

M1-Series Tanks,  
M88-Series Recovery Vehicle,  
M113-Series FOV...

# Stay on Track in the Desert



In PS 614, we told you how to take care of Bradley track in the desert. But Bradleys aren't the only vehicles whose track takes a beating.

Heavy loads, non-stop missions, severe temperatures and abrasive sand also take their toll on track for the M1-series tank, M88-series recovery vehicle and M113-series vehicles.

So follow these track inspection and preventive maintenance tips to get the most life possible out of your vehicle's track.

## Track Shoe Wear

Follow the Condition Code F wear guides below from TM 9-2530-200-24, *Standards for Inspection and Classification of Tracks, Track Components and Solid-rubber Tires*.

Condition Code F means the track shoe or pad is repairable if it's replaced **when** it reaches this level of wear. Components and pads worn **beyond** these limits can't be repaired.

Follow these guidelines for component replacement and turn-in. All measurements are in inches.

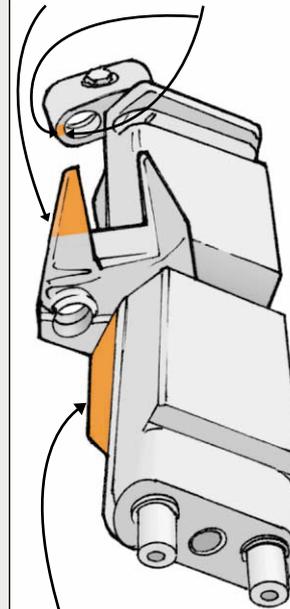
	Grouser Height	Center Guide Thickness	Pad Thickness	Sprocket Window Thickness	End Connector Thickness	Roadwheel Path Rubber
<b>M1-Series Tanks (T158/T158LL Track)</b>	1/8 to 1/4	1/2 to 5/8 (measured 1 inch from top)	Less than 15/16	N / A	Less than 3/16*	More than 50% missing from both inserts combined, or more than 50% from one insert
<b>M88-Series Recovery Vehicle</b>	Less than 1/2 to metal exposure	1/2 to 5/8 (measured 1 inch from top)	N / A	N / A	1/8 to 3/16	N / A
<b>M113-Series FOV</b>	1/8 to 5/16	1/8 to 1/4	1/8 to 5/16	1 5/8 to 1 11/16**	N / A	N / A

\*M1-series tank end connectors aren't repairable, so there is no Condition Code F rating. Use the connectors until the thickness falls below 3/16 inch. Then replace them.

\*\*Sprocket window wear is measured from the front bushing bore.

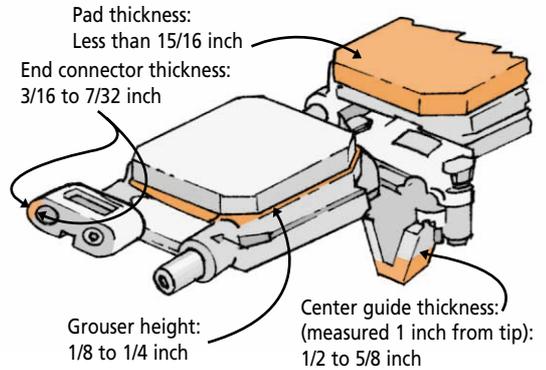
### M88A1 recovery vehicle

Center guide thickness: (measured 1 inch from tip): 1/2 to 5/8 inch  
End connector thickness: 1/8 to 3/16 inch

