URGENT

TB 1-1520-238-30-16

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSTALLATION PROCEDURES FOR REPLACING MAIN LANDING GEAR SHOCK STRUT STRUCTURAL SUPPORTS P/N'S 7-311113409-1/-2/-3/-4 WITH IMPROVED SHOCK STRUT STRUCTURAL SUPPORTS 7-311113709-1/-2 ON AH-64A HELICOPTER.

Headquarters, Department of the Army, Washington, D.C.
26 February 1999

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. Priority Classification. URGENT.

a. Aircraft in Use. Routine. Upon receipt of this Technical Bulletin (TB) the status of all affected aircraft is not changed. This TB is to be taken as information only.

b. Aircraft in Depot Maintenance. Same as paragraph 1a.

c. Aircraft in Undergoing Maintenance. Same as paragraph 1a.

d. Aircraft in Transit. Same as paragraph 1a.

e. Maintenance Trainers. Same as paragraph 1a.

f. Spares. N/A.

2. **Task/Inspection Suspense Date.** N/A.

3. **Reporting Compliance Suspense Date.** N/A..

4. **Purpose.** To provide installation procedures for replacing main landing gear shock strut structural supports P/N's 7-311113409-1/-2/-3/4 with improved shock strut structural supports P/N's 7-311113709-1/-2.

5. **End Items To Be Inspected.** N/A.

6. **Assembly Components To Be Inspected.** N/A.

7. **Parts To Be Inspected.** N/A.

8. **Inspection Procedures.** N/A.

9. **Installation Procedures.** The following procedures contain instructions for the replacement of both main landing gear structural supports on the AH-64A helicopter.

CAUTION

Ensure that a foreign object damage (FOD) prevention program is implemented during application of this TB in accordance with AR 385-95, Chapter 4.

To prevent damage or loss, items removed to gain access to work areas shall be tagged for identification and protected from damage before reinstallation.

NOTE

Retain all attaching hardware unless otherwise directed.

a. Preconditions.

(1) Prepare helicopter for safe ground maintenance (TM 1-1520-238-23).

(2) If installed, remove safety bolt and nut from shock strut structural supports (TM 1-1520-238-23).

(3) Remove both left and right main landing gear shock strut structural supports (TM 1-1520-238-23).

(4) Retain hardware for reinstallation.

b. Installation.

(1) Install two new [P/N 7-311113709-1 (LH) and P/N 7-311113709-2 (RH)] shock strut structural supports, from modification kit. See Figure 1.

(a) Install new structural support on aircraft per TM 1-1520-238-23 using existing hardware except replace two removed bolts (P/N HS5482-8-24 or HS4440-09-24) per side with new bolts (P/N HS5482-9-26) from modification kit.

(2) Install new airframe studs (P/N HS5876-01 and HS5976-02) from modification kit in both structural supports. Airframe stud HS5976-02 is two way interchangeable with airframe stud 7-111210218.

(a) Using new washer (P/N HS5975-02) as a guide, with chamered side toward mount, install new studs in main landing gear structural support using sealing compound, MIL-S-22473, Grade T. See Figures 2 & 3.

NOTE

If MWO 1-1520-238-50-51 has been previously complied with step (3), trimming of main landing gear fuselage fairings will not be required.

(3) Trim both main landing gear fuselage fairings [P/N 7-311113381-1 (LH) and P/N 7-311113381-2) (RH)].

(a) Using new washer (P/N HS5975-02) from modification kit installed on structural support as a template, trim fuselage fairings to ensure sufficient clearance around HS5975-02 washer. Apply adhesive P/N EA9313 to trimmed edges. See Figure 4.

(4) Install both trimmed fairings using removed hardware (TM 1-1520-238-23).

