User Handbook

TYPE 714

MAST TELESCOPIC 12m AND ANCILLARIES

5985-99-719-4328

RACAL

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USER HANDBOOK

MAST, TELESCOPIC 12m AND ANCILLARIES

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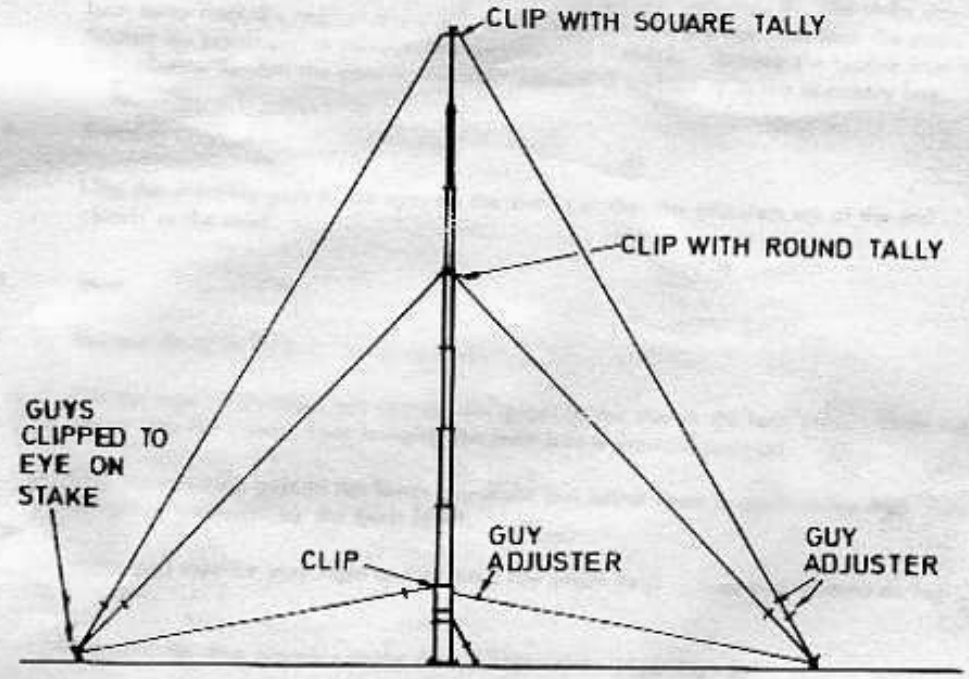
RACAL ANTENNAS LTD TYPE 714



MAST, TELESCOPIC 12 METRE
FIELD MOUNTING ARRANGEMENT

ERECTING INSTRUCTIONS
MAST, TELESCOPIC 12 METRE
TYPE MA 714

A. FIELD MOUNTING THE MAST

Site

1 Select a site, as level as possible, and place mast and accessories near the centre.

2. Place base plate at centre of site and pin down with the three pins. If the mast is to be used to support a span antenna position the base plate as shown in Fig. 2 in relation to the location of the distant station.

3. Layout

Unwind the radius line. Enter the bobbin into the slot in the base plate and move it into the central hole. Fully extend the cord in line with one of the pins and drive a stake into the ground using the wire frame as a guide. See Fig. 3. The stake should lean away from the mast at about 30° to the vertical and the eye must face the mast. Repeat the procedure to position the remaining two stakes. Remove the bobbin from the base plate. Rewind the cord on the wire frame and replace it in the accessory bag.

4. Erecting Guys

Clip the erecting guys to the eyes on the stakes so that the adjusters are at the end closest to the mast.