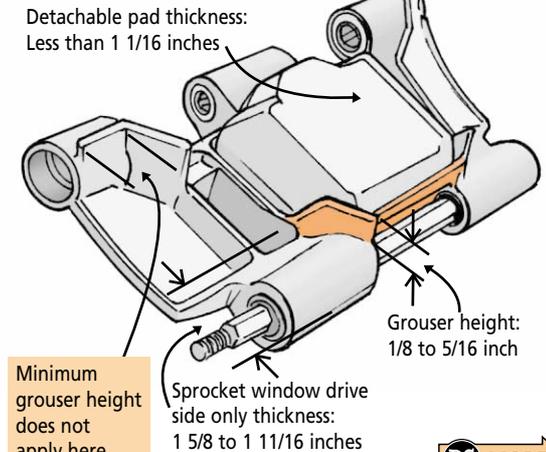


Grouser height: Less than 1/2 inch to metal exposure

### M1-series tanks



### M113-series FOV

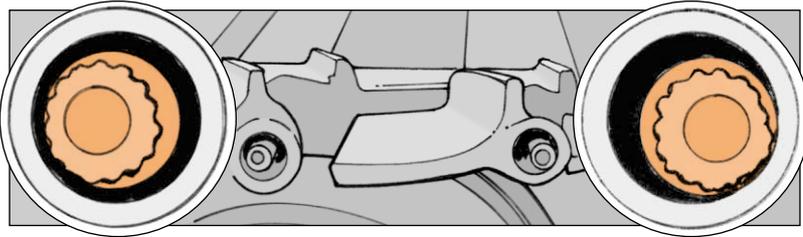


### M113-series FOV:

Off-center pins on M113-series vehicles indicate bushing wear and should be closely watched. If the pin touches the inside surface of the bushing bore, the shoe's no good. Replace it.

Keep close watch on off-center pin nuts...

...but replace shoe if pin nut touches bore



Also, watch for pins that stick out more on one side of the shoe than the other. One of the locking nuts could be loose or missing. The locking nuts are a one-time-use item, so make sure your mechanic uses a new one if they are loose or damaged.

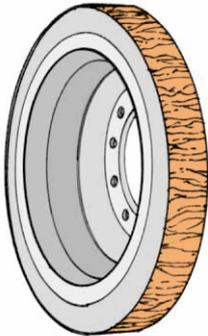
### Wheel Inspection

Turn in roadwheels, idler wheels and support rollers that have elongated mounting holes or are bent or out of round.

Here's what else to look for on your tank, recovery vehicle and M113 FOV:

#### • Weather cracking:

If weather cracks extend completely across the tread surface or are deeper than 1/4 inch, the wheel should be replaced and turned in for repair.

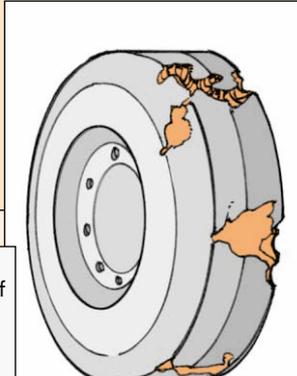


Replace wheels that have weather cracking across tread surface

#### • Chunking:

You should replace and send in for repair **any** wheels that have:

- + Chunking that exceeds 50% of the total tread surface.
- + Any chunking that extends more than 1/2 the width of the wheel.
- + Chunking of 10% or more of the total tread surface that reaches the bonding surface of the rim.



Large chunks of rubber missing? Replace wheel

• **Tread separation:** Roadwheels, idler wheels, and support rollers that meet the following guidelines should be replaced and turned in for repair:

#### M1-series tanks/M88-series recovery vehicle:

Replace roadwheels and idler wheels with tread separation (each side) that is one inch or wider up to the entire circumference of the wheel.

Replace M88-series vehicle support rollers with tread separation that is 1/2 inch or wider (each side) up to the entire circumference of the roller.

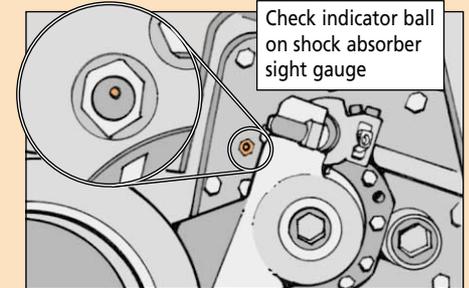
#### M113-series FOV:

Separation of the tread that is 3/4 inch or wider (each side) up to the entire circumference of the roadwheel.

### Shocks and Hubs

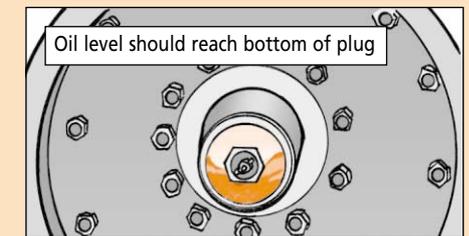
Good shock absorbers generate heat during operation. If any of your shocks are cool or only slightly warm to the touch, report 'em. They aren't doing the job and can cause excessive track wear.

For M1-series tanks, you should also check the shock absorber sight gauges. The indicator ball should be between the middle and top of the sight gauge. If not, or if the oil looks milky from water contamination, report it.

