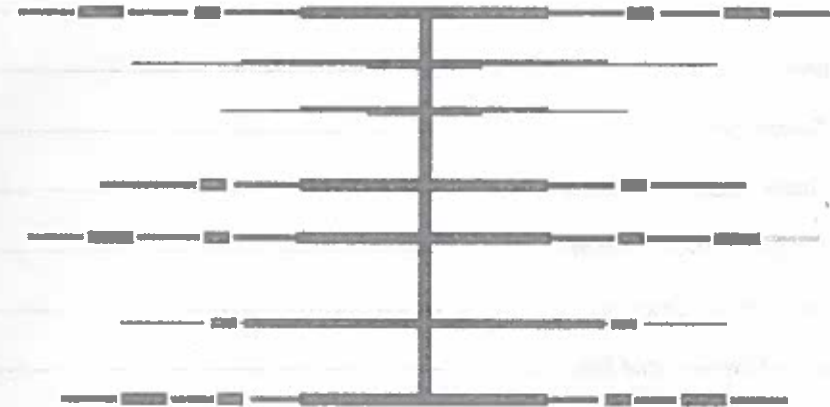


M.E.I.

**PRO-67-C-3**

Seven Element for Seven Bands

40, 30, 20, 17, 15, 12, & 10 Meters



Mosley Electronics, Inc., St. Louis, Missouri  
U.S.A.

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[RadioAmateur.eu](http://RadioAmateur.eu)

Mosley Electronics, Inc., 1325 Style Master Drive, Union, Missouri 63084  
Tel: 636-583-8595, Fax: 636-583-0890

# PRO-67-C-3 Seven Band High Performance Beam

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## PRO-67-C-3

The high performance of your Mosley PRO-67-C-3 can only be achieved if this beam is assembled in acc the instructions in this manual. Substitutions of materials or modification of design will greatly lessen it's We recommend that you read through the assembly instructions and familiarize yourself with each step b bling your antenna.

<u>PART NUMBER</u>	<u>QUANTITY</u>	<u>ITEM</u>
1	2	DRIVEN ELEMENT SUPPORT (Large)
2	16	A-1002 INSULATORS
3	48	#10 LOCK WASHERS
4	32	10/32 X 1-1/2" MACH. SCREWS
5	16	10/32 X 1-3/4" MACH. SCREWS
6	68	#8 X 1/2" S.S. SHEET METAL
6A	8	#6 SHEET METAL SCREW
<b>FRONT DRIVEN ELEMENT BROWN</b>		
7	2	1-1/8" OD X .058 X 72" BROWN NOTE: THIS PIECE HAS A 1" X .058 X TUBE SLEEVED INSIDE THE 1-1/8".
7A	2	1" X .058 X 29", BROWN
8	2	7/8" OD X .058 X 24" BROWN
9	2	TRAP ASSEMBLY, 12" CODED BROW
10A	2	7/8" X .058 X 25-3/8", BROWN
10B	2	7/8" X .058 X 27-3/8", BROWN
10C	2	7/8" X .058 X 29-3/8", BROWN
11	2	TRAP ASSEMBLY, 18" CODED BROW
12	2	5/8" X .058 X 40", BROWN
13	2	1/2" X .049 X 60", BROWN
<b>BACK DRIVEN ELEMENT RED</b>		
14	2	1-1/8" OD X .058 X 72" RED
14A	2	1" OD X .058 X 27"
15	2	7/8" OD X .058 X 27" RED
16	2	TRAP ASSEMBLY 12" CODED RED
17	2	5/8" X .058 X 40", RED
18	2	1/2" X .049 X 36", RED
19	2	#1021 SOLDER LUGS
20	8	1/2" END CAP
21	4	2" U-BOLTS, 5/16-18
21A	8	5/16" LOCK WASHERS
21B	8	5/16" NUTS
22	2	PHASING LINES CODED BROWN
23	2	8/32 X 1" SCREW S.S.
24	4	#8 LOCK WASHER
25	2	8/32 NUT

26	4	#47 CLAMPING BLOCK
27	1	*LARGE MAST PLATE (Use caution when handling the edges of this plate are sharp.)