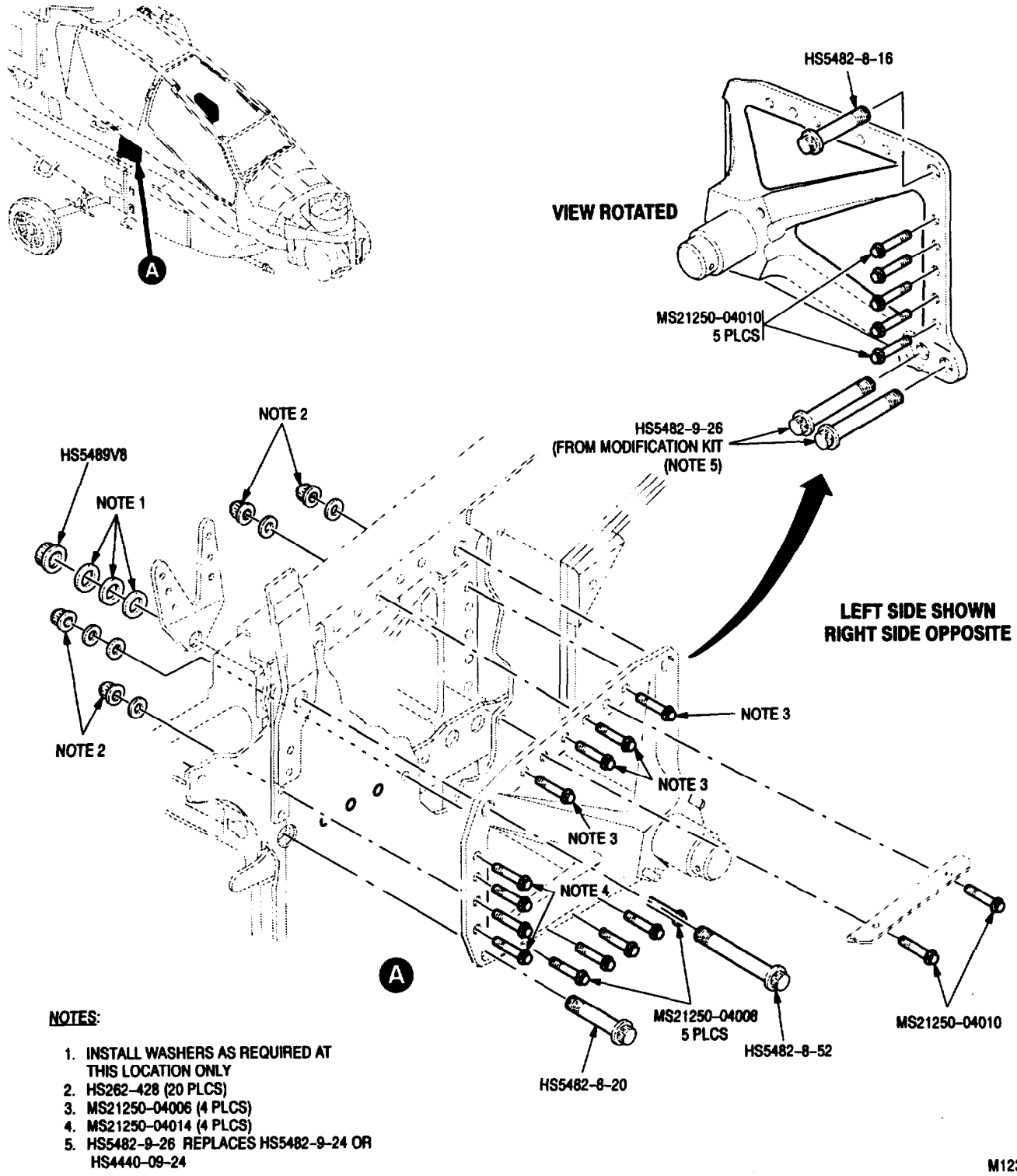


Figure 1. Main Landing Gear Structural Support Bolt/Nut Installation

