HAMATEUR CHATTER

The Milwaukee Radio Amateurs Club

July 2011, Volume 19, Issue 7

One of the World's Oldest Continuously Active Radio Amateur Clubs—since 1917

The Interclub field day event held at Konkel Park here in Greenfield was a resounding success, with the crew of KC9IJJ, KA9WXN and many others making over 310 contacts with the installed Digital station and HF, VHF station. Visitors to the site included a photographer from CQ magazine who was in the area to document the Field Day activities of clubs in the Southeastern Wisconsin Area. So, scan future CQ magazines to see if our club station is featured.

The KC9IJJ Super Event Station

The KA9WXN Multiband Tower

MRAC Officers:

Terms Expiring in 2012

- President – Dave,WB9BWP
- V-President– Vacant
- Secretary – Mike, KC9CMT
- Treasurer – Vacant
- Director – Mark, AB9CD
- Director – Dave,KA9WXN

Terms Expiring in 2013

- Director – Al, KC9IJJ
- Director – Hal ,WB9OZN
- Director – Vacant

The Club Phone Number is: (414) 332-MRAC or

(414) 332- 6 7 2 2

Visit our website at:

www.w9rh.org

Mail correspondence to:

M. R. A. C.

P.O. Box 240545

Milwaukee, WI 53223

Field Day Continued:

The Field day event took place between 1pm Saturday to 1pm Sunday. During this time club stations were working all the open bands looking for contacts from other clubs in distant states. Many contacts were made using digital signals from the KC9IJJ station at the MAAR/MARC Konkel park field day grounds. The weather this year was better than in prior years when rain and storms caused delays during the a lot time to make contacts. During the 2010 event, the NWS in Sullivan issued a Tornado warning for central Racine county when a brief spin up was detected by trained observers. The warning area was only 20 miles south of the MRC91 setup. So, some were concerned that day. If serious weather events were to pop-up during a field day event, would the event stations be susceptible to wind and rain damage.

It would seem that most event areas in Southeastern Wisconsin are at during intense weather events. Planning will have to be undertaken to harden these areas before the 2012 field day events. Perhaps stations can be constructed within the confines of forested area, or within structures on the field day sites.

The Camper-VHF station of KA9WXN

Next Regular Meeting

The next meeting will be September 29th at 7:00PM. We meet in the Fellowship Hall of Redemption Lutheran Church, 4057 N Mayfair Road. Use the south entrance.

Please do not call the church for information!

Club Nets

Please check in to our nets on Friday evenings.

Our ten meter SSB net is at **8:30 p.m.** at **28.490 MHz USB.**

Our two meter FM net follows at 9:00 p.m. on our repeater at **145.390 MHz** with a minus offset and a **PL of 127.3 Hz**.

Visit our website at: **www.w9rh.org**

Or phone (414) 332-MRAC or 332 - 6722

Chatter Deadline

The **DEADLINE** for items to be published in the **Chatter** is the 15th of each month. If you have anything (announcements, stories, articles, photos, projects) for the 'Chatter, please get it to me before then.

You may contact me or Submit articles and materials by e-mail at: **Kc9cmt@earthlink.net**

or by Post at:

Michael B. Harris

807 Nicholson RD

South Milwaukee, WI 53172-1447

AARC QRV FOR FIELD DAY

My humble and perhaps a bit dated opinion, but lets jump right in...

Plain language in emergency management is the norm and has been for some time. Since the inception of the original ICS, Incident Command System, (now in many flavors), one theme is clear, USE PLAIN TEXT and COMMON TERMINOLOGY.

The fire service started to adopt this concept after the formation of the FIRESCOPE group in southern California. This was a result of disastrous fires in the 60's in which unlike agencies used 10 codes, differing nomenclature and agency specific shorthand. This led to total confusion and a breakdown in the basics of communication.

This concept of Incident Management itself spread like wildfire and within 6 years was the adopted son of the nations federal, state, and local government first responders. Albeit a few holdouts that were forced to follow by eventual laws directing the use of ICS, NIMS, etc etc. etc.

Law enforcement has been slow to follow suit, (it's a cop thing), for daily use, though in multi-agency incidents, at the communications level, they do play the "plain text game", and do it well.

Since the 70's, emergency communications has evolved and for the most part amateur support communications has been able to fill various roles.

Prior to my retirement in 2005 we found many roles for amateurs to participate, locally and state wide. And through training the use of codes, Q signals, etc, was eventually brought under control. Yes if you and the other communicator want to confirm by saying 10-4, QSL, or whatever, and it is between you, then so be it. But if you get in the habit of using plain text, and common terminology, you will use it as a matter of nature.

If you wish to play in the emergency communications arena and be part of the program, then learn the basics of NIMS, or whatever communications training is offered.

