Grade M (CAGE 81349)	bt
*287	8030-01-192-2807	Sealing Compound MIL-PRF-81733 (CAGE 81349)	kt
*288	8030-00-008-7204	Sealing Compound MIL-PRF-81733, Type 3-1 (CAGE 81349)	kt
289	8030-00-174-2597	Sealing Compound MIL-S-8516 (CAGE 81349)	kt
*290	8030-00-152-0021	Sealing Compound MIL-S-8784 (CAGE 81349)	ca
*291	8030-00-680-2041	Sealing Compound MIL-S-8784 (CAGE 81349)	kt
*292	8030-00-723-2746	Sealing Compound MIL-S-8802 (CAGE 81349)	kt
293	8030-01-044-5527	Sealing Compound 07331 (CAGE 05972)	bt
*293A	8030-01-158-6070	Sealing Compound 27131 (CAGE 05972)	bt
294	8030-00-714-3013	Sealing Compound 590 (CAGE 77464)	gal
*295	8030-01-234-2186	Sealing Compound PR1436GB-2 (CAGE 83574)	pt
*295A	8030-01-370-2161	Sealing Compound PR-1775, B-2 (CAGE 85374)	6 oz
*295B	8030-01-290-5138	Sealing Compound PR-1826, B-2 (CAGE 85374)	kt

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1º Batalhão de Aviação do Exército

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
*296	8030-00-753-5006	Sealing Compound PR-1440, B-2 (CAGE 83574)	kt
*296A	8030-00-753-4597	Sealing Compound PR-1440, B-1/2 (CAGE 83574)	kt
*297		Deleted (Refer to Item 73B)	
298	8030-00-599-7753	Sealing Compound 1372W (CAGE 77247)	tu
299	8030-00-148-9833	Sealing Compound 27121 (CAGE 05972)	bt
300	8030-01-393-5471	Sealing Compound CHO-Shield 2002 (CAGE 18565)	gal
301	8010-14-360-0749	Sealing Compound (MASTINOX 6856KD (1913/3601)) (CAGE F1419)	tu
*301A	8030-01-450-0381	Sealing Compound CA 1000 (CAGE 83574)	tu
302	8030-00-339-0310	Sealing Compound 69-31 (CAGE 05972)	bt
*302A	8030-00-142-9718	Sealing Compound Epocast 1652 A/B (CAGE 99384)	kt
302B	8030-00-142-9738	Sealing Compound Epocast 1310A/9226 (CAGE 99384)	kt
302C	8030-01-387-2007	Sealing Compound 68060 (CAGE 05972)	bt
302D	8030-01-494-9651	Sealing Compound TG8498-50 (CAGE 1NPE1)	ca

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4º Batalhão de Aviação do Exército 1212

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
302E	8030-01-290-5136	Sealing Compound AMS3277 (CAGE 81343)	kt
303		Deleted (Refer to Item 301A)	
304		Deleted (Refer to Item 305)	
*304A		Deleted (Refer to Item 276 through 283)	
305		Deleted (Refer to Item 276 through 283)	
*306	8030-00-900-2373	Sealing Primer ASTM D 5363, Grade N (CAGE 81346)	bt
307		Deleted (Refer to Item 282)	
307A		Deleted (Refer to Item 237A)	
308		Deleted (Refer to Item 309)	
*309	6850-00-177-5094 6850-00-880-7616	Silicone Compound MIL-S-8660 (CAGE 81349)	2 oz 8 oz
310		Deleted (Refer to Item 121)	
311	5970-00-284-8468	Sleeving, Insulation MIL-I-7444 (CAGE 81349)	ft
312		Deleted (Refer to Item 313)	
313	3439-00-269-9610	Solder QQ-S-571 (CAGE 81348)	sp
313A		Deleted (Refer to Item 99B)	
314	9330-00-753-5372	Spiral Wrap R23100-1 (CAGE 50599)	ea
315	9330-00-688-7856	Spiral Wrap R23100-3 (CAGE 50599)	ft
315A	9330-00-688-7857	Spiral Wrap R23100-4 (CAGE 50599)	ft

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4º Batalhão de Aviação do Exército
1213

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
315B	9330-00-074-0963	Spiral Wrap R23100-5 (CAGE 50599)	ft
315C	7340-00-753-5565	Stirring Stick, Beverage A-A-1081 (CAGE 58536)	ea
315D	5970-01-381-7180	Spiral Wrap SW31 BK005 (CAGE 92194)	ft
316		Deleted (Refer to Item 231)	
316A	8030-00-889-3535	Tape, Antiseize A-A-58092 (CAGE 58536)	ea
317		Deleted (Refer to Item 282)	4 oz
317A	8510-00-170-5469	Talcum Powder U-T-30 (CAGE 81348)	16 oz
317B	4020-00-900-0986	Tape, Lacing and Tying A-A-52080 (CAGE 58536)	rl
317C	4020-01-179-1949	Tape SS7057-2 (CAGE 78286)	ft
318		Deleted (Refer to Item 319B)	
318A	9320-01-247-7735	Tape, Anti-Chafe 8671 (CAGE 52152)	rl
318B	5640-00-103-2254	Tape, Duct A-A-2231 (CAGE 58536)	rl
319	5970-00-723-5413	Tape, Insulation HM 350 (CAGE 71643)	rl
319A		Tape, Insulation 1300891 (CAGE 04813)	lb
319B	5970-00-883-1161	Tape, Insulation A2005 (CAGE 71643)	rl

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4º Batalhão de Aviação do Exército 1214

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
320	5970-00-186-6627	Tape, Insulation 7001 (CAGE 88301)	rl
320A	5970-00-955-9976	Tape, Insulation, Electrical MS70T09-S (CAGE 07099)	rl
321		Deleted (Refer to Item 317B)	
321A		Deleted (Refer to Item 317C)	
322	9390-01-334-4357	Tape, Reflective 7610 (CAGE 52170)	rl
322A		Teflon Urethane Coating 23-73-90 (CAGE 17564)	kt
322B	6515-01-504-9326	Tape, Teflon 25629LT (CAGE 5X927)	rl
323	6685-01-177-2764	Temp Indicator Card 4B-225 (CAGE 82682)	pkg
324	6810-00-819-1128	Tetrachloroethylene ASTM D 4376 (CAGE 81346)	5 gal
324A	8010-01-097-5253	Thinner 9958 (CAGE 30676)	1 gal
324B	8010-00-165-6760	Thinner, Acrylic MIL-T-81722, Type III (CAGE 81349)	1 gal
325	8310-00-204-3749	Thread V-T-295, Type 1, Class A (CAGE 81348)	tu
326	8310-00-530-1182	Thread A-A-52094 (CAGE 58536)	yd
327	8310-01-341-2715	Thread, Break-A-Way MIL-T-43624 Jewel Red 16/4 (CAGE 81349)	rl

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4º Batalhão de Aviação do Exército
TM 1-70-36-23
125

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
328	5975-00-984-6582	Tiedown Strap MS3367-1-0 (CAGE 81343)	100 pkg
329	5975-00-074-2072	Tiedown Strap MS3367-1-9 (CAGE 81343)	100 pkg
330	5975-00-899-4606	Tiedown Strap MS3367-2-0 (CAGE 81343)	100 pkg
331	5975-00-156-3253	Tiedown Strap MS3367-2-9 (CAGE 81343)	100 pkg
332	5975-00-985-6630	Tiedown Strap MS3367-3-0 (CAGE 81343)	100 pkg
333	5975-00-451-5001	Tiedown Strap MS3367-3-9 (CAGE 81343)	100 pkg
334	5975-00-903-2284	Tiedown Strap MS3367-4-0 (CAGE 81343)	100 pkg
334A	5975-00-727-5153	Tiedown Strap MS3367-4-9 (CAGE 81343)	100 pkg
335	5975-00-111-3208	Tiedown Strap MS3367-5-9 (CAGE 81343)	100 pkg
336	5975-01-048-2922	Tiedown Strap MS3367-6-0 (CAGE 81343)	100 pkg
337	5975-00-133-8696	Tiedown Strap MS3367-6-9 (CAGE 81343)	100 pkg
338	5975-00-570-9598	Tiedown Strap MS3367-7-9 (CAGE 81343)	100 pkg
*339	6810-00-579-8431 6810-00-281-2002	Toluene A-A-59107 (CAGE 58536)	qt gal