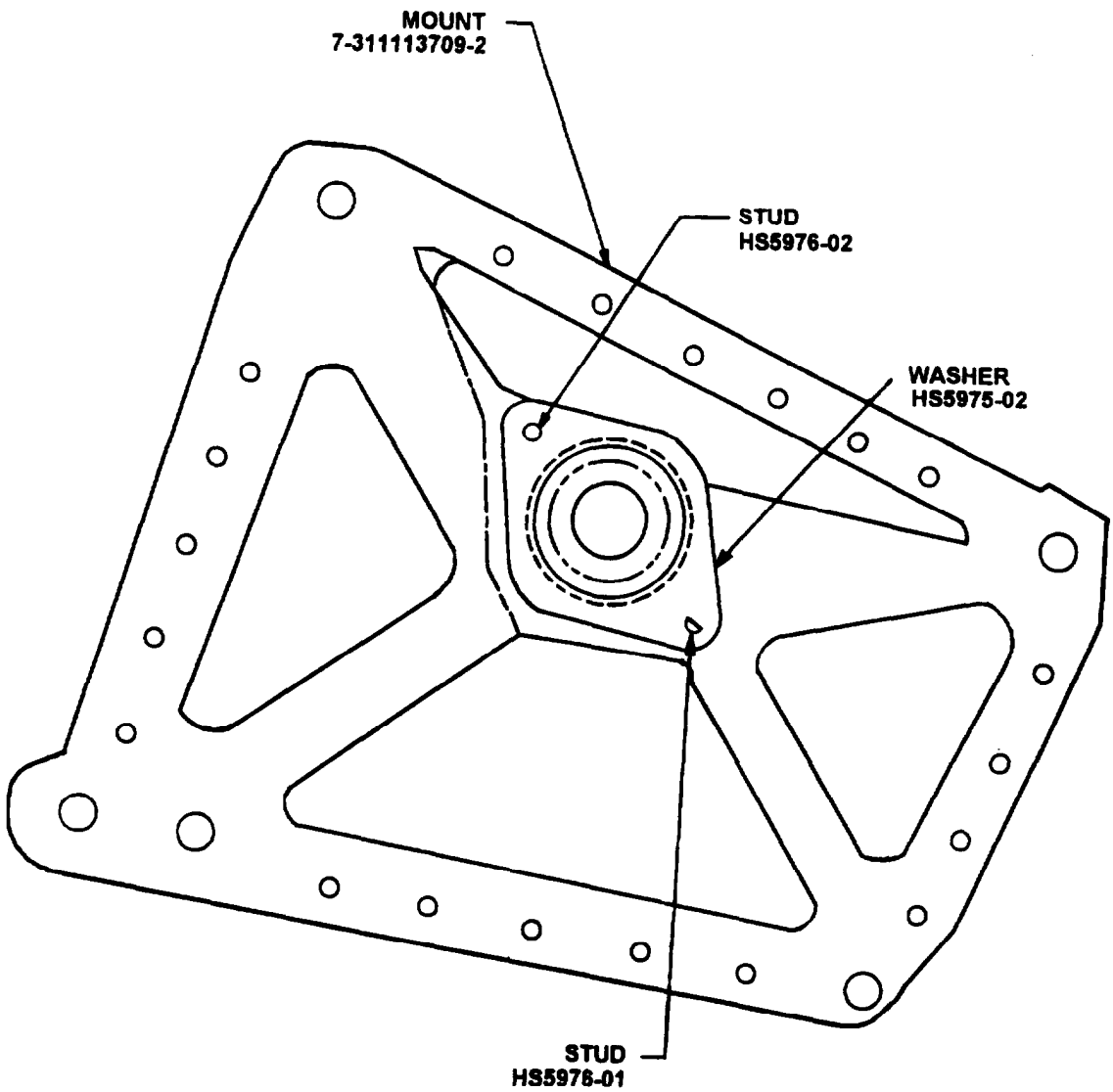


Figure 2. Main Landing Gear Mount Looking Inboard, Right Side.

