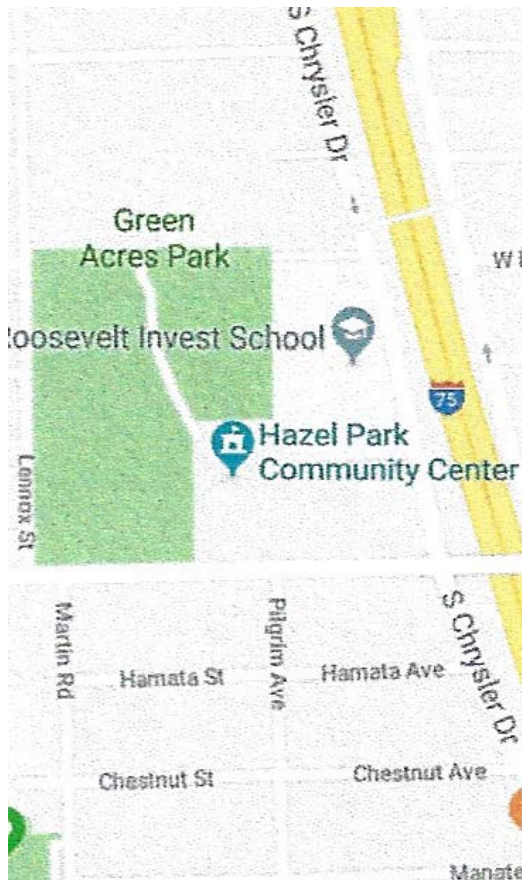




**General Meeting**  
**Wednesday April 8th**  
**7:30 pm**

### Meeting Location

**Your Computer**  
**Read Dave's Email**  
**For using Skype**



# Zero Beat

**March 2020**

## President's QRM

Three important events are coming up for HPARC: Officer Nominations in April, Officer Elections in May and Field Day in June.

The April Officer Nomination member meeting is important for HPARC's continuation of its fantastic legacy. Every club member should consider how to contribute to the continuation and success of HPARC. Accepting a nomination or self nominating to one of the officer positions ensures the continuation of club.

In May all club members will have an opportunity to vote for the next HPARC Officers. As an alternative to filling an officer position, volunteering to chair an activity or volunteering your time and talent to support an event are also great ways to contribute to the club. So step forward, volunteer your time and talents to the continuation of HPARC.

Field Day in June is a great opportunity to operate the HF and VHF bands for all club members and especially for those that do not have an HF or VHF set-up. This year Field Day will be held at Green Acres Park which is adjacent to HPARC's Member Meeting location, the HP Recreation Center. Scout Park was not available for the Field Day date.

Setting-up on Field Day provides a hands-on experience with raising a tilt tower, raising various wire antennas and setting-up stations. It is also a time to enjoy an amateur activity outside the formalities of the club member meetings. If you have not been to Field Day in a while, add it to your calendar. Come and enjoy the eyeball QSO's and RF QSO's of a Field Day operator. As a bonus the meals are provided by the club.

**Volunteer, Attend and Have Fun**

73

David - AA8IK - President HPARC

## 2020-03-11 Minutes of HPARC general meeting at Hazel Park Community center

Meeting called to order by president David AA8IK @7:30 pm

Pledge of allegiance

Introductions

Advancement/achievements/upgrades:

3 new techs, 1 new extra

Brenda N8AQ gets a Spark Plug award presented for her work on behalf of the club doing coffee and donuts.

Marsha N8FE announced the Toledo hamfest upcoming, Reuven KB3EHW announced (follow up) that it was canceled today because of Coronavirus risk.

Contest calendar discussion

Volunteer positions reviewed

John W8TOY - We are soliciting nominations for all positions; our elections are in May.

Club officers inauguration banquet was announced, Mike WD8S is selling tickets.

Presentation by John AA8UU on our Field day plans for June.

Break for coffee and donuts

Treasurer's report- Bob N8REL- At this point in the year we've planned to be ~\$1000 in red, but we are actually ~\$700 in black. Budgeted 2000 deficit, but will break even probably. Proposed 2020 budget reviewed, will be voted on at the next meeting. The budget covers our fiscal year which runs 7/1 - 6/30. \$9706.27 bank balance as of 2/29.

Marsha moves to accept treasurer report, seconded, accepted.

Marsha moves to accept minutes in zero beat.

