

**Summary Report for Individual Task  
061-271-1455  
Maintain M198 Brake Assemblies (U6)  
Status: Approved**

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DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

DESTRUCTION NOTICE: None

**Condition:** Given a howitzer scheduled for maintenance, a 5 ton truck, a field artillery mechanic's tool kit, cleaning materials, and lubricants.

**Standard:** Maintain the brake assemblies for the M198 Howitzer so that all damaged parts are repaired and missing parts replaced IAW the technical guidance listed in TM 9-1025-211-10.

**Special Condition:** None

**Safety Level:** Low

**MOPP:**

**Task Statements**

**Cue:** Howitzer is scheduled for maintenance

**DANGER**

None

**WARNING**

None

**CAUTION**

None

**Remarks:** None

**Notes:** None

## Performance Steps

### 1. Disassemble the brakes.

Note: There are two manual brake assemblies. This procedure applies to both.

- a. Remove lock wire and four cap screws.
- b. Remove manual brake assembly.
- c. Remove two cotter pins.
- d. Remove rod assembly.
- e. Remove plate spacer.
- f. Remove pin.
- g. Remove two cotter pins from two pins.
- h. Remove two pins.
- i. Remove two sleeve bearings.
- j. Remove manual brake assembly from bracket.
- k. Remove cotter pin.
- l. Remove washer.
- m. Remove cotter pin.
- n. Remove cotter pin.
- o. Disengage and remove spring.
- p. Remove two angle plate.
- q. Unscrew and remove rod end from adjusting yoke.
- r. Remove cotter pin.
- s. Remove two cotter pins and two pins.
- t. Remove two cotter pins.
- u. Separate top plate from bottom plate and remove adjusting yoke and brake pad assembly.
- v. Remove cotter pin.
- w. Separate top plate from bottom plate and remove adjusting yoke and brake pad assembly.
- x. Remove two nuts, two screws, and limiter from underside of top plate.

2. Service brake components.

- a. Check for broken, missing, or damaged parts.
- b. Repair is by replacement of authorized parts.

3. Reassemble the brakes.

- a. Install limiter to underside of top plate and secure with two screws and two nuts.
- b. Install bottom plate, brake pad assembly, and top plate.
- c. Install pin and new cotter pin.
- d. Install bottom plate, and brake pad assembly, adjusting yoke, and top plate.
- e. Install two new cotter pins in adjusting yoke.
- f. Install pin and new cotter pin.
- g. Install two pins and two new cotter pins.
- h. Install rod end into adjusting yoke.
- i. Install straight leg of spring to top angle plate and angled leg to bottom plate.

Note:

Assemble spring with 0.26 in. (0.66 cm) wide opening (straight leg) on the top angle plate.

- j. Install pin through bottom plate, bottom angle plate, spring, top angle plate, top plate, and new cotter pin.

Note: Adjustment may be necessary before pin is installed. Do not spread cotter pin until proper adjustment can be obtained.

- k. Install washer and new cotter pin.

- l. Install two sleeve bearings.

- m. Aline holes of modified brake assembly with holes in bracket.

- n. Install two pins.

- o. Install two new cotter pins in two pins.

- p. Install pin and plate spacer.

- q. Place rod assembly in position.

- r. Install one pin and one new cotter pin in each end of rod assembly.

4. Install the brakes.

- a. Install manual brake assembly.
- b. Install four cap screws and lock wire.
- c. Install lock wire.

5. Adjust the brakes, if necessary.

Note: Adjustment procedure is written for one manual brake assembly, but applies to both. Nut has left-hand threads.

- a. Loosen nut and hexagon nut.
- b. Rotate rod to loosen or tighten brake adjustment as required.
- c. Install handle in socket and raise as far as possible to check adjustment. It should latch in applied position. Readjust rod as necessary.

d. Turn rod so that approximately 1-1/16 in. (2.69 cm) of thread will be exposed when tightened. This dimension could be more or less depending on the condition of brake pads.

Note: If rod cannot be turned far enough to obtain proper adjustment, adjust threaded rod end connected to angle plates (step 6 thru 9).

- e. Tighten nut and hexagon nut.

- f. Remove cotter pin and pin.

g. Disconnect threaded rod end by turning clockwise or counterclockwise to obtain approximately 3-7/8 in. (9.8 cm) length.

- h. Reconnect threaded rod end with pin and cotter pin.

Note: Additional adjustment of rod assembly and threaded rod end may be necessary to obtain correct adjustment of manual brake assembly.

i. Adjust rod and threaded rod end until socket is raised to locked position and brakes keep disks from turning. Perform steps 4 thru 9 required.

- j. Center shoe and lining assembly on both sides of brake disk. Check that tang of limiter is tight against bracket.

6. Service the power booster assembly.

- a. Disassemble the power booster assembly.

(1) Remove filter breather, coupling, and nipple from power booster.

(2) Remove straight adapter, preformed packing, and bleeder valve from power booster.

(3) Remove hose assembly from inside surface of right trail.

(4) Remove hose assembly, filter, and nipple from power booster.

- b. Inspect the power booster assembly.

- (1) Check for broken, damaged, or missing parts.
- (2) Repair is by replacement of authorized parts.
- (3) Check for contamination of BFS in power booster reservoir. Notify direct support maintenance if contamination is present.

c. Reassemble the power booster.

- (1) Install new filter breather, coupling, and nipple on power booster.
- (2) Install bleeder valve, preform packing, and straight adapter on power booster.  
Note: Direction of flow indicator arrow is optional.  
Step 3 and 4 apply to modified howitzer only.