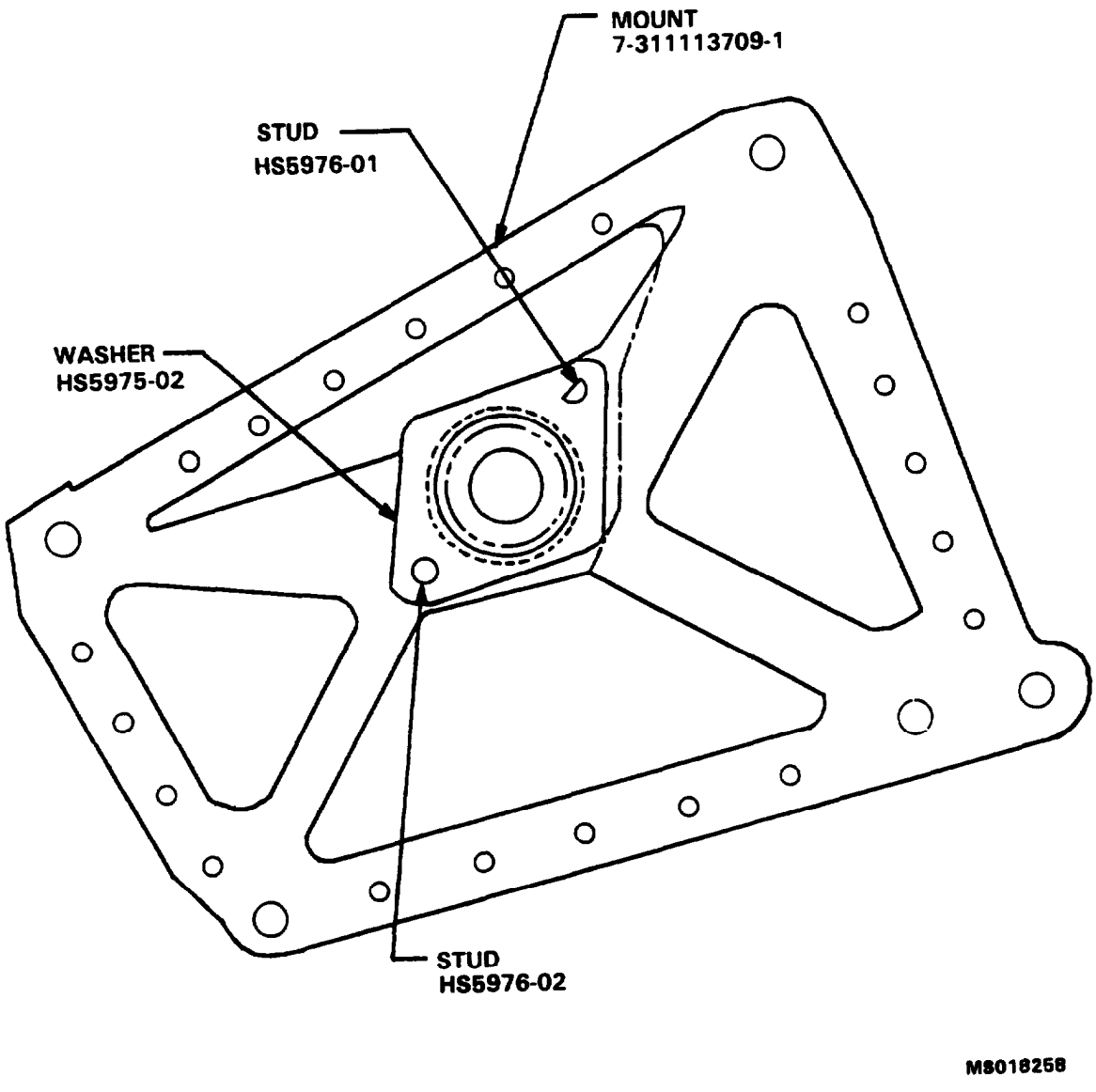
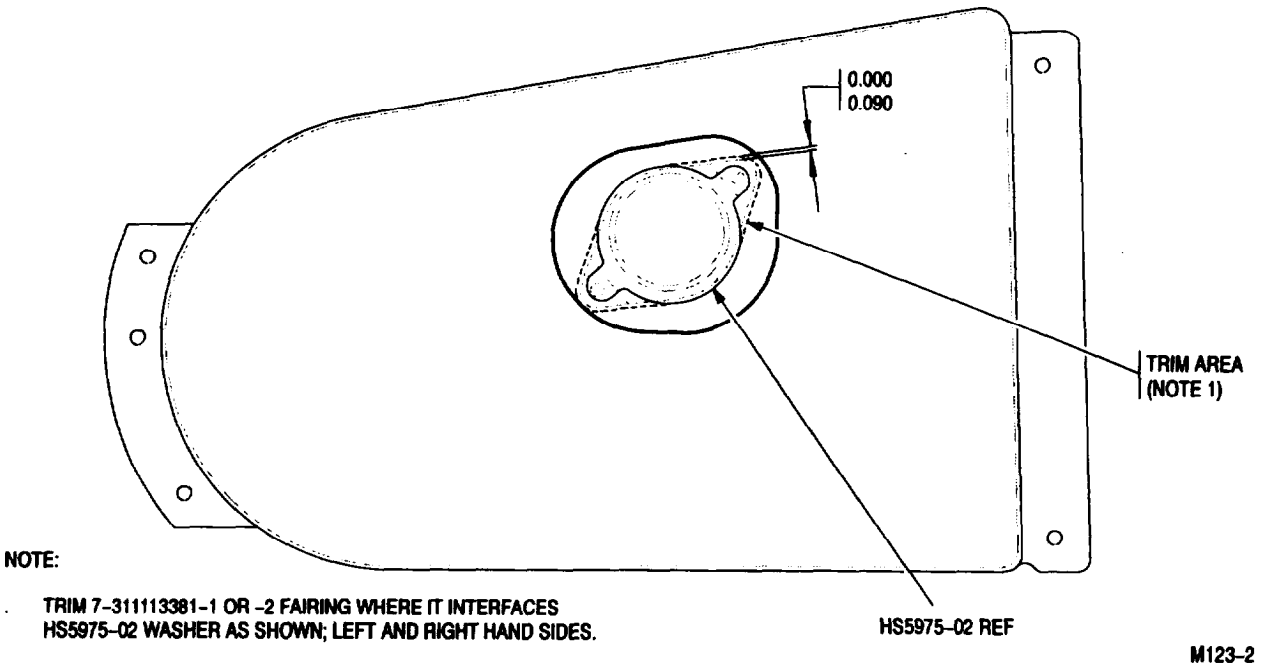


