Zero Beat

December, 2025

President's QRM

Holiday Message to the Membership

As we bring another year to a close, I want to take a moment to reflect on the remarkable dedication, enthusiasm, and fellowship that defines the Hazel Park Amateur Radio Club. Every year brings its own set of challenges and opportunities, and 2025 has been no exception. Yet through it all, our members have continued to demonstrate the spirit of service, curiosity, and camaraderie that make HPARC truly exceptional.

One of the highlights of this past year has been the tremendous progress we've made on building the new Digital DART system. From equipment planning to site evaluations and technical coordination, countless hours have gone into strengthening our repeater resources for the benefit of everyone in the Detroit-area amateur radio community. These efforts remind us that the work we do today lays the foundation for the next generation of operators—and I am grateful to every volunteer who contributed their time and expertise.

This year also showcased the resilience of our club's educational mission. Our VE team continued to welcome new hams into the hobby, and our experienced members stepped up as mentors, instructors, and Elmers. Whether teaching a newcomer how to program a handheld, helping a fellow operator troubleshoot an antenna, or presenting at a monthly meeting, each contribution strengthens our community.

As we enter the holiday season, I am especially mindful of the power of connection. Amateur radio has long played a unique role in bridging distances—geographical and personal. A simple check-in on a net, a friendly QSO on a winter evening, or a shared moment at a club gathering can mean more than we realize. Let us continue to reach out to one another, especially to those who may be spending the season alone or facing challenges.

Continued on page 3...

General Meetings are heald the second Wednesday of the month, 7:30 pm at the Hazel Park Library and on Zoom With Socializing At 7:00 pm .

See you there!

Club Officers:

President: Joe WB8ADX

1st. VP: Len AD8FK

2nd. VP: Andrew AJ0WX

Secretary: Reuven KB3EHW

Treasurer: Bob N8REL

Parliamentarian: Hugh KE8BED

Zero Beat Editor: Mike N8VDZ

*Excerpts from **ARRL News***

Operators/Monitors Wanted for Meteor Scatter QSO Party December 12-13

12/05/2025

HamSCI — the Ham Radio Citizen Science Investigation program — is looking for "ping jockeys," or ham radio operators who enjoy making contacts via meteor scatter (MS), to take part in its **Meteor Scatter QSO Party** during the Geminids meteor shower on December 12 and 13, 2025. Operation will take place on the 10-meter and 6-meter bands only (28.145 and 50.260 MHz), using the MSK144 digital protocol. The event is a combination on-air contest and data collection for what HamSCI describes as an experiment "to analyze the feasibility of HF meteor scatter for future scientific research."

The group is looking for both *active operators* (seeking and making contacts) and *passive monitors*, recording .WAV files of MS contacts and uploading them to *PSK Reporter*. HamSCI says the best operating times will be between 8 PM and 8 AM local time, and suggests announcing CQs on "Ping Jockey Central" (especially for 10 meters) and the groups.io page of the Front Range Six Meter Group (especially for 6 meters).

For more information, including suggested operating procedures,visit www.hamsci.org/msqp.

*To see full article click here **ARRL News***

Need to get Caught up on the Repeater Upgrade?

The Repeater Grant Team is working hard to get the repeater replaced. Please check out the News feeds at HPARC.org

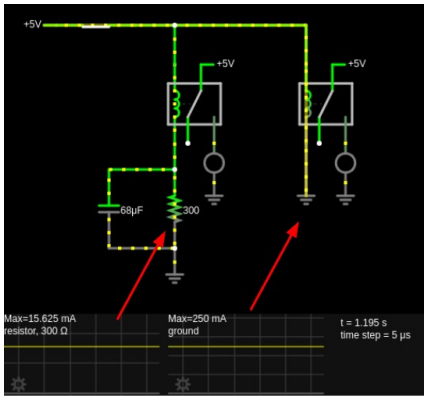
Saving power when using relays

A relay is a device that is a current controlled mechanical switch. It consists of a coil that acts as an electromagnet that when energized, pulls the contacts to complete the circuit. This means that for the switch to be on, power has to be continuously supplied to the coil. This may be fine for mains powered applications, but if used in a circuit that is powered by a battery, any excess power draw is a detriment.

The most efficient design would be one that limits the current to only what is needed to hold the contacts closed. However, relays need more than this to start the closing process. That is, if a relay will stay closed with a 10mA current, it will often take a few milliseconds of 20mA current to actually close the contacts. Therefore, a circuit that allows a higher inrush current but limits the current during steady state can ensure the relay operates as desired while at the same time minimizing current consumption.

