

**DIRECTOR GENERAL BORDER ROADS**  
**GENERAL MAINTENANCE INSTRUCTION NO 56**

**ON**

**EFFECTS OF DESERT ON BRAKE AND SUSPENSION**  
**SYSTEM OF VEHICLES AND EQUIPMENTS**

1. Aim :- The instruction enumerates the effects of desert on various assemblies/components of the Brake and Suspension system of various vehicles and equipments operating in desert areas. Suggested remedial measures and recommendations to overcome the same have also been explained.

2. Characteristics of desert :- The effect of desert condition on the Brake and suspension system of vehicles and equipments has been summarized under the following principal characteristics of desert :-

- (a) Sand, dust and storms.
- (b) Excessive heat.
- (c) Salt and Salinity in water.
- (d) Dry weather (Lack of humidity and moisture).

3. Details of the effects of desert on brake and suspension system :- These have been tabulated in Appendices 'A' and 'B' as under to this GENERAL MAINTENANCE INSTRUCTION for necessary action :-

- (a) Appendix 'A' on Brake System.
- (b) Appendix 'B' on Suspension system.

HQ DGBR GMI No 56  
Dated 24 Nov 1971

**EFFECTS OF DESERT ON BRAKE SYSTEM OF VEHICLES AND EQUIPMENTS**

Effected assy/Component	Sand, Dust and Storms	Excessive heat	Salt/Salinity in water	Dry weather	Remedy/Recommendations
(a) Hand brake and Foot brake	Sand and dust get into their levers and linkages and makes their movement sluggish and hard.	(a) Grease melts away from the grease nipples which makes operation of levers difficult. (b) Rubber boot gets perished and permit ingress of sand and dust into linkage.	-	-	*(a) Replace rubber boots whenever found perished. (b) Remove dust and sand from levers and linkage threads/teeth, grease them lightly and fit serviceable rubber boot correctly to ensure their free movement. (c) Grease all the grease nipples of levers of hand brake and foot brake linkage before and after exercise beside normal maintenance task.
(b) Rubber boots of Air boosters, Air servo mechanism, Master Cylinder etc.	Get perished early and permit ingress of sand/dust into the brake system, which renders it ineffectively by :- (a) Blocking their fine passages. (b) Wearing out their cylinder shafts and piston rods.	-	-	-	*(a) Fd Wksp to provision rubber boots of all types at liberal scale and treat it as an essential item in desert. (b) Whenever Brake Fluid is found muddy or full of dirt and sand, flush it out with petrol thoroughly, dry it up and then fill in fresh brake fluid. Also check the wear on shafts piston rod and replace if necessary. Never compromise with quality in Brake system lest it should lead to its failure and accident.
© Wheel cylinders,	(a) Primary and secondary cups get	-	-	-	*(a) Fd Wksp to provision rubbered parts of Brake system at double the normal scale and

<p>Brake Cylinder and brake Hoses</p>	<p>perished, causing leakage of brake Fluid and poor braking action. Also leakage of brake fluid from wheel cylinders into brake drums further reduces breaking action. (b) Brake hoses get perished early, which permit air to enter into the system and render brakes spongy.</p>				<p>brake fluid at liberal scale.</p> <p>*(b) Wheel cylinder cups should never be replaced only on one wheel otherwise vehicle will pull to a side on applying brakes. Also remember to replace rubber sups in all wheel cylinders together and of the same MAKE.</p>
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Legend :- Items marked \* will be attended to by Fd Wksp.

END.

**EFFECTS OF DESERT ON SUSPENSION SYSTEM OF VEHICLES AND EQUIPMENTS**

<b>Effected assy/Component</b>	<b>Sand, Dust and Storms</b>	<b>Excessive heat</b>	<b>Salt/Salinity in water</b>	<b>Dry weather</b>	<b>Remedy/Recommendations</b>
(a) Road Springs	While plying cross country in loose sand for long, road spring leaves, center bolt and U clips get loose and even break often. Tighten up or replace.	-	-	-	*(a) Fd Wksp to provision Rod Springs, leaves, Centre bolts, U Clips, Shockle pin bushes at increased scale.  (b) Avoid applying sudden brakes in desert unless must.
(b) Shackle pins	(a) Sand mixes with shackle pin grease and causes early wear of shackle pin bush. (b) More breakage of Road Spring leaks when plying cross country in loose sand continuously.	Perishes rebberised shackle pin bushes fast.	-	-	-

Legend :- Items marked \* will be attended to by Fd Wksp.

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