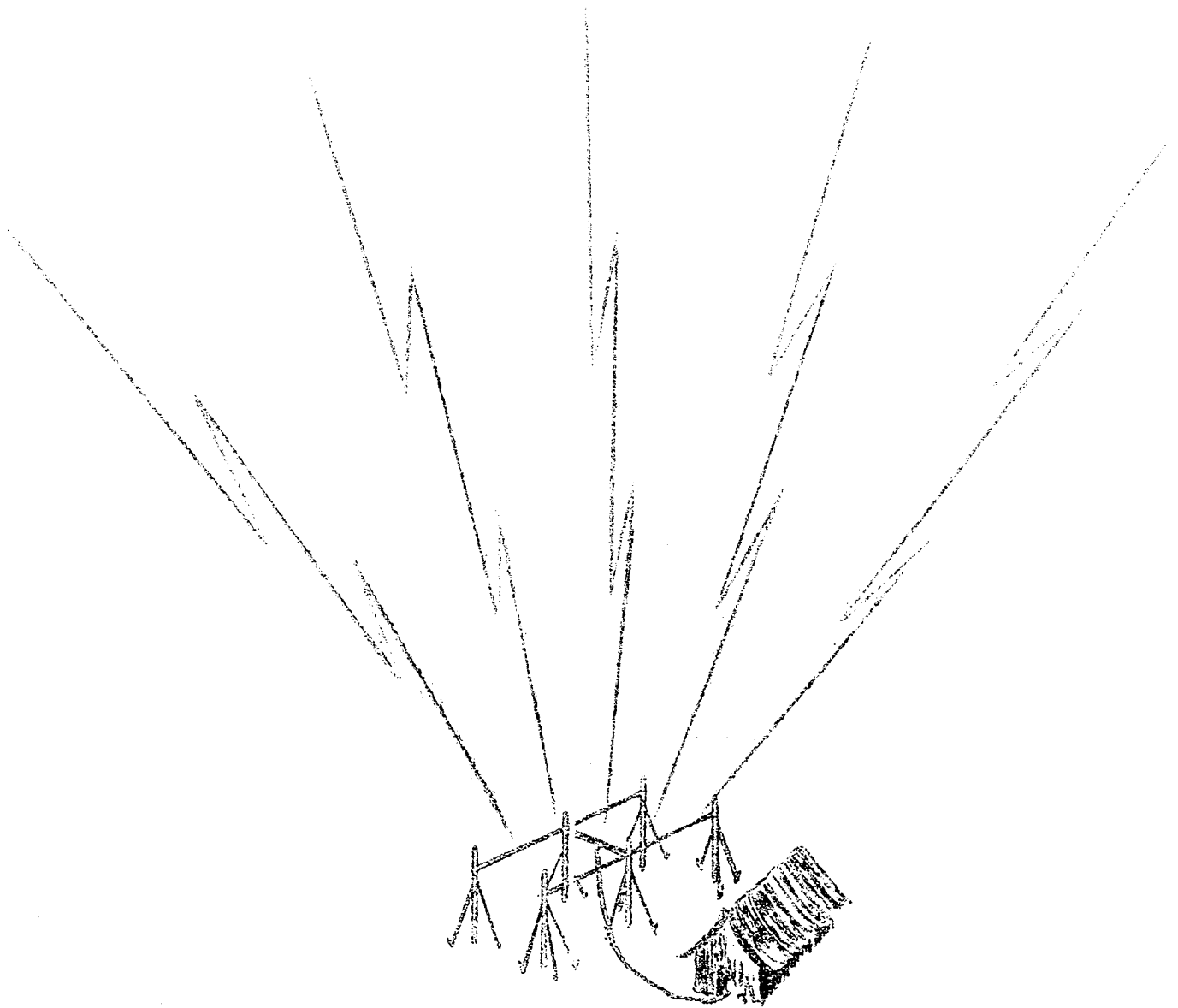


'JAMAICA'

AERIAL



ISSUED BY THE CHIEF SIGNAL OFFICER MALAYA

APRIL 1953

This short pamphlet describes the "JAMAICA" aerial. It is so called, because it was originally designed and erected for a very successful medium range commercial broadcasting station in JAMAICA.

