**The HIARC Bulletin**

September 2022 Edition

**Newsletter 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 5:30 PM, business is at 6:30 PM. Prizes at 7:00 PM. Our programs start at 7:15 PM. Meeting ends by 8:00 PM. As some members have allergies, we kindly ask that you refrain from wearing fragrances. Thanks.

**Repeaters:** K4HRS,145.47 Mc, tone 107.2 cycles. Down for the moment, being moved to the Turkey Creek Tower.

**Nets:**

These nets are open to everyone. Subject to change try:

* South Brevard Emergency Net: Thursdays at 7:00 PM. 146.61 Mc. In event of repeater failure 146.85 Mc and or 146.58 Mc simplex.
* Skywarn Net: 7:30 PM or so, 146.61 Mc Thursdays.
* Palm Bay Informal Net: 8 PM Thursdays on 147.255 Mc.
* Medical Complaint Nets: evenings 3.5 to 4.0 Mc.
* Gasoline Price Complaint Net: 146.61 Mc Fridays after the ham lunches

These are open to everyone.

**HIARC Web Site:** [www.qsl.net/hiarc](file:///C:/Users/Worm-W10PC/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/053Z5X9S/www.qsl.net/hiarc). Website administrator; Jim , KC7SSW

**Officers:** President: Francis (“Butch”), WA4AQV

Treasurer: Pat KA4ZEC

Secretary: Open

Repeater Chairman: Clyde KD8AN

Program Chairman: Open

Field Day Chairman: Open

Sunshine Chairman: Open

Club Jester: Ken N8KH

**Annual Membership:**

Annual dues are $12.00. You can join at the meeting or send a check to:

HIARC Treasurer

Pat Reilly, KA4ZEC

We are on a calendar year dues system with annual dues due in June. Dues are prorated by a dollar a month so if you join in April they are $2.00 to get to June, or you can pay ahead.

Send me your email address to receive the newsletter: francis.parsche@l3harris.com

**Local Hamfests**

* Melbourne, October 7, 8 Melbourne Auditorium.

<https://pcars.org/wp/melbourne-hamfest/>

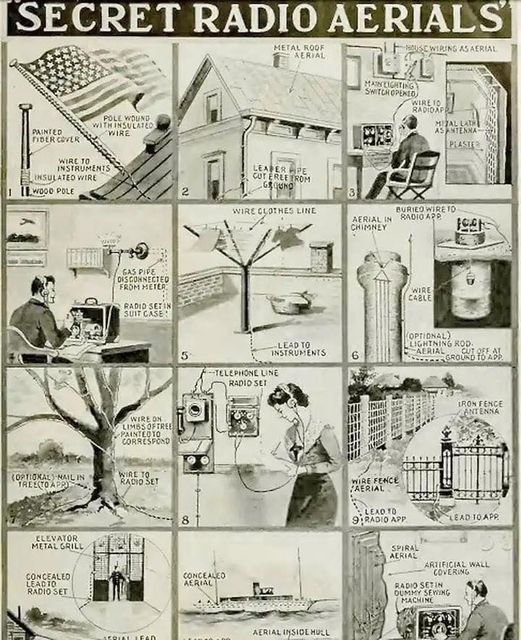
**Ham Radio Lunches:**

* Every Friday, 11:00 AM till 1:00 PM or so, Golden Corral on Palm Bay Road in Palm Bay. Around 9 people recently. Talk in on 146.61 Mc repeater.
* Every Friday, 11:00 AM till 1:00 PM or so, Crystal Buffet on 192. Around 9 people recently. Talk in on 146.61 Mc repeater.
* Once a month, the Saturday after the PCARS meeting, Sarno Restaurant and Pizzaria, 11:00 AM. Talk in 146.61 repeater. This restaurant is at the corner of Sarno Road and Croton Road.

**September 2022 HIARC Meeting**

Our next HIARC meeting is Thursday September 8 at Meemaws Barbecue. 5:30 PM for dinner, 6:30 business, 6:45 prizes, 7:00 the program. The September program will be “The Kiwi SDR Radio Network” by Butch WA4AQV. We will tune into some remote receivers to see what the Longwave Band sounds like in Europe, what signals can be hear in Australia, and how much shortwave broadcasting there is in the far east. It is surprising to see what HF and low frequency radio sounds like overseas.