2 ND DIRECTOR

28	1	1-3/8" X .058 X 72", BLUE
29	2	1-1/4" X .058 X 72", BLUE
30	2	1-1/8" X .058 X 20", BLUE
31	2	1" X .058 X 12", BLUE
32	2	7/8" X .058 X 11-1/2", BLUE
33	2	12" TRAPS, BLUE
34	2	7/8 X .058 X 24", BLUE
35	2	TRAPS, 18" COLOR CODED BLUE
36	2	5/8" X .058 X 40", BLUE
37	2	1/2" X .049 X 48" END TIP, BLUE

REFLECTOR

38	1	1-3/8" X .058 X 72" YELLOW
39	2	1-1/4" X .058 X 72", YELLOW
40	2	1-1/8" X .058 X 20", YELLOW
41	2	1" X .058 X 21", YELLOW
42	2	7/8" X .058 X 20", YELLOW
43	2	TRAPS, YELLOW
44	2	7/8 X .058 X 26", YELLOW
45	2	TRAPS, 18" COLOR CODED YELLOW
46	2	5/8" X .058 X 40", YELLOW
47	2	1/2" X .049 X 72" END TIP, YELLOW

1 ST DIRECTOR

48	1	1-1/8" X .058 X 72", WHITE
49	2	1" X .058 X 72", WHITE
50	2	7/8" X .058 X 30", WHITE
51	2	TRAP 12", WHITE
52	2	5/8" X .035 X 14", END TIP, WHITE

12 METER REFLECTOR

53	1	1" X .058 X 18", BLACK
54	2	7/8" X .058 X 72", BLACK
55	2	3/4" X .058 X 29", BLACK
56	2	5/8" X .035 X 39", BLACK

17 METER REFLECTOR

57	1	1-1/8" X .058 X 72", GREEN
58	2	1" X .058 X 72", GREEN
59	2	7/8" X .058 X 48", GREEN
60	2	3/4" X .058 X 29", GREEN
61	2	5/8" X .035 X 34", GREEN
62	6	5/8" END CAPS

BOOM

63	1	3" BOOM SECTION
64	1	2.75 X .125 X 36", SPLICE
65	1	3" BOOM SECTION
66	7	3" LONG U-BOLTS
67	6	3" SHORT U-BOLTS
68	6	#51 CLAMPING BLOCKS
69	7	#50 ELEMENT BLOCKS
70	4	3/8" X 3-1/2" BOLT
71	30	3/8" LOCK WASHER
72	30	3/8" NUT
73	2	3" END CAPS
74	2	1-1/8" PLUGS
75	2	1" PLUGS
76	2	#1021 SOLDER LUG
77	1	WARRANTY CARD
78	1	INSTRUCTION MANUAL
79	3	PENATROX
80	1	DEBURRING NOTICE
81	1	WARNING NOTICE

ASSEMBLY

**Caution: Mast Plates Edges are sharp. Use gloves when handling**

< > Start by grouping all element sections and traps according to color code.

DEBURRING

< > MAKE SURE that before attempting to sleeve ANY of the pieces of tubing together you check tubing pieces are DEBURRED!

In building the antenna we have removed the majority of the burrs, however, due to the number of pieces of labor, the time consumption; some pieces may still have a few remaining burrs. Double check before trying to put them together!

The tubing Mosley uses is made for us and the telescoping tolerances are very close. If you would try piece of tubing to sleeve, which is not deburred, it will SEIZE. If this would happen you aren't going to

This is a beautiful beam, we have put a lot of time and pride into it, take a few minutes and check the  
NOTE: PENATROX, an anti-corrosion compound, should be applied in a light layer between coupling tubing to prevent formation of high resistance and seizing of aluminum.

**CAUTIONS**

- < > In an attempt to keep the weight of the antenna down to a minimum, we are using a .035 wall on the small, single end tips. In their area of use, they are as strong as a heavier-walled piece. However, **WHEN SECURING WITH THE #8 STAINLESS SHEET METAL SCREW, DON'T OVER TIGHTEN!** Seat the screw flush with the tubing and stop.

- < > **CAUTION: Trap Assemblies are color coded on one end of the trap tubing.**

THIS COLOR-CODE SHOULD ALWAYS GO TOWARD THE BOOM. INSERT TOWARD THE CENTER. REVERSAL OF THE TRAPS WILL CAUSE HIGH S.W.R. AND OTHER MALFUNCTIONS.

- < > Mark the color-coded ends of the traps by placing masking tape on the metal trap cover and note the side and



color on the trap. This will solve any problems if the color code comes off when sanding or placing the penatrox on the trap tubing. **THE TRAPS CAN GO INTO THE 7/8" CONNECTING PIECE EITHER WAY.**

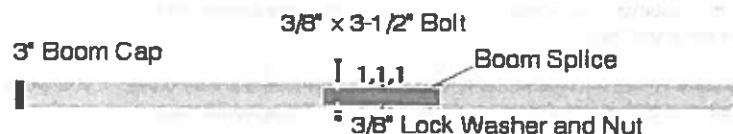
- < > The various pieces of tubing used on the antenna elements are also color coded on one end. This end always goes in toward the boom.