Figure 3. Main Landing Gear Mount Looking Inboard, Left Side.



NOTE:

. TRIM 7-311113381-1 OR -2 FAIRING WHERE IT INTERFACES HS5975-02 WASHER AS SHOWN; LEFT AND RIGHT HAND SIDES.

Figure 4. Main Landing Gear Fuselage Fairing Rework

(5) Replace main landing gear shock strut upper rod ends.

(a) Remove main landing gear shock strut upper rod ends (TM 1-1520-238-23) and install new (P/N 1168104-103) rod ends from modification kit using removed hardware (TM 1-1520-238-23).

NOTE

Do not remove existing identification plates.

(b) Apply existing serial number from modified shock strut to new identification plate (P/N MS27253-F1) from modification kit. Also apply the following data to new ID plate. Use metal stamping die set (TM 1-1520-238-23).

Part No.	
Before Mod.	After Mod.
7-311210100-1	7-511210150-1
7-311210100-2	7-511210150-2
7-311210100-3	7-511210150-3
7-311210100-4	7-511210150-4

(c) Install annotated ID plate on shock strut next to existing ID plate (TM 1-1520-238-23).

(6) Install both modified main landing gear shock struts.

CAUTION

Failure to properly install the HS5975-02 washer could damage the mount and/or the washer.

(a) Install struts using new washers (HS5975-02) with the chamfered side toward the mount, new washers (P/N 7-111412031-13) and new nuts (P/N MS21025-28) from modification kit. See Figure 5.

(b) Torque shock strut nut to 83 FOOT-POUNDS, continue to torque, not exceeding 333 FOOT-POUNDS, until cotter holes in nut and support shaft line up.

(c) Secure nut to strut using new cotter key (P/N MS24665-446) from modification kit.