Frankly with today's evolved messaging systems: Winlink; with Amateur frequencies, MARS frequencies, its various protocols; packet, pactor, WinMor, etc. etc., typing what they want, or sending the form they want as an attachment, (within system limits), is the appropriate methodology.

Yes I know that file they gave you was full of acronyms, etc, but you just transported what they wanted, its on them. The point is the basic NIMS forms, those should always be PLAIN TEXT. Think of it this way, if YOU are sending a message to another party, USE PLAIN TEXT, follow the established procedures for that venue. If you are just the communicator and passing email into the Winlink system that "they" gave you, then you are, (pardon the movie cliché), "the transporter".

Your served agency no matter how small or large will direct the flow. If it is an established incident, and they have a Communications Unit Leader, (that's the section you work under), you will find it easy to follow the program if you understand a basic premise, PLAIN TEXT.

If you are a part of a small local government program and they don't care how you get the job done locally, well then so be it. But as incidents progress in scale so does the level of control and expectations of the communicator. So if you can use PLAIN TEXT and COMMON TERMINOLOGY at the base level, it will be a habit well served.

ARRL message grams and associated acronyms have no direct place within emergency management communications. They have their role in an established system that is specific to a non government entity. But their established methodology stays within its boundaries.

As the bard sez.......... "these times they are a changing"...

Mike Burton, N6KZB/XE2

Retired, Chief, "Communications & Technology" Fire Service (and the bonafides list);

-Instructor "Incident Communications Unit Leader"
-Instructor "Mobile Communications Center Technical Specialist"
-Past Positions of; Communications Unit leader, multi-agency Comm Center Manager
Communications Technical Specialist
Agency Communications Coordinator
Situation Unit Leader
Plans Chief
FIRESCOPE Communications Chairman
Assistant Emergency Services Director

Experimenter's Bench

Coils and transformers

Coils are not a very common component in electronic circuits, however when they are used, they need to be understood. They are encountered in oscillators, radio-receivers, transmitter and similar devices containing oscillatory circuits. In amateur devices, coils can be made by winding one or more layers of insulated copper wire onto a form such as PVC, cardboard, etc. Factory-made coils come in different shapes and sizes, but the common feature for all is an insulated body with turns of copper wire.
The basic characteristic of every coil is its inductance. Inductance is measured in Henry (H), but more common are millihenry (mH) and microhenry (µH) as one Henry is quite a high inductance value. As a reminder:

$$1H = 1000mH = 10^6 \mu H.$$

Coil inductance is marked by X_L, and can be calculated using the following formula:

$$X_L = 2\pi f L,$$

where *f* represents the frequency of the voltage in Hz and the *L* represents the coil inductance in H.
For example, if f equals 684 kHz, while L=0.6 mH, coil impedance will be:

$$X_L = 2 \cdot 3{,}14 \cdot 684000 \cdot 0{,}6 \cdot 10^{-3} = 2\,577\ \Omega.$$

The same coil would have three times higher impedance at three times higher frequency. As can be seen from the formula above, coil impedance is in direct proportion to frequency, so that coils, as well as capacitors, are used in circuits for filtering at specified frequencies. Note that coil impedance equals zero for DC (f=0).
Several coils are shown on the figures 3.1, 3.2, 3.3, and 3.4.
The simplest coil is a single-layer air core coil. It is made on a cylindrical insulator (PVC, cardboard, etc.), as shown in figure 3.1. In the figure 3.1a, turns have space left between them, while the common practice is to wind the wire with no space between turns. To prevent the coil unwinding, the ends should be put through small holes as shown in the figure.

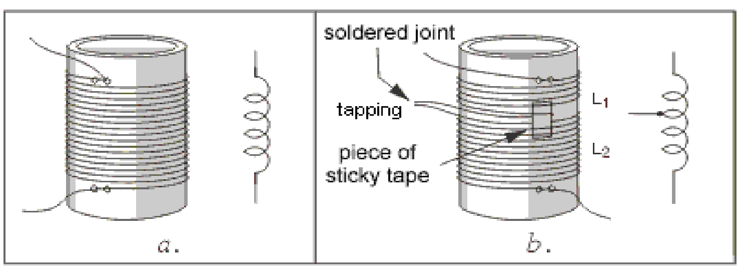


Fig. 3.1: Single-layer coil

Figure 3.1b shows how the coil is made. If the coil needs 120 turns with a tapping on the thirtieth turn, there are two coils L1 with 30 turns and L2 with 90 turns. When the end of the first and the beginning of the second coil are soldered, we get a "tapping."
A multilayered coil is shown in figure 3.2a. The inside of the plastic former has a screw-thread, so that the ferromagnetic core in the shape of a small screw can be inserted. Screwing the core moves it along the axis and into the center of the coil to increase the inductance. In this manner, fine change s to the inductance can be made.