Read

- < > Deburr tubing and use the enclosed PENATROX.
- < > Mount All elements on TOP SIDE of Boom!
- < > Review the drawings and READ the instructions before starting assembly.
- < > Follow all safety procedures in assembly and raising of this beam. When installing the antenna, make sure the tower, all other associated hardware, and components are rated correctly for this antenna!
- < > **Avoid power lines and other electrical hazards!**
- < > Make sure you and the people helping you use good judgement and follow all safety rules which would apply.

**ASSEMBLY OF BOOM**

- < > Insert one end of the 48" center boom splice into one end of the boom section (parts 63 through 73) marked #1 in BLACK. Align the numbers on the splice and boom section so they show 1, 1, this will position the holes



2- 3" x .104 x 144" Boom Sections  
1- 2.760 x .125 x 48" Splice

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correctly, and secure with screws (part 70), lock washers and nuts. Insert opposite end of remaining section boom marked #1 in BLACK, and secure with hardware.

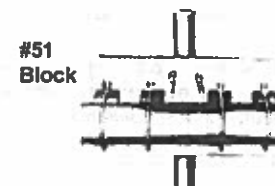
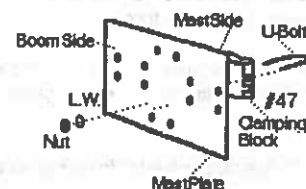
- < > Place captug (part 73) on each end of boom.
- < > Check that all bolts are tight, and have lock washers in place.

**ASSEMBLY AND PLACEMENT OF MAST PLATE**

**CAUTION: Mast Plates Edges are sharp! Use gloves when handling them!**

- < > Place the mast plate on the boom (Part 27) between the RED COLOR CODE on the boom for between the BROWN COLOR CODE of the Front Driven Element, (FDE).

Plate does not show all holes!

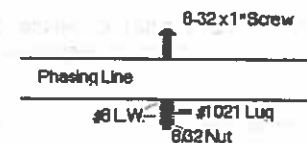


- < > Place 6 #51 clamping blocks (part 68) between the boom and the mast plate and secure with SHORT U-bolts (part 67).
- < > Secure the U-bolts with lock washers and nuts (parts 71, 72).

**DO NOT TIGHTEN AT THIS TIME. ONCE ALL ELEMENTS ARE IN PLACE, THE MAST PLATE WILL NEED TO BE MOVED RADIATORS TO GET THE BEST BALANCE POINT.**

**PREPARING PHASING LINES**

- < > These two lines (part 22) are used between the Front Driven Element and the Back Driven Element. They connect the two driven elements together, putting them in phase with each other.



- < > Place the 8/32 x 1" screw, lock washers, and nut to the side of the phasing lines. (Parts 22) Set aside until needed.

### REVIEW OF DRIVEN ELEMENTS

The Back Driven Element, color-coded RED, controls 12, 17 and 30.

The Front Driven Element, color-coded BROWN, controls 10, 15, 20, 40.

You are provided with three choices for 20, 1. Code I = cw, 2. Code II phone & cw, 3. Code III Phone. This is done by selecting the correct piece of 7/8" coupler used between the two traps. This element also has an adjustment for 40 meters, using the 1/2" end tip.

The Yellow Reflector and the Blue Director have no adjustments other than on the 40 meter end tips.

The 1/2" End Tip on the Yellow Reflector and the Blue Director control 40 meters.

The Red Radiator or Back Driven element does not need to be adjusted unless you have some set of unusual circumstance. If so, contact our engineering department and they can help you with this procedure.

The 40 meter 1/2" end tips have no pre-drilled settings. You will first adjust the radiator to the center frequency you desire. (46" of 1/2" tubing exposed on the driven element, will resonate around 7,200 megahertz. Use a piece of electrical tape to hold the end tip in position until the adjustment procedure is completed.)

The reflector is moved to 10 to 12 inches longer than the driven element. Adjust the reflector for the least amount of SWR.

Once the reflector has been adjusted, position the 1/2" blue end tip at 32" exposed.

The shortening and lengthening these element end tips will give you the correct adjustment for your QTH.

You want to make these adjustments on 40 meters with the antenna as high as possible. A good at test height would be from 25 to 45 feet. If this is not possible use the highest height you can that is in the clear and not being affected by other antennas, guy wires, etc..

Since the "Q" of this antenna is very high and it is working on "7" bands it needs some room away from other objects to operate as designed.

When adjusting the antenna near to the ground, 10 to 12 feet. Plan for a movement higher in frequency due to coupling with ground. Both real and artificial! Remember that the lowest frequency will be impacted the most when near the ground.