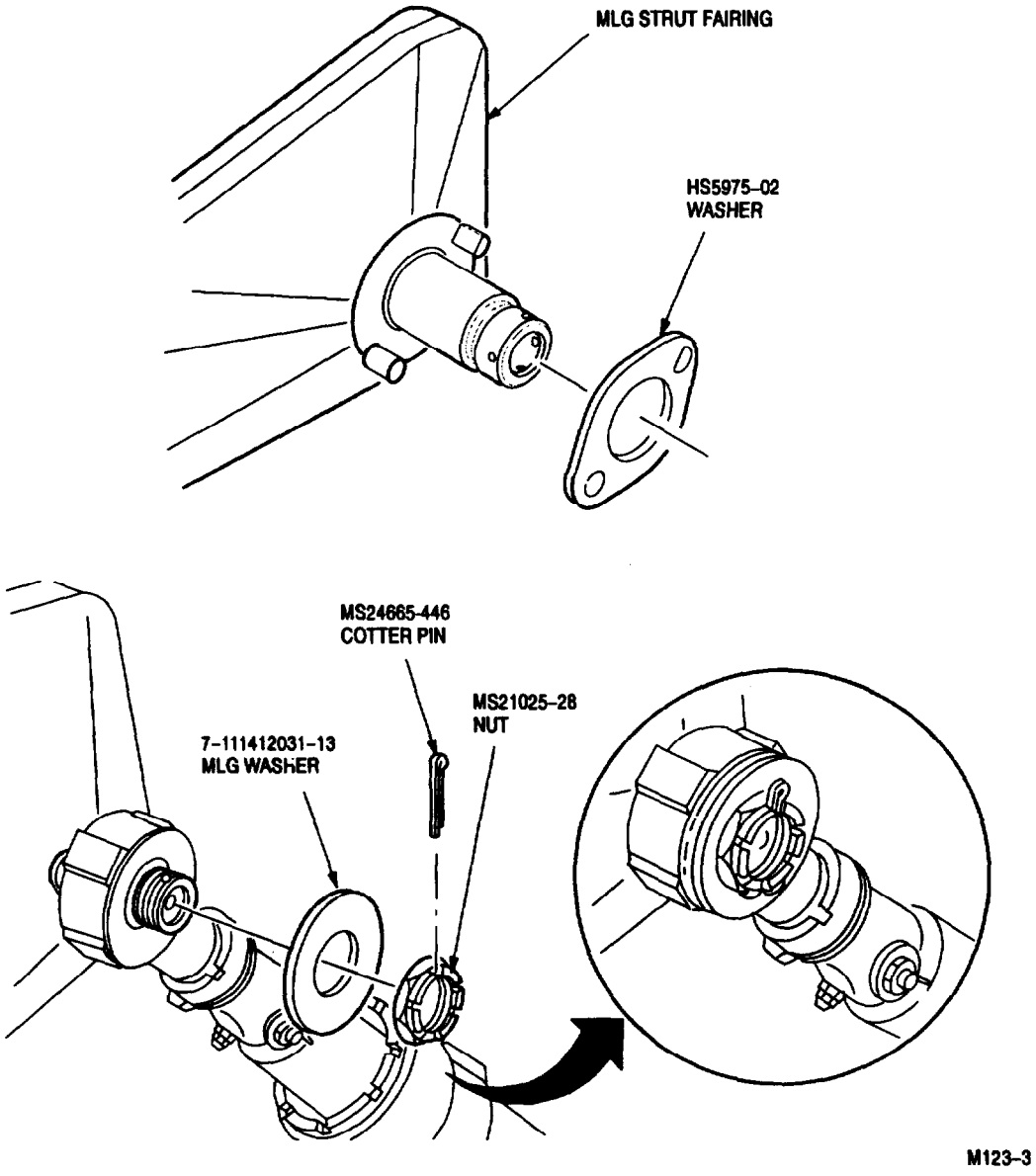


Figure 5. Main Landing Gear Strut Hardware Installation

10. **Supply Parts and Disposition.**

a. **Parts needed to apply the TB.**

Nomenclature	NSN	CAGE	Part Number	Security	Weight/ Dimensions
Modification Kit	1580-01-458-2701	8V613	7-M11113411-1	Normal	39 Pounds/ 31” x 18” x 18”