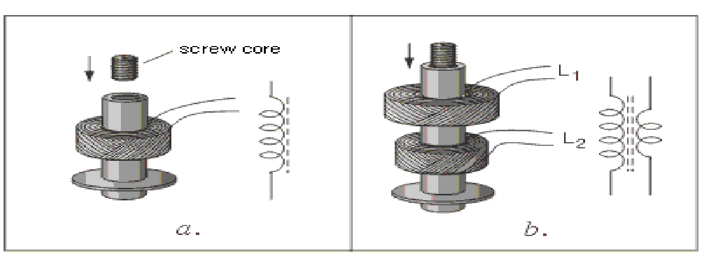


Fig. 3.2: a. Multi-layered coil with core, b. Coupled coils

Figure 3.2b shows a high-frequency transformer. As can be seen, these are two coils are coupled by magnetic induction on a shared body. When the coils are required to have exact inductance values, each coil has a ferromagnetic core that can be adjusted along the coil axis.
At very high frequencies (above 50MHz) coil inductance is small, so coils need only a few turns. These coils are made of thick copper wire (approx. 0.5mm) with no coil body, as shown on the figure 3.3a. Their inductance can be adjusted by physically stretching or squeezing the turns together.

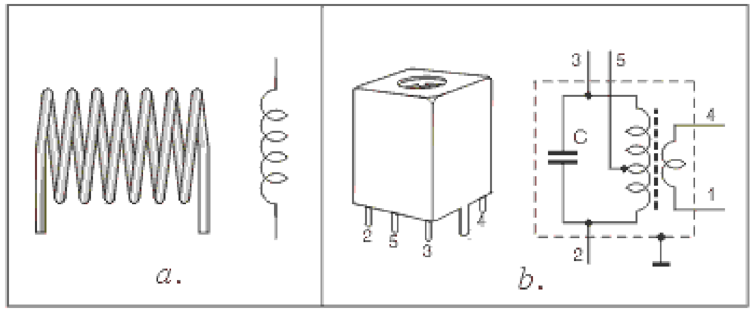


Fig. 3.3: a. High frequency coil, b. Inter-frequency transformer

Figure 3.3b shows a metal casing containing two coils, with the schematic on the right. The parallel connection of the first coil and capacitor C forms an oscillatory circuit. The second coil is used for transferring the signal to the next stage. This is used in radio-receivers and similar devices. The metal casing serves as a screen to prevent external signals affecting the coils. For the casing to be effective, it must be earthed.
Fig 3.4 shows a "pot core" inductor. The core is made in two halves and are glued together. The core is made of ferromagnetic material, commonly called "ferrite." These inductors are used at frequencies up to 100kHz. Adjustment of the inductance can be made by the brass or steel screw in the centre of the coil.

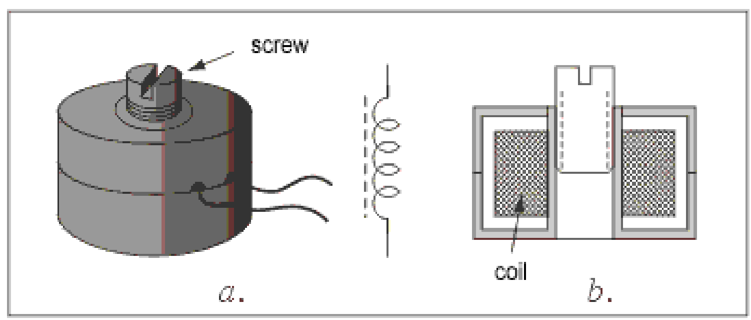


Fig. 3.4: A "pot core" inductor

Transformers

For electronic devices to function it is necessary to have a DC power supply. Batteries and rechargeable cells can fulfill the role, but a much more efficient way is to use a POWER SUPPLY. The basic component of a power supply is a transformer to transform the 220V "mains" to a lower value, say 12V. A common type of transformer has one primary winding which connects to the 220V and one (or several) secondary windings for the lower voltages. Most commonly, cores are made of E and I laminations, but some are made of ferromagnetic material. There are also iron core transformers used for higher frequencies. Various types of transformers are shown on the picture below.

Fig. 3.5: Various types of transformers

Symbols for a transformer are shown on the figure 3.6   Two vertical lines indicate that primary and secondary windings share the same core.

