

# GETTING A GOOD GROUND IN THE DESERT

SAND IS A POOR CONDUCTOR.

THIS MEANS THAT GETTING A GOOD EARTH GROUND IN THE DESERT REQUIRES EXTRA TIME AND EFFORT.

A GOOD GROUND IS A MUST TO PREVENT ELECTRICAL SHOCK TO YOU AND DAMAGE TO YOUR EQUIPMENT.

START BY GETTING A COPY OF CECOM TR-93-6 EARTH GROUNDING AND BONDING PAMPHLET FROM [@us.army.mil](https://www.us.army.mil)

## Before You Drive

MAKE SURE THE GROUNDING ROD IS CLEAN. GREASE, OIL, PAINT AND CORROSION ON THE ROD MAKE IT A POOR CONDUCTOR.

IF YOU USE A SLEDGE HAMMER, WEAR SAFETY GLOVES TO PROTECT YOUR HANDS FROM METAL FRAGMENTS WHEN YOU DRIVE IN THE ROD.

WEAR SAFETY GOGGLES TOO!

BEFORE YOU DRIVE, DIG A HOLE AT LEAST 12 INCHES DEEP AND 36 INCHES ACROSS.

THE TOP OF THE ROD **MUST** BE BELOW GROUND LEVEL.

FAR TOO MANY GROUND RODS ARE LEFT STICKING ABOVE THE GROUND.

IT'S A GOOD IDEA FOR THE GROUNDING ROD TO REACH THE WATER TABLE. USE A SECTIONAL GROUND ROD AND ADD EXTENSIONS TO REACH DEEPER INTO THE SOIL UNTIL THE ROD NO LONGER CAN BE DRIVEN. IF YOU CAN, LOCATE YOUR EQUIPMENT NEAR AN OASIS OR SUBTERRANEAN WATER.

DRIVE THE ROD IN THE CENTER OF THE HOLE. DRIVE IT STRAIGHT.

IF THE SOIL **WON'T** PERMIT THE ROD TO GO IN STRAIGHT, MAKE SURE THE DRIVING ANGLE IS **NO MORE THAN 45 DEGREES** FROM VERTICAL.

45°

WHEN ADDING ROD EXTENSIONS MAKE SURE EACH SECTION IS TIGHTLY CONNECTED TO THE PREVIOUS ONE.

IF THEY'RE **NOT** TIGHT WHEN YOU DRIVE IN THE ROD, YOU'LL **DAMAGE** THE COUPLING SLEEVE THREADS.

**DON'T** HIT THE THREADED END OF THE ROD WITH THE HAMMER.

THAT DAMAGES THE **THREADS**, TOO.

**DON'T** DAMAGE MY THREADS, MAN!

USE A **SLIDE HAMMER** WHEN INSTALLING A SECTIONED GROUND ROD, IF YOU CAN.

A SLIDE HAMMER, NSN 5120-01-013-1676, MAKES IT EASIER TO DRIVE RODS, AND EASIER TO GET THEM OUT, TOO.

INSTEAD, SCREW ON A DRIVING BOLT ON THE TOP SECTION. MAKE SURE IT'S **TIGHT**.

A LOOSE BOLT WILL BREAK OFF, OR DAMAGE THE THREADS.

IF YOU CANNOT REACH THE WATER TABLE WITH A SINGLE GROUND ROD OR ONE WITH EXTENSIONS, USE MULTIPLE GROUNDS AND A SALT AND WATER MIXTURE.

DRIVE IN THE ADDITIONAL RODS TWO TO FOUR ROD LENGTHS APART.

IF **THREE RODS** ARE USED, DRIVE THEM IN A **TRIANGLE PATTERN.**\*

\*RODS SHOULD BE SEPARATED BY A DISTANCE OF TWO TIMES THE DEPTH OF THE ROD FOR **MAXIMUM EFFECT.**

IF **FOUR OR MORE RODS** ARE USED, PUT THEM IN A **STAR PATTERN** OR A **STRAIGHT LINE.**

WHEN USING MULTIPLE RODS **ALWAYS** CONNECT ALL THE RODS TOGETHER WITH THE FINAL ROD BEING CONNECTED TO THE EQUIPMENT TO BE GROUNDING.

IF YOU **CAN'T** DRIVE A GROUND ROD MORE THAN 4 FEET DEEP, BURY THE ROD HORIZONTALLY **1 1/2 FEET DEEP.**

THEN ADD THE SALT AND WATER MIXTURE BEFORE THE BACKFILL.

SLOWLY POUR THE MIXTURE INTO THE HOLE YOU DUG FOR THE GROUND ROD SO IT SOAKS IN.

USE THE SALT AND WATER MIXTURE OFTEN. IT MAY TAKE A DAILY 5-GAL MIX AND SEVERAL POURS.

YOU'RE DOING THAT AGAIN TODAY?!

YEP. TODAY AND EVERY DAY!

### Grounding Plates

GROUND ROD ASSEMBLY, NSN 5975-00-878-3791, COMES WITH A 3-SECTION GROUND ROD AND...

| Parts                  | NSN              |
|------------------------|------------------|
| 3 couplings            | 5975-00-794-2523 |
| 1 clamp                | 5999-00-186-3912 |
| 1 drive head stud      | 5975-00-924-9927 |
| 1 terminal lug         | 5940-00-271-9504 |
| No. 6 AWG wire by foot | 6145-00-395-8799 |

BECAUSE SAND IS **EASY** TO MOVE, **GROUNDING PLATES** CAN BE A GOOD IDEA IN THE DESERT.

TO MAKE A GROUND PLATE, START WITH A CLEAN, BARE STEEL PLATE OR SHEET **1/4 INCH THICK. DO NOT USE ALUMINUM.**

THE PLATE SHOULD HAVE AT LEAST 3 SQUARE FEET OF SURFACE CONTACT WITH THE GROUND.

THE LARGER THE PLATE, THE LOWER THE RESISTANCE AND THE BETTER THE GROUND.

ALONG WITH THE PLATE YOU'LL NEED A **METAL BOLT, NUT AND LOCK WASHER** TO ATTACH THE GROUND WIRE.

DRILL A HOLE IN THE CENTER OF THE PLATE JUST LARGE ENOUGH FOR THE BOLT.



THE GROUND PLATES—USE TWO TO FOUR—SHOULD BE SPACED AT LEAST 10 FEET APART.

THEY GIVE YOU A LARGE, METALLIC AREA THAT IS IN CONTACT WITH THE SOIL.

DIG A HOLE SO THAT THE PLATE CAN BE BURIED VERTICALLY WITH THE TOP EDGE ABOUT 6 FEET BELOW THE SURFACE.

IT'S EASIER TO BURY THE PLATE VERTICALLY AND ENSURE GOOD SOIL CONTACT ON BOTH SIDES OF THE PLATE.

POUR YOUR MIXTURE OF WATER AND SALT INTO THE SOIL AROUND THE PLATE TO FURTHER INCREASE CONDUCTIVITY.

### Soil Preparation

ONE WAY TO GET A GOOD GROUND IN THE DESERT IS BY **PREPARING THE SOIL.**

SOIL CONDUCTIVITY CAN BE IMPROVED BY KEEPING THE SOIL MOIST AND BY ADDING A SALT AND WATER MIXTURE TO THE AREA AROUND THE GROUND ROD.

MIX A POUND OF SALT WITH EACH GALLON OF WATER. NSN 6810-00-227-0439 BRINGS AN 80 POUND BAG OF SALT.

START WITH 5 GALLONS OF THE MIXTURE.

SALT

WATER