When setting up the 40 Meter BROWN Radiator, start by putting the 40 meter radiator 1/2" end tip at 46". This will give you a good starting point to adjust from. Depending on the height above ground, both real and artificial, you should be getting a dip between 7,170 and 7,230.

If you want to be lower in frequency, lengthen the radiator 2" at a time. Once you are close to the center frequency you desire start moving the end tip in 1/2" movements.

Once you have the radiator set, place the 40 meter reflector 1/2" end tip 10 to 12" longer than the radiators 1/2" end tip.

Adjust the 1/2" reflector end tip until the SWR is 1:1.

If you want the maximum of F/B ratio, you can adjust the reflector end tip a 1/2 inch at a time until the swr of the driven element just starts to raise. Example: You move it inward 1-1/2" and now your SWR won't go below 1:25. This is telling you that you are moving closer to the radiators frequency and that the coupling between the two is increasing.

If you want to broaden out the bandwidth, at the expense of the F/B ratio. You can increase the length of end tip once it has gone flat. This is putting the reflectors frequency lower than it needs to be at that spot; allow the radiator to travel lower in frequency before the SWR starts to climb.

Follow the same procedure with the directors 40 meter end tip. You will start with 32 inches of exposed 1/2" you adjust the end tip you will see your SWR come up a little. This means you are increasing the coupling Driven Element and the Director.

To adjust the director start by shortening the end tip in 2" movements until the SWR goes flat again.

As with the reflector, if you want to stress the F/B ratio. You would start lengthening the director end tip until 1:1.25 or more, if you wish. This will increase the F/B ratio.

If you wish to broaden out the 40 meter band to the high side, shorten the end tip a little past the 1:1 SWR.

When correct; the reflector and director will be in perfect balance with the radiator.

If you want to go to a much higher or lower frequency than you originally set on the radiator, you will have to adjust the radiator and readjust the reflector and director.

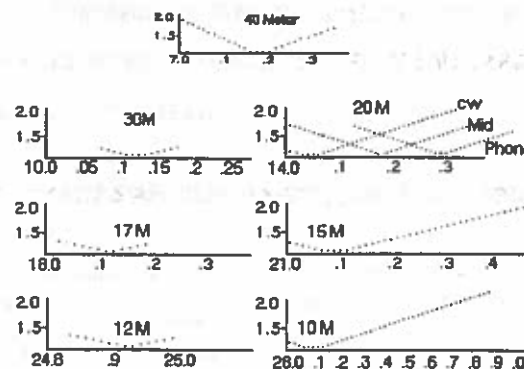
We have adopted this method of adjusting on the 40 meter portion of the antenna, due to the hundreds of requests for a different center frequency than the pre-drilled ones we had been using. If we would pre-drill the tubes with nothing but holes to come up with all the combinations. To adjust the center frequency correctly, the radiator must be adjusted to the radiators center frequency. The director being higher and the reflector being lower.

20 Meters: Twenty meters is controlled by a BROWN 7/8" coupler tube. There are 3 choices; cw CODE I, 14,110; CODE II, 14,050 to 14,200; and CODE III, 14,200 to 14,350.

10 & 15 Meters: Ten and Fifteen meters is controlled by the inner 7/8" tubing on the BROWN front driven element. There are no other pre-drilled choices on the 7/8" BROWN. Ten meters is from 28,000 to 28,600. Fifteen meters is from 21,000 to 21,600.

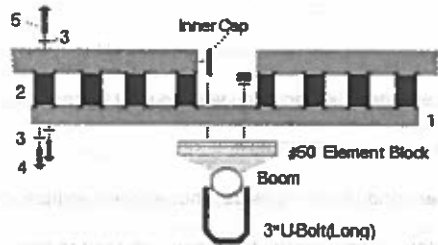
You can adjust 40 meters independently from 10, 15, and 20 meters. Example: You can have 20 meters c/w setting.

Typical SWR Curves



### ASSEMBLY OF DRIVEN ELEMENTS

- < > **FDE = Forward Driven Element, Color-Coded BROWN.**
- < > Loosely install 8 plastic insulators (part 2) on the rectangle support plate (part 1) with lock washers and



screws (parts 3,4). NOTE: (Don't completely tighten down the bottom screws in the insulator blocks until the inner element sections have been attached. This will simply mounting the element section.)