The Experimenters Bench

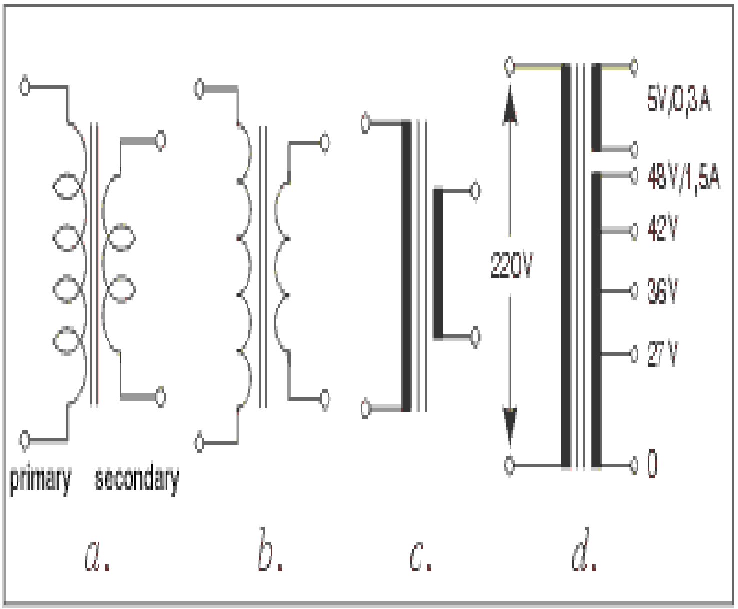


Fig. 3.6: Transformer symbols

With the transformer, manufacturers usually supply a diagram containing information about the primary and secondary windings, the voltages and maximal currents. In the case where the diagram is missing, there is a simple method for determining which winding is the primary and which is the secondary: a primary winding consists of thinner wire and more turns than the secondary. It has a higher resistance - and can be easily be tested by ohmmeter. Figure 3.6d shows the symbol for a transformer with two independent secondary windings, one of them has three tapings, giving a total of 4 different output voltages. The 5v secondary is made of thinner wire with a maximal current of 0.3A, while the other winding is made of thicker wire with a maximal current of 1.5A. Maximum voltage on the larger secondary is 48V, as shown on the figure. Note that voltages other than those marked on the diagram can be produced - for example, a voltage between tapings marked 27V and 36V equals 9V, voltage between tapings marked 27V and 42V equals 15V, etc.

Working principles and basic characteristics

As already stated, transformers consist of two windings, primary and the secondary (figure 3.7). When the voltage *Up* is connected to the primary winding (in our case the "mains" is 220V), AC current *Ip* flows through it. This current creates a magnetic field which passes to the secondary winding via the core of the transformer, inducing voltage *Us* (24V in our example). The "load" is connected to the secondary winding, shown in the diagram as *Rp* (30Ω in our example). A typical load could be an electric bulb working at 24V with a consumption of 19.2W.

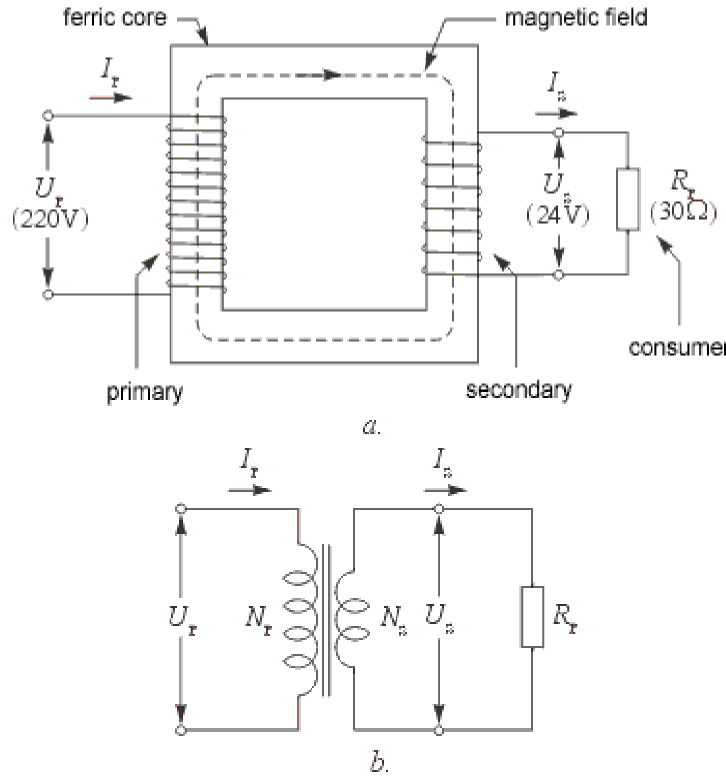


Fig. 3.7: Transformer: a. Working principles, b. Symbol

Transfer of electrical energy from the primary to the secondary is done via a magnetic field (called "flux") and a magnetic circuit called the "core of the transformer." To prevent losses, it is necessary to make sure the whole magnetic field created by the primary passes to the secondary. This is achieved by using an iron core, which has much lower magnetic resistance than air.

