

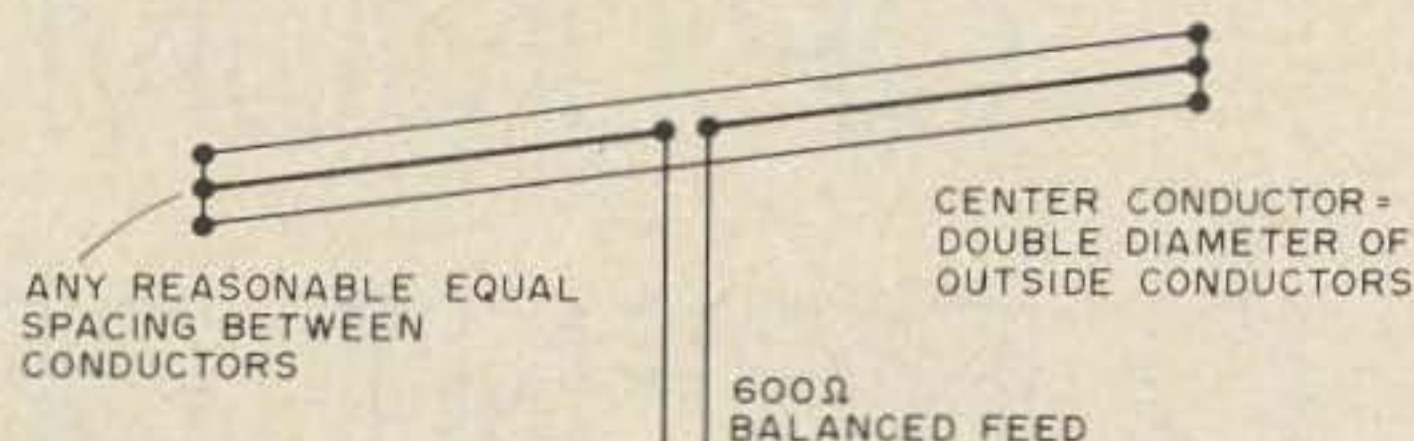
THE THREE - WIRE DIPOLE

After having been on the air a year or so, I ran into an old timer who was running a 3-wire dipole. I was running an ordinary dipole on 40m and a folded dipole on 75m, but had given no thought to a 3-wire dipole. He mentioned that it was a good antenna; I thought it would be an interesting try. So, one spring day, with nothing much better to do, I solicited the aid of the Jr. Op. and we commenced the 3-wire dipole.

First you need some spacers. About this time I ran across someone connected with an advertising sign company, and he gave me some scrap plastic. A moment with a band saw and a drill gave the necessary spacers. A few minutes perusing the antenna handbooks gave me information on impedance stepup vs. wire size and spacing. For simplicity, we used the center wire as double the diameter of the outer two conductors, making the impedance independent of spacing, and giving us a nominal 600Ω feed point.

Using 75Ω coax into a 4:1 balun gives us only 300Ω , so a $\frac{1}{4}\lambda$ section of about 450Ω line (slopped together in a hurry using approximate measurements) acted as an impedance transformer.

This antenna was constructed for 20m so that the matching section wouldn't have to be too long and because we had about that much physical room available between the supports. Only one afternoon's work, and up it went! This antenna stayed in service about a year and gave excellent results. At times, depending on conditions, it was possible to make contacts impossible to hear on the beam. The nicest feature was the extremely good bandwidth — it was possible to cover the entire 20m phone band without the



SWR going over 1.5:1. No adjustment of tuning or loading was necessary once the rig was tuned near the center of the band.

Changes always get made, and this antenna is now rolled up and somewhere in the corner of the garage. The results were most gratifying, and I am now building another system using two of these in a phased array.

The advantages of the 3-wire dipole over the ordinary dipole are added bandwidth without impedance change, better performance in not having to compensate tuning or bading when QSYing, and apparently some improvement in signal strength. It was suggested that since there is more wire in the air, there is more capture of received signals and correspondingly greater strength in the receiver. The same would appear to be true on transmit.

The disadvantages are the higher feed point impedance, making it necessary to do some sort of matching, the added weight with more wire and spacers, and somewhat greater wind resistance.

The advantages and performance outweighed the disadvantages in this installation — in addition to many stateside contacts, it was possible to work Alaska like they were down the street, Siberia, Europe and Latin America.

When you want to spend an afternoon on a project, remember the 3-wire dipole.

... WA6CPP/WA7PEI