- < > Place plastic caps (part 75) on the inboard end of the element sections (part 7) color coded BROWN. Place one inner BROWN element section into the "v" on the 4 insulators (part 2) so that the screw hole on the outboard end of the element section is facing DOWN.. (This is necessary to assure proper position of trap assemblies which are provided with breather holes and should always face DOWN).
- < > Start with the 2nd insulator block on the rectangle, by insert a 10/32 screw (part 5) through lock washer (part 3), through the element (part 6) and into the insulator (part 2). Insert screw (part 5) through the lock washer (part 3), element (part 7) and into the insulator (part 2). **DO NOT OVER TIGHTEN SCREWS INTO INSULATOR BLOCKS....**
- < > Place the other element section (part 7) color coded BROWN over the opposite side insulators (part 2), insert screw (part 5) through lock washer (part 3), through the corresponding hole on the element (part 7) and into the 2nd insulator (part 2).
- < > Continue assembly by inserting the BROWN coded end of the remaining sections and traps into the corresponding end of the next element coded brown up to the 1/2" tubing. (Parts 7 through 12). Secure these parts of the element with a #8 screw, (part 6). Remember the color coded end goes in toward the boom side of the element!
- < > Place the 1/2" brown coded end tip and secure with a #6 screw. (part #6A)

### ASSEMBLY OF RED BACK DRIVEN ELEMENT

- < > Repeat the above procedure on the BACK RED DRIVEN ELEMENT, following the RED color code.

### ASSEMBLY OF SINGLE TRAPPED PARASITIC ELEMENTS



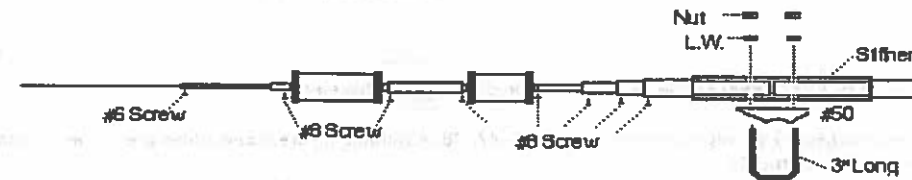
- < > Assembly of the trapped, color coded, White (1st Director).
- < > Insert a White coded element section (Part ) on each end of the center section of (Part 39) and large holes, KEEPING end element holes for next section pointing down.
- < > Ready to use #50 clamping block and a 3" Long U-bolt.



- < > Place #50 clamping block under center section of ELEMENT, and place a 3" Long U-bolt through and element center section making sure inner element sections are locked into position by U-bolt.
- < > Loosely place lock washer, and nuts on U-bolt to keep it from coming out of element.
- < > Continue inserting next size of tubing color coded White onto the element. Secure with #8 Sheet
- < > Place White color coded trap onto element making sure color-coded end is pointing in toward the
- < > Secure with #8 Sheet metal screw.
- < > Place 5/8" end element into exposed end of trap. Place 5/8" end cap on element end tip. (Part 37)
- < > Place the White element on the White color coded spot on the boom. Tighten down, but remember elements will need to be checked for alignment along boom.

### ASSEMBLY OF THE DOUBLE TRAPPED BLUE 2ND DIRECTOR

- < > Insert the 1-1/4" BLUE coded element section (Part 33) on each end of the center section of (P: the large holes, KEEPING end element holes for next section pointing down.



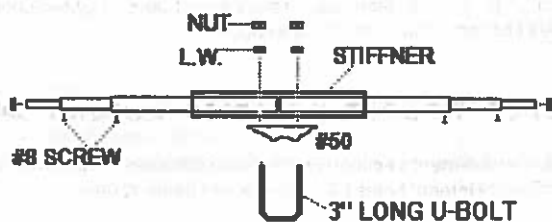
- < > Ready to use #50 clamping block and 3" Long U-bolt.
- < > Place #50 clamping block under center section of ELEMENT, and place U-bolt through #50 block center section making sure inner element sections are locked into position by U-bolt.
- < > Loosely place lock washer, and nuts on U-bolt to keep it from coming out of element.
- < > Continue inserting next size of tubing color coded BLUE onto the element. Secure with #8 Sher (Parts 34 through 36c, 22)

- < > Place BLUE color coded 12" trap onto element making sure color-coded end is pointing in (toward) the boom. Secure with #8 Sheet metal screw. Place 7/8" coupling element onto exposed end of 12" trap and secure with a #8 screw.
- < > Add the remaining BLUE 18" trap to the exposed element with the color code in (toward) the boom. (This end trap is the longer of the two traps). (Make sure trap drain holes and element screw holes are pointed down to the earth side.)
- < > Insert the 5/8" tubing with the Blue color code going into the trap tubing. Align the holes and secure with a #8 screw.
- < > Place 1/2" end caps on the end tip element. (Part 22).
- < > Complete opposite side of the element in the same manner following the same procedure.