Primary voltage is the "mains" voltage. This value can be 220V or 110V, depending on the country. Secondary voltage is usually much lower, such as 6V, 9V, 15V, 24V, etc, but can also be higher than 220V, depending on the transformer's purpose. Relation of the primary and secondary voltage is given with the following formula:

$$\frac{U_S}{U_P} = \frac{N_S}{N_P},$$

where *Ns* and *Np* represent the number of turns on the primary and secondary winding, respectively. For instance, if *Ns* equals 80 and *Np* equals 743, secondary voltage will be:

$$U_S = U_P \cdot \frac{N_S}{N_P} = 220\,V \cdot \frac{80}{734} = 24\,V.$$

Relationship between the primary and secondary current is determined by the following formula:

$$\frac{I_P}{I_S} = \frac{N_S}{N_P}.$$

For instance, if *Rp* equals 30Ω, then the secondary current equals *Ip* = *Up*/*Rp* = 24V/30Ω = 0.8A. If *Ns* equals 80 and *Np* equals 743, primary current will be:

$$I_P = I_S \cdot \frac{N_S}{N_P} = 0{,}8\,A \cdot \frac{80}{734} = 87\,mA.$$

Transformer wattage can be calculated by the following formulae:

$$P = U_S \cdot I_S = U_P \cdot I_P.$$

In our example, the power equals:

$$P = U_S \cdot I_S = 24\,V \cdot 0{,}8\,A = 19{,}2\,W.$$

Everything up to this point relates to the ideal transformer. Clearly, there is no such thing as perfect, as losses are inevitable. They are present due to the fact that the windings exhibit a certain resistance value, which makes the transformer warm up during operation, and the fact that the magnetic field created by the primary does not entirely pass to the secondary. This is why the output wattage is less than the input wattage. Their ratio is called EFFICIENCY:

$$\eta = \frac{P_S}{P_P}.$$

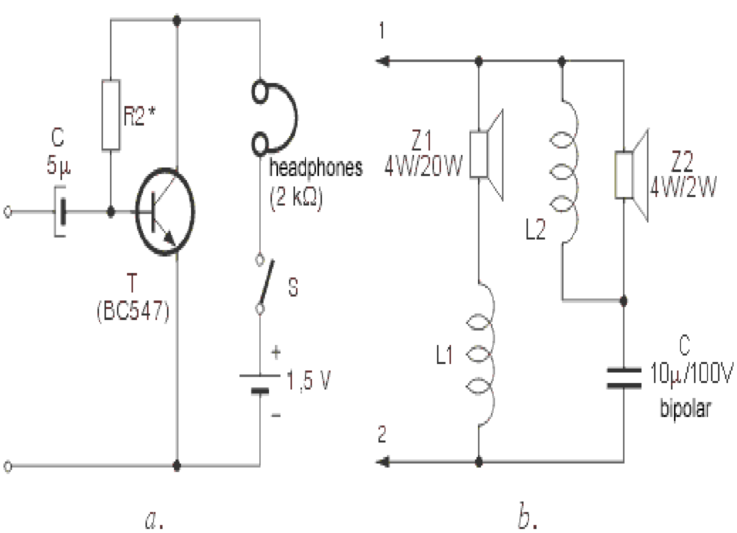
For transformers delivering hundreds of watts, efficiency is about μ=0.85, meaning that 85% of the electrical energy taken from the mains gets to the consumer, while the 15% is lost due to previously mentioned factors in the form of heat. For example, if power required by the consumer equals *Up*Ip* = 30W, then the power which the transformer draws from the maains equals:

$$P_P = \frac{P_S}{\eta} = \frac{30\,W}{0{,}85} = 35{,}3\,W$$

To avoid any confusion here, bear in mind that manufacturers have already taken every measure in minimizing the losses of transformers and other electronic components and that, practically, this is the highest possible efficiency. When acquiring a transformer, you should only worry about the required voltage and the maximal current of the secondary. Dividing the wattage and the secondary voltage gets you the maximal current value for the consumer. Dividing the wattage and the primary voltage gets you the current that the transformer draws from network, which is important to know when buying the fuse. Anyhow, you should be able to calculate any value you might need using the appropriate formulae from above.

Practical examples with coils and transformers

On the figure 2.6b coils, along with the capacitor, form two filters for conducting the currents to the speakers.
The coil and capacitor C on figure 2.6c form a parallel oscillatory circuit for "amplifying" a particular radio signal, while rejecting all other frequencies.