M2M-

Bob N8REL gives his review of the North American shortwave winter fest.

"Fly in" at an avionics program at a school near Detroit City Airport, they want to do a ham radio demo, talk to Larry KE8LXA.

Meeting adjourned 8:51pm

Respectfully submitted,

Reuven Gevaryahu KB3EHW

HPARC Secretary

**When the Navy works from home.**



### Items for Sale

**Kenwood TS-850S AT HF Radio.** 100 watts out-put. Built in Antenna Tuner, Computer interface included All bands 160 -10 meters except 5 Mhz and 10 Mhz .

**Connect Systems CS-800.** UHF DMR radio. Programed for Metro-Detroit area.

**Tytera MD-380 UHF DMR HT Radio.** Programed for Metro-Detroit area.

All radios work well, I just upgraded my equipment.

Contact Rick Laird at ricklaird1@comcast.net or the phone number listed in the club roster.

## Male Logic

A CONVERSATION BETWEEN A MAN AND HIS WIFE. SHE ASKS SEVEN QUESTIONS WHICH HE ANSWERS QUITE SIMPLY.

HE ASKS HER ONE QUESTION AND SHE IS SPEECHLESS

**WOMAN:** DO YOU DRINK BEER?

**MAN:** YES

**WOMAN :** HOW MANY BEERS A DAY?

**MAN:** USUALLY ABOUT THREE

**WOMAN:** HOW MUCH DO YOU PAY PER BEER?

**MAN:** \$5.00 WHICH INCLUDES A TIP (THIS IS WHERE IT GETS SCARY!)

**WOMAN:** AND HOW LONG HAVE YOU BEEN DRINKING?

**MAN:** ABOUT 20 YEARS, I SUPPOSE

**WOMAN:** SO A BEER COSTS \$5 AND YOU HAVE THREE BEERS A DAY WHICH PUTS YOUR SPENDING EACH MONTH AT \$450.

IN ONE YEAR, IT WOULD BE APPROXIMATELY \$5400 CORRECT?

**MAN:** CORRECT

**WOMAN:** IF IN 1 YEAR YOU SPEND \$5400, NOT ACCOUNTING FOR INFLATION, THE PAST 20 YEARS PUTS YOUR SPENDING AT \$108,000 CORRECT?

**MAN:** CORRECT

**WOMAN:** DO YOU KNOW THAT IF YOU DIDN'T DRINK SO MUCH BEER, THAT MONEY COULD HAVE BEEN PUT IN A STEP-UP INTEREST SAVINGS ACCOUNT AND AFTER ACCOUNTING FOR COMPOUND INTEREST FOR THE PAST 20 YEARS, YOU COULD HAVE NOW BOUGHT AN AIRPLANE

**MAN:** DO YOU DRINK BEER?

**WOMAN:** NO.

**MAN:** WHERE IS YOUR AIRPLANE?

**WOMAN:**



## HPARC Nets

### HPARC Official Sunday Night 2-meter Phone Net

Every Sunday a 9:00 Pm local time on the DART repeater, 146.64 (PL 1 00), catch up on club news and information, and just to keep in touch. All amateurs are welcome to check in.

### ARPSC Thursday Night 2-meter phone net

Every Thursday at 8:00 PM on the W8OAK repeater, 146.90 (PL 100). The Hospital radio check net takes place on the last Thursday each month at 7:30 PM on the W8OAK repeater. <http://www.arpdc.com>

## Around Town

### HPARC Buddy Breakfast every Saturday at 9:00 AM (or so)

### Temporarily Suspended

Cozy Cabin Diner, 2129 E. 12 Mile Rd, Warren, MI  
Come in early for the socializing. Park in the restaurant parking lot.

### Oakland County ARPSC Siren Testing, 1st Saturday at 1:00 PM.

### Temporarily Suspended

March through November except April. Contact Marsha, N8FE, at [n8fe@arrl.net](mailto:n8fe@arrl.net), to be assigned a siren to test.

### Amateur Radio Licensing Testing

### Temporarily Suspended

HPARC and the City of Oak Park offer amateur radio licensr testing on the first Tuesday of even numbered months at the Oak Park Community Center, 14300 Oak Park Blvd, Oak Park, MI, 48237, starting at 7:00 PM. Contact Jerry, W9NPI at [w9npi@arrl.net](mailto:w9npi@arrl.net).