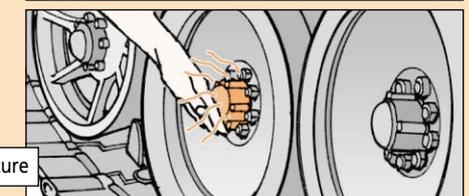


Roadwheel, idler wheel, and support roller hubs should **not** run hot. If they generate excessive heat, it's a good sign that the bearings are failing. Tell your mechanic.

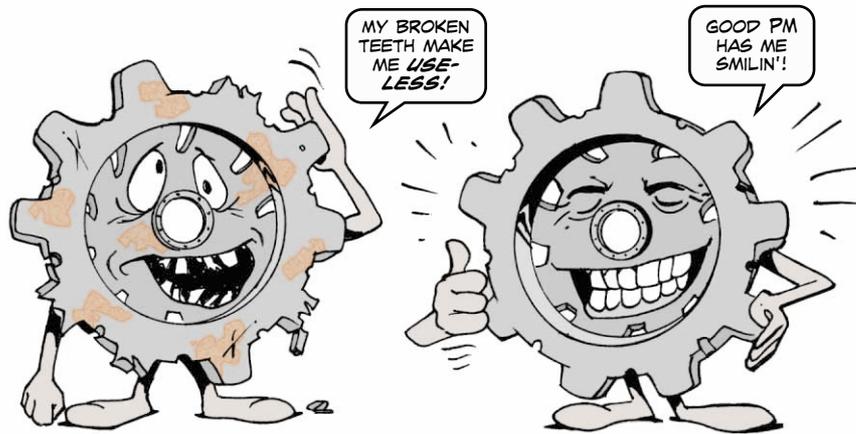
For M1-series tanks, you should also check the roadwheel's oil level at the hub caps. The level should be to the bottom of the hole for the plug. If it's not, or if the oil looks milky from water contamination, report it.



Be careful when checking for hot shocks or hubs. Either one can generate enough heat to burn you.



Use care when checking hub temperature



### Sprockets

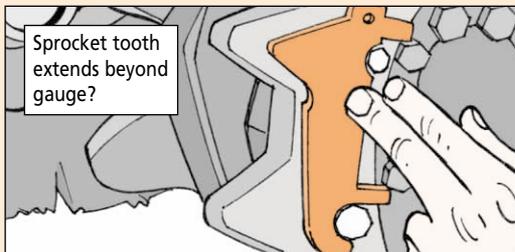
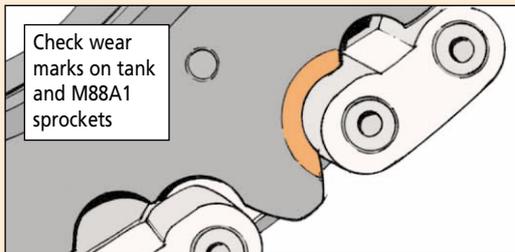
Check the drive sprockets on your vehicle for broken teeth, cracks, excessive wear and loose mounting bolts.

The sprockets on M1-series tanks and M88A1 recovery vehicles have wear limit marks. When the wear limit mark is reached, you should reverse or replace the sprocket.

For M113-series vehicles, use the track and sprocket gauge, NSN 5220-01-041-9920, to check for excessive wear. If any part of the sprocket tooth does not extend beyond the gauge, reverse or replace the sprocket.

If your carrier has the new style T130 sprockets, the wear gauge is not needed. These sprockets have wear marks that are used to gauge wear to the teeth.

When replacing or reversing a sprocket, make sure all mating surfaces are clean before reinstalling the parts. Pay special attention to bolts and the surface of the sprocket where the bolt mounts. Dirt between these areas can cause the bolt to loosen or break.



### Track Tension

Improper track tension will wear out track fast! Track that's too tight cups sprocket teeth and strains shoe pins and end connectors. Track that's too loose gets thrown, damaging roadwheels and support rollers.

