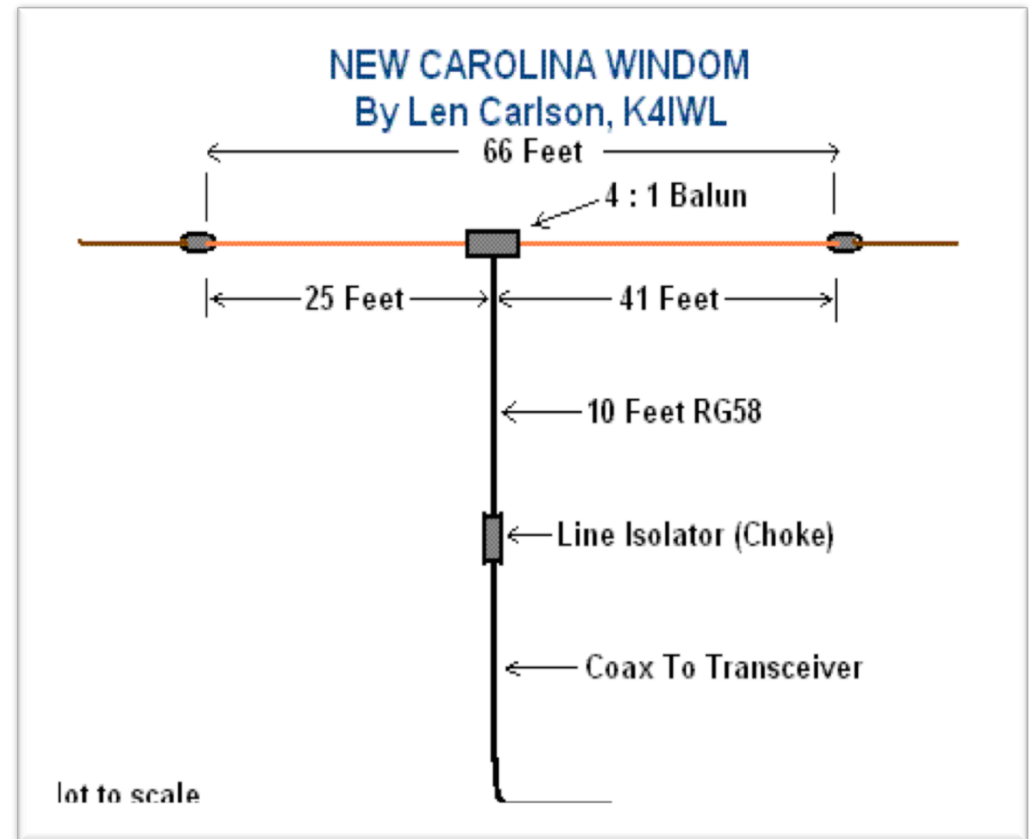# Building a Windom HF Antenna

Kevin Reeve, N7RXE
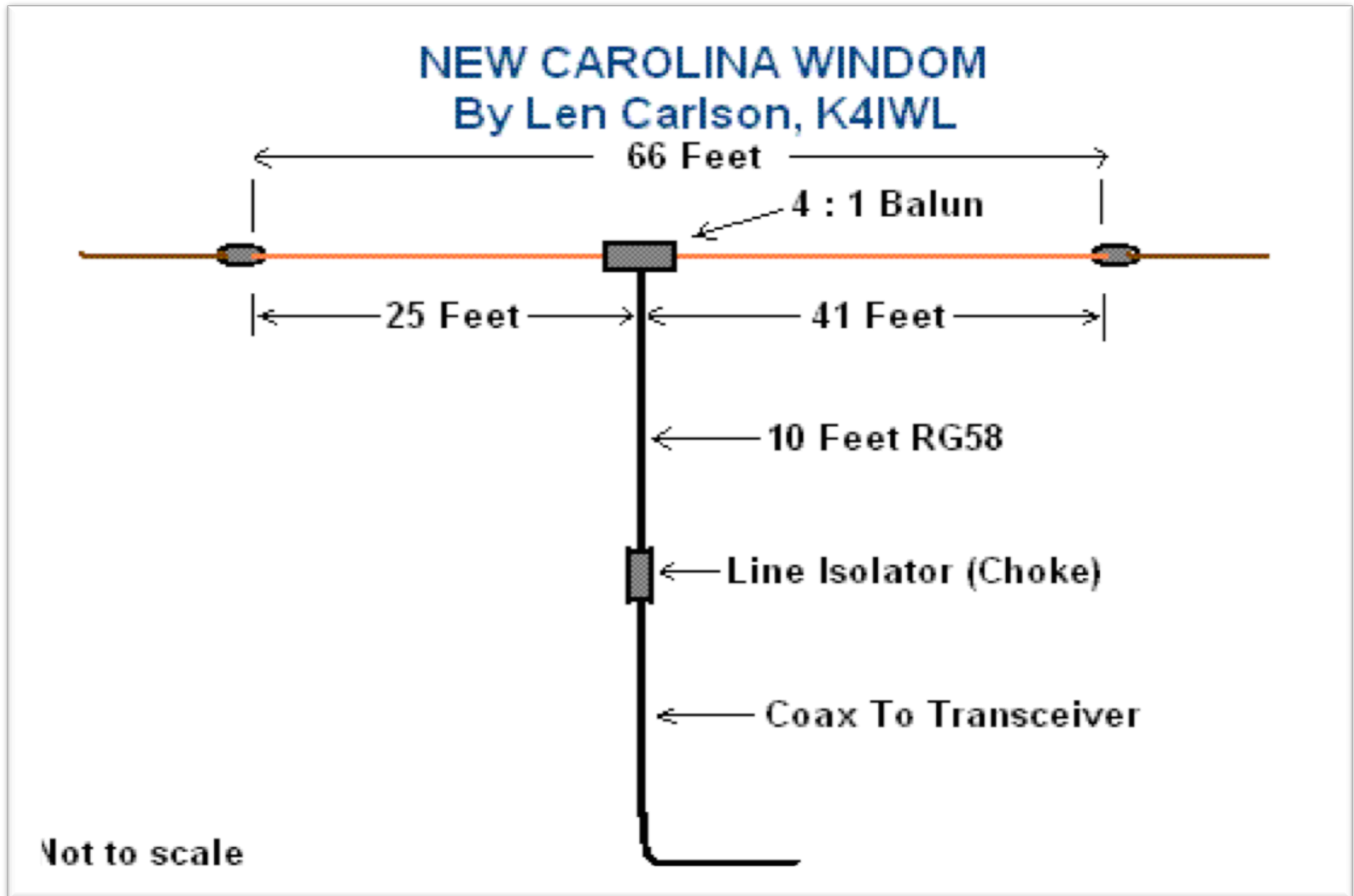
N7RXE@arrl.net

What is a Windom

- It is an off-center fed dipole and can be constructed as a multiband antenna.

- Windom for 10 – 40 meters shown

NEW CAROLINA WINDOM
By Len Carlson, K4IWL

66 Feet

4 : 1 Balun

25 Feet

41 Feet

10 Feet RG58

Line Isolator (Choke)

Coax To Transceiver

lot to scale

Parts of the Antenna

NEW CAROLINA WINDOM
By Len Carlson, K4IWL

66 Feet

4 : 1 Balun

25 Feet   41 Feet

10 Feet RG58

Line Isolator (Choke)

Coax To Transceiver

Not to scale

FORMULA 40M

- Using 7.1mhz as lowest frequency of operation we use:

- 468 / 7.1mhz = 65.9 feet (round to 66 feet) for total half wave length.
- Short side length = .378 (37.8%) X 66 = 24.9 feet = 25 feet rounded
- Long side length = .622 (62.2%) X 66 = 41.05 feet = 41 feet rounded
- So we have the short length of 25 feet, and
- long side of 41 feet using the formula.
- Vertical length for RG58 from balun to choke = 4 to 1 ratio (meter band / 4)
- 40 meters / 4 = 10 feet

FORMULA 80M

- Using 3.9mhz (80/75 Meters)
- 468 / 3.9mhz = 120 feet for total half wave length.
- Short side length = .378 (37.8%) X 120 = 45.36 feet
- Longest side length = .622 (62.2%) X 120 = 74.64 feet
- Vertical length 4 to 1 radio = 80 / 4 = 20 feet