5. Mast

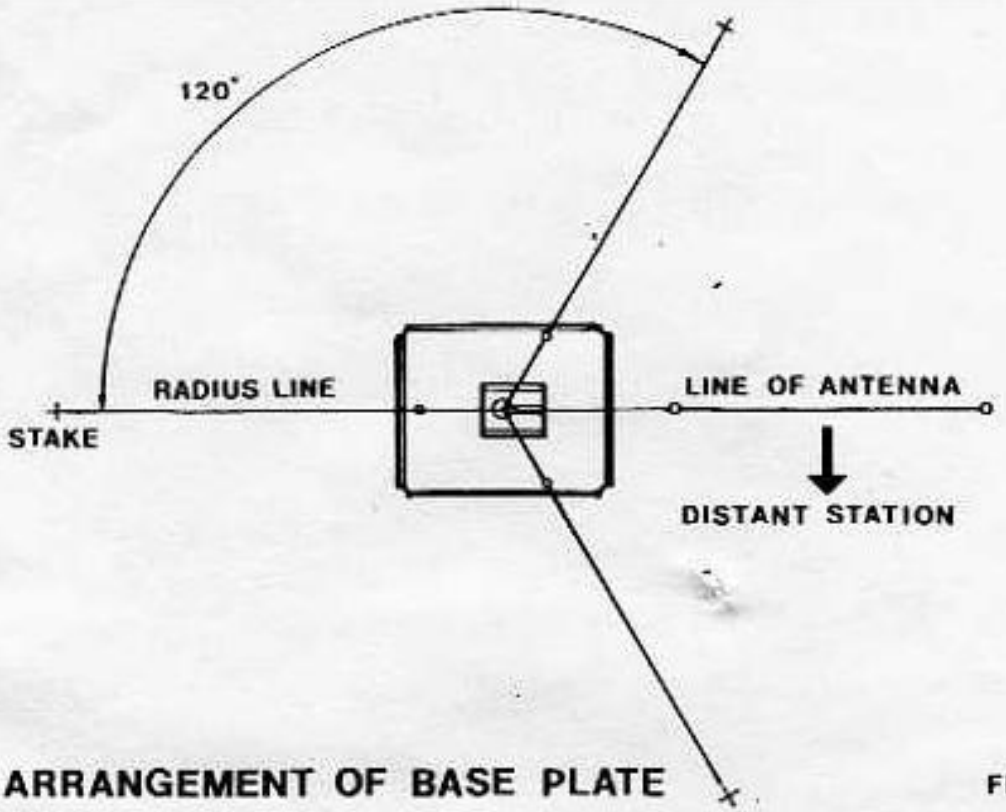
Remove the mast from the carrying case.

Tilt the mast at an angle and engage the spigot in the slot in the base plate. Slide the spigot into the central hole bringing the mast into a vertical position.

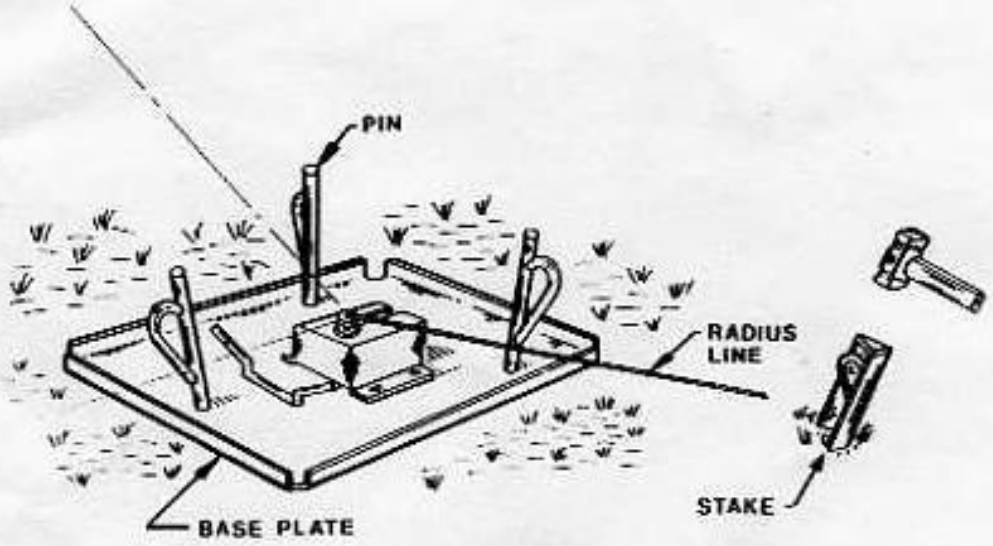
Clip the erecting guys to the lower guy plate and adjust them to position the mast truly upright as indicated by the spirit level.