*** Read the associated hazardous material warning for this item. Warnings are called out in Paragraph D-1.3 of this Appendix.**

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4º Batalhão de Aviação do Exército 1216

(1) ITEM NO.	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION	(4) (U/M)/(U/I)
340		Deleted (Refer to Item155A)	
340A	6810-00-141-6078	Tribasic Sodium Phosphate O-S-642 (CAGE 81348)	1 lb
*341	6810-00-476-5612	Trichloroethane 1,1,1 MIL-T-81533 (CAGE 81349)	cn
*342	6810-00-930-6311	Trichloroethane 1,1,1 ASTM D 4126 (CAGE 81346)	12 oz
343	6810-00-678-4418	Trichloroethylene, Technical ASTM D 4080 (CAGE 81346)	55 gal
344	4720-01-145-6685	Tubing, Nonmetallic Tygothane 3/8-inch ID (CAGE 34384)	ft
344A	4710-01-087-1629	Tubing, Nonmetallic 4710-EG-000-3 (CAGE 81996)	ft
345		Deleted (Refer to Item 141B)	
345A		Vacuum Bagging Film SL800 (CAGE 53912)	rl
346		Deleted (Refer to Item 137A)	
347		Deleted (Refer to Item 137B)	
347A		Deleted (Refer to Item 137C)	
347B	8315-01-331-4506	Velcro Strap SJ3401-200/3.00 (CAGE 52152)	yd
348	8030-00-267-1583	Walkway Compound A-A-59166 (CAGE 58536)	gal
349		Deleted (Refer to Item 315C)	

NOTE: When using lubricating oil for servicing engine only, refer to General Electric SEI-671 manual for approved oils.

*** Read the associated hazardous material warning for this item. Warnings are called out in Paragraph D-1.3 of this Appendix.**

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1217

APPENDIX E

STORAGE OF AIRCRAFT

APPENDIX OVERVIEW

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E-5	PREPARING HELICOPTER FOR INTERMEDIATE STORAGE	E-13
E-6	PUTTING HELICOPTER INTO SERVICE AFTER FLYABLE STORAGE	E-19
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PARA E-1 1218

E-1 INTRODUCTION AND SCOPE.

E-1.1 Introduction.

This task contains instructions for storage of helicopter and activation after storage. Storage of helicopter includes corrosion control, which consists primarily of using preservatives to prevent moisture from contacting exposed metal surfaces. There are two main types of corrosion, direct chemical and electrochemical, each is defined as follows:

(1) Direct chemical corrosion: Occurs when chemicals in the atmosphere cause metal surfaces to erode or etch.

(2) Electrochemical corrosion: Occurs when adjacent surfaces of dissimilar metals become electrolytic cells in the presence of moisture.

Preservation procedures are based on the principle that clean, moisture-free surfaces will not corrode. Preservation of the helicopter consists of cleaning the exposed metal surfaces and providing a barrier between the surfaces and the moisture-laden atmosphere.

E-1.2 Environmental Conditions.

a. The weather must be taken into account when a helicopter is to be placed in storage. The category of storage selected will determine the amount of ground operation, motoring of engines, and other required maintenance for which men and materials are needed. Wet weather conditions create corrosion, rot, mildew, and mold. To prevent environmental conditions from damaging equipment, perform inspections regularly and take proper preventive maintenance action.

b. The following practices should be used as a guide during exceptionally wet weather conditions:

(1) Prevent rot, mildew, and mold by keeping fabrics, rubber, and other susceptible materials as dry as possible. Keep fabric material in the helicopter clean.

(2) Treat all visible corrosion.

(3) Wash helicopter often.

(4) Lubricate moving parts when helicopter is exposed to salt-laden air or mud.

(5) Open all drain holes to make sure water drains properly.

(6) If fuel cells are not preserved, keep fuel cells full to prevent condensation in cells.

E-1.3 Categories of Storage.

The information in this task does not cover when or why helicopters are stored and activated, only how this is done. The instructions in this task cover three types of helicopter storage. The three types and their duration are:

FLYABLE STORAGE	NO TIME LIMIT
SHORT-TERM STORAGE	1 TO 45 DAYS
INTERMEDIATE STORAGE	46 TO 180 DAYS

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E-2 FLYABLE, SHORT-TERM, AND INTERMEDIATE STORAGE.

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PARAGRAPH BREAKDOWN

		PAGE			PAGE
E-2.1	General Procedures	E-3	E-2.2	Inspection During Storage	E-3

INITIAL SETUP

Tools

- Aircraft Mechanic's Toolkit
- Fan
- Thermometer

References

- MIL-STD-794
- PARA 1-3-3
- PARA 1-3-5
- PARA 1-5-1 through PARA 1-5-13
- PARA 1-6-2
- PARA 1-6-4
- PARA 1-6-6
- SEI 671

E-2.1 General Procedures.

Use the following procedures whenever a helicopter is placed in a flyable, short-term, or intermediate storage:

a. Tow helicopter (PARA 1-6-2).

b. Park helicopter (PARA 1-6-6).

c. Observe fire regulations for helicopters parked outside.

d. Tie down helicopter (PARA 1-6-4).

e. Lubricate helicopter before placing it in storage (PARA 1-5-1 through PARA 1-5-13).

f. Protect engines from corrosion resulting from dirt, moisture, and disuse (SEI 671).

g. Cover and protect elastomeric bearings from sunlight.

E-2.2 Inspection During Storage.

The local maintenance officer is responsible for maintaining proper helicopter ventilation and preservation; maintaining helicopter drain valves in operable condition and free from obstructions (open drain valves for the duration of the storage period); providing drains in protective covers at locations where water collects; and for establishing an inspection program for stored helicopters. Inspect as follows:

a. Determine peak interior helicopter temperatures during hot weather conditions as follows:

(1) Hang standard thermometers temporarily in helicopter.

(2) Record interior temperatures at 30-minute intervals during hottest part of day.

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NOTE

If normal ventilating methods are not enough, provide fan ventilation.

(3) If interior temperatures go over 160°F (71°C), ventilate helicopter.

b. Periodically inspect helicopter for corrosion. Frequency of inspection will be determined by local commander based on humidity, temperature, atmospheric conditions, and storage conditions. When found, treat corrosion as required.

c. Inspect tiedown devices (ground wire, wheel chocks, mooring ropes, rods, and eyes) at regular intervals for bending and signs of wear. Inspect tiedown devices immediately after helicopter has been subjected to winds over 40 mph. If any tiedown device is bent or show signs of wear, replace tiedown device.

d. Inspect protective covers for proper drainage. If cover(s) are damaged or worn, replace cover.

e. Inspect communication equipment for fungus and corrosion. If fungus or corrosion is found, perform the following:

NOTE

Do not remove or package antennas.

(1) Remove, repair, and package communication equipment that is deteriorating (MIL-STD-794).

(2) Store packaged equipment in helicopter from which it was removed.

f. Inspect tires for at least 75% normal tire pressure during storage period. If tire pressure is below 75%, service landing gear tire(s) (PARA 1-3-3 or PARA 1-3-5).

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E-3 PREPARING HELICOPTER FOR FLYABLE STORAGE.