### Assembly of the Yellow Double Trap Reflector

- < > Follow the same procedure used on the blue double trap element following the YELLOW color code.
- < > Make sure the drain and screw holes are pointed downward. Remember this is controlled by inserting the inner 1-1/4" tube correctly into the 1-3/8" tube.

### ASSEMBLY OF MONO-PARASITIC Assembly of the 12 Meter Reflector, color coded BLACK



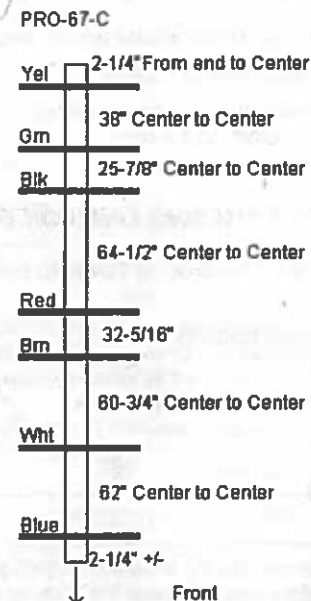
- < > Start with the BLACK coded elements. Refer to the drawings on this element.
- < > Place inner elements into larger stiffener (Parts 46, 47, 48, 49) making sure screw holes are to the ground or bottom side of the element.
- < > Since these elements will be placed on inner sections of the boom, do not install the U-bolt and clamping block (Parts 57, 60, 62, 63) until you have the element over the color-coded portion of the boom which applies to that color coded element.
- < > To keep the inner section of the element from moving, place a U-Bolt partially into the element center section at the point where the element extension join at the center stiffener tube.
- < > COMPLETE ADDING OUTER ELEMENT SECTIONS BEFORE PLACING ON THE BOOM. MAKE SURE SCREW HOLES WILL BE POINTED DOWNWARD, THIS IS CONTROLLED BY THE CORRECT PLACE MENT OF PART 44 INTO PART 43. These parts are at the center of the element.

- < > Secure element sections with #8 sheet metal screw.
- < > Attach the plastic 5/8" end cap to end of the BLACK element.

### Assembly of the 17 Meter Reflector, color coded GREEN

- < > Follow the same procedure which was used for assembling the black element. However, the Gr will have one more piece of tubing extension.
  - < > Start assembly with the center stiffener and follow the GREEN color code.
  - < > Attach the plastic 5/8" end cap to the end of the element.
  - < > Once all elements are on the boom, align them so that they are all parallel to each other and tig
- This completes the physical assembly of the elements and boom:
- < > Re-check all connections.
  - < > Make sure penatrox was used on all connecting pieces of tubing and traps.
  - < > Make sure trap drain holes and element screws are pointing downward.
  - < > Re-check and review all dimensions for the CODE setting you chose.

### Reference Drawing for Element Placement

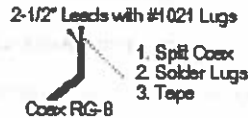


- < > The boom has been color coded and checked. You do not need to measure or adjust these din are provided as a reference and for later use if the antenna is disassembled and the color code
- < > Start by placing the Driven elements on their respective color codes, and work out toward the e on each side.

- < > Use a "Bubble level" placed on the rectangle or the #50 block to level the elements.
- < > Make sure the elements are at a right angle to the mast plate. This will insure that the elements will be horizontal to the ground when mounted to the mast on the tower.
- < > Once all the elements are in position and level tighten down to seat the lock washer. Be careful not to over tighten and crush the tubing. The 3/8" U-Bolts are very strong.

**PREPARING COAX FOR PHASING LINE HOOK UP**

- < > Cut insulation on coax back 2-1/2" and form the braid of the coax into a leg of the line. NOTE: (Make sure the

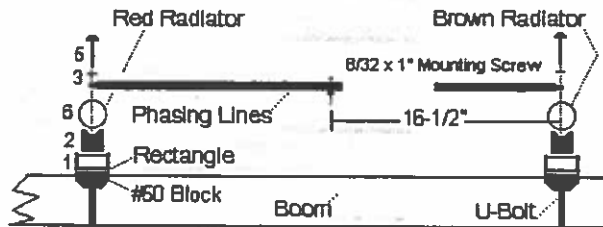


leads are 2-1/2" long including the #1021 solder lug! This length is critical.)