(3) Install nipple, filter, and hose assembly on power booster.

(4) Install hose assembly to inside surface of right trail.

d. Check hydraulic reservoir.

- (1) Clean dirt from area of fluid filler cap on hydraulic reservoir.
- (2) Remove fluid filler cap.
- (3) Check fluid level of hydraulic reservoir, ensuring it is approximately 3/4 in. (1.91 cm) from top.
- (4) If fluid level is low, fill with brake fluid.
- (5) Install fluid filler cap.

7. Service the hose assembly.

a. Remove the hose assembly.

- (1) Remove emergency or service hose assembly from coupling.
- (2) Remove lock wire, two bolts, and two washers.
- (3) Remove coupling.
- (4) Unscrew straight pipe adapter from brake line air filter.

b. Disassemble the hose assembly.

- (1) Remove preformed packing.
- (2) Remove filter screen.
- (3) Remove marker band.

Note:

(4) Remove quick half coupling.

(5) Remove straight pipe adapter from hose by unscrewing nut from body, and removing body, sleeve, and nut.

c. Inspect the hose assembly.

(1) Check for broken, damaged, or missing parts.

(2) Repair is by replacement of authorized parts.

d. Reassemble the hose assembly.

(1) Install straight pipe adapter by placing nut and sleeve on hose, installing body, and screwing nut on to body.

Note:

Wrap all threads with tape at reassembly.

(2) Install quick half coupling.

(3) Install marker band.

Note: The word EMERGENCY or SERVICE, as appropriate, must be stamped on replacement marker band (11) in 1/4-in. (6.4-mm) high capital letters.

(4) Install filter screen.

(5) Install new preformed packing.

e. Install the hose assembly.

(1) Wrap threads of straight pipe adapter with tape.

(2) Install straight pipe adapter and tighten to brake line air filter.

(3) Hook hose assembly to prime mover, and check for leaks.

(4) Install coupling, two washers, two bolts, and lock wire.

(5) Install hose assembly in coupling.

8. Test the emergency relay valve.

a. Close bleed cock.

b. Open service cutout cock and emergency cutout cock.

c. Move howitzer with prime mover to ensure brakes are not set. While still moving, apply service brake on prime mover to check for proper operation, then release.

d. Close emergency cutout cock.

Note: The index pin should extend on unmodified howitzer or the brake precheck gauges should register air and hydraulic pressure when emergency air line is disconnected from the prime mover.

e. Disconnect emergency air line from prime mover. This should set brakes automatically on howitzer, and close service cutout cock. If index pin and/or gauges do not indicate pressure, notify direct support maintenance.

f. Move howitzer slightly with prime mover to ensure brakes are set.

9. Service the brake line air filter.

a. Open bleed cock and bleed air pressure.

b. Close bleed cock.

c. Remove drain plug in bottom of filter while holding adapter bushing in place.

d. Open appropriate air line cutout cocks on prime mover, allowing air to blow away moisture from emergency air filter.

e. Close cutout cock.

f. Install drain plugs and tighten.

g. Open cutout cocks.

h. Apply prime mover brakes.

i. Inspect drain plugs for leaks.

j. If air leaks, tighten drain plugs.

k. Close cutout cocks.

l. Disconnect air lines from prime mover.

m. Open bleed cock.

n. Check drain plugs for air leaks after replacement (which is part of servicing procedure).

o. Repair by replacing authorized damaged parts.

p. Open bleed cock and bleed air pressure.

q. Remove adapter bushing from housing.

r. Remove gasket from adapter bushing , and replace.

s. Remove spring, washer, and filter element from housing. Replace parts, if damaged.

t. Install gasket on adapter bushing.

u. Aline spring, washer, and filter element on adapter bushing, and install in housing.

v. Tighten adapter bushing.

- w. Close bleed cock.
- x. Connect air lines to prime mover.
- y. Open cutout cocks.
- z. Apply brakes and inspect for leaks around adapter bushings. Drain plugs on housing.
- aa. If air leaks, tighten drain plugs or adapter bushings.
- ab. Close cutout cocks.
- ac. Disconnect air lines from prime mover.

(Asterisks indicates a leader performance step.)

**Evaluation Preparation:** Setup: Ensure the M198 howitzer is in position with the wheels up or clear of the ground. Brief Soldier: Tell the soldier an assistant will be available to help remove and replace the tire.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Disassembled the brakes.			
2. Serviced brake components.			
3. Reassembled the brakes.			
4. Installed the brakes.			
5. Adjusted the brakes, if necessary.			
6. Serviced the power booster assembly.			
7. Serviced the hose assembly.			
8. Tested the emergency relay valve.			
9. Serviced the brake line air filter.			

**Supporting Reference(s):**

Step Number	Reference ID	Reference Name	Required	Primary
	PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual.	No	No
	TM 9-1025-211-10	Operators Manual (Crew) for Howitzer, Medium, Towed: 155-MM, M198 (NSN 1025-01-026-6648) (EIC: 3EL) {TM 08198A-10/1} (Reprinted W/Basic Incl C1-4)	No	No

**Environment:** Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. Environmental protection is not just the law but also the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects.

**Safety:** In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines

IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. 1. Task may involve personal exposure to hazardous substances.  
2. Brief personnel IAW OSHA HAZZCOM requirements.

**Prerequisite Individual Tasks :** None

**Supporting Individual Tasks :** None

**Supported Individual Tasks :** None

**Supported Collective Tasks :** None