While there are many high tech solutions to this problem, such as PWM relay economizers, the simplest solution is available in any electrical junk drawer. A capacitor, when connected to voltage, has an extremely high inrush current until the voltage equalizes. A resistor limits current that goes through it. By putting a resistor in series with the relay coil and a capacitor in parallel with the resistor, when the coil is switched on, the capacitor allows a large inrush current to pull the contacts closed. As the voltage equalizes, the current through the capacitor stops and the only path is through the resistor, which limits the current. The values of both components are determined by the characteristics of the relay. The resistor is chosen based on the hold current of the relay coil, the capacitor is chosen based on the turn on current. Though in practice, both have an impact on one another.

In the simulation below, one can see the difference that this circuit makes. Without the circuit, the relay draws 250mA or 3W, with the circuit, it only draws 15mA or 0.18W.



Andrew AJ0WX

President's QRM continued...

Looking ahead to the coming year, we will continue our focus on technical improvements, education, and community service. I invite each of you to stay engaged, share your ideas, and take part in shaping the future of our club. Together, we can strengthen our infrastructure, expand our outreach, and ensure that HPARC remains a vibrant and welcoming home for radio enthusiasts across the region.

On behalf of the Board, I wish you and your families a peaceful, healthy, and joyful holiday season. May the new year bring good cheer, good health, and strong signals—both on the air and in our lives.

73's and Happy Holidays,

Joe WB8ADX

Kite Antennas (Excerpts from Kite-Antenna by *Richard G3CWI*)

Kite antennas seem like an interesting way to get an temporary antenna up. Could be a fun experiment for Field Day 2026.

Choice of a kite for antenna lifting: Size matters. I recommend a kite with an area of between 0.8 and 1.2m2. Any bigger and you will find yourself fighting to control it. Any smaller and it will not do the job. Look for a kite with a good range of operating windspeeds; ours is 5-18MPH. This allows you to use the kite in a wide range of conditions. Rigid kite structures such as box kites used to be popular but newer designs work much better. You are aiming for a "fly and forget" kite. The newer semi rigid kites have another advantage -if the string breaks they lose lift and fall quickly. Rigid kites fly away!

Attaching antennas to a kite: there are a few things to think about here. For a vertical hung from the kite line you will get best stability if the antenna is well down the line from the kite (at least 10m). You will need a loop to attach the antenna system to the line. Use a knot that will not weaken the line. I will cover knots in another post. Dont tie the wire for the vertical directly to the kite line. Use a length of elastic shock cord (5m is good) - the vertical wire is attached to the lower end of the shock cord. This will reduce the tension in the wire and again will aid stability. Of course using a long wire as the kite line is possible, but this can result in a rather unstable antenna. Much better is to use the kite to support the centre of an end fed 3/8 wave. Again the techniques suggested for the vertical are used to give a stable installation. *See image 1 & 2 on Page 4*

Kites - static discharge: having a static leakage system on your kite antenna is an essential requirement. This needs to present a high impedance to RF and a relatively low impedance to the static charge. The RF impedance of the leakage system needs to be at least ten times the antenna impedance at the lower end. If you work on an end impedance of 10k Ohms (for an end fed wire) you can see that the impedance needs to be high. RF chokes are possible as are parallel tuned circuits (in some cases). However, best perfiormance across all bands is likely to be achieved with a non-inductive resistor of a value of at least 100k Ohms. I would go for 470k or 1 Meg. Use one rated at 2 Watts or so. Across it I would make a spark gap - but if you are seeing sparks you are in trouble!

Kites and Static: Flying kites in thunderstorms is clearly dangerous but even in normal weather huge static charges can build up on kite-borne antennas. I recommend connecting an RF choke from the antenna to a ground stake. Some configurations of antenna tuning unit will have a connection between the antenna and earth.

Getting a good ground connection can be tricky. I tend to use several tent pegs all bonded together. On rocky summits you may well struggle to get an earth. A radial laid on the ground will be better than nothing. Static rain can be a real problem with kite aerials. Frankly if it is a problem, you would be safest to abandon the activation. Static rain can make all sorts of odd sounds in your receiver. If the band is just covered in noise and the S meter is hanging at S9+, it's probably static rain. Oh and it does not have to be raining either. Even microscopic particles get charged.

In addition to your kite you will need a strong anchor point for the end of the string. Remember, you want to play radio - not fiddle with kites. A dog anchor screw is ideal for this. *See Image 3 on page 4*

Join us an the HPARC Sundy Night 2 Meter Web, 9:00 PM 146.640 MHz, 100.0 Hz PL Minus offset.