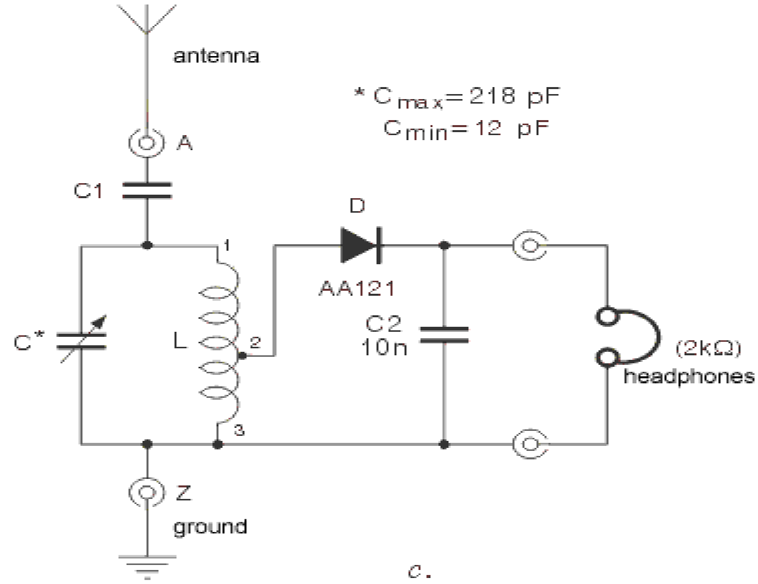


Fig. 2.6: a. Amplifier with headphones, b. Band-switch, c. Detector radio-receiver

The most obvious application for a transformer is in a power supply. A typical transformer is shown in figure 3.8 and is used for converting 220V to 24V.

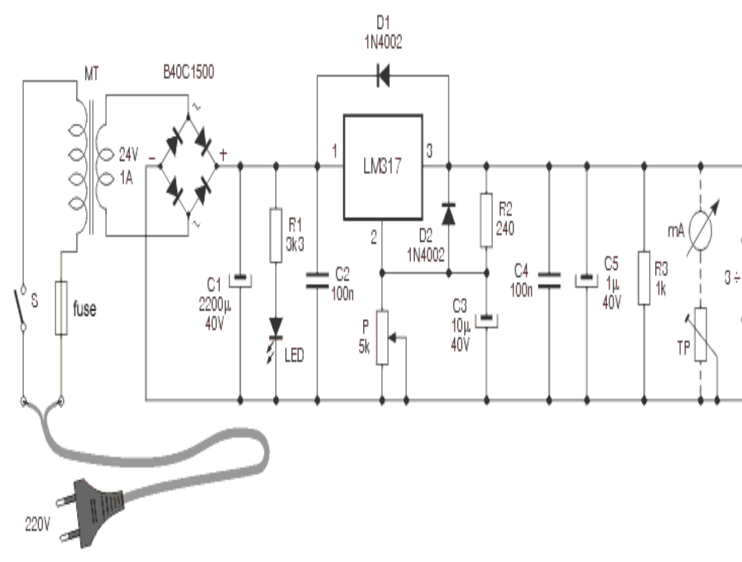


Fig. 3.8: Stabilized converter with circuit LM317

Output DC voltage can be adjusted via a linear potentiometer P, in 3~30V range.

The Experimenters Bench

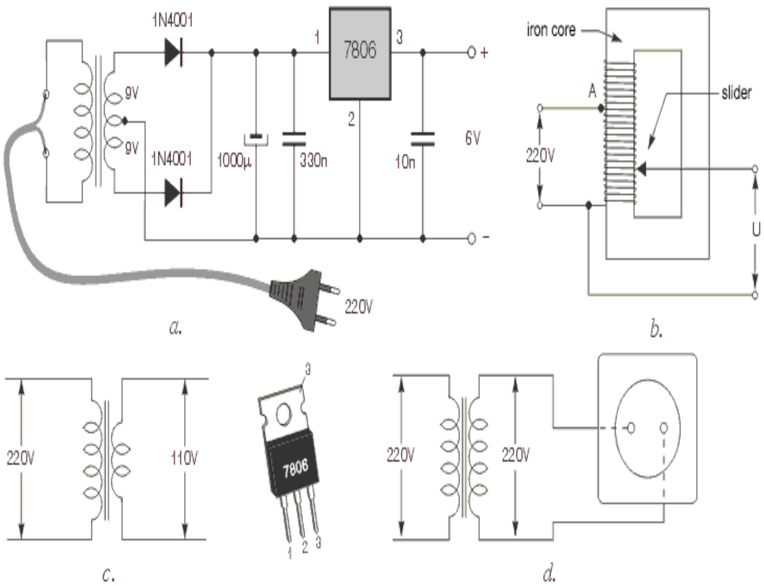


Fig. 3.9: a. Stabilized converter with regulator 7806, b. auto-transformer, c. transformer for devices working at 110V, d. isolating transformer

Figure 3.9a shows a simple power supply, using a transformer with a centre-tap on the secondary winding. This makes possible the use two diodes instead of the bridge in figure 3.8. Special types of transformers, mainly used in laboratories, are auto-transformers. The diagram for an auto-transformer is shown in figure 3.9b. It features only one winding, wound on an iron core. Voltage is taken from the transformer via a slider. When the slider is in its lowest position, voltage equals zero. Moving the slider upwards increases the voltage U, to 220V. Further moving the slider increases the voltage U above 220V.