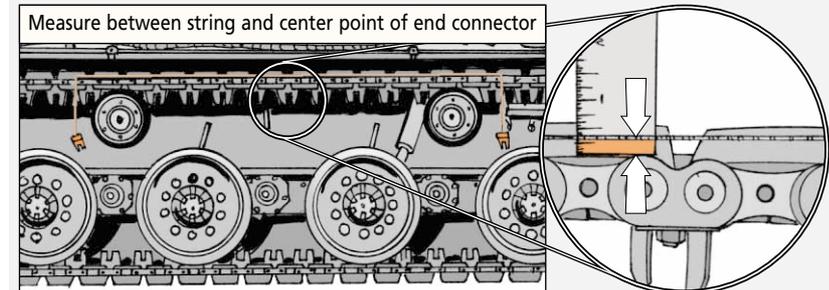


#### M1-series tanks:

There are two different style track adjusting links used on the M1-series tank. You'll find the procedures for both starting on Page 3-194 of TM 9-2350-264-10-2, Page 3-107 of TM 9-2350-288-10-2, and Page 3-124 of TM 9-2350-388-10-2.

#### M88A1 recovery vehicle:

1. Let the vehicle roll to a complete stop on firm, level ground.
2. Remove any dirt or mud from the outboard end connectors between the first and second support rollers.
3. Place a string with a weight on both ends over the first end connector before the No. 1 support roller. Extend the string past the No. 2 support roller and over the next end connector.
4. Go to the center end connector between the two support rollers. Measure the distance between the string and the center point of the end connector.



If the measurement is between 3/8 inch and 9/16 inch, no adjustment is needed. A measurement outside that range means the track is either too tight or too loose. Follow the instructions starting on Page 3-21 to adjust the track tension.

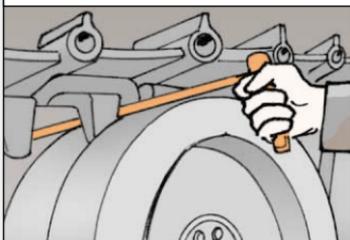
#### M88A2 recovery vehicle:

There are two different style track adjusting links used on the M88A2. You'll find the procedures for both starting on Page 0103 00-1 and Page 0104 00-1 of TM 9-2350-292-10.

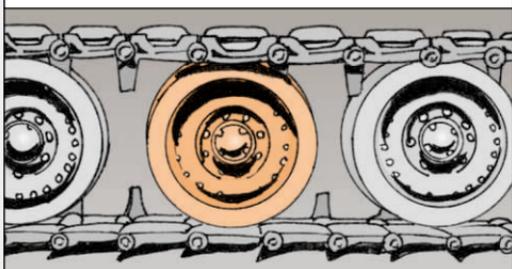
## M113-series FOV:

1. With the transmission controller in SL (steering lock), let the vehicle roll to a complete stop on firm, level ground. Stop the engine.
2. Insert the drive pin punch, NSN 5120-01-006-8847, from your vehicle's BII between the top of the No. 2 roadwheel and the bottom of the track. If the punch can be inserted freely, and the track touches the top of the No. 3 roadwheel, track tension is correct.

With punch between bottom of track and top of No. 2 roadwheel...



...track should touch top of No. 3 roadwheel



If the punch can be inserted freely, but the track does not touch the top of the No. 3 roadwheel, track tension is too tight. Go to step 3.

If the punch cannot be inserted freely, the track is too loose. Go to step 4.

3. To loosen track tension, slowly open the bleed valve on the track adjuster to let grease out. Retighten the bleed valve, wipe away excess grease and go back to step 1. If the track adjuster is in as far as it will go and the track is still too tight, add a track shoe and readjust the tension.

4. To tighten track tension, pump in grease through the fitting on the track adjuster.

Do not extend the track adjuster more than 17 inches (measured between the center of the track adjuster mounting screws) or it may buckle during operation. If the track is still too loose, remove a track shoe and readjust the tension.

Track tension can also be checked using the track and sprocket gauge. Instructions start on Page 3-21 of TM 9-2350-261-10 and Page 0091 00-1 of TM 9-2350-277-10.

## Driving

Be wary of a lack of steering response. That indicates sand is building up between the treads and sprockets or idler wheels. If you allow the buildup to continue, the sand will throw the track.

Try "shaking" the vehicle with the steering or backing up to remove sand buildup. Remove accumulated sand by hand at your next stop.

Make wide, smooth turns instead of sharp, hard turns. That'll eliminate some of the sand accumulation and put less stress on track pads.

THESE  
PM TIPS  
WILL KEEP  
YOU ON  
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