PARAGRAPH BREAKDOWN

		PAGE
E-3.1	Inspection Before Flyable Storage	E-6
E-3.2	Engines	E-6
E-3.3	Auxiliary Power Unit	E-6
E-3.4	Hydraulic Systems	E-6
E-3.5	Main Rotor Head	E-6
E-3.6	Gear Boxes	E-6
E-3.7	Fuel Cells	E-6
E-3.8	Electrical System	E-6
E-3.9	Landing Gear	E-6
E-3.10	Airframe	E-7
E-3.11	Flight Controls	E-7
E-3.12	Inspection During Flyable Storage	E-7

INITIAL SETUP

Tools

- Aircraft Mechanic's Toolkit

Materials/Parts

- Barrier Material, Item 80, Appendix D
- Dry-Cleaning Solvent, Item 124, Appendix D
- Hydraulic Fluid, Item 154, Appendix D
- Hydraulic Fluid, Item 155, Appendix D
- Machinery Towel, Item 211, Appendix D
- Pressure Sensitive Adhesive Tape, Item 245, Appendix D

References

- Appendix D
- PARA E-2.2
- PARA 1-3-2
- PARA 1-3-3
- PARA 1-3-4
- PARA 1-3-5
- PARA 1-3-8
- PARA 1-3-9
- PARA 1-3-12
- PARA 1-3-13
- PARA 1-3-14
- PARA 1-3-15
- PARA 1-3-18
- PARA 1-6-5
- PARA 9-4-33
- SEI 671
- TM 1-70-36-MTF
- TM 1-70-36-10

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E-3.1 Inspection Before Flyable Storage.

NOTE

Helicopters in flyable storage will be kept in a serviceable condition.

a. Install static ground wire.

b. Perform 10-hour engine inspection (SEI 671).

c. Enter in helicopter logbook. Include date and type of storage.

E-3.2 Engines.

a. Preserve engines per short-term storage criteria (SEI 671).

b. Install engine exhaust plugs (PARA 1-6-5).

c. Install engine inlet plugs (PARA 1-6-5).

E-3.3 Auxiliary Power Unit.

a. Check and service APU (PARA 1-3-9).

b. Start and operate APU for 10 to 15 minutes (TM 1-70-36-10).

c. Install APU exhaust plug (PARA 1-6-5).

d. Seal APU inlet with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

E-3.4 Hydraulic Systems.

a. Service hydraulic systems (PARA 1-3-8).

b. Check accumulators for required pressure (PARA 1-3-8).

E-3.5 Main Rotor Head.

a. Check damper indicators on dampers for proper fluid level (PARA 1-3-15).

b. If necessary, service dampers (PARA 1-3-15).

E-3.6 Gear Boxes.

Check, and if necessary, service main transmission (PARA 1-3-12), intermediate gear box (PARA 1-3-13), and tail gear box (PARA 1-3-14) to proper oil level.

E-3.7 Fuel Cells.

a. Drain any water from fuel cells before adding fuel.

NOTE

Keep fuel cells at full level for duration of storage.

b. Refuel main fuel cells (PARA 1-3-18).

E-3.8 Electrical System.

a. Disconnect electrical connector, P140, from battery (PARA 9-4-33).

b. Disconnect electrical connector, P141, from battery and connect to dummy electrical connector on battery relay junction box (PARA 9-4-33).

c. Wrap battery electrical connector with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

NOTE

Remove battery from helicopter when ambient temperature is below -40°F (-40°C). Store battery in heated building.

d. If required, remove battery (PARA 9-4-33).

E-3.9 Landing Gear.

a. Maintain normal tire pressure (PARA 1-3-3 and PARA 1-3-5).

b. Maintain normal shock strut extension (PARA 1-3-2 and PARA 1-3-4).

c. Clean polished chrome surfaces on exposed pistons using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

d. Coat cleaned piston surfaces with hydraulic fluid, Item 154 or Item 155, Appendix D.

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E-3.1 Inspection Before Flyable Storage.

NOTE

Helicopters in flyable storage will be kept in a serviceable condition.

a. Install static ground wire.

b. Perform 10-hour engine inspection (SEI 671).

c. Enter in helicopter logbook. Include date and type of storage.

E-3.2 Engines.

a. Preserve engines per short-term storage criteria (SEI 671).

b. Install engine exhaust plugs (PARA 1-6-5).

c. Install engine inlet plugs (PARA 1-6-5).

E-3.3 Auxiliary Power Unit.

a. Check and service APU (PARA 1-3-9).

b. Start and operate APU for 10 to 15 minutes (TM 1-70-36-10).

c. Install APU exhaust plug (PARA 1-6-5).

d. Seal APU inlet with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

E-3.4 Hydraulic Systems.

a. Service hydraulic systems (PARA 1-3-8).

b. Check accumulators for required pressure (PARA 1-3-8).

E-3.5 Main Rotor Head.

a. Check damper indicators on dampers for proper fluid level (PARA 1-3-15).

b. If necessary, service dampers (PARA 1-3-15).

E-3.6 Gear Boxes.

Check, and if necessary, service main transmission (PARA 1-3-12), intermediate gear box (PARA 1-3-13), and tail gear box (PARA 1-3-14) to proper oil level.

E-3.7 Fuel Cells.

a. Drain any water from fuel cells before adding fuel.

NOTE

Keep fuel cells at full level for duration of storage.

b. Refuel main fuel cells (PARA 1-3-18).

E-3.8 Electrical System.

a. Disconnect electrical connector, P140, from battery (PARA 9-4-33).

b. Disconnect electrical connector, P141, from battery and connect to dummy electrical connector on battery relay junction box (PARA 9-4-33).

c. Wrap battery electrical connector with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

NOTE

Remove battery from helicopter when ambient temperature is below -40°F (-40°C). Store battery in heated building.

d. If required, remove battery (PARA 9-4-33).

E-3.9 Landing Gear.

a. Maintain normal tire pressure (PARA 1-3-3 and PARA 1-3-5).

b. Maintain normal shock strut extension (PARA 1-3-2 and PARA 1-3-4).

c. Clean polished chrome surfaces on exposed pistons using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

d. Coat cleaned piston surfaces with hydraulic fluid, Item 154 or Item 155, Appendix D.

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E-3.10 Airframe.

a. Close doors and windows unless ventilation is required.

b. Cover all fuselage openings to keep water, dust, or other foreign matter out.

E-3.11 Flight Controls.

Release friction lock on pilot's collective stick.

E-3.12 Inspection During Flyable Storage.

a. Inspect using local directives.

b. Inspect helicopter (PARA E-2.2).

NOTE

Engine inspection is required every 14 days.

c. Perform 14-day engine inspection (SEI 671).

NOTE

- Make sure main and tail rotor blades are turned during engine run up.
- Engine run up is required every 14 days.

d. Run up engine every 14 days (TM 1-70-36-MTF).

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PARA E-4
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E-4 PREPARING HELICOPTER FOR SHORT-TERM STORAGE.

PARAGRAPH BREAKDOWN

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E-4.3	Auxiliary Power Unit	E-9
E-4.4	Hydraulic Systems	E-10
E-4.5	Gear Boxes	E-10
E-4.6	Main Rotor Blades	E-10
E-4.7	Main Rotor Head	E-11
E-4.8	Tail Rotor	E-11
E-4.9	Fuel Cells	E-11
E-4.10	Electrical System	E-11
E-4.11	Instruments	E-11
E-4.12	Avionics	E-11
E-4.13	Landing Gear	E-11
E-4.14	Airframe	E-12
E-4.15	Flight Controls	E-12
E-4.16	Inspection During Short-Term Storage	E-12

INITIAL SETUP

Tools

- Aircraft Mechanic's Toolkit
- Protection, Eye

Materials/Parts

- Barrier Material, Item 80, Appendix D
- Condition Tag, Green
- Corrosion Preventive Compound, Item 112, Appendix D
- Dry-Cleaning Solvent, Item 124, Appendix D
- Hydraulic Fluid, Item 154, Appendix D
- Hydraulic Fluid, Item 155, Appendix D
- Lubricating Oil, Item 207, Appendix D
- Machinery Towel, Item 211, Appendix D
- Nitrogen, Item 221, Appendix D
- Pressure Sensitive Adhesive Tape, Item 245, Appendix D
- Rags

References

- Appendix D
- PARA E-2.2
- PARA 1-3-2
- PARA 1-3-3
- PARA 1-3-4
- PARA 1-3-5
- PARA 1-3-8
- PARA 1-3-9
- PARA 1-3-10

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- PARA 1-3-12
- PARA 1-3-13
- PARA 1-3-14
- PARA 1-3-15
- PARA 1-4-1
- PARA 1-6-4
- PARA 1-6-5
- PARA 1-6-7
- PARA 9-4-33
- SEI 671
- TM 1-70-36-PMS-1
- TM 11-70-36-23

E-4.1 Inspection Before Short-Term Storage.

