

W9JOZ

Volume 9, Issue 7

July 2019

Next Meeting is July 18th

Dues are due and still \$12.00

Weekly 2 meter Net

We are having the Saturday Night Net at 8:00 pm on the 145.410 repeater.

Hope you can check in and join us for some good conversation.

We could use some more check-ins on the net.

**Thanks
John W3ML**



Meetings are at the Henry F. Schricker Library on the third Thursday of each month, with the exception of December.

The library is located on west Culver Road, two blocks west of Highway 35.



Are you on the air?

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June Events

Fox Hunts are the 2nd Sunday. See webpage for details

Birthdays

30th - Don, WA9KRT

Starke County Amateur Radio Club Weekly 2 Meter Net will be on each Saturday at 8:00 p.m. Central time.

DAY OF WEEK: Saturday 8:00 p.m. Central time

HOST: KN9OX Repeater

FREQUENCY: 145.410 - 600

PL TONE: 131.8

New Items Listed

See all the For Sale Items at

www.w9joz.org/forsale.htm

There are a lot of them there. Updated regularly.

Getting loaded (antenna-wise, anyway)

By Dan Romanchik, KB6NU

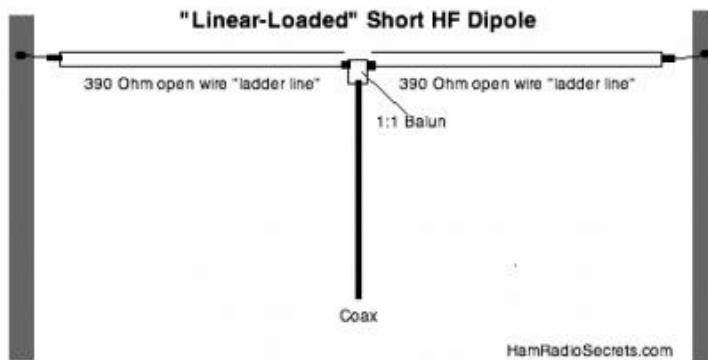
A couple of years ago, I homebrewed a "Cobra" antenna (<https://www.kb6nu.com/yet-another-new-antenna-the-cobra/>). It's a doublet antenna, meaning that it consists of two elements connected to a center insulator, where it connects to a feedline. The unique thing about the Cobra antenna is that each element consists of three parallel conductors connected in series.

My antenna uses a lightweight, three-conductor rotor cable that used to be available from Radio Shack. The feedline is 450 Ω ladder line that connects to an antenna tuner to give me multi-band operation.

Connecting the conductors in this way is supposed to provide "linear loading." Somehow, running the conductors in parallel is supposed to increase the antenna's effective length. My antenna is only 73-ft. long, but it easily tunes up on 80m.

The *ARRL Antenna Book* has a short section on linear loading. It says that linear loading is a "little understood" alternative to inductive loading that can be applied to almost any type of antenna. Furthermore, "...it introduces very little loss, does not degrade directivity patterns, and has low enough Q to allow reasonably good bandwidths."

As I mentioned, I've been using this antenna with good results for a little more than two years now. When I first put it up, someone mentioned the concept of linear loading to me, but not being an antenna guru, I didn't 'give it much thought. About a week ago, though, I ran across a link to the page Short Ham Antennas for HF (<https://www.hamradiosecrets.com/short-ham-antennas.html>). That got me thinking about the topic again.



This page describes a way to build a linearly-loaded dipole antenna with a feedpoint impedance of approximately 35 Ω . This allows you to feed it with coax instead of the ladder line that I use. The author uses 390 Ω ladder line for the elements. He says it's commonly available, but I don't think I've ever seen 390 Ω ladder line. You could probably use 450 Ω ladder line by adjusting the element lengths a little.

At that point, I started Googling. The next linear-loaded antenna design that I ran across is a design from M0PZT (<http://www.m0pzt.com/40m-linear-loaded-dipole/>). He built his elements from some sturdy wire and homebrewed spacers made from PVC pipe. He's used this design for the 40m elements of a fan dipole covering the 40m, 20m, 15m, and 12m bands. Only the 40m elements are linear-loaded.