These guys must be very tight as they take the entire load of mast and antenna during erection.

Assemble the step assembly to the No. 1 Mast Section (see fig. 5.)



ARRANGEMENT OF BASE PLATE FIG 2



POSITIONING THE GROUND STAKE FIG 3

Unwind the middle guys (indicated by round tallies). Clip the adjuster end of each guy to the eye on the stakes. Clip the other end of each guy to the middle mast guy plate.

Repeat with the upper guys (square tallies) clipping them to the top guy plate.

7. Halyard

Unwind the halyard and attach its 'S' hook to the fourth hole in the top guy plate.

8. Fitting the Antenna

(a) Wire antenna. Ensure that the upper guy plate is correctly orientated and attach the end of the wire antenna to the halyard.

(b) Vertical Radiator. If a vertical radiator is to be used the base insulator should be fitted before attaching the mast to the base plate. Using the 5mm diameter tommy bar remove the spigot from the base of the mast and screw the base insulator in its place. Screw the spigot into the base insulator.

Insert the adaptor into the socket at the top of the mast and tighten the clamp.

Screw the antenna rods together, insert them into the adaptor and tighten the clamp. Attach the downlead to the adaptor and tighten the terminal. Unwind the downlead so that it will pay out as the mast is raised.

(c) Directional antenna. Insert the spigot on the base of the antenna into the socket at the top of the mast. Turn the antenna so that it points in approximately the required direction and tighten the clamping screw. Position the antenna feeder cable so that it will pay out cleanly as the mast is raised.

B. RAISING THE MAST

1. Ensure that all the guys, the halyard and the antenna feeder are correctly attached and free from tangles. Stand on the step assembly to carry out the following operations.

2. Ensure that all the clamp levers are in the closed position. See Fig. 4.

3. Release the top section clamp by pulling the lever to the open position. See Fig. 4.

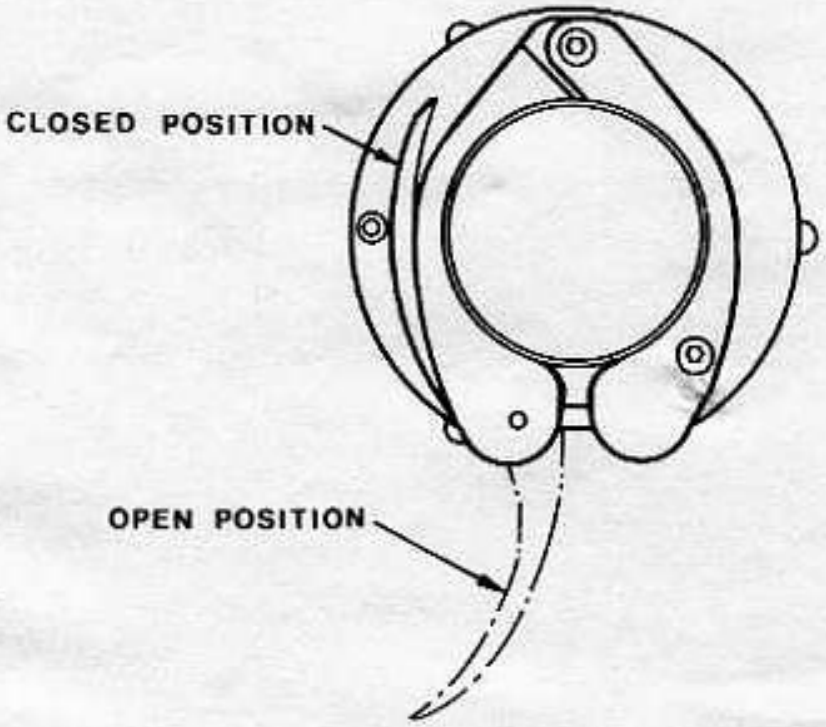
4. Raise the top section hand over hand until it is fully extended.
Hold it in this position.