NOTE

Helicopters in short-term storage will be kept in a serviceable condition.

a. Install static ground wire.

b. Perform 10 hour/14 day inspection (TM 1-70-36-PMS-1).

c. Enter in helicopter logbook. Include date, type of storage, and removed or disconnected components.

E-4.2 Engines.

a. Preserve engines (SEI 671).

b. Install engine exhaust plugs (PARA 1-6-5).

c. Install engine inlet plugs (PARA 1-6-5).

E-4.3 Auxiliary Power Unit.

a. Check and service APU oil tank to FULL (PARA 1-3-9).

b. Disconnect electrical connector from ignition exciter.

c. Insulate electrical connector.

d. Disconnect fuel line from fuel manifold.

e. Disconnect fuel line from start fuel injector.

WARNING

Injury to personnel will result if precautions are not taken while using compressed air. Compressed air will propel debris from hoses and tubes. Point hoses and tubes in a safe direction before blowing compressed air. Do not point hose towards personnel when blowing compressed air through hose. Make sure all personnel are wearing safety glasses when compressed air is being used.

f. Blow out remaining fuel from fuel manifold and start fuel injector. Use dry, compressed air or bottled nitrogen, Item 221, Appendix D, at 30 psi.

g. Place rags under disconnected lines to catch fuel and oil.

h. Disconnect fuel line from fuel inlet filter.

i. Connect gravity-feed supply of lubricating oil, Item 207, Appendix D, to filter fitting.

j. Place APU switch to START and motor APU until APU automatically shuts down.

k. Recharge accumulator, using external power or APU handpump (PARA 1-3-10).

l. Repeat motoring until oil flows through fuel control and out of drain.

m. Disconnect oil supply.

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PARA E-4

n. Motor APU to remove any residual preservative oil from fuel system.

o. Recharge accumulator (PARA 1-3-10).

p. Disconnect drain lines.

q. Connect fuel line to fuel inlet filter.

r. Connect fuel line to fuel manifold.

s. Connect fuel line to start fuel injector.

t. Connect electrical connector to ignition exciter.

u. Place a green condition tag on the APU engine stating: "APU FUEL SYSTEM PRESERVED WITH LUBRICATING OIL, MIL-PRF-6081. FLUSHING REQUIRED BEFORE STARTING."

CAUTION

Damage to components may result if dry-cleaning solvent is allowed to come in contact with surfaces. Do not allow dry-cleaning solvent to come in contact with wire insulation, rubber, or gasket material surfaces. These surfaces may be damaged by dry-cleaning solvent.

v. Clean APU external surfaces with machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

WARNING

Injury to personnel will result if precautions are not taken while using compressed air. Compressed air will propel debris from hoses and tubes. Point hoses and tubes in a safe direction before blowing compressed air. Do not point hose towards personnel when blowing compressed air through hose. Make sure all personnel are wearing safety glasses when compressed air is being used.

w. Dry APU with machinery towel, Item 211, Appendix D, and blow dry with compressed air.

x. Install APU exhaust plug (PARA 1-6-5).

y. Seal APU inlet with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

E-4.4 Hydraulic Systems.

a. Service hydraulic systems (PARA 1-3-8).

b. Check accumulator for proper charge (PARA 1-3-8).

c. Clean exposed pistons of all servos with machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

d. Coat all cleaned pistons with hydraulic fluid, Item 154, Appendix D.

E-4.5 Gear Boxes.

CAUTION

Damage to equipment will result if tail gear box is filled past the normal service level. Do not fill tail gear box past normal service level, beyond bull's eye on sight plug. Gear box oil from over servicing during storage can penetrate the bearing seal of pitch change shaft grease packed bearing. The presence of grease in pitch change shaft bearing is necessary for proper function.

a. Check, and if necessary, service main transmission (PARA 1-3-12), intermediate gear box (PARA 1-3-13), and tail gear box (PARA 1-3-14) to proper oil level.

b. Coat exposed surfaces of drive train parts with corrosion preventive compound, Item 112, Appendix D.

E-4.6 Main Rotor Blades.

If necessary, fold main rotor blades (PARA 1-6-7).

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E-4.7 Main Rotor Head.

a. Check damper indicators on dampers for proper fluid level (PARA 1-3-15).

b. If necessary, service dampers (PARA 1-3-15).

CAUTION

Damage to components may result if corrosion preventative compound is allowed to come in contact with surfaces. Do not allow corrosion preventative compound to come in contact with bearings or rubber boots. Surfaces may be damaged by corrosion preventative compound.

c. Coat exposed surfaces with corrosion preventive compound, Item 112, Appendix D.

d. Cover elastomeric bearings with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape Item 245, Appendix D, to protect from sunlight.

E-4.8 Tail Rotor.

a. Coat exposed metal surfaces with corrosion preventive compound, Item 112, Appendix D.

b. Cover hub, pitch control rods, and tail gear box output shaft with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape Item 245, Appendix D.

E-4.9 Fuel Cells.

a. Helicopter will be stored with fuel cells at full level for duration of storage.

b. Drain any water from fuel cells before adding fuel.

E-4.10 Electrical System.

a. Disconnect electrical connector, P140, from battery (PARA 9-4-33).

b. Disconnect electrical connector, P141, from battery and connect to dummy electrical connector on battery relay junction box (PARA 9-4-33).

c. Wrap battery electrical connector with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

NOTE

Remove battery from helicopter when ambient temperature is below -40°F (-40°C). Store battery in heated building.

d. If required, remove battery (PARA 9-4-33).

E-4.11 Instruments.

a. Clean pitot tube with dry-cleaning solvent, Item 124, Appendix D.

b. Install pitot tube cover (PARA 1-6-5).

E-4.12 Avionics.

NOTE

Do not remove unclassified avionics from helicopter unless malfunctions exist. Repaired avionics must be installed immediately upon return from the repair shop.

a. Remove, protect, and return classified avionics equipment to proper storage facility as noted in applicable directives.

b. Remove 9-volt battery from Doppler computer display unit (TM 11-70-36-23).

E-4.13 Landing Gear.

a. Maintain normal tire pressure (PARA 1-3-3 and PARA 1-3-5).

b. Maintain normal shock strut extension (PARA 1-3-2 and PARA 1-3-4).

c. Clean polished chrome surfaces on exposed pistons using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

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d. Coat cleaned piston surfaces with hydraulic fluid, Item 154 or Item 155, Appendix D.

e. Cover tires with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

E-4.14 Airframe.

a. Clean interior and exterior fuselage surfaces (PARA 1-4-1).

b. Close doors and windows unless ventilation is required.

c. Cover all fuselage openings to keep out water, dust, or other foreign matter.

d. Moor helicopter (PARA 1-6-4).

E-4.15 Flight Controls.

Release friction lock on pilot's collective stick.

E-4.16 Inspection During Short-Term Storage.

a. Inspect using local directives.

b. Inspect helicopter (PARA E-2.2).

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E-5 PREPARING HELICOPTER FOR INTERMEDIATE STORAGE.