I also found a design for a linear loaded vertical antenna for 40m and 80m (<https://www.qsl.net/pa3hbb/ll.htm>). This antenna is only 7.736m, or 25.4 ft. tall. Of course, it requires a good radial system to work well, but it will work a lot better for DX than a low doublet or dipole.

Finally, there's an eHam discussion on linear loading (<https://www.eham.net/ehamforum/smf/index.php?topic=84418.0>). Unlike a lot of eHam discussions, this one is quite civil. It's worth reading if you're interested in the topic.

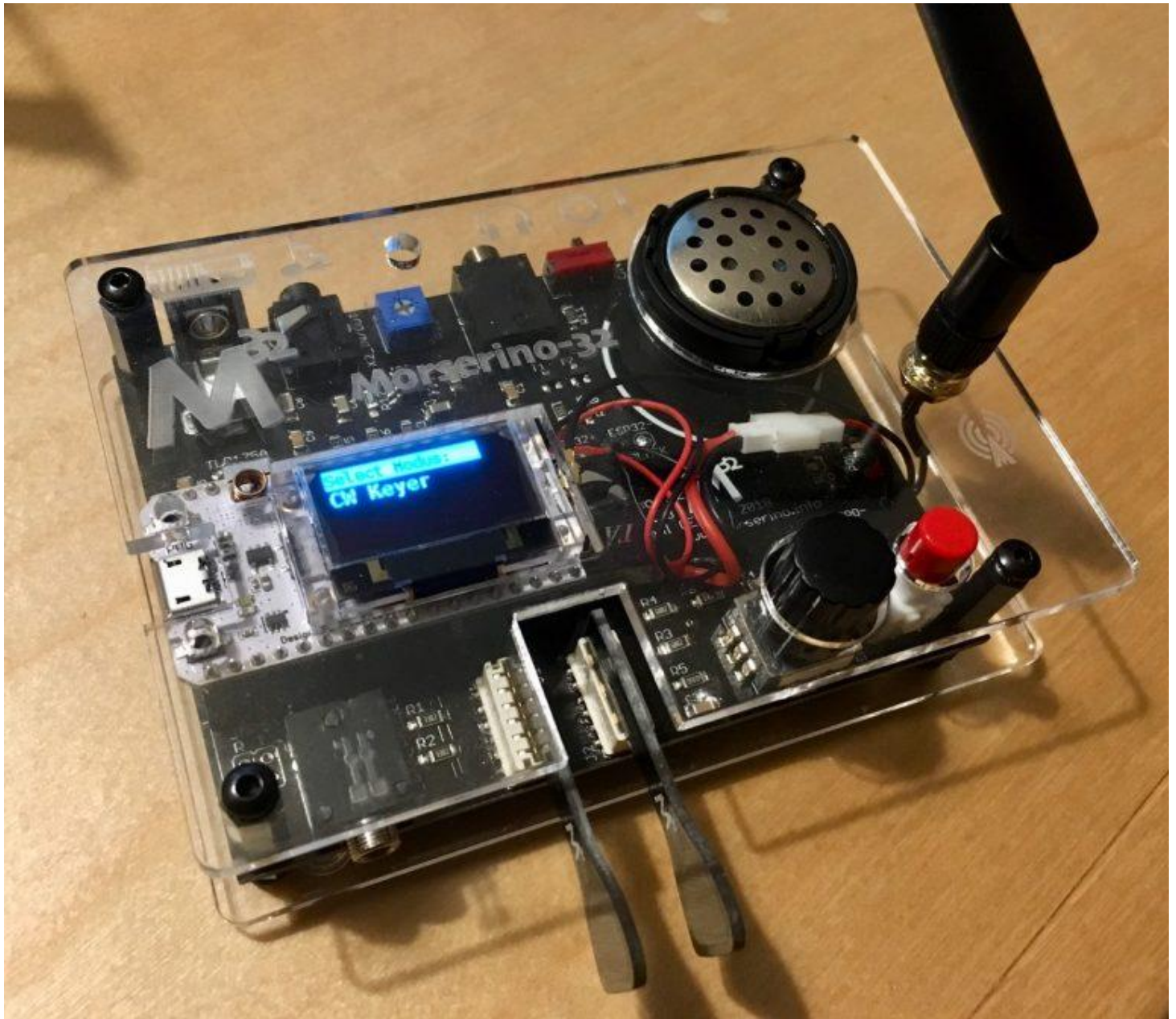
So, if you're thinking of getting loaded, errrrr, I mean loading your antennas, here's a method for you to consider. It works!