In MALAYA, it is already in use by Bde Signals in several formations, and is giving excellent results.

Owing to its size and the time required for erection, it is not suitable for mobile wireless stations, such as jungle patrols. It is however most suitable for use :-

- (a) At a static headquarters (e.g. Bn or Coy Base), for communication to jungle patrols.
- (b) At a static headquarters (e.g. Bn or RAC Sqn), for communication to Scout Cars and other mobile veh stations.

Used in either of these roles, it will give very much better results than a single wire aerial, even when the latter is properly designed, and will often make the difference between no communication at all, and a good, readable signal.

Extensive tests have shown, that it undoubtedly transmits a stronger signal, but its great advantage lies in its superiority as a receiving aerial, so essential when the outstations are badly sited in the jungle, or are mobile.

2. Description of Aerial

- (a) The layout and constructional details of the "JAMAICA" aerial will be evident from the diagrams at Appendix 'A'.
- (b) Since the aerial is only intended for use at static Bn and Coy bases, it will only be used, at Bn level and below, with the WS 19 or WS 62. With either set:-
 - (i) The bottom end of the twisted feeder is connected between Aerial and Earth terminals of the set. (It does not matter which leg of the feeder is connected to aerial or earth).
 - (ii) The set is tuned to give the maximum Aerial Current reading, in exactly the same way as for a rod aerial.

The points in (c) and (d) below should be noted.

(c) Used with WS 19

- (i) Many WS 19 will not tune this, or any other aerial, at frequencies above 6.5 Mcs. This is therefore the highest frequency on which the WS 19 should normally be used.
- (ii) The twisted feeder must be cut to the appropriate length given at Appendix 'C', para 1.
- (iii) The "JAMAICA" aerial will almost invariably tune on the Red portion of the variometer scale. This is a feature of the aerial, and is quite in order.

(d) used with WS 62

- (i) The set will tune quite normally. Readings will be less than those obtained with the WS 19.
- (ii) The twisted feeder must be cut to the appropriate length given at Appendix 'C', para 2.

(e) Height of Aerial

The aerial wires should be at a height of 20 - 35 feet above the ground, depending on the lengths of poles available; the nearer it is to 35', the better.

(f) Orientation of Aerial

The "JAMAICA" aerial is non-directional, and may thus be erected on any convenient alignment that the site allows.

3. Stores Required

- (a) Poles Six Bamboo Poles (cut locally). These should be from 25' - 40' feet long.
- (b) Stay Wire Can be improvised from old field cable.
- (c) Aerial Wire Y3/WB 1057 Wire Elec (or equivalent standard copper wire). Quantity required varies with frequency: (see Appendix 'B').

(As a guide, at 5 Mcs, the amount required is approximately 190 yards. Sufficient aerial wire is being issued through Bde Signals to all Bns selected for the initial trials).