b. **Contents of kit.**

Nomenclature	NSN	CAGE	Part Number	Qty.
Structural Support, Main Landing Gear, LH	1560-01-454-3808	8V613	7-311113709-1	1
Structural Support, Main Landing Gear, RH	1560-01-454-3809	8V613	7-311113709-2	1
Rod, End	TBD*	17576	1168104-103	2
Stud, Airframe	TBD*	8V613	HS5976-01	2
Stud, Airframe	TBD*	8V613	HS5976-02	2
Bolt, Tension, Flanged HD, Double Hex	TBD*	8V613	HS5482-9-26	4
Washer, Airframe	TBD*	8V613	HS5975-02	2
Washer, MLG	TBD*	8V613	7-111412031-13	2
Nut, Castellated, Hex	5310-00-838-0264	96906	MS21025-28	2
Pin, Cotter	5315-00-899-4119	98906	MS24665-446	2
Plate, Identification	9905-00-981-0321	96906	MS27253-F1	2

*Item may be ordered by Part Number and Cage Code.

c. **Bulk and Expendable Materials.**

Nomenclature	NSN	CAGE	Part Number	Qty.
Primer, Seating Compound	8030-00-082-2508	80244	MIL-S-22473, GR T	BT
Adhesive	8040-01-107-4000	33564	EA9313	KT

11. **Special Tools, Fixtures, and Jigs.**

Nomenclature	NSN	CAGE	Part Number	Qty.
Apron	8415-00-082-8108	81349	MIL-A-41829	1
Gloves	8415-00-266-8677	81348	U-G-381	1
Goggles	4240-00-052-3776	58536	A-A-1110	1
Wrench, torque, dial indicator type, 1/2- inch drive, 0 - 175 in/lb	5120-00-640-6364	08194	1753LDF	1
Wrench, torque, click type, 3/4- inch drive, 100 - 500 foot-pound	5120-00-902-3550	81348	GGG-W-00686	1
Die Set, Metal Stamping	5110-00-289-0002	81348	GGGD280	1

12. **Application.**

a. Category of Maintenance. AVIM.

b. Estimated Time Required. 8 man-hours using two people.

c. Estimated Cost Impact to the Field. $11,424 for the modification kit.

d. TB/MWOs to be applied prior to or concurrently with this inspection. N/A.

e. Publications which require change as a result of this inspection.

TM 1-1520-238-23, dated 16 May 1994, and TM 1-1520-238-23P, dated 9 February 1995, will be changed to reflect this message.

13. **References.**

a. TM 1-1520-238-23, Aviation Unit and Intermediate Maintenance Manual, for Army AH-64A Helicopters, dtd 16 May 1994.

b. TM 1-1520-238-23P, Aviation Unit and Intermediate Maintenance Repair Parts and Special Tools List for Helicopter, Attack AH-64A, dtd 28 May 96.

14. **Recording and Reporting Requirements.**

a. **Records and Reports.**

(1) The following forms are applicable and are to be completed in accordance with DA PAM 738-751, TAMMS-A.

(a) DA Form 2407, Maintenance Request.

(b) DA Form 2408-13, Aircraft Inspection and Maintenance Record.

(c) DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.

(d) DA Form 2408-13-2, Related Maintenance Actions Record.

(e) DA Form 2408-15, Historical Record for Aircraft.

b. **identification Data.**

Description	Part No.		National Stock No.	
	Before Mod.	After Mod.	Before Mod.	After Mod.
Main Landing Gear Assembly	7-311210100-1	7-511210150-1	*	TBD
Main Landing Gear Assembly	7-311210100-2	7-511210150-2	*	TBD
Main Landing Gear Assembly	7-311210100-3	7-511210150-3	*	TBD
Main Landing Gear Assembly	7-311210100-4	7-511210150-4	*	TBD
Main Landing Gear Structural Support	7-3 11113409-3	7-311113709-1	1560-01-341-8589	TBD
Main Landing Gear Structural Support	7-311113409-4	7-311113709-2	1580-01-341-8213	TBD

15. **Weight And Balance.** Make entries on DD Form 365-1 (Chart A) and DD Form 365-3 (Chart C), in accordance with TM 1-1520-238-23, as indicated below.

a. Chart A Deletions. Draw a line completely through the listing in chart A for main landing gear structural support, P/N 7-311113409-3 and -4. The line should be drawn from the compartment and item number column through the check columns.

b. Chart C. Make entries in Chart C as shown below.