5. Clamp the section by moving the lever to the closed position. See Fig. 4.

6. Repeat with all the other sections until the mast is fully extended.

NOTE The air damping system creates some resistance when raising the mast. Unnecessary effort will be expended if the mast is raised too fast.

7. Adjust both middle and upper guys to secure the mast in an upright position.



ANTENNA CLAMP FIG 4

C. RAISING THE MAST IN STRONG WIND

1. Position a man on the windward side of the mast. This man's job is to keep the mast as straight as possible by pulling on the halyard or one of the guys. The pull should come from as far out as possible.

2. If a spare man is available, then two men may be positioned to windward to steady the mast during erection.

3. If the wind is very strong, the necessity for extending all the mast sections should be considered. The smallest diameter sections bend most. In bad wind conditions the mast is easier to erect if the smallest section (or sections) is not extended. The clamps must be kept closed on any sections which are not extended.

D. MAST ERECTED

1. Check the tensions on the middle and upper guys. It is not necessary for these to be very tight as this only puts unnecessary strain on the mast. The guys should be adjusted so that the mast is as straight as possible and tensioned so that any slackness is just taken out.

   To allow freer access at the base of the mast, the erecting guys may be removed and stowed in the accessory bag. It is recommended, however, that the erecting guys should remain in position, particularly in windy conditions or if the mast will only be erected for a short period.

2. Wire Antenna

   Using the halyard pull the wire antenna to the top of the mast and tension it. Tie off the halyard on the halyard cleat. This is located on the base plate.

3. Directional Antenna

   Two alternative modes of operation are possible:-

   (a) Fixed orientation - when it will not be necessary to alter the direction of orientation once this has been set. The erecting guys should be left in position to maintain the angular orientation of the mast. Prior to erection of the mast, the antenna should have been set in approximately the correct direction. Using a compass (or other means), determine the required direction.

   Grasp the mast above the lowest clamp. Release the clamp (whilst supporting the mast) and turn the mast and antenna to the required direction. Tighten the clamp.

   (b) Variable orientation. This mode of operation is useful when communicating with several fixed stations in different directions or with a mobile station. The erecting stays should be removed. Turn the mast and antenna in the required direction and adjust for maximum signal strength. In windy conditions check that the antenna is not blown away from the desired direction.

E. LOWERING THE MAST

NOTE The mast is equipped with an air operated damping system to control the rate of descent of the sections.

1) Replace the erecting stays and tighten them correctly.

2) Release the lower clamp and allow the section to descend. Close the clamp when the section is completely down.

3) Repeat with all the remaining sections. It may be necessary to assist the top one or two sections if only a very light antenna is being used.

F. STOWING THE ACCESSORIES

1. Disconnect the upper and lower guys, rewind them onto their winders and stow them in the accessory carrying bag.

2. Hold the mast and release the erecting stays from the lower stay plate.

   Tilt the mast sideways and disengage the spigot from the slot in the base plate.

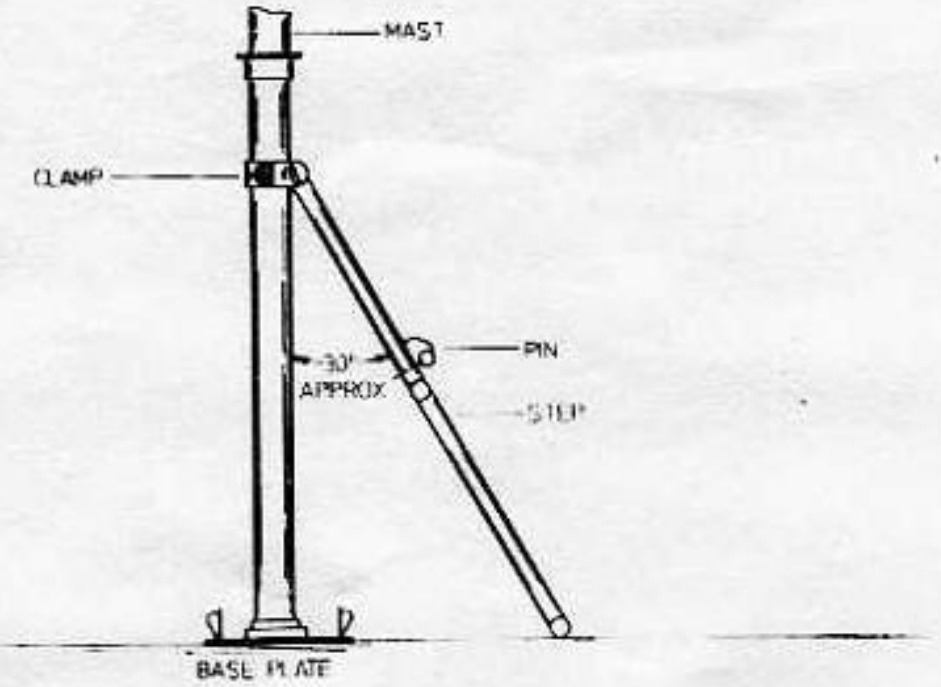
3. Rewind the erecting guys and stow them.