The transformer in figure 3.9c converts 220v to 110v and is used for supplying devices designed to work on 110V.
As a final example, figure 3.9d represents an isolating transformer. This transformer features the same number of turns on primary and secondary windings. Secondary voltage is the same as the primary, 220V, but is completely isolated from the "mains," minimizing the risks of electrical shock. As a result, a person can stand on a wet floor and touch any part of the secondary without risk, which is not the case with the normal power outlet.

Early Radio: Combat Radio

History of 44th Signal Battalion

"Fighting" 44th Expeditionary Signal Battalion

The history of the 44th Expeditionary Signal Battalion begins with it being constituted on 3 February 1944 in the Army of the United States as the 44th Signal Construction Battalion. It was redesigned on 14 April 1944 as the 44th Signal Light Construction Battalion and activated at Camp Forrest, Tennessee. The unit was later reorganized and redesignated on 26 June 1944 as the 44th Heavy Signal Construction Battalion. It was then inactivated on 6 April 1946 in Japan. During WWII, the unit earned the credit for participation in the Rhineland Campaign and the Central Europe Campaign.

The unit was redesignated on 1 August 1966 as the 44th Signal Battalion, allotted to the Regular Army, and activated in Vietnam. It was inactivated on 1 March 1970 in Vietnam, activated on 17 March 1972 in Vietnam, and then inactivated on 3 June 1972 at Oakland, California. During the Vietnam War, the unit participated in the following: Counteroffensive, Phase II; Counteroffensive, Phase III; Tet Counteroffensive ; Counteroffensive IV; Counteroffensive, Phase V; Counteroffensive, Phase VI; Tet 69/Counteroffensive ; Summer-Fall 1969; Winter-Spring 1970; Consolidation II; Cease-Fire. Company C is additionally entitled to the Meritorious Unit Commendation (Army), Streamer embroidered VIETNAM 1966-1967. Company D (now Company B) is additionally entitled to the Republic of Vietnam Cross of Gallantry with Palm, Streamer embroidered VIETNAM 1967-1968. The 44th Signal Battalion was again activated on 16 March 1981 in Germany.

Headquartered in Mannheim, the "Fighting 44th" was geographically dispersed from Darmstadt to Heilbronn. After successful deployment in support of operations Desert Shield, Desert Storm, and Provide Comfort, the Battalion consolidated all the companies and relocated to Rheinland Kaserne, Ettlingen, Germany, in June 1991. The Battalion once again received orders to relocate back to Mannheim, Germany, effective 15 January 1995. Recent deployments and operations include: the unit deployment to Southwest Asia in support of Operation Desert Shield and Desert Storm; elements of Companies Alpha and Delta participation in Operation Provide Comfort in northern Iraq; and in 1994, elements of Companies Bravo and Charlie deployed in support of Operation Support Hope in Rwanda. In late November 1995, the flag went up and the 44th railroaded equipment from HHC, Alpha, and Delta Companies with attached personnel and deployed throughout the Balkan region to support Operation Joint Endeavor. Soldiers in Taszar and Kaposvar, Hungary, supported the U.S. National Support Element's Intermediate Staging Base and USAREUR (Fwd) Headquarters. Charlie Company deployed with elements of the 72d Signal Battalion to Sarajevo, Bosnia-Herzegovina and Zagreb, Croatia, to support the Implementation Forces Headquarters and the Commander for Support. The inactivation of Alpha Company and realignment of equipment posed a significant challenge following Alpha Company's redeployment in July 1996. Delta Company, the company slated to inactivate, was deployed for the duration of the year, so inactivation was not possible. Instead, Delta Company was re-flagged as Bravo Company, and the former Bravo Company, located in the rear, was inactivated at the end of the fiscal year. Equipment, Soldiers, and facilities were distributed throughout the battalion.

From August 2002 to May 2003, the 44th Signal Battalion was part of the historic Georgia Train and Equipment Program (GTEP). A Joint Task Force of U.S. Army and U.S. Air Force, under 2/10 Special Forces Group out of Fort Carson, Colorado, began a two year program to train and equip four "Combat Battalions" of the Republic of Georgia, a former member state of the USSR. Bravo Company led an 11-man Deployable Communications Package-Tactical (DCP-T) to provide the operations base camp in Krtsanisi, Georgia, with critical reach-back communications to Central Region and CONUS. In December 2002, personnel rotated in to replace the initial team. The GTEP was transferred from 2/10 Special Forces Group to Marine Forces Europe. Both teams took part in the training of the Georgian troops for communications subjects. The OICs were also the task force executive officers of Advance Operating Base 060 and served as the Task Force GTEP Signal Officer for the duration of the rotation. In May 2003, the mission was taken over by the 72d Signal Battalion