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PARAGRAPH BREAKDOWN

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E-5.2	Engines	E-14
E-5.3	Auxiliary Power Unit	E-14
E-5.4	Hydraulic Systems	E-15
E-5.5	Gear Boxes	E-16
E-5.6	Main Rotor Blades	E-16
E-5.7	Main Rotor Head	E-16
E-5.8	Tail Rotor	E-16
E-5.9	Fuel Cells	E-17
E-5.10	Electrical System	E-17
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E-5.15	Airframe	E-18
E-5.16	Flight Controls	E-18
E-5.17	Inspection During Intermediate Storage	E-18

INITIAL SETUP

Tools

- Aircraft Mechanic's Toolkit
- Main Rotor Blade Shipping Container
- Protection, Eye
- Tail Rotor Blade Shipping Container

Materials/Parts

- Barrier Material, Item 80, Appendix D
- Condition Tag, Green
- Corrosion Preventive Compound, Item 112, Appendix D
- Dry-Cleaning Solvent, Item 124, Appendix D
- Hydraulic Fluid, Item 154, Appendix D
- Hydraulic Fluid, Item 155, Appendix D
- Lubricating Oil, Item 207, Appendix D
- Machinery Towel, Item 211, Appendix D
- Nitrogen, Item 221, Appendix D
- Pressure Sensitive Adhesive Tape, Item 245, Appendix D
- Rags
- Tags

References

- Appendix D
- PARA E-2.2
- PARA 1-3-2
- PARA 1-3-3

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- PARA 1-3-4
- PARA 1-3-5
- PARA 1-3-8
- PARA 1-3-9
- PARA 1-3-10
- PARA 1-3-12
- PARA 1-3-13
- PARA 1-3-14
- PARA 1-3-15
- PARA 1-4-1
- PARA 1-4-5
- PARA 1-6-4
- PARA 1-6-5
- PARA 5-4-28
- PARA 5-4-35
- PARA 8-4-26
- PARA 9-4-33
- PARA 10-4-40
- PARA 17-4-1
- PARA 17-4-2
- SEI 671
- TM 1-70-36-PMS-1
- TM 11-70-36-23

E-5.1 Inspection Before Intermediate Storage.

NOTE

Helicopters in intermediate storage will be kept in a serviceable condition.

a. Install static ground wire.

b. Perform 10 hour/14 day inspection (TM 1-70-36-PMS-1).

c. Enter in helicopter logbook. Include date, type of storage, and removed or disconnected components.

E-5.2 Engines.

a. Preserve engines (SEI 671).

b. Install engine exhaust plugs (PARA 1-6-5).

c. Install engine inlet plugs (PARA 1-6-5).

E-5.3 Auxiliary Power Unit.

a. Check and service APU oil tank to FULL (PARA 1-3-9).

b. Disconnect electrical connector from ignition exciter.

c. Insulate electrical connector.

d. Disconnect fuel line from fuel manifold.

e. Disconnect fuel line from start fuel injector.

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WARNING

Injury to personnel will result if precautions are not taken while using compressed air. Compressed air will propel debris from hoses and tubes. Point hoses and tubes in a safe direction before blowing compressed air. Do not point hose towards personnel when blowing compressed air through hose. Make sure all personnel are wearing safety glasses when compressed air is being used.

f. Blow out remaining fuel from fuel manifold and start fuel injector. Use dry, compressed air or bottled nitrogen, Item 221, Appendix D, at 30 psi.

g. Place rags under disconnected lines to catch fuel and oil.

h. Disconnect fuel line from fuel inlet filter.

i. Connect gravity-feed supply of lubricating oil, Item 207, Appendix D, to filter fitting.

j. Place APU switch to START and motor APU until APU automatically shuts down.

k. Recharge accumulator, using external power or APU handpump (PARA 1-3-10).

l. Repeat motoring until oil flows through fuel control and out of drain.

m. Disconnect oil supply.

n. Motor APU to remove any residual preservative oil from fuel system.

o. Recharge accumulator (PARA 1-3-10).

p. Disconnect drain lines.

q. Connect fuel line to fuel inlet filter.

r. Connect fuel line to fuel manifold.

s. Connect fuel line to start fuel injector.

t. Connect electrical connector to ignition exciter.

u. Place a green condition tag on the APU engine stating: "APU FUEL SYSTEM PRESERVED WITH LUBRICATING OIL, MIL-PRF-6081. FLUSHING REQUIRED BEFORE STARTING."

CAUTION

Damage to components may result if dry-cleaning solvent is allowed to come in contact with surfaces. Do not allow dry-cleaning solvent to come in contact with wire insulation, rubber, or gasket material surfaces. Surfaces may be damaged by dry-cleaning solvent.

v. Clean APU external surfaces with machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

WARNING

Injury to personnel will result if precautions are not taken while using compressed air. Compressed air will propel debris from hoses and tubes. Point hoses and tubes in a safe direction before blowing compressed air. Do not point hose towards personnel when blowing compressed air through hose. Make sure all personnel are wearing safety glasses when compressed air is being used.

w. Dry APU with machinery towel, Item 211, Appendix D, then blow dry with compressed air.

x. Install APU exhaust plug (PARA 1-6-5).

y. Seal APU inlet with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

E-5.4 Hydraulic Systems.

a. Service hydraulic systems (PARA 1-3-8).

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b. Check accumulator for proper charge (PARA 1-3-8).

c. Clean exposed pistons of all servos with machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

d. Coat all cleaned pistons with hydraulic fluid, Item 154 or Item 155, Appendix D.

E-5.5 Gear Boxes.

CAUTION

Damage to equipment will result if tail gear box is filled past the normal service level. Do not fill tail gear box past normal service level, beyond bull's eye on sight plug. Gear box oil from over servicing during storage can penetrate the bearing seal of pitch change shaft grease packed bearing. The presence of grease in pitch change shaft bearing is necessary for proper function.

a. Check, and if necessary, service main transmission (PARA 1-3-12), intermediate gear box (PARA 1-3-13), and tail gear box (PARA 1-3-14) to proper oil level.

b. Coat exposed surfaces of drive train components with corrosion preventive compound, Item 112, Appendix D.

E-5.6 Main Rotor Blades.

a. Remove main rotor blades (PARA 5-4-28).

b. Tag main rotor blades with helicopter serial number.

c. Clean main rotor blade cuffs (PARA 1-4-5).

d. Coat main rotor blade pin sockets with corrosion preventive compound, Item 112, Appendix D.

e. Cover main rotor blade cuffs with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

f. Clean main rotor blades (PARA 1-4-5).

g. Place main rotor blades in shipping containers.

E-5.7 Main Rotor Head.

a. Check damper indicators on dampers for proper fluid level (PARA 1-3-15).

b. If necessary, service dampers (PARA 1-3-15).

CAUTION

Damage to components may result if corrosion preventative compound is allowed to come in contact with surfaces. Do not allow corrosion preventative compound to come in contact with bearings or rubber boots. Surfaces may be damaged by corrosion preventative compound.

c. Coat exposed surfaces with corrosion preventive compound, Item 112, Appendix D.

d. Cover elastomeric bearings with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D, to protect from sunlight.

E-5.8 Tail Rotor.

a. Remove tail rotor blades (PARA 5-4-35).

b. Tag and store tail rotor components (other than tail rotor blades) in cabin area.

c. Tag tail rotor blades with helicopter serial number and place in shipping containers.

d. Place tail rotor blades in shipping containers.

e. Coat exposed metal surfaces of tail rotor with corrosion preventive compound, Item 112, Appendix D.

f. Cover tail gear box output shaft with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

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E-5.9 Fuel Cells.

Helicopter will be stored with fuel cells drained and purged (PARA 10-4-40).

E-5.10 Electrical System.

a. Disconnect electrical connector, P140, from battery (PARA 9-4-33).

b. Disconnect electrical connector, P141, from battery and connect to dummy electrical connector on battery relay junction box (PARA 9-4-33).

c. Wrap battery electrical connector with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

d. Remove battery (PARA 9-4-33). Transfer battery to battery shop or other heated building.