ITEM NO.			WEIGHT CHANGE					
			ADDED			REMOVED		
In	Out	Description	Weight	Arm	Moment /100	Weight	Arm	Moment /100
	X	Main Landing Gear Structural Supports (2) (7-311113409-3 and -4) and Rod Ends (2) (1168104-101)	N/A	N/A	N/A	-21.2	120.3	-25.8
X		Main Landing Gear Structural Supports (2) (7-311113709-1 and -2) and Rod Ends (2) (1188104-103)	+22.6	121	+27.4	N/A	N/A	N/A

16. **Points of Contact.**

a. Technical point of contact for this message is Mr. Lon A. Stanger, AMSAM-AR-E-I-P-A, DSN 897-4920 or Commercial (258) 313-4920; datafax is DSN 897-4923 or (256) 313-4923. E-mail is stangerl@redstone.army.mil.

b. Forms and Records point of contact is Ms. Ann Waldeck, AMSAM-MMC-RE-FF, DSN 748-5564 or Commercial (256) 878-5584, datafax is DSN 748-4984 or (256) 876-4994. E-mail is waldeck-ab@redstone.army.mil.

c. Logistical point of contact is Mr. John Patton, SFAE-AV-AAH-L, DSN 897-4244 or Commercial (258) 313-4244, datafax is DSN 897-4343 or (258) 313-4343. E-mail is pattonj@peoavn.redstone.army.mil.

d. Safety point of contact is Mr. Howard Chilton, AMSAM-SF-A, DSN 897-2068 or Commercial (258) 313-2068; datafax is DSN 897-2111 or (258) 313-2111. E-mail is chilton-hl@redstone.army.mil.

e. Foreign Military Sales (FMS), Recipients requiring clarification of action advised by this message should contact CW5 Joseph L. Wittstrom, Security Assistance Management, AMSAM-SA, DSN 897-0681 or Commercial (258) 313-0681. E-mail is wittstrom-jl@redstone.army.mil, or Mr. Ronnie Sammons, AMSAM-SA-CS-NF, DSN 897-0869 or Commercial (258) 313-0869. Datafax is DSN 897-0411 or (258) 313-0411. E-mail is sammons-rw@redstone.army.mil. Huntsville, AL is GMT minus 6 hours,

f. After hours, contact the AMCOM Command Operations Center (COC), DSN 897-2066/2067 or Commercial (256) 313-2066/2067.

17. **Reporting Of Errors And Recommending improvementa.** You can help improve this TB. 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 direct to: Commander, U. S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-LP, Redstone Arsenal, AL 35898-5230. A reply will be furnished to you. You may also send in your comments electronically to our e-mail address: ls-lp@redstone.army.mil or by fax 256-842-6546/DSN 788-8548. Instructions for sending an electronic 2028 may be found at the back of this manual immediately preceding the hard copy 2028.

By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
05298

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THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

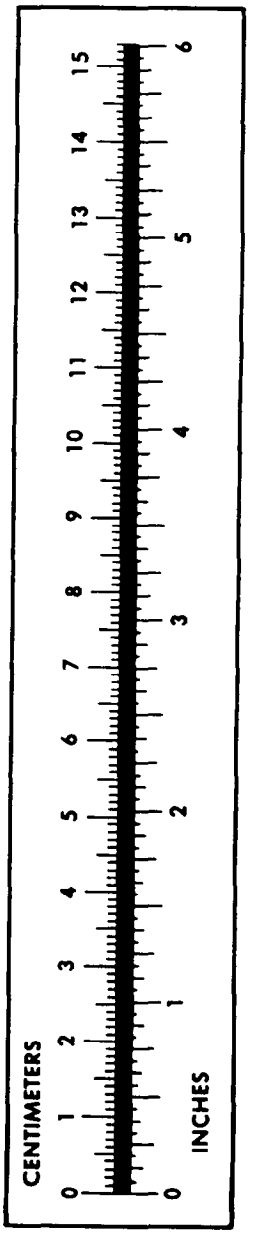
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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