- < > Once the coax is in the form of a "Y", tape junction, (area where the coax stops and the two lines of the "Y" start), with a good 3-M type electrical tape. This will seal the coax from the weather.
- < > Cut the insulation on the "HOT" or center of the coax line, back 1/4" and solder one of the #1021 solder lugs to the exposed end of the center section of the coax.
- < > Before soldering the #1021 solder lug on the braided section, twist braid to ensure you have a good section of line.
- < > Solder #1021 solder lug onto the braided line. Be careful not to over heat the braid line to avoid the melting of the insulation covering the center section of the coax.

**PLACEMENT OF PHASING LINES ON DRIVEN ELEMENTS**

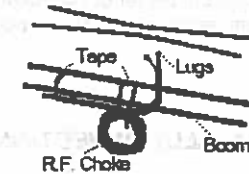
- < > Note: The BEND IN THE PHASING LINES GO IN TOWARD EACH OTHER OVER THE BOOM.



Note: The deepest inner bend in the phasing lines is not where the mast will center on the boom. This will ensure that the lines are clear of the mast, however the phasing line closest to the mast will run near the mast.

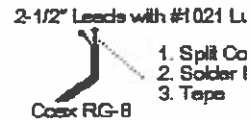
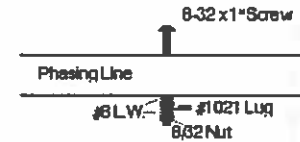
- < > Place the screws on the inner insulator blocks first on the front driven element (Note the BROWN phasing lines) and place the color coded end of the phasing line on top of the BROWN element a the lockwasher and 10/32 screw. Refer to drawing.
- < > Repeat this procedure to the opposite side of the FDE.
- < > Repeat this for the back driven element.
- < > Connect phasing line to BDE as was done on FDE.

**USE OF A RF CHOKE**

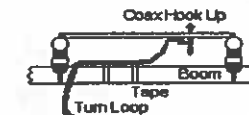


- < > You want to insert a R.F. Choke into the coax line to eliminate any RF on the coax line.
- < > To make the choke, coil the feed line (10 turns in a 10" diameter) right after the point where the phasing lines. Do not use more than 3 to 6 inches of coax before starting the coil. Tap three places to keep the coil in position and then tape the completed coil to the under side of the boom under the feed point on the phasing lines.

**PLACEMENT OF COAX TO PHASING LINES**



- < > Locate the pre-drilled hole in the phasing line to the opposite side of the mast plate. The hole is from the BROWN front radiator. This side of the phasing line will receive the center or "HOT" coax. This is important because it keeps the center of the coax the furthest from ground.
- < > Place the #1021 Solder Lug with the "Center of the Coax" on the bottom side of the phasing line with the 8/32 x 1" screw, 3 lock washers and 8/32 nut.



- < > (Note: Place a lock washer on the screw first then put the screw through the phasing line. Place lock washer on the screw. Now place the #1021 solder lug with the "Center coax lead" onto the last lock washer and the 8/32 nut on the screw.) (Parts 22 through 25).