E-5.11 Instruments.

a. Remove clocks (PARA 8-4-26).

b. Attach a green condition tag on clock and store in secure facility.

c. Clean pitot tube with dry-cleaning solvent, Item 124, Appendix D.

d. Install pitot tube cover (PARA 1-6-5).

E-5.12 Avionics.

NOTE

Do not remove unclassified communication equipment from helicopter unless malfunctions exist. Repaired communication equipment must be installed immediately upon return from the repair shop.

a. Remove, protect, and return classified communication equipment to proper storage facility as noted in applicable directives.

b. Cover disconnected connectors with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

c. Clean antenna masts, metal mounts, brackets, and associated mechanical items. Use dry-cleaning solvent, Item 124, Appendix D.

d. Coat cleaned surfaces. Use corrosion preventive compound, Item 112, Appendix D.

e. If necessary, remove mechanical items showing evidence of corrosion.

f. Remove corrosion, preserve, package, and store mechanical items with equipment from which it was removed.

g. Remove 9-volt battery from Doppler computer display unit (TM 11-70-36-23).

E-5.13 Landing Gear.

a. Maintain normal tire pressure (PARA 1-3-3 and PARA 1-3-5).

b. Maintain normal shock strut extension (PARA 1-3-2 and PARA 1-3-4).

c. Clean polished chrome surfaces on exposed pistons using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

d. Coat cleaned piston surfaces with hydraulic fluid, Item 154 or Item 155, Appendix D.

e. Cover tires with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

E-5.14 Utility Items.

a. Remove fire extinguishers from cockpit and cabin (PARA 17-4-1 and PARA 17-4-2).

b. Transfer fire extinguishers to proper storage facility.

c. Remove first aid kits (PARA 17-4-1 and PARA 17-4-2).

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E-5.15 Airframe.

a. Clean interior and exterior fuselage surfaces (PARA 1-4-1).

b. Close doors and windows unless ventilation is required.

c. Cover fuselage openings to keep out water, dust, or other foreign matter.

d. Clean external surfaces of plastic windows.

e. Dry windows and surrounding areas thoroughly.

f. Cover windows with barrier material, Item 80, Appendix D. Secure with pressure sensitive adhesive tape, Item 245, Appendix D.

g. Moor helicopter (PARA 1-6-4).

E-5.16 Flight Controls.

Release friction lock on pilot's collective stick.

E-5.17 Inspection During Intermediate Storage.

a. Inspect helicopter using local directives.

b. Inspect helicopter (PARA E-2.2).

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4º Batalhão de Aviação do Exército 1256

E-6 PUTTING HELICOPTER INTO SERVICE AFTER FLYABLE STORAGE.

PARAGRAPH BREAKDOWN

		PAGE			PAGE
E-6.1	Airframe	E-20	E-6.7	Hydraulic Systems	E-20
E-6.2	Landing Gear	E-20	E-6.8	Engines	E-20
E-6.3	Electrical System	E-20	E-6.9	Auxiliary Power Unit	E-20
E-6.4	Fuel Cells	E-20	E-6.10	Inspection After Activation From Flyable Storage	E-20
E-6.5	Gear Boxes	E-20			
E-6.6	Main Rotor Head	E-20			

INITIAL SETUP

Tools

- Aircraft Mechanic's Toolkit

Materials/Parts

- Dry-Cleaning Solvent, Item 124, Appendix D
- Hydraulic Fluid, Item 154, Appendix D
- Hydraulic Fluid, Item 155, Appendix D
- Machinery Towel, Item 211, Appendix D

References

- Appendix D
- PARA 1-3-2
- PARA 1-3-3
- PARA 1-3-4
- PARA 1-3-5
- PARA 1-3-8
- PARA 1-3-9
- PARA 1-3-12
- PARA 1-3-13
- PARA 1-3-14
- PARA 1-3-15
- PARA 1-3-17
- PARA 1-4-1
- PARA 1-6-4
- PARA 1-6-5
- PARA 9-4-33
- SEI 671
- TM 1-70-36-PMS-1
- TM 1-70-36-10

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4º Batalhão de Aviação do Exército

E-6.1 Airframe.

a. Before performing operational checks, make sure all systems and components are depreserved and serviced.

b. Remove tiedown restraints (PARA 1-6-4).

c. Remove protective covers and stow (PARA 1-6-5).

d. Remove all barrier material.

e. Clean residue left by barrier material tape with dry-cleaning solvent, Item 124, Appendix D.

f. Clean interior and exterior fuselage surfaces (PARA 1-4-1).

g. Open doors and windows.

E-6.2 Landing Gear.

a. Check tires for proper inflation, condition and rotation (PARA 1-3-3 and PARA 1-3-5).

b. Clean polished chrome surfaces on exposed pistons using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

c. Coat cleaned piston surfaces with hydraulic fluid, Item 154 or Item 155, Appendix D.

d. Service shock struts (PARA 1-3-2 and PARA 1-3-4).

E-6.3 Electrical System.

a. If required, install battery (PARA 9-4-33).

b. Remove tape and barrier material from battery connector.

c. Connect electrical connector, P140, to battery (PARA 9-4-33).

d. Connect electrical connector, P141, to battery (PARA 9-4-33).

E-6.4 Fuel Cells.

a. Drain any water from fuel cells before adding fuel.

b. Refuel fuel cells as required (PARA 1-3-17).

E-6.5 Gear Boxes.

Check, and if necessary, service main transmission (PARA 1-3-12), intermediate gear box (PARA 1-3-13), and tail gear box (PARA 1-3-14) to proper oil level.

E-6.6 Main Rotor Head.

a. Check damper indicators on dampers for proper fluid level (PARA 1-3-15).

b. If necessary, service dampers (PARA 1-3-15).

E-6.7 Hydraulic Systems.

a. Service hydraulic systems (PARA 1-3-8).

b. Check hydraulic accumulators for required precharge pressure (PARA 1-3-8).

E-6.8 Engines.

a. Remove and stow engine inlet and exhaust plugs (PARA 1-6-5).

b. Check and service engine (SEI 671).

c. Clean engine external surfaces, as necessary (SEI 671).

E-6.9 Auxiliary Power Unit.

a. Remove tape and barrier material from intake.

b. Remove and stow APU exhaust plug (PARA 1-6-5).

c. Check and service APU (PARA 1-3-9).

d. Start and operate APU for 5 minutes (TM 1-70-36-10).

e. Shut down APU (TM 1-70-36-10).

E-6.10 Inspection After Activation From Flyable Storage.

a. Check helicopter logbook for record of components removed or disconnected. Check

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that components have been installed or connected.

b. Check that all procedures required to activate helicopter from flyable storage have been done.

c. Check that helicopter logbook entries have been posted.

d. Perform 10 hour/14 day inspection (TM 1-1520-36-PMS-1).

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E-7 PUTTING HELICOPTER INTO SERVICE AFTER SHORT-TERM STORAGE.