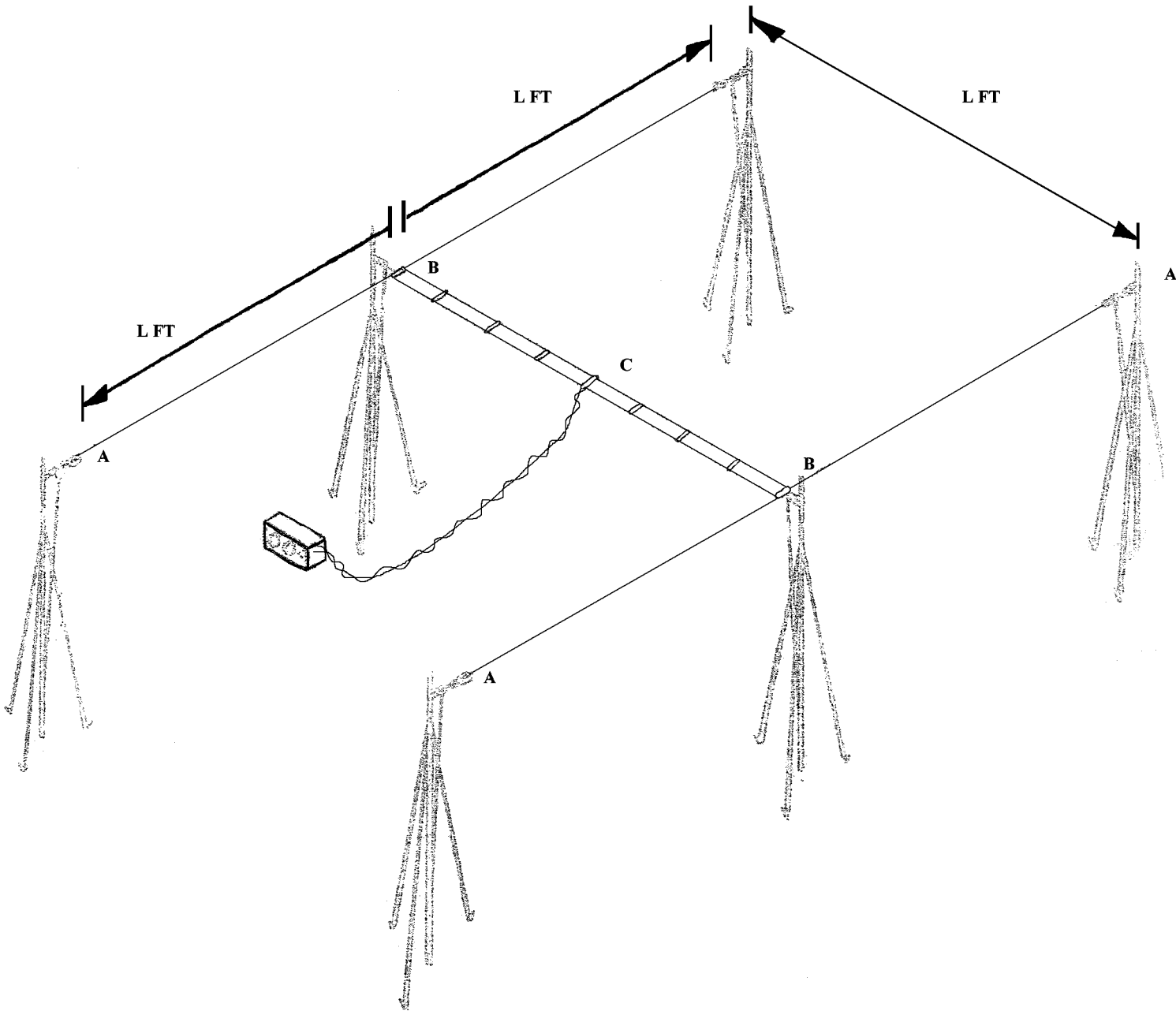
- (d) Insulators Ten Insulators Chain 2 Link WI Small (Standard issue with WS 19 and WS 62 stations).
- (e) "Spacers" Ready-made spacers of Compressed Resin Sheet are being issued through Bde Signals. These are required for the central 'Limb' of the aerial, and are located at 5' - 6' intervals. It is most important that only the special spacers provided should be used. In NO circumstances must ordinary wood spacers be employed. These rapidly absorb moisture, and in a sodden state merely short circuit the aerial, and make it useless.
- (f) "Feeders" Stripped Carrier Quad feeder wire is being issued through Bde Signals. It is important that only this feeder (which has PVC insulation) is used. Twisted rubber covered lighting flex, or other rubber insulated wires have a high loss, and rapidly deteriorate. Under no circumstance must 'D' Type Field Cable be used.

4. Conclusion

The "JAMAICA" aerial takes up a fair amount of space, but you cannot get "something for nothing". The weight and bulk of sets used by mobile patrols must obviously be kept to a minimum. Patrols are sometimes unable to erect a really satisfactory aerial, and aerials on mobile vehicles are always the "weak link in the chain". These factors automatically limit the power and efficiency of such stations. Erecting a "JAMAICA" aerial at the static Headquarters is equivalent to giving the patrol or vehicle a bigger and better set and aerial. The initial effort and labour of putting up the "JAMAICA" aerial is not great, when compared with the improvement in communications that will result.

