Construct Field Expedient Antennas

- **Identify Length Of The Elements For The Radio Frequency Being Used.**
  - **Use a Quick-reference Chart.**
  - **Measure and cut elements.**
  - **Measure and cut spacing sticks.**

Quick Reference Chart

Operating Frequency (MHz)	Element Length (Radiating Element and Ground Plane Element)
30	2.38m (7ft., 10in.)
32	2.23m (7ft., 4in)
34	2.1m (6ft., 11in.)
36	1.98m (6ft., 6in.)
38	1.87m (6ft., 2in.)
40	1.78m (5ft., 10in.)
43	1.66m (5ft., 5in.)
46	1.55m (5ft., 1in.)
49	1.46m (4ft., 9in.)
52	1.37m (4ft., 6in.)
55	1.3m (4ft., 3in.)
58	1.23m (4ft., 0in.)
61	1.17m (3ft., 10in.)
64	1.12m (3ft., 8in.)
68	1.05m (3ft., 5in.)
72	0.99m (3ft., 3in.)
76	0.94m (3ft., 1in.)

Quarter Wave Formula

- Wire length in feet = $\frac{234}{\text{FM frequency}}$
- Remainder in feet X 12 inches
- Add two inches for connection
- Overall length

Example

- Frequency: 53.000

1.) 53 / 234.0 = 4.41

212

220

212

2.) .41 x 12” = 4.9 inches

3.) 4’+ 4” = 4’4”

4.) 4’4”+ 2” = 4’6”

Practice

- Frequency 38.500

234/38=6.15=6’
.15*12=1.8=1”
Add 2”
6’3”

Jungle Antenna

Length: All wires and spreader sticks are cut to length using the 1/4 wave formula.

Range: 2 to 3 times the normal operating range of the set.

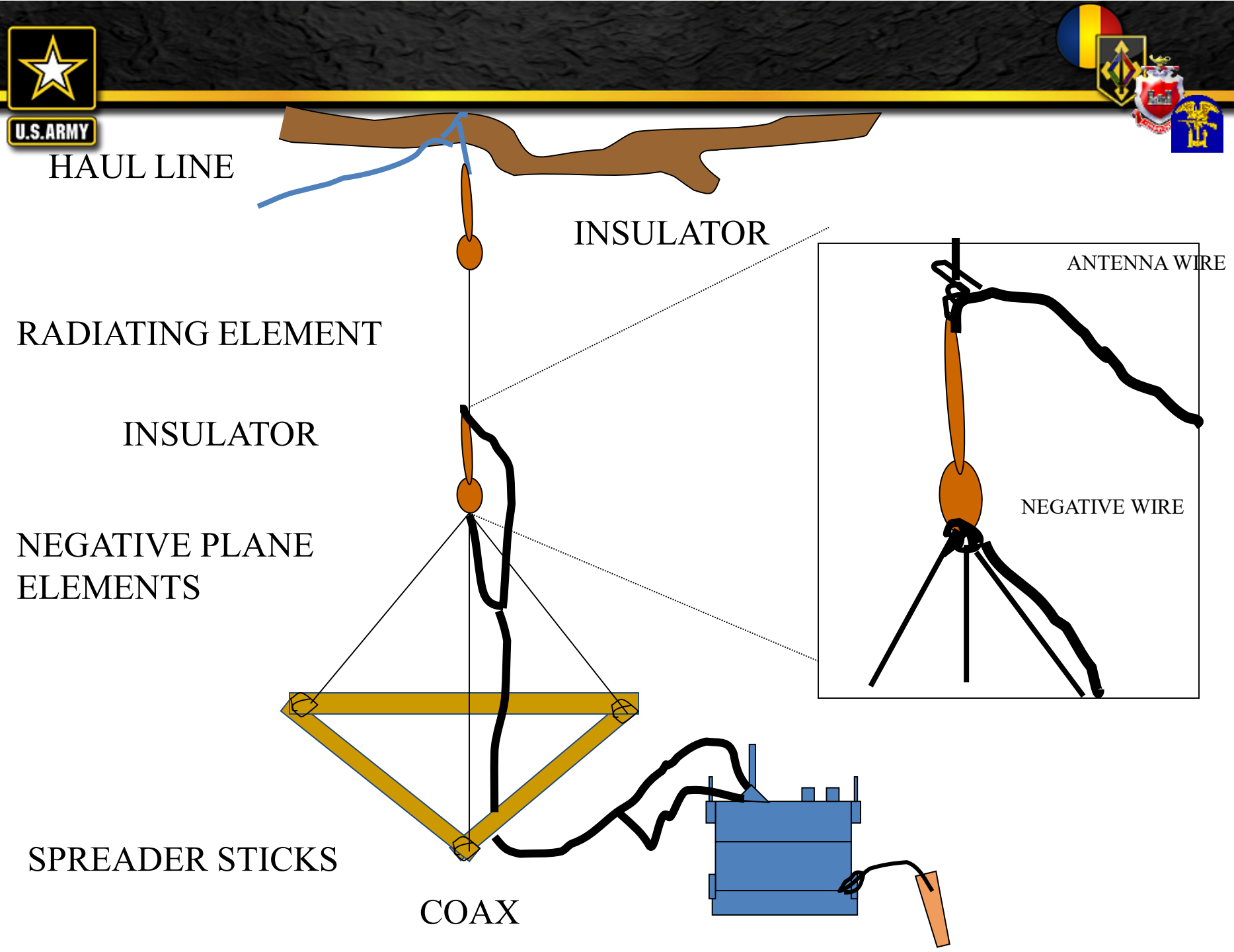
Lead in: Hand made coax (8 to 10 twist per foot).

Ground: Required because of the height of the radiating element.

Note: *Radiating element* is connected to the antenna port. *Negative* elements are connected to the antenna base.

Materials Needed

- Radio
- Wire
- 2-5 Insulators
- Ground
- Tie down / haul line
- 3 spreader sticks


HAUL LINE
INSULATOR
ANTENNA WIRE
RADIATING ELEMENT
INSULATOR
NEGATIVE WIRE
NEGATIVE PLANE ELEMENTS
SPREADER STICKS
COAX

ANTENNA
WIRE(RADIATING WIRE)

NEGATIVE WIRE

WRAP THE GROUND WIRE AROUND THE ANTENNA WIRE 8 TO 10 TIMES PER FOOT