4º Batalhão de Aviação do Exército 1239

PARAGRAPH BREAKDOWN

		PAGE			PAGE
E-7.1	Airframe	E-23	E-7.9	Main Rotor Blades	E-24
E-7.2	Landing Gear	E-23	E-7.10	Gear Boxes	E-24
E-7.3	Avionics	E-23	E-7.11	Hydraulic Systems	E-24
E-7.4	Instruments	E-23	E-7.12	Auxiliary Power Unit	E-24
E-7.5	Electrical System	E-23	E-7.13	Engines	E-24
E-7.6	Fuel Cells	E-23	E-7.14	Inspection After Activation from Short-Term Storage	E-25
E-7.7	Tail Rotor	E-23			
E-7.8	Main Rotor Head	E-24			

INITIAL SETUP

Tools

- Aircraft Mechanic's Toolkit
- Container

Materials/Parts

- Dry-Cleaning Solvent, Item 124, Appendix D
- Hydraulic Fluid, Item 154, Appendix D
- Hydraulic Fluid, Item 155, Appendix D
- Machinery Towel, Item 211, Appendix D

References

- Appendix D
- PARA 1-3-2
- PARA 1-3-3
- PARA 1-3-4
- PARA 1-3-5
- PARA 1-3-8
- PARA 1-3-9
- PARA 1-3-10
- PARA 1-3-12
- PARA 1-3-13
- PARA 1-3-14
- PARA 1-3-15
- PARA 1-3-17
- PARA 1-4-1
- PARA 1-6-4
- PARA 1-6-5

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- PARA 1-6-7
- PARA 9-4-33
- SEI 671
- TM 1-70-36-PMS-1
- TM 1-70-36-10
- TM 11-70-36-23

4º Batalhão de Aviação do Exército 1242

E-7.1 Airframe.

a. Before performing operational checks, make sure related systems or components are depreserved and serviced.

b. Remove tiedown restraints (PARA 1-6-4).

c. Remove protective covers and stow (PARA 1-6-5).

d. Remove all barrier material from airframe and components.

e. Clean residue left by barrier material tape with dry-cleaning solvent, Item 124, Appendix D.

f. Clean interior and exterior fuselage surfaces (PARA 1-4-1).

g. Open doors and windows.

E-7.2 Landing Gear.

a. Check tires for proper inflation, condition and rotation (PARA 1-3-3 and PARA 1-3-5).

b. Clean polished chrome surfaces on exposed pistons using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

c. Coat cleaned piston surfaces with hydraulic fluid, Item 154 or Item 155, Appendix D.

d. Service shock struts (PARA 1-3-2 and PARA 1-3-4).

E-7.3 Avionics.

a. Requisition classified avionics equipment from supply office. Protect and install classified equipment as noted in applicable directives.

b. Remove tags from avionics equipment.

c. Install 9-volt battery from Doppler computer display unit (TM 11-70-36-23).

E-7.4 Instruments.

a. Remove pitot tube protective cover and stow (PARA 1-6-5).

b. Remove tape and barrier material sealing static and sideslip ports.

c. Remove tape residue with dry-cleaning solvent, Item 124, Appendix D.

E-7.5 Electrical System.

a. If required, install battery (PARA 9-4-33).

b. Remove tape and barrier material from battery connector.

c. Connect electrical connector, P140, to battery (PARA 9-4-33).

d. Connect electrical connector, P141, to battery (PARA 9-4-33).

E-7.6 Fuel Cells.

a. Drain any water from fuel cells before adding fuel.

b. Refuel fuel cells as required (PARA 1-3-17).

E-7.7 Tail Rotor.

Clean corrosion preventive compound from tail rotor using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

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E-7.8 Main Rotor Head.

CAUTION

Damage to components may result if dry-cleaning solvent is allowed to come in contact with surfaces. Do not allow dry-cleaning solvent to come in contact with elastomeric bearings or rubber boots. These surfaces may be damaged by dry-cleaning solvent.

a. Clean corrosion preventive compound from main rotor head using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

b. Check damper indicators on dampers for proper fluid level (PARA 1-3-15).

c. If necessary, service dampers (PARA 1-3-15).

E-7.9 Main Rotor Blades.

If necessary, unfold main rotor blades (PARA 1-6-7).

E-7.10 Gear Boxes.

a. Drain some oil and check main transmission for proper oil level (PARA 1-3-12).

b. Drain some oil and check intermediate gear box (PARA 1-3-13) and tail gear box (PARA 1-3-14) for proper oil level. Discontinue draining at proper oil level.

c. Clean corrosion preventive compound from drive train components. Use machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

E-7.11 Hydraulic Systems.

a. Service hydraulic systems (PARA 1-3-8).

b. Check accumulator for proper pressure (PARA 1-3-8).

c. Clean exposed pistons of all servos with machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

d. Coat all clean piston surfaces with hydraulic fluid, Item 154 or Item 155, Appendix D.

E-7.12 Auxiliary Power Unit.

a. Remove tape and barrier material from intake.

b. Remove and stow APU exhaust plug (PARA 1-6-5).

c. Check and service APU (PARA 1-3-9).

d. Disconnect fuel line from fuel manifold.

e. Disconnect fuel line from fuel injector.

f. Connect drain lines to disconnected fuel lines.

g. Place end of drain lines in empty quart container.

h. Place APU switch to START and motor APU until APU automatically shuts down.

i. Recharge accumulator, using external power or APU handpump (PARA 1-3-10).

j. Repeat motoring until oil-free fuel flows through fuel control and out of drain lines.

k. Recharge accumulator to required pressure (PARA 1-3-10).

l. Disconnect drain lines.

m. Connect fuel line to fuel manifold.

n. Connect fuel line to start fuel injector.

o. Connect electrical connector to ignition exciter.

p. Drain accumulated fuel from combustor fuel drain.

q. Start and operate APU for 5 minutes (TM 1-70-36-10).

E-7.13 Engines.

a. Remove and stow engine inlet and exhaust plugs (PARA 1-6-5).

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b. Depreserve engine (SEI 671).

E-7.14 Inspection After Activation from Short-Term Storage.

a. Check helicopter logbook for record of components removed or disconnected. Check that these components have been installed or connected.

b. Check that all procedures required to activate helicopter after short-term storage have been done.

c. Check that all PRESERVED tags have been removed.

d. Check that helicopter logbook entries have been posted for helicopter, engines, and APU.

e. Perform 10 hour/14 day inspection (TM 1-70-36-PMS-1).

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4º Batalhão de Aviação do Exército 1243

E-8 PUTTING HELICOPTER INTO SERVICE AFTER INTERMEDIATE STORAGE.

PARAGRAPH BREAKDOWN

		PAGE			PAGE
E-8.1	Airframe	E-27	E-8.10	Main Rotor Blades	E-28
E-8.2	Landing Gear	E-27	E-8.11	Gear Boxes	E-28
E-8.3	Utility Items	E-27	E-8.12	Hydraulic Systems	E-28
E-8.4	Avionics	E-27	E-8.13	Auxiliary Power Unit	E-28
E-8.5	Instruments	E-27	E-8.14	Engines	E-29
E-8.6	Electrical System	E-27	E-8.15	Inspection Following Activation from Intermediate Storage	E-29
E-8.7	Fuel Cells	E-28			
E-8.8	Tail Rotor	E-28			
E-8.9	Main Rotor Head	E-28			

INITIAL SETUP

Tools

- Aircraft Mechanic's Toolkit
- Container

Materials/Parts

- Dry-Cleaning Solvent, Item 124, Appendix D
- Hydraulic Fluid, Item 154, Appendix D
- Hydraulic Fluid, Item 155, Appendix D
- Machinery Towel, Item 211, Appendix D

References

- Appendix D
- PARA 1-3-2
- PARA 1-3-3
- PARA 1-3-4
- PARA 1-3-5
- PARA 1-3-8
- PARA 1-3-9
- PARA 1-3-10
- PARA 1-3-12
- PARA 1-3-13
- PARA 1-3-14
- PARA 1-3-15
- PARA 1-3-17
- PARA 1-4-1

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- PARA 1-6-4
- PARA 1-6-5
- PARA 5-4-28
- PARA 5-4-35
- PARA 8-4-26
- PARA 9-4-33
- PARA 17-4-1
- PARA 17-4-2
- SEI 671
- TM 1-70-36-PMS-1
- TM 1-70-36-10
- TM 11-70-36-23

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E-8.1 Airframe.

a. Before performing operational checks, make sure related systems or components are depreserved and serviced.

b. Remove tiedown restraints (PARA 1-6-4).

c. Remove protective covers and stow (PARA 1-6-5).

d. Remove all barrier material from airframe and components.

e. Clean residue left by barrier material tape with dry-cleaning solvent, Item 124, Appendix D.

f. Clean interior and exterior fuselage surfaces (PARA 1-4-1).

g. Open doors and windows.