4. Replace the mast carrying case onto the mast by placing the top end over the mast first.

5. Withdraw all the stakes and the base plate pins, remove any adhering soil and stow them together with the base plate in the accessory carrying case.

6. Finally check that all the accessories have been stowed correctly, securely fasten the accessory carrying case.

7. The mast and accessories can now be returned to the vehicle.



ARRANGEMENT OF STEP LADDER

If the damping is not effective when the mast is lowered, the internal leather seals shou follows. See Figure 6.

1. Tilt the mast at an angle of approximately 45 °; base uppermost.

2. Cover the air vent holes in the base.

3. Remove the M5 hexagon screw.

4. Insert approximately 40ml of TELUS T46 OIL or equivalent.

5. Replace the hexagon screw.

6. To distribute the oil onto the seals, rotate the mast and move each sectic approximately ¼ to ½ metre.

7 Remove the vent hole covers.

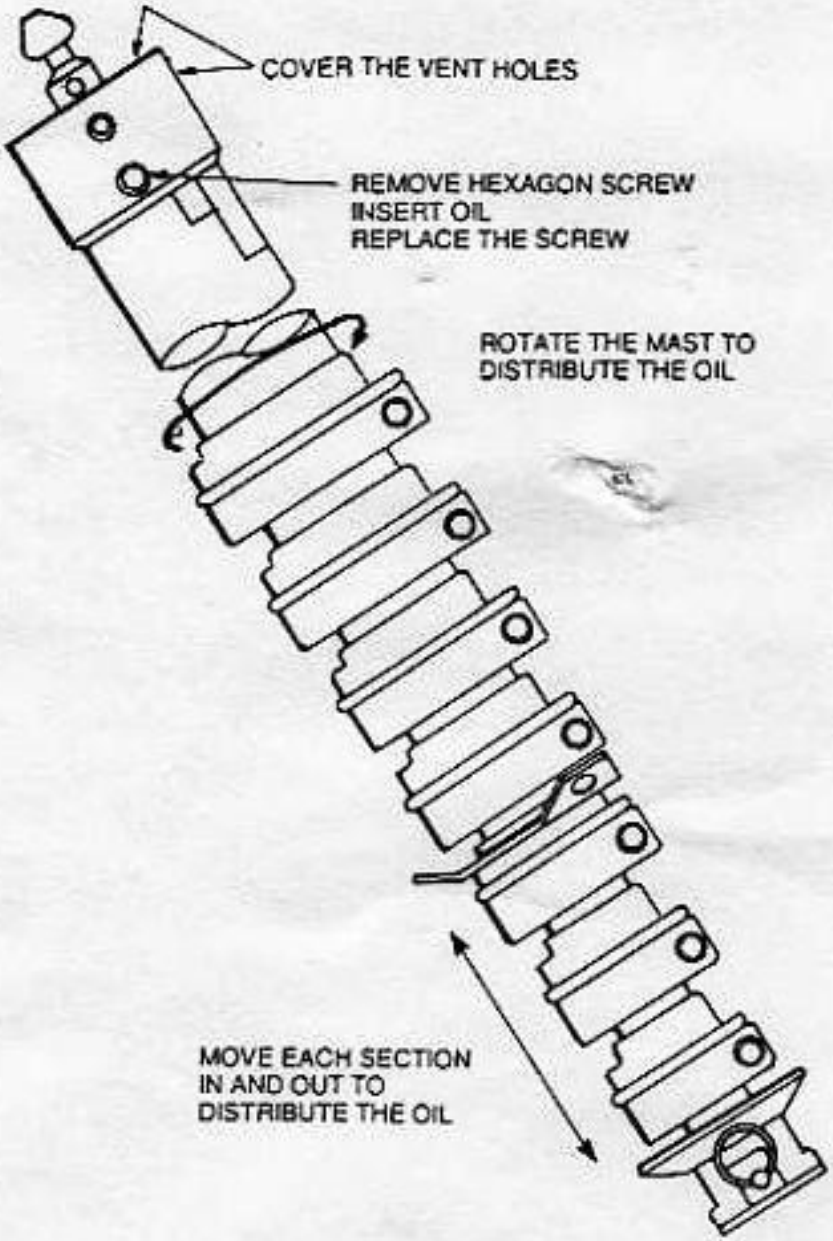
8. Re-test the mast.