Resources

- Transmission Line Transformers 4th edition by Jerry Sevick, W2FMI

- The New Carolina Windom article

    - http://www.hamuniverse.com/k4iwlnewwindom.html
    - http://www.w5fc.org/files/how-to/QRP%20Expressions_version_1.pdf

- Toroid and Bead Suppliers
    - Amidon Corporation
    - JPM Supply
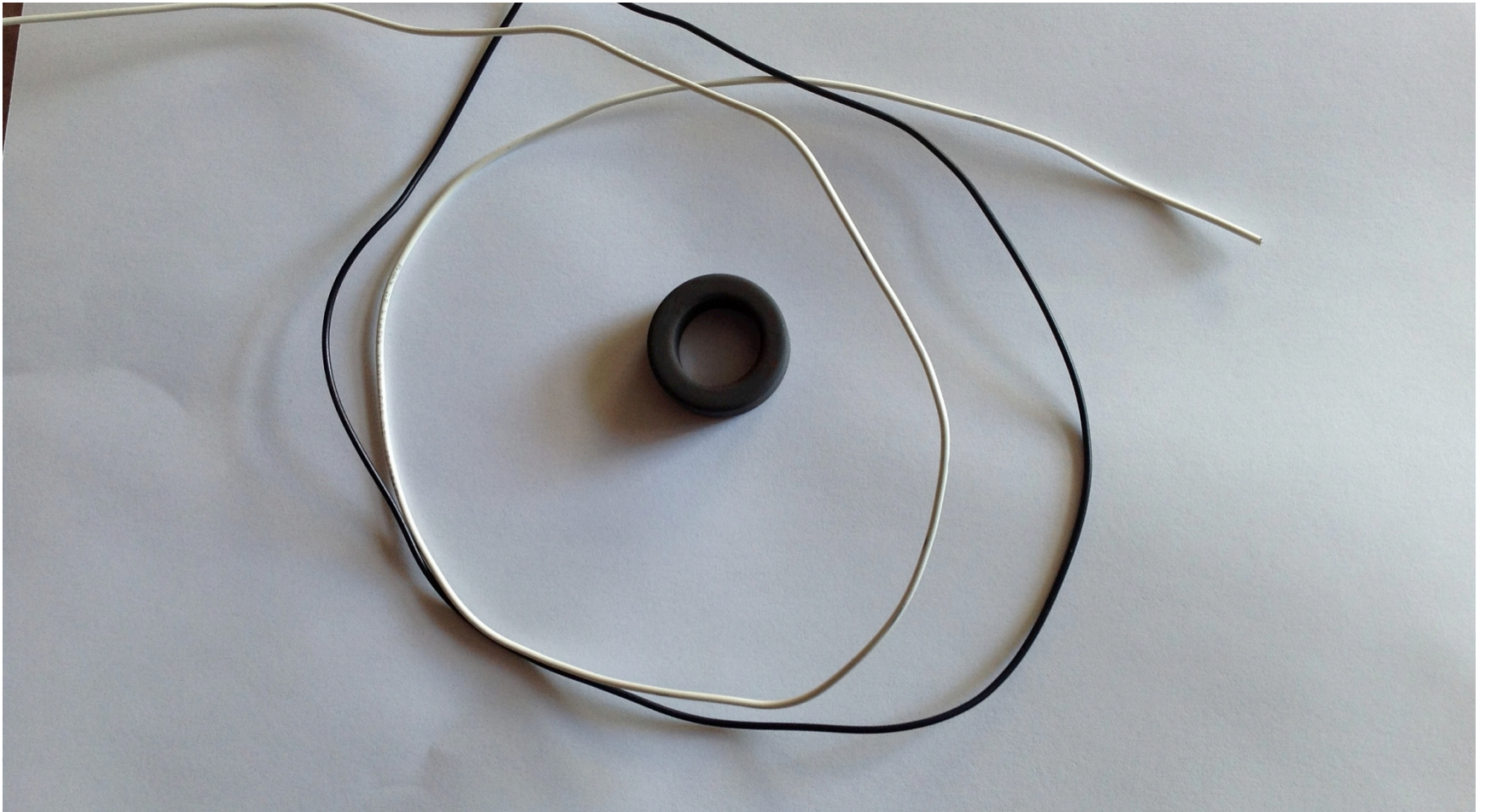   - Coil Winding Speciliasts
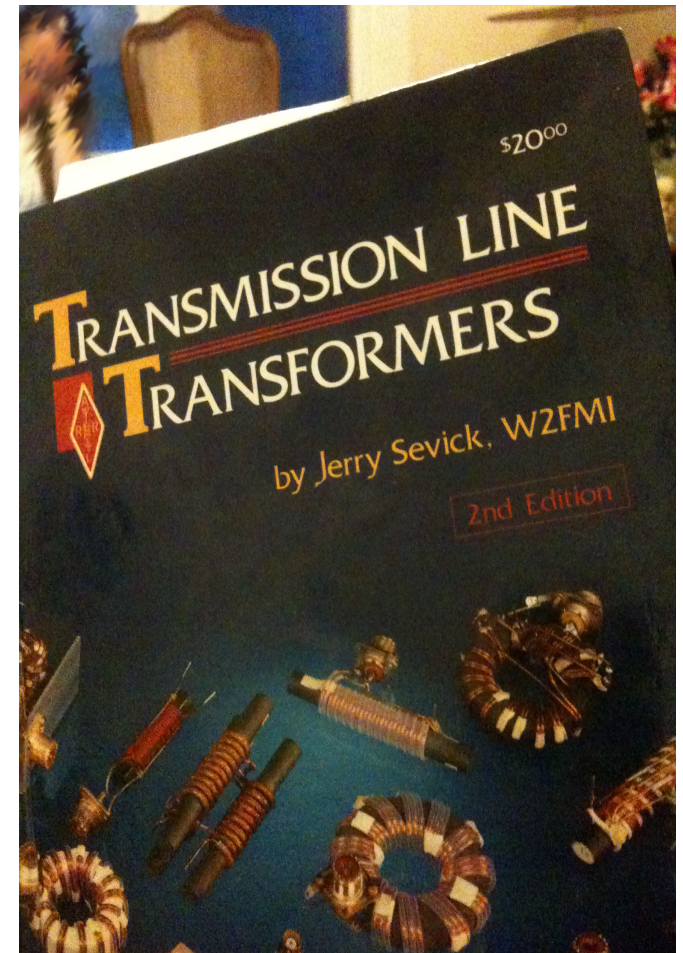
Step 1 – Built the 4:1 Balun