## Club Officers

**President:** David Koch AA8K

davidkoch@comcast.net

**1st VP** Jim Poehlman K8ABZ

k8abz@arrl.net

**2nd VP** Joe Raznic WB2ADX

joeraznic@gmail.com

**Secretary** Reuven Gevaryahu KE3EHW

kb3ehw@arrl.net

**Treasurer** Robert Lauer N8REL

rlau@aol.com

**Director** Bill Ketel N8QVS

n8qvs@arrl.net

**Parliamentarian** Hugh Boyle KE8BED

photoink7@hotmail.com

## Volunteers

### Lotw Manager

Murray Scott KE8UM

### Break Time

Brenda White N8AQ

### Club Cook

Bill Ketel N8QVS

### Holiday Meeting

Board

### Equipment Inventory

Jim Poehlman K8ABZ

### Audio Video Support

Ken Simpson

### Lark in the Park

John Teagardin AA8UU

### Meeting Greater

Edgar Walton N8LBS

## Chairmen

### Repeater

Joe Raznik WB2ADX

### W8HP Trustee

Joe Raznik WB2ADZ

### W8JXU Trustee

Bill Ketel N8QVS

### Swap

Bob Lauer N8REL

### Field Day

John Teagardin AA8UU

### Education

Jerry Begel W9NPI

### Sunday Net

Bob Lauer N8REL

### Zero Beat Editor

Rick Laird KB500

### Public Information Officer (PIO)

Rick Laird KB500

### Webmaster

David Koch AA8IK

### Banquet

John Little W8TOY

### Club Picnic

Jay Schwartz WB8SBI



### Nomination for club officers: 2020

As you may already know, the club may not have any more meetings this year because of the virus. Hazel Park Recreation Center is closed for now.

Still, there things that have to be done, notably the elections of officers. This year we are going to have nominations by email. This is going to require the participation of every member. All board positions are up for grabs.

To qualify, members nominated must be a member for at least one year and subject to their acceptance.

Below is a list of the present board members.

President: David Koch, AA8IK ----- Dave is not running again.

1<sup>st</sup> Vice President: Jim Poehlman, K8ABZ

2<sup>nd</sup> Vice President: Joe Raznik, WB2ADX

Secretary: Reuven Gevaryahu, KB3EHW

Treasurer: Bob Lauer, N8REL

Parliamentarian: Hugh Boyle. KE8BED

Director: Bill Ketel, N8QVS

Below is the board positions were you can nominate you self or someone else. Use the club roster to pick names!

If you cannot think of anyone for a position, leave it blank.

PRESIDENT:

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1<sup>ST</sup> Vice PRESIDENT:

---

2<sup>ND</sup> VICE PRESIDENT:

---

SECRETARY:

---

TREASURER:

---

PARLIAMENTARIAN:

---

DIRECTOR:

---

After you complete this form; save it to your hard drive and then email to [hazelparkarc@gmail.com](mailto:hazelparkarc@gmail.com)

as an attachment A.S.A.P. Do this now because nominations after April 15<sup>th</sup> will not count!

# Sorting Out Linear And Switching Power Supplies.

Chris Warren March 21, 2020 14 Comments on Sorting Out Linear And Switching Power Supplies.

## Two of a kind?

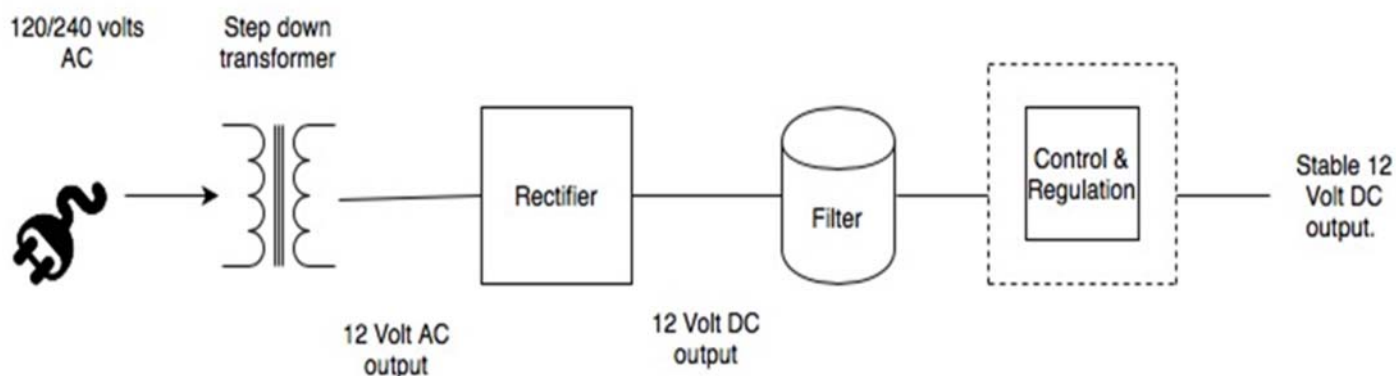
Some radio amateurs, especially those who are new to the hobby, may not even know there are two main types of power supplies. They could be forgiven for that. When you need a power supply, you just jump online, pick out that one suits your needs and budget, and click. No one really thinks about what goes on in the guts of a power supply. Juice is juice, right? Well, sort of. There are huge differences between linear and switching power supplies even if the final product is the same.