Fig 1. General View

Appendix "A"



NOTES Aerial wire and twisted feed shown in red

For plan view and elevation, See Figs 2 and 3

For details of construction at A, B and C, See Figs 4,5 and 6

For length L ft, See table at Appendix "B"

For length of feeder, see Appendix "C"

Fig 2. PLAN VIEW OF AERIAL

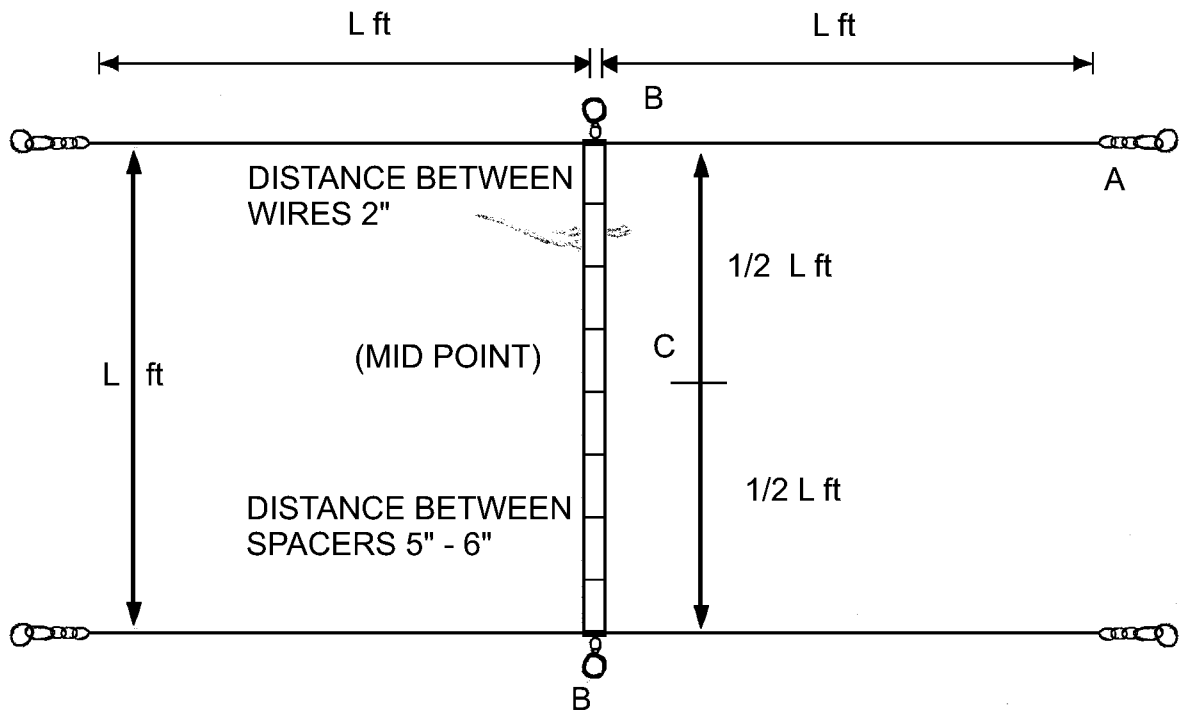


FIG 3 END ELIVATION OF AERIAL

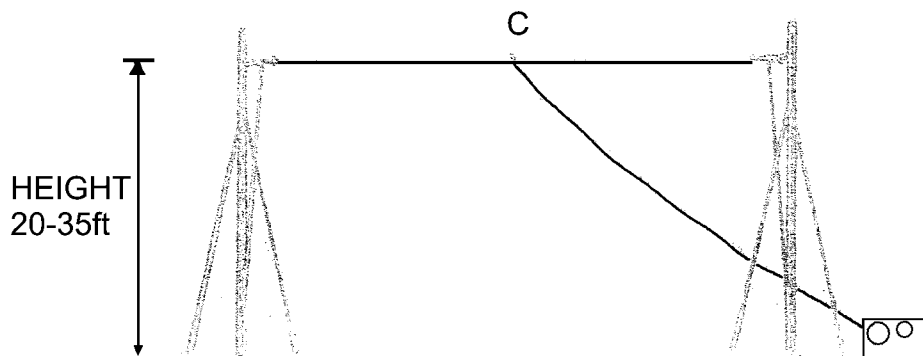


FIG 4 DETAIL AT POINT A

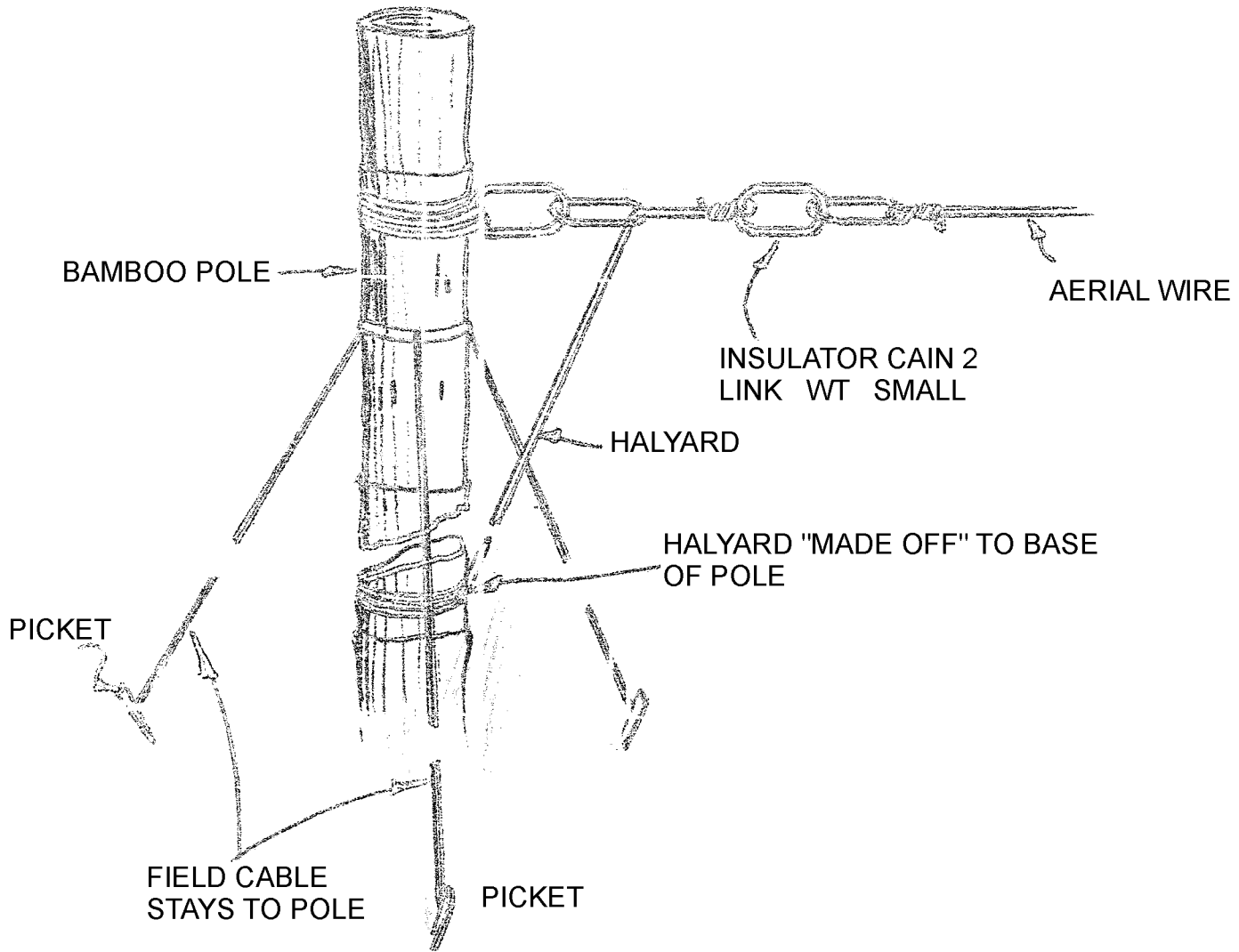


FIG 5. DETAIL AT POINTS "B"