Learning about batteries

By Dan Romanchik, KB6NU

I often say that getting an amateur radio license is as much getting a license to learn as it is getting a license to operate on the amateur radio bands. Lately, I've been learning about batteries, LiPo batteries to be exact.

It all started when I purchased a Morserino (<http://morserino.info/>). The Morserino is a Morse Code learning aid that has a number of unique features. For example, in addition to helping you learn the characters, it's also supposed to help you learn how to copy in your head. It also has a built-in touch keyer function, and a LoRa interface that lets you send and receive code from other Morserino units.



I'll be writing more about the Morserino in a future column, but let's get back to batteries. The kit did not come with a battery. Instead, it was suggested that one purchase a 600 mAh LiPo battery commonly used for powering drones. I found this battery on Amazon, and purchased a six pack of them, thinking that I'd find uses for the other five in some project or another.



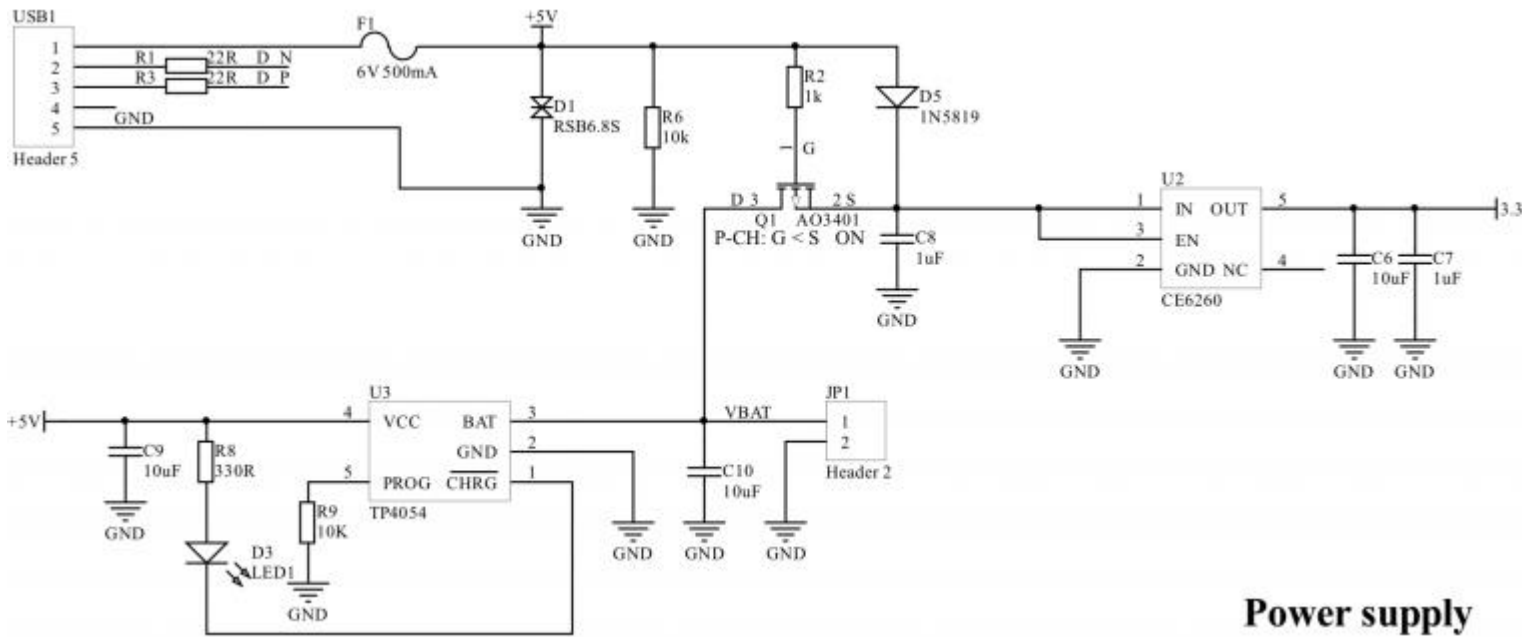
Well, sooner than expected, I did find another application for one of the batteries. I'm building a little Arduino project for a client, and I reckon that this, or one with more capacity, will make a great power source for the project.