## Old School.

Linear power supplies are one of the grand elders of ham radio. They've been around as long as radio itself. The principle of operation is fairly simple. Household AC voltage is fed to a transformer and dropped down to 12-15 volts. The low voltage AC goes through a rectifier which changes it to DC. That raw DC still has some residual AC in it, so it must be cleaned up. To solve that issue, the power goes through a capacitor to filter out any leftover AC "ripple". After that, it's ready for your radio.

In the early days of radio, rectifiers were a series of vacuum tubes that themselves gulped *a lot* of power. Later models had solid state diodes, which were much smaller and more efficient. Today, diodes are still used but manufacturers use components with several diodes mounted into one integrated rectifier package (these devices are sometimes referred to as "bridges"). The diagram below shows the basic parts of a linear power supply. Some better quality linear power supplies have additional regulation & control circuitry, as well as chokes for filtering. You'll also see linear power supplies with variable outputs, multiple outputs, built-in meters, and other handy add ons. Regardless of the "bells and whistles," all linear power supplies perform the same basic function.

Linear Power Supply-Block Diagram

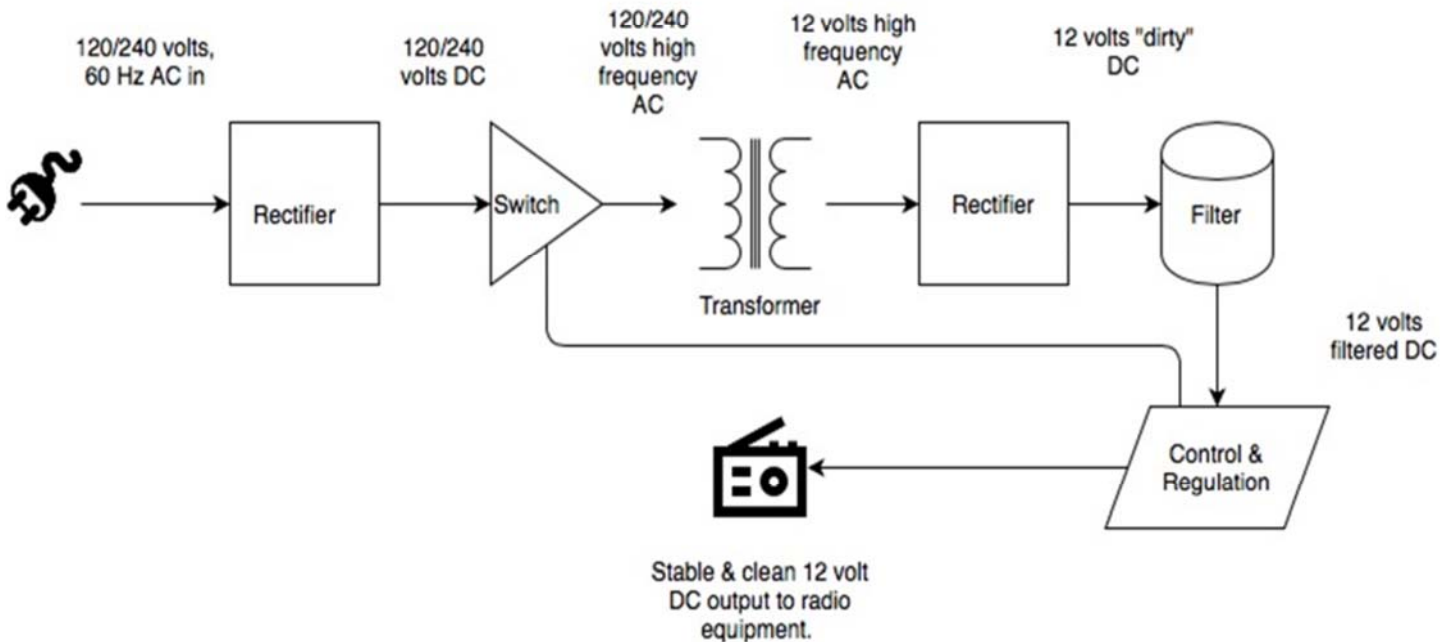


[www.offgridham.com](http://www.offgridham.com)

Used linear power supplies are very easy to find because they've been around so long. New models are still available but they will typically cost more than equivalent switching power supplies, and they're also large and heavy. A linear power supply may be a good choice if you have a fixed station where space/weight is not a big concern or you want to reduce RF interference

## A new breed.

### Switching Power Supply-Block Diagram



[www.offgridham.com](http://www.offgridham.com)

Switching power supplies are a relative newcomer to ham radio. In a switching power supply, AC input is immediately converted to DC, but it is not stepped down to a lower voltage right away. The high voltage DC is fed into a switching transistor. The switch pulses or "switches" the DC on and off at a very high frequency, effectively making it AC again. While the AC in your house is 60 Hz, the switch cycles much faster, usually between 30kHz and 150 kHz. After that, it's basically a traditional linear power supply: The high frequency AC goes through a transformer to become low voltage AC, then it's rectified, filtered, and sent to your radio.