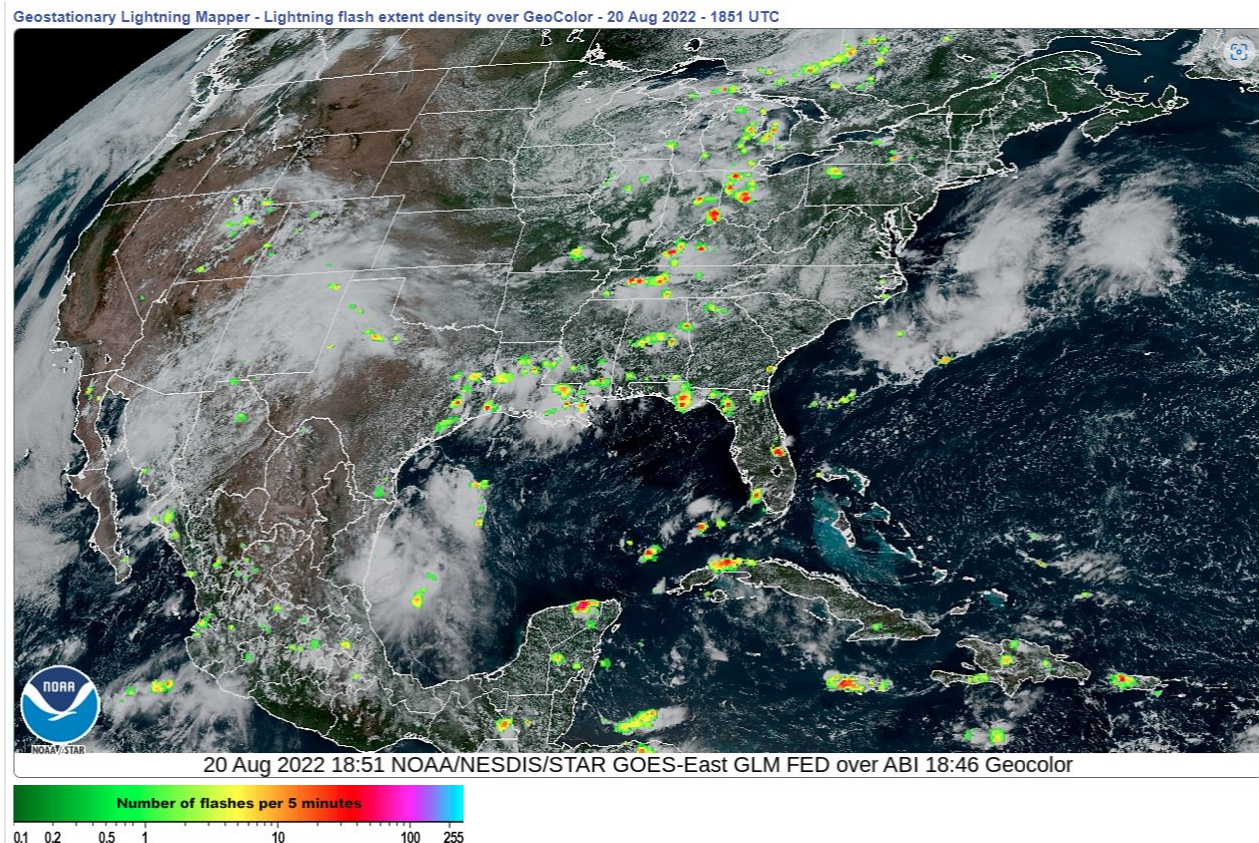
**Hidden Radio Aerials:**



**Tropo Conditions In Central Florida**

As mentioned last month the Atlantic Subtropical Ridge Axis / Horse Latitude is a line of high pressure that forms this time of year. It runs east and west in the Atlantic Ocean and reaching into state at times and has much influence on where the summer storms go. It also decides our tropospheric propagation on the VHF and up bands.

You can see this line of high pressure and propagation using the GOES weather satellite (built by Harris or course). Now here is a link to the current GOES picture: <https://www.star.nesdis.noaa.gov/GOES/conus_band.php?sat=G16&band=EXTENT3&length=24>



In the pasted GOES photo the Atlantic Subtropical Ridge is the dark area where there are no clouds. This is outlined in red. That’s there the tropospheric propagation is best. The little green and red dots are lightning, mostly over land.

Tropospheric propagation arises from the atmospheric humidity gradient. That is, there is more moisture in the air near the earth’s surface than at higher altitudes. And radio waves like to bend into regions of higher dielectric constant. Water having a dielectric constant of 81, which is quite high, serves the purpose to raise the dielectric constant of the air. All of this is in accordance with Snell’s Law.

Tropospheric propagation is different for vertical and horizontal propagation. Horizontal is better. Horizontal gets a better bite into moist air. The difference between vertical and horizontal propagation gets bigger with distance. Long range tropospheric propagation greatly favors horizontal propagation. You still get some tropospheric refraction improvement for vertical at shorter ranges.

If you would like to see the difference between vertical and horizontal polarization tropospheric propagation tune into FM broadcast stations (88 – 108 Mc.) that are over the horizon with a half wave dipole. Use some rabbit ears so you can rotate the dipole to vertical and horizontal orientation, which will be vertical and horizontal polarization as well.. There will be much more DX with horizontal polarization. This is because most FM broadcast stations are broadcasting circular polarization made with nearly equal vertical and horizontal polarization components. So by rotating your receive dipole you can sample the vertical and horizontal components alone. It is the horizontal polarization component that makes it the furthest as the air will bend it best.

There once was a notion to broadcast circular polarization for television stations as the ghost causing ground reflection would supposedly come up cross sense, that is left hand rather than right hand, which could be rejected by a circularly polarization receiving antenna. Tests didn’t work that well as the ground reflection came up elliptical in practice, just wasn’t that much discrimination between polarization components.

Television is horizontal polarization. The FCC in the 1950’s wanted people to be able to watch tropospheric television DX as there weren’t enough local stations. In Melbourne / Palm Bay people waited until night to watch channel 4 out of Jacksonville. The air settled down in the evening and a dielectric constant gradient ensued.

The British use vertical polarization for television. Their TV antennas are slot types as that flips polarization orientation. If you want to design a slot antenna often you will wind upreading British engineering literature.