E-8.2 Landing Gear.

a. Check tires for proper inflation and condition (PARA 1-3-3 and PARA 1-3-5).

b. Clean polished chrome surfaces on exposed pistons using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

c. Coat cleaned piston surfaces with hydraulic fluid, Item 154 or Item 155, Appendix D.

d. Service main landing gear and tail landing gear shock struts (PARA 1-3-2 and PARA 1-3-4).

E-8.3 Utility Items.

a. Install fire extinguishers in cabin and cockpit (PARA 17-4-1 and PARA 17-4-2).

b. Install first aid kits in cabin and cockpit (PARA 17-4-1 and PARA 17-4-2).

E-8.4 Avionics.

a. Requisition classified communication equipment from supply office. Protect and install classified equipment as noted in applicable directives.

b. Remove tags from communication equipment.

c. Install 9-volt battery from Doppler computer display unit (TM 11-70-36-23).

E-8.5 Instruments.

a. Remove pitot tube protective cover and stow (PARA 1-6-5).

b. Remove tape and barrier material sealing static and sideslip ports.

c. Remove tape residue with dry-cleaning solvent Item 124, Appendix D.

d. Install clocks (PARA 8-4-26).

E-8.6 Electrical System.

a. Install battery (PARA 9-4-33).

b. Remove tape and barrier material from battery connector.

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c. Connect electrical connector, P140, to battery (PARA 9-4-33).

d. Connect electrical connector, P141, to battery (PARA 9-4-33).

E-8.7 Fuel Cells.

a. Prepare fuel cells for service.

b. Refuel fuel cells (PARA 1-3-17).

E-8.8 Tail Rotor.

a. Clean corrosion preventive compound from tail rotor using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

b. Install tail rotor blades (PARA 5-4-35).

E-8.9 Main Rotor Head.

CAUTION

Damage to components may result if dry-cleaning solvent is allowed to come in contact with surfaces. Do not allow dry-cleaning solvent to come in contact with elastomeric bearings or rubber boots. These surfaces may be damaged by dry-cleaning solvent.

a. Clean corrosion preventive compound from main rotor head using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

b. Check damper indicators on dampers for proper fluid level (PARA 1-3-15).

c. If necessary, service dampers (PARA 1-3-15).

E-8.10 Main Rotor Blades.

CAUTION

Make sure color codes on main rotor blades agree with color code on sleeves.

Install main rotor blades (PARA 5-4-28).

E-8.11 Gear Boxes.

a. Drain some oil and check main transmission for proper oil level (PARA 1-3-12).

b. Drain some oil and check intermediate gear box (PARA 1-3-13) and tail gear box (PARA 1-3-14) for proper oil level. Discontinue draining at proper oil level.

c. Clean corrosion preventive compound from drive train components using machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

E-8.12 Hydraulic Systems.

a. Service hydraulic systems (PARA 1-3-8).

b. Check accumulator for proper pressure (PARA 1-3-8).

c. Clean exposed pistons of all servos with machinery towel, Item 211, Appendix D, and dry-cleaning solvent, Item 124, Appendix D.

d. Coat all cleaned pistons with hydraulic fluid, Item 154 or Item 155, Appendix D.

E-8.13 Auxiliary Power Unit.

a. Remove tape and barrier material from intake.

b. Remove and store APU exhaust plug (PARA 1-6-5).

c. Check and service APU (PARA 1-3-9).

d. Disconnect fuel line from fuel manifold.

e. Disconnect fuel line from start fuel injector.

f. Connect drain lines to disconnected fuel lines.

g. Place end of drain lines in empty quart container.

h. Place APU switch to START and motor APU until APU automatically shuts down.

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i. Recharge accumulator, using external power or APU handpump (PARA 1-3-10).

j. Repeat motoring until oil-free fuel flows through fuel control and out of drain lines.

k. Recharge accumulator to required pressure (PARA 1-3-10).

l. Disconnect drain lines.

m. Connect fuel line to fuel manifold.

n. Connect fuel line to start fuel injector.

o. Connect electrical connector to ignition exciter.

p. Drain accumulated fuel from combustor fuel drain.

q. Start and operate APU for 5 minutes (TM 1-70-36-10).

E-8.14 Engines.

a. Remove and stow engine inlet and exhaust plugs (PARA 1-6-5).

b. Depreserve engine (SEI 671).

E-8.15 Inspection Following Activation from Intermediate Storage.

a. Check helicopter logbook for record of components removed or disconnected. Check that these components have been installed or connected.

b. Check that all procedures required to activate helicopter from intermediate storage have been done.

c. Check that all PRESERVED tags have been removed.

d. Check that helicopter logbook entries have been posted for helicopter, engines, and APU.

e. Perform 10 hour/14 day inspection (TM 1-70-36-PMS-1).

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Miscellaneous products used on helicopters

302. Use of oils

A. Miscellaneous products used on helicopters

NOTE

This work card is applicable to technical documentation that does not use CM codes for the identification of materials.

NOTE

Following the design office decision, DOD-L-85734 R (AS) type oils or NATO O-160 type oils can be used in the gear boxes of the above-mentioned aircraft as an alternative to NATO O-156 oils.

If an oil change is made on a gearbox, it is recommended to wash the gearbox as per the WC or MET for the corresponding aircraft.

Oil								
AIR standard	NATO Sym-bol	Specification		Characteristic-s		Manufactur-er	Commercial name	Remarks
		Us	UK	Pour point (°C)	Flash point (°C)			
3511A Ester-type synthetic oil for on-board e-quipment and instru-ments	O-147	MIL-PRF 6085E	DEF-STAN 91-49 ind 1	Less than - 66	225	NYCO	NYCOLUBE 11B	
				- 68	220	SHELL	AEROSHELL FLUID 12	
				Less than - 60	227	TOTAL	ROYCO INSTRUMENT OIL 885 (obsolete)	
				Less than - 57	225	AIR BP LUBRI-CANTS	BRAYCO 885	
				- 64	225	Anderol	Royco 885	
3512A Mineral oil for turbo-machines (9 cst type)	O-138		DEF-STAN 91-97 ind 1	- 32	235	NYCO	TURBONYCOIL 3512	
				- 32	230	TOTAL	921 AEROTURBINE	

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Oil								
AIR standard	NATO Symbol	Specification		Characteristics		Manufacturer	Commercial name	Remarks
		Us	UK	Pour point (°C)	Flash point (°C)			
Ester type oil (US origin) for turbomachines (3 CST type)	O-148	MIL-PRF 7808L GRADE 3 (1)		- 62	+ 220	Anderol	Royco 808	
				- 60	220	Eastman	Eastman TURBO OIL 2389	
				Less than - 62	235	SHELL	AEROSHELL TURBINE OIL 308	
				- 60	224	EXXON MOBIL	MOBIL AVREX S TURBO 256	
				- 60	234	EXXON MOBIL	MOBIL TURBO319A-2	**
				- 62	225	TOTAL	ROYCO TURBINE OIL 808 (obsolete)	
				- 72	225	NYCO	TURBONYCOIL 160	
		MTL-PRF-7808L GRADE 4		- 57	228	EXXON MOBIL	MOBIL TURBO 284 (obsolete)	
Ester-type synthetic oil (US origin) for turbine aircraft (4 CST type)	O-163	MIL-PRF 7808L GRADE 4			240	Nyco	Turbonycoil	

(1): product not recommended for French SNECMA / ATAR-type engines (refer to STANAG 1135 standard).

Oil								
AIR standard	NATO Symbol	Specification		Characteristics		Manufacturer	Commercial name	Remarks
		Us	UK	Pour point (°C)	Flash point (°C)			
3514A ind 2 Ester type oil (French origin) for turbomachines (3 cst type)	O-150			Less than - 60	222	NYCO	TURBONYCOIL 13B	

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