From the Treasurer, Bob N8REL

Hazel Park Amateur Radio Club
Income Statement: Actual v Budget
FYE 06-30-2026 as of November 30, 2025
period as indicated

*** does not include Repeater Grant activity....see separate statement ****

	Current Month - November			Year to date		
	month ACTUAL	month BUDGET	Variance	Actual YTD	Budget YTD	Variance YTD
Summary						
TOTAL INCOME	60.00	280.00	(220.00)	755.00	920.00	(165.00)
TOTAL EXPENSE	61.66	1,110.00	1,048.34	808.89	2,994.00	2,185.11
Net	(1.66)	(830.00)	828.34	(53.89)	(2,074.00)	2,020.11

ARDC Grant progress by month

	at June 30, 2025	at July 31, 2025	at Aug 31, 2025	at Sept 30, 2025	at Oct 31, 2025	at Nov 30, 2025	at Dec 31, 2025
Avail at Beginning of Month	26,743.00	26,263.20	26,263.20	16,895.20	16,007.20	16,007.20	
used	479.80	0.00	9,368.00	888.00	0.00	8,416.87	
Remaining Grant fund NOT including Club contrib	**26,263.20**	**26,263.20**	**16,895.20**	**16,007.20**	**16,007.20**	**7,590.33**	

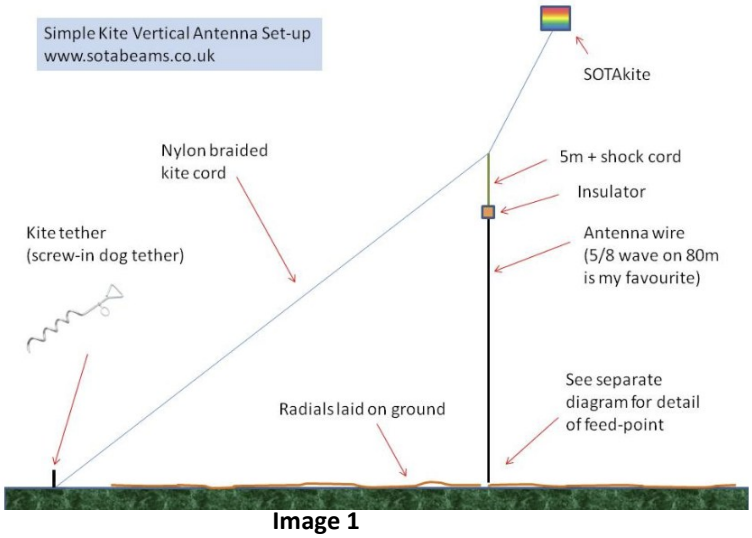
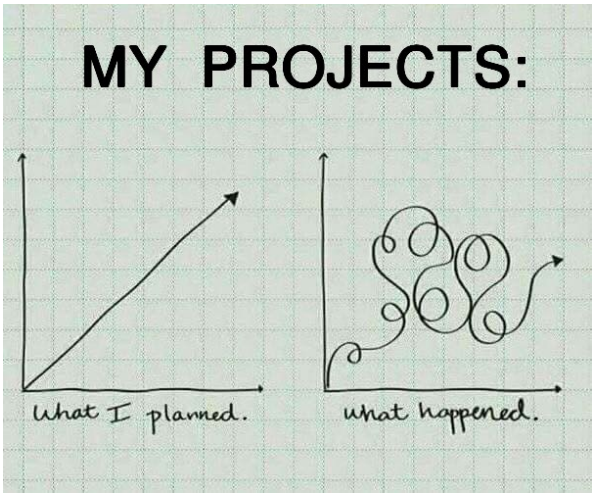


Image 1

Image 3



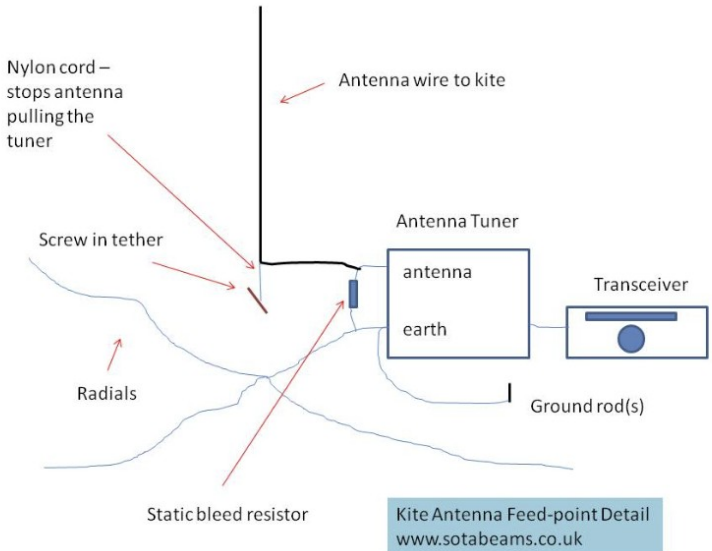


Image 2