The obvious question is, why bother to go through the AC-DC conversion process twice? There's a one-word answer: Physics. High frequency voltage coming out of the switch requires a much smaller transformer. This is why switching power supplies are less expensive, more efficient, smaller, and lighter than their elders. And like old school linear power supplies, they can also include extra features. On the down side, switching power supplies have the potential to generate RF interference, especially on the HF bands. Switchers may be a good pick if you are on a budget or have space/weight limitations.

## So which one should you have?

Most hams today use switching power supplies and are very satisfied, but don't let popularity alone decide for you. Many old timers swear by tried-and-true linear power supplies, and the belief is not without merit. After all, linear power supplies have been around this long for a reason. I personally use a switching power supply. I've used linear versions in the past and they were fine too.

For my situation, it's a moot point anyway because my entire radio station is powered directly from storage batteries charged by solar panels. I rarely pull power from the grid through a power supply to run my gear. The concerns about RF interference from switching power supplies is probably more hype than reality. Unless you're using a junky low-end unit or have incorrect grounding, it's not likely to be a problem.

## Linear power supply.

### Pros:

Time-tested design and principle of operation.

Very clean output-no RF noise.

Widely available on the used market.

Generally better build quality...decades-old units are still in service going strong.

### Cons:

Large & heavy compared to switching equivalents.

More expensive.

Less efficient.

## Switching power supply.

### Pros:

Inexpensive.

Small & light weight compared to linear equivalents.

Most popular type used today.

More efficient.

### Cons.

Do your research! There is a lot of cheap junk on the market.

Potential for RF interference.

## What we learned today.

There is no clear winner in the linear vs switching power supply debate. Like everything, what's "best" will vary with each individual. Chances are good that you'll be happy no matter what you ultimately get. Understanding the difference between the two and their respective principles of operation gives you the information you'll need to make a decision as well as expand your skills as a radio amateur.





***You are invited to join us  
at the***



**Installation of Officers Banquet  
at**

**NEW VENUE**



**Sylvan Glen Golf Course**

**5725 Rochester Rd., Troy, MI 48085**

**on Wednesday, June 10, 2020**

**Gathering 6:30 p.m. Dinner 7:00 p.m.**

***Buffet Dinner with Pecan Baked Chicken & Roast Beef***

*Includes Mostaccioli, Redskin Potatoes, Caesar Salad, Mixed Vegetables,  
Bread and Butter, Coffee, Tea, Soft Drinks and Dessert.*

*Cash Bar*

**Door Prizes**

**Cost \$35.00 per person**

*For tickets or questions contact WD8S Mike at his email - [WD8S@comcast.net](mailto:WD8S@comcast.net)*

*Please make checks payable to: Hazel Park Amateur Radio Club*