H. ALTERNATIVE PAINT COLOURS

To order any equipment or spares in Desert Sand colour, add 030 to the part numbe

For example: Part Number shown 716-000

Desert Sand Part No. 716-000-030



OILING THE INTERNAL SEALS FIG. 6.

MAST, TELESCOPIC 12 METRE

TYPE MA.714

COMPLETE STATION LIST

Qty. Per Kit	Title	Nato Stock No.	Drawing No
	MAST TELESCOPIC 12M AND ANCILLARIES comprising:-	5985-99-719-4328	714-900
1	MAST KIT, TELESCOPIC 12M comprising:-	5985-99-719-7711	714-901
1	MAST TELESCOPIC 12M	5985-99-719-4326	714
1	CASE MAST	5985-99-719-4309	714-170
1	ACCESSORY KIT, MAST TELESCOPIC 12M comprising:-	5985-99-719-4327	714-902
1	PLATE, ANTENNA MAST	5985-99-645-0042	716-171
3	PIN, ANTENNA MAST	5985-99-645-0043	716-172
3	STAKE, GUY	4030-99-645-0044	716-188
1	INSULATOR, MAST	5985-99-645-0045	716-173
3	GUY (UPPER)	5985-99-719-4329	714-176
3	GUY (MIDDLE)	5985-99-719-4330	714-177
3	GUY (ERECTING)	5985-99-719-4331	714-178
1	HALYARD ASSEMBLY	5985-99-719-4317	714-179
1	ADAPTOR, MAST TO ANTENNA	5985-99-719-4316	714-180
1	LINE RADIUS	5985-99-719-4310	714-185
1	STEP ASSEMBLY	5985-99-719-4315	714-196
1	BAG WEBBING	5820-99-103-0517	638-43
1	HAMMER, HAND 4LB.	5120-99-949-4253	-
1	USER HANDBOOK	-	714-191
1	TOOL KIT, ANTENNA MAST comprising:-	5180-99-645-0052	716-190
1	SPANNER, BOX 8.0mm x 9.0mm	5120-99-910-6274	-
1	PUNCH, DRIVE PIN 3/32in.dia.	5120-99-910-5577	-
1	TOMMY BAR	5120-99-136-6305	-
	WRENCH KEY, SOCKET HEAD SCREW - 2.5mm A/F	5120-99-122-6463	-
	4mm A/F	5120-99-122-6465	-
1	ASSEMBLY STRIP, PLASTIC	5985-99-645-0286	716-86
1	ASSEMBLY STRIP, PLASTIC	5985-99-645-0287	716-87
1	ASSEMBLY STRIP, PLASTIC	5985-99-645-0288	716-88
1	POUCH TOOL	5140-99-645-0125	716-189