MFJ 913K

1-1/2 Genova brand PVC Caps – Flat top

Toroid and Wire

These are Ferrite #61 material Toroids work great for 1 – 30 Mhz

Putting it Together

Toroids

A goes to Antenna Legs

C goes to Ground of SO239
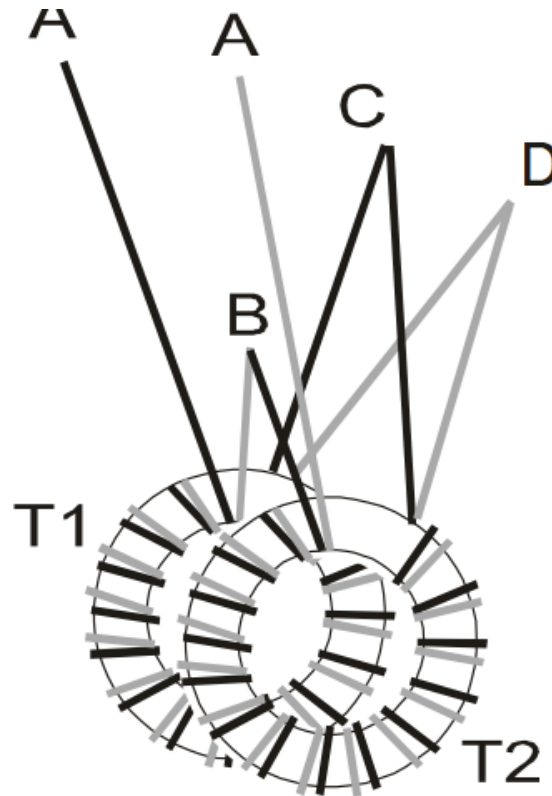D goes to Center Pin of SO239

A   A
        C
            D
        B

T1

T2

Figure 1-4: Matched T1 and T2

The Choke

Choke Cap