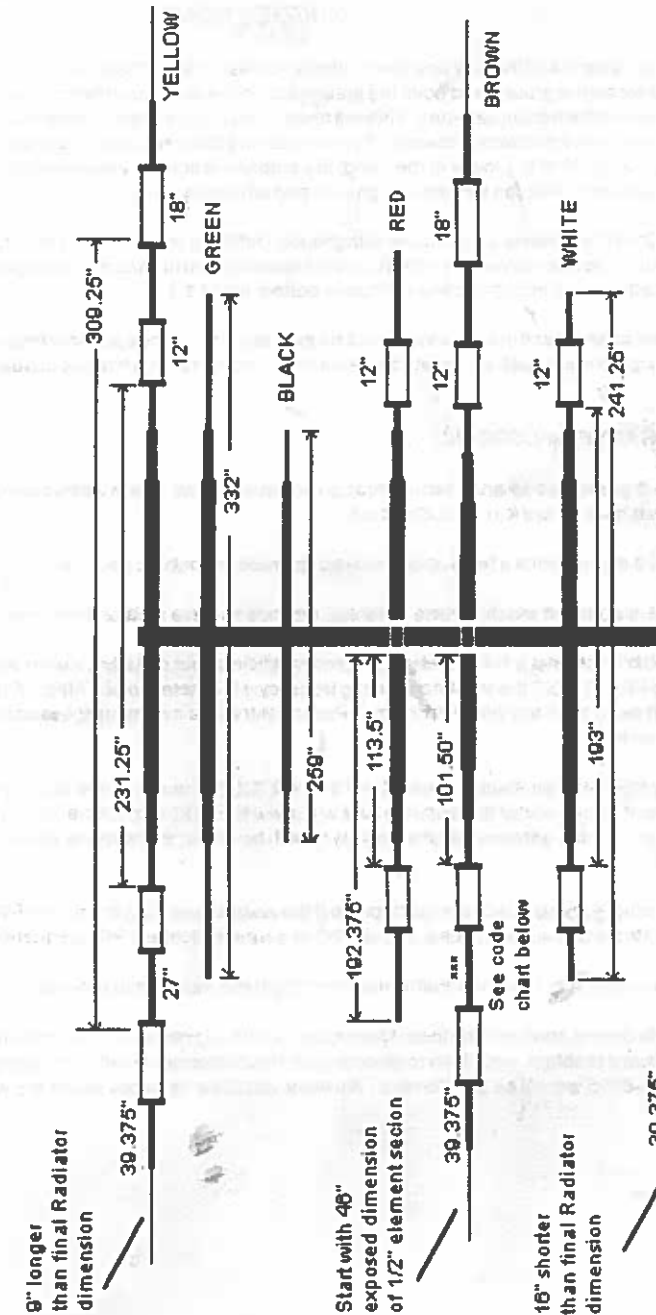


- < > Tighten down screw keeping #1021 solder lug and coax lead pointing in over and toward the center of the boom.
- < > Once the line is secure tape over the screw and down over the bottom side of the connection. This will protect the connection from the weather.
- < > Repeat the above procedure with the braided side of the coax.
- < > After both leads are attached secure the coax to the boom with tape. If a choke is being used tape as shown earlier. If a choke is not used simply tape the coax along the boom. Position coax so that it won't pull on phasing lines and will run toward the mast at the center of the tower. Don't forget to put in a turning loop of coax at the center of the tower so the beam can freely rotate without pulling on the coax as the beam turns.

**Re-check ALL CONNECTIONS**

- < > Make sure all hardware is tight and all color codes were followed.
- < > Make sure the penatrox was used.
- < > Place any remaining end caps or boom caps in place.
- < > Check the coax attachment points.
- < > Review the drawings with end tip and inner dimensions.

**Dimension Reference**



## SUGGESTIONS

Before hauling your antenna all the way up a tower, check it at least 10 to 12 feet off the ground. In checking the antenna, DO NOT put the reflector on the ground and point the antenna up in the air. Place the antenna on a ladder, temporary pole, or to the side of your tower in the horizontal plane. This will enable you to get an overview of the antenna. That is, if you're showing 2:1 everywhere, you have a problem. However, if you are seeing the antenna trying to dip, but not going completely flat and/or the frequency is 50 to 80 kHz, lower in the band; the antenna is correctly assembled. Remember at this low height you are coupling with ground. That can be both real ground and artificial ground.

Due to the high "Q" of the antenna it will couple with ground. Artificial or real. This type of check will allow you to see that the antenna is trying to dip and does possess a SWR curve. However, due to its nearness to ground or other resonant objects this curve will be shifted lower in frequency and not totally bottom out to 1:1.

A problem with the assembly of the antenna would be indicated if all bands are showing in excess of 2:1 with no dip of any kind. A coupling problem would be indicated when only one or two bands are unusual and the remainder are within specifications.

### WATCH OUT FOR ARTIFICIAL GROUND

Artificial ground is presented to an antenna through various means. Guy wires up under the antenna, roof top, other resonant antennas near by are the most common.

This would cause a disruption of a few bands and also degrade the front to back ratio.

The PRO-67-C-3 is doing so much for one antenna, it needs to have a clear area in which to perform.

The antenna should be at least a 1/4 wave length from any artificial ground at the lowest operating frequency of the antenna. In the case of the PRO-67-C-3 the lowest operating frequency is 40 meters or 7 MHz. With this in mind the antenna should be at least 34 feet away from any artificial ground. Remember this is a minimum, in a commercial installation this minimum would be 1/2 wave length.

To break up guy wires use an insulator ever 4' for the first 32', (8 insulators per leg), or use non metallic guys. This will give a non resonant length under the antenna and will allow the PRO to perform as shown in our specifications. If these procedures are ignored the antenna will still work very well, however, there will be some trade off in bandwidth, resonance and front to back.

Due to the Q feed being above ground, avoid attaching the coax line coming in from the PRO to a common switch which has other antennas with the same frequencies as the PRO or a harmonic to the PROs frequencies can cause problems.

A high "Q" antenna needs to have a proper installation to get the most out of the system.

Doing these simple checks and following these basic rules concerning installation can save you and your crew a lot of frustration. If you think you have a problem, would like to discuss your installation or something is going on you don't understand, please call us, 1-636-583-8595 we will be glad to help. We want you to be as happy as we are you chose MOSLEY!

## NOTES

Dimension Reference