Early Radio: Radio at War

In early 2003, the 7th Signal Brigade received an order to deploy to Turkey in support of ARFOR in the northern front for Operation Iraqi Freedom. By late February, the equipment of the entire brigade was rail loaded to be transported by ship to Turkey. In February 2003, Bravo Company took the recently redeployed team from Georgia into Turkey as the advanced communications support for 1st ID and 21st TSC. Transported by air, the team brought the first tactical vehicles into theater and set up the Port of Iskenderun, the sea port of debarkation, providing initial communications support to the northern front. Later, other DCP-Ts arrived from 72d Signal Battalion and the 44th Signal Battalion. This team provided support to the 1st Infantry Division Commander, MG Batiste, on Incirlik Airbase while Bravo's team was relieved by 72d Signal Battalion at the SPOD and moved east to Mardin on the border of Turkey and Iraq where they later supported MG Batiste until the 1st Infantry Division was given orders in late April to redeploy to Central Region.

At this time, Task Force Rock was formed in order to augment 11th Signal Brigade in Kuwait and Iraq for Operation Iraqi Freedom. Task Force Rock was composed of Charlie Company with a hub platoon and associated support personnel from Alpha Company and DCP-T support from HHC. The task force deployed to the CENTCOM region in May with units geographically separated from Kuwait in the South of Baghdad in the North. In Basrah, Alpha Company's DCP-T Heavy was deployed in support of Coalition Forces Land Component Command (CFLCC). Alpha and Charlie Companies DCP-T Light was augmented to the 151st Signal Battalion at Camp Virginia, Kuwait. Charlie Company DCP-T Heavy initially provided support to the Iraqi Survey Group in Baghdad. Later, it moved to Babylon where it provided support to the headquarters of the Polish-led Multi-National Division. The superior leadership and skill of the officers and NCOs of Task Force Rock resulted in not a single combat injury or loss of life and no loss of equipment for the duration of the deployment.

In addition to OIF, Charlie Company deployed a C2FEM (Command and Control Forced Entry Module) DCP-T package to Vicenza, Italy, in April, in support of the Southern European Task Force Quick Reaction Force. The package was pre-positioned in Italy to replace the communications ability that the deployed 509th Signal Battalion had previously provided. In August, with the ongoing change in national leadership threatening peace in Liberia, CPT Denton Dye deployed to Vicenza, Italy, to join the DCP-T already there as the LNO to UN forces preparing for Joint Task Force Liberia. Fortunately, a peaceful transition was able to proceed in Liberia and the Marines providing security in that country did not require any additional forces.

Individual augmentees throughout the year included one warrant officer who deployed to Skopje, Macedonia, in support of KFOR; one staff sergeant who deployed to Bosnia in support of SFOR; one lieutenant and two senior non-commissioned officers who all deployed to Camp Bondsteel, Kosovo, to provide information systems support to forces stabilizing that country.

Finally, when the 44th's sister battalion, the 72d Signal Battalion, and the 7th Signal Brigade were ordered to deploy to Iraq, personnel restructuring occurred in order to assure that 72d was mission ready. Eighty-two of the Battalion's personnel were transferred to the 72d Signal Battalion including half of the battalion's warrant officers, significant numbers of communications Soldiers, and 90% of assigned mechanics not already deployed. The 44th also played a major role in preparing and pushing 72d and 7th out on their deployment and lent the 72d Signal Battalion both personnel and equipment to ensure a successful deployment to OIF.

In the spring of 2004, 44th Signal Battalion received the order to begin preparing for a possible deployment to Afghanistan for a yearlong deployment rotation to Operation Enduring Freedom VI in support of CJTF-76 headed by Southern European Task Force (SETAF). By October 2004, the command had received official word that the deployment was a go and the battalion was in full swing with personnel realignment, equipment reset and upgrades, and training.

Task Force Lightning consisted of 275 personnel. Alpha Company and Bravo Company were identified to deploy in whole, while Charlie Company plus (Task Force Rock), had just returned from a yearlong deployment to Iraq in June of 2004 and was identified as the stay-behind company to reconstitute and to handle any pop-up missions that would normally be tasked to the battalion. Headquarters and Headquarters Company was divided up into a forward element and a Rear Detachment. The Battalion Commander, Battalion Command Sergeant Major, and the Staff deployed with an attached company commander and first sergeant from the 509th Signal Battalion. In addition, 30 military and civilian personnel from the 509th Signal Battalion were attached to Task Force Lightning. Later, during the deployment, Task Force Lightning would also have attached personnel from 82nd Signal Battalion, 7th ARCOM, and augmentees from Joint Services Command including Air Force, Marines, and Navy personnel.

Task Force Lightning provided superior and unsurpassed tactical communications services in various forms to combined and joint forces throughout the Afghanistan theater and beyond. In support of SETