The HIARC Bulletin

June 2019 Edition

The Official Bulletin of the Harris-Intersil Amateur Radio Club

Club Meetings: Second Thursday of each month at Meemaw's Barbecue on Babcock Street between Palm Bay Road and Port Malabar Road. Supper is at 6:00 PM, business is at 7:00 PM. Our programs start at 7:30 PM. Some of the members have allergies. We ask that you refrain from wearing fragrances if at all possible thanks.

Club Station: Building 15, Room 321. E-mail Butch for access.

HIARC Website: http://qsl.net/hiarc

Repeaters: 145.47 Mc, tone 107.2 cycles, elevation 170 feet, Melbourne

HIARC Web Site: www.qsl.net/hiarc. Website administrator; Jim KC7SSW

Officers: President: Francis ("Butch"), WA4AQV
Treasurer: Bill WA4EMU
Secretary: None
Repeater Chairmen: Bud W4HXP
Program Chairman: None
Field Day Chairman: Bill WA4EMU
Sunshine Officer: Open
Club Jester: Ken N8KH

Membership:
Dues are $12.00 per year to:
Bill WA4EMU

Annual Events: Annual swap-fest at the October meeting. Field Day (always the fourth full weekend in June) at Grant Community Center Fairgrounds, Field Day web site link https://sites.google.com/site/hiarcfieldday2013/

Selected Hamfests:

2019 Melbourne Hamfest, October 11, and 12, Melbourne Auditorium.

Ham Radio Lunches:

- Every Friday, 10:30 AM till 12:30 PM or so, Golden Corral on Palm Bay Road in Palm Bay
- Every Friday, 9:00 AM till 11:00AM or so, Umpa's Diner,1115 N Courtenay Pkwy, Merritt Island, FL 3295, (321) 454-3422

President's Message

The HIARC ARRL 2019 Field Day will be June 22 and 23 at The Grant Community Park / Seafood Festival Grounds in Grant, FL. All are invited. Flyer is pasted, here is a map link : https://www.google.com/maps/@27.9290826,-80.5303419,164m/data=!3m1!1e3. HIARC will be class 2A. Food and drinks provided. More information about Field Day: http://www.arrl.org/files/file/Field-Day/2019/2019-Field-Day-Packet-Complete.pdf . See amateur radio operators in action!

Our next monthly HIARC meeting is Thursday June 13. The meeting program will be completion of Noise and Interference by Ed Messer and an overview of the new eLoran navigation system the US Government is implementing. Lots of Meemaw's Barbecue food and door prizes as well.

73's

Butch WA4AQV

New Florida Texting While Driving Law

Here is the text of the newly enacted Florida Texting While Driving Law: http://www.leg.state.fl.us/statutes/index.cfm?App_mode=Display_Statute&URL=0300-0399/0316/Sections/0316.305.html It does not seem to affect most types of amateur radio mobile operation.

Butch WA4AQV

Upcoming Skywarn Classes for East Central Florida

A list of Skyward classes currently scheduled in East Central Florida is attached. Note that classes for Brevard County aren't scheduled until mid-August, a month before the peak of hurricane season.

73,
Paul Gray NØJAA
HIARC BEARS/Skywarn Representative

Our Field Day Filters

Free Antenna Book

Last month we featured a free link to the famous Antennas Theory And Design textbook by Constantine Balanis at Arizona State University: https://archive.org/details/Antenna.Theory.Analysis.and.Design3rd.Edition/page/n7

Professor Balanis also wrote a graduate text on electromagnetics. Here is free link to that:

https://zackrauen.com/PublicFiles/School/Textbooks/EE381_FieldsAndWaves.pdf. Now you have the set.

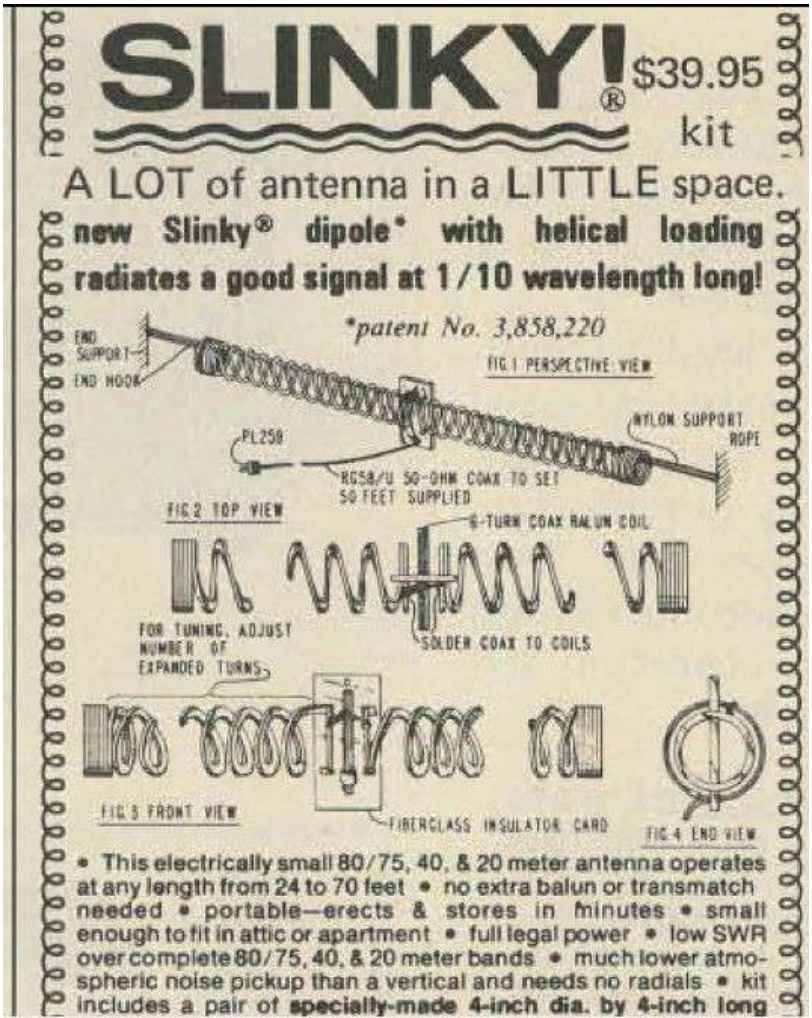
Butch WA4AQV

The Slinky Dipole Antenna

The Slinky Dipole is a reduced size HF dipole antenna using you guessed, two slinky springs on a taught rope. The Slinky springs make inexpensive loading coils in the 40 to 100 microhenry range. Attached is a 1976 ad for Slinky antenna in 73 Magazine (remember 73 Magazine?). Usually there are some Slinky Dipoles for sale on the internet and of course you can make your own. Bare steel is 40 times less conductive than copper plated steel so copper plated or brass springs may have less conductor loss although longer Slinky antennas steel is fine.

The first stretchable spring antenna seems to have been by Franklyn McKenzie with his April 20, 1926 “Stretchable Spring Dipole” Patent. Link to see: https://pdfpiw.uspto.gov/.piw?Docid=01581133&homeurl=http%3A%2F%2Fpatft.uspto.gov%2Fnetacgi%2Fnph-Parser%3FSect2%3DPTO1%2526Sect2%3DHITOFF%2526p%3D1%2526u%3D%25252Fnetahtml%25252FPTO%25252Fsearch-bool.html%2526r%3D1%2526f%3DG%2526l%3D50%2526d%3DPALL%2526S1%3D1581133.PN.%2526OS%3DPN%2F1581133%2526RS%3DPN%2F1581133&PageNum=&Rtype=&SectionNum=&idkey=NONE&Input=View+first+page

The Slinky dipole design is impressive for simplicity and ease of manufacture. A US patent application was filed on a Spring On A Rope version in November 1973. The US patent issued to the inventor, Sidney Arnow. No word on his call letters. Here is a link to view the patent: https://pdfpiw.uspto.gov/.piw?PageNum=0&docid=03858220&IDKey=EF0480A7B12E%0D%0A&HomeUrl=http%3A%2F%2Fpatft.uspto.gov%2Fnetacgi%2Fnph-Parser%3FSect1%3DPTO2%2526Sect2%3DHITOFF%2526u%3D%25252Fnetahtml%25252FPTO%25252Fsearch-adv.htm%2526r%3D1%2526p%3D1%2526f%3DG%2526l%3D50%2526d%3DPALL%2526S1%3D3858220.PN.%2526OS%3Dpn%2F3858220%2526RS%3DPN%2F3858220. Clearly



in 1973 Sidney Arnow added the rope, the method of tuning, the compressed spring pitch on he ends, the balun and other features. The Slinky itself was invented in 1940 https://en.wikipedia.org/wiki/Slinky.

There are many possible variations regards tuning. In the Arnow patent the Slinky turns are bunched up near the ends of the dipole. This was a good approach for broad tuning range and to pull the current further out on the dipole arms for better efficiency. Doing otherwise, by say forming a constant winding pitch helix out from the antenna center creates the competing factors of 1) compressing the coil increases coil inductance to reduce frequency and 2) compressing coil shape decreases the antenna length to raise frequency, so the constant winding pitch approach may have a limited tuning range. Of course jumper wires and coil taps can be used as well.

In 1974 there was a slinky dipole article in QST attached. Tuning of this version is by drooping end wires.

Inexpensive 24 GHz Amateur Radio

Cheap 24GHz Doppler Radars can form the basis for amateur microwave communications. Here is a technical explanation https://www.YouTube.com/watch?reload=9&v=5vqSX40seqA

The radar units mentioned could be used for communications in exactly the same way a Gunnplexers were used in the past: with an audio modulated power supply, providing you know the approximate IF frequency needed and have a tunable WBFM receiver for an IF.

73,
Ken N8KH

PS The unit in the video was at 23.9 GHz, below the amateur band. It would probably be possible to move it higher in frequency using a knife to trim the oscillator feedback filter.