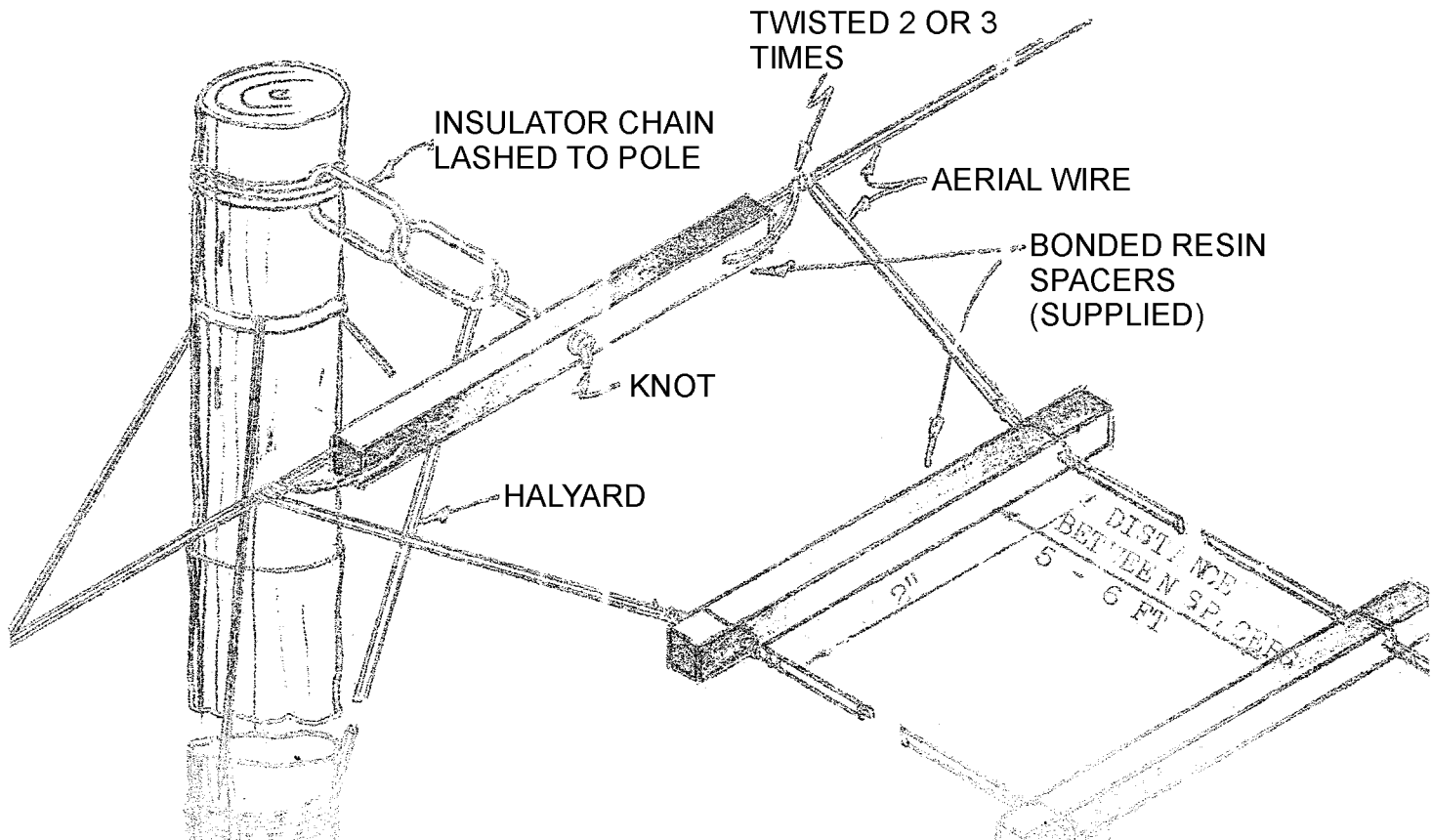
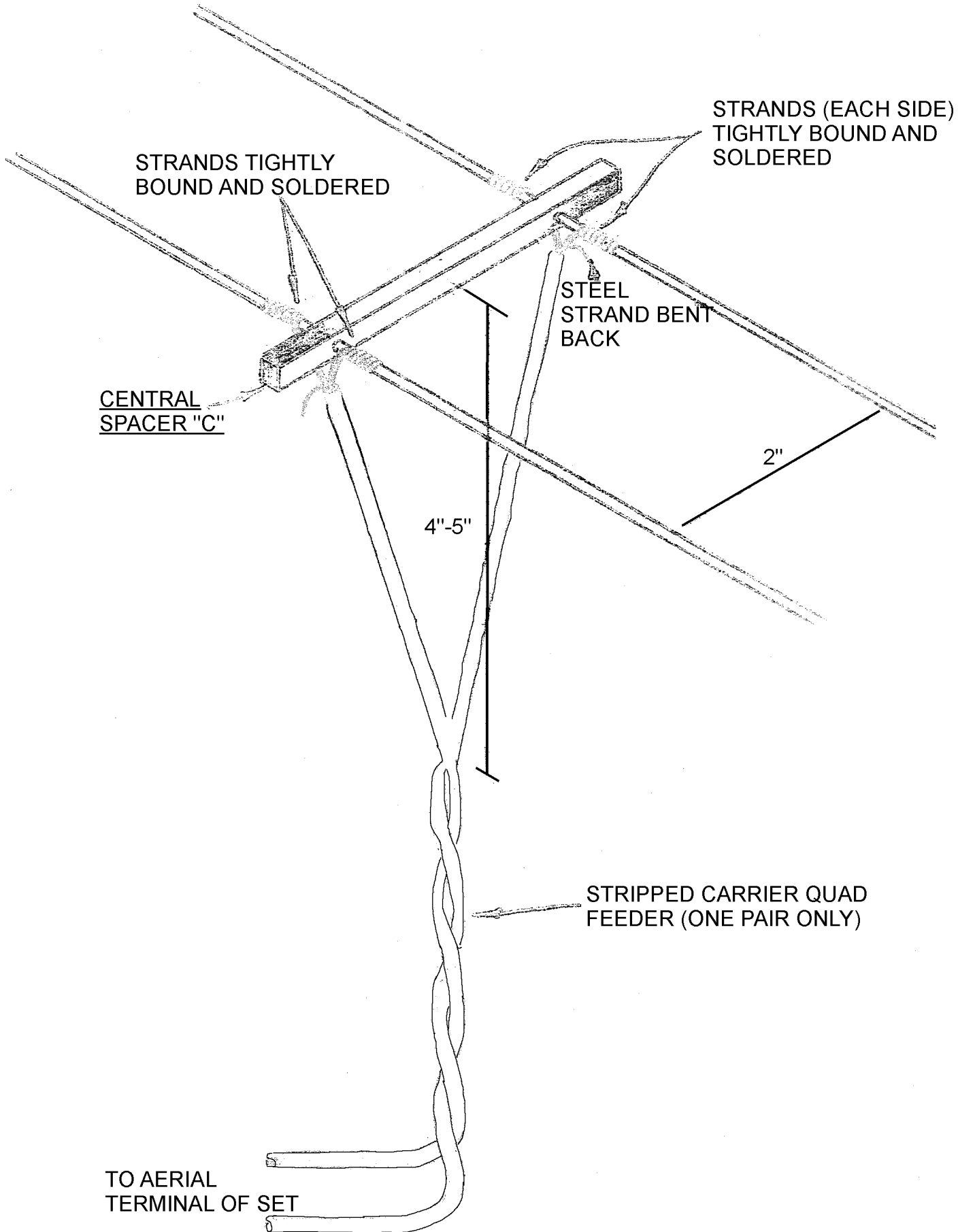
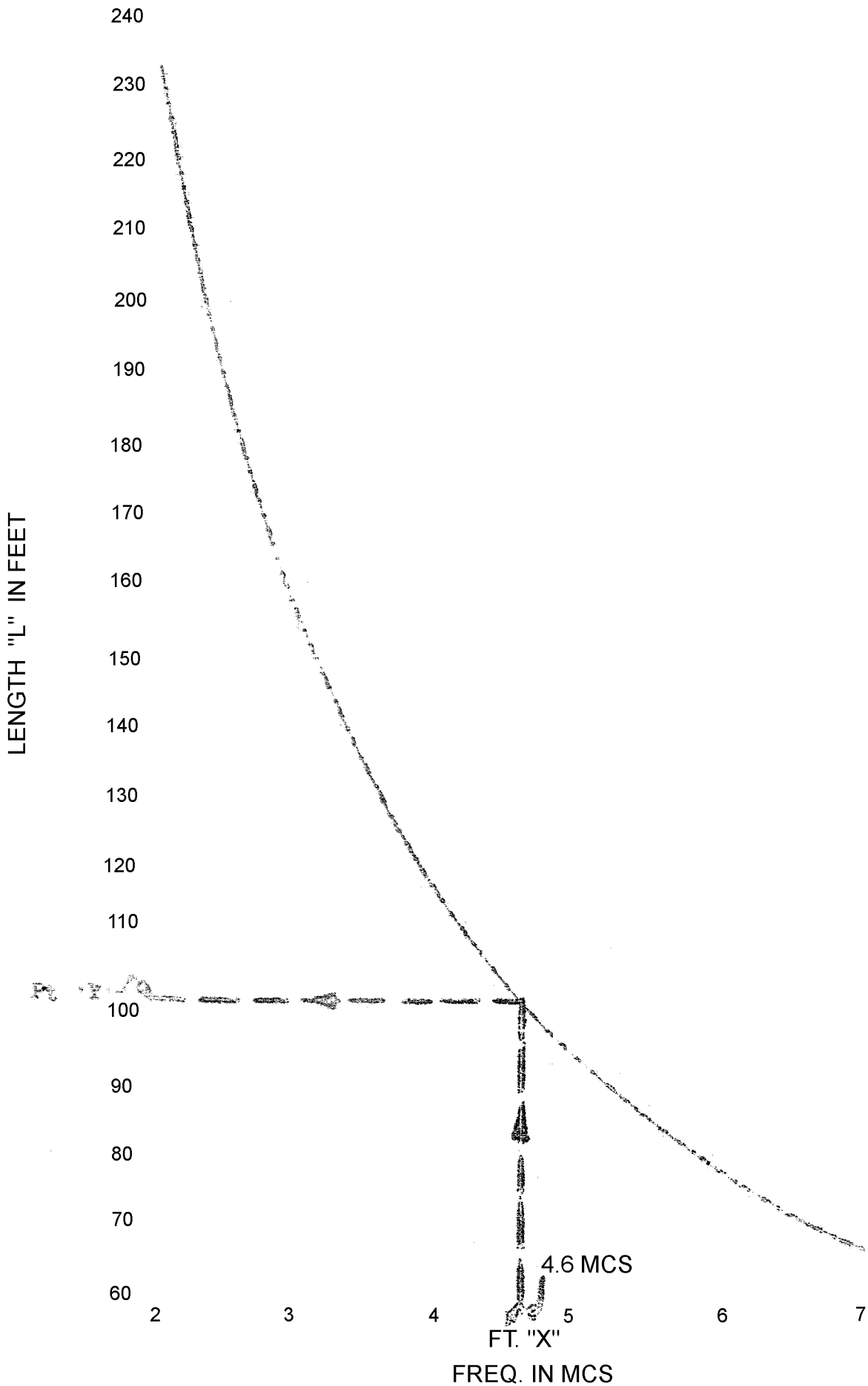


FIG 6. DETAIL AT POINT "C"





TO USE CHART

- (A) SELECT REQUIRED FREQUENCY ALONG BOTTOM LINE.
- (B) RISE VERTICALLY UP TO HIT THE RED LINE.
- (C) GO HORIZONTALLY TO LEFT AND READ OFF LENGTH ON LEFT HAND SCALE.

APPENDIX 'C'JAMAICA Aerial : Length of Twisted Feeder Wire ()1. WS 19

Frequency	Feeder Length
4.0 - 4.5 Mc/s	120 feet
4.5 - 5.5 Mc/s	110 feet
5.5 - 6.5 Mc/s	100 feet

2. WS 62

Frequency	Feeder Length
4.0 - 4.5 Mc/s	90 feet
4.5 Mc/s and above	70 feet

NOTE: No figure is given for frequencies below 4 Mc/s, since few are allotted, and the "JAMAICA" aerial becomes impractically large at lower frequencies.