Now, I have two immediate challenges:

1. Figure out how to charge the battery.
2. Figure out how to connect it to the Arduino.

On the Morserino, the battery plugs directly into a connector on the bottom of the computer board (the white board with the LED display). I knew that connecting the 5V line from the USB connector directly to the battery was a no-no, but I'd lent out the Morserino to a friend, and I didn't have the schematics for the board. So, how they managed to charge the battery from the USB port was a bit of a mystery.

I emailed Willi, OE1WKL, the designer of the Morserino, and he sent me a wealth of information. There actually is a battery-management IC, the TP4054, on the board:



Power supply

He also gave me the part number for the battery's mating connector. He said, "The mating connector for the Molex connector on the battery is a Molex 51006. It is sometimes referred to by vendors as 51005 female, but 51005 is the connector on the battery." You can, of course, buy pre-made cable assemblies on Amazon (<https://www.amazon.com/gp/product/B07P54QTR8>).

You can also buy lithium battery charging modules (<https://www.amazon.com/gp/product/B01LZSC7I8>). These modules have a TP4056 on them, which is similar to the TP4054. It's amazing to me that you can purchase ten of these things for less than seven bucks.

So, that's where I'm at right now. Once I get the modules and cables, I'm going to hook it all up and get the Arduino system running from the battery. The next step will be to integrate a small solar panel and run the whole thing from solar power, hopefully.

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (KB6NU.Com/study-guides/), and one of the hosts of the No Nonsense Amateur Radio Podcast (NoNonsenseAmateurRadio.Com). He often wonders if he can learn things fast enough.

Metal Poles for Antenna Supports

Levi, WB9CAO found these telescopic poles that can be used for antenna supports.

Levi said, he was in Preferred Flooring on Range Road and 300 S. / Toto Road a few days back. In the same building is a Swimming Pool Accessory business.

The pool business has lightweight aluminum poles for sale: \$25. They telescope from 8 foot to 15 foot length. The bottom is 1-1/4 diam. and the top section is 1-1/8 diameter. There is a PVC like plastic screw-on piece attached at the top.

These could be used for temporary antenna center support. You would need a bottom plate or means to keep it from sinking into soil. It would have to be guyed or well supported at the bottom.

13 Colonies Special Event to Mark 11th Anniversary this Year

06/26/2019

The annual [Original 13 Colonies Special Event](#) will mark its 11th anniversary this year. The event gets under way on July 1 at 1300 UTC and runs through July 7 at 0400 UTC. Special event stations with 1 × 1 call signs will represent the original 13 US colonies, plus bonus stations K2Z, WM3PEN in Philadelphia and GB13COL in Durham, England.

Each special event station will have its own QRZ.com profile page. Participating stations try to contact all 13 Colony Stations plus the two bonus stations. Call signs and their respective states are K2A, New York; K2B, Virginia; K2C, Rhode Island; K2D, Connecticut; K2E, Delaware; K2F, Maryland; K2G, Georgia; K2H, Massachusetts; K2I, New Jersey; K2J, North Carolina; K2K, New Hampshire; K2L, South Carolina, and K2M, Pennsylvania.

[Additional information](#) is on the 13 Colonies website.

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If you have a presentation for the meeting, please let me know.

If you have something for the newsletter, please send it to me before the 20th of the month.

See you at a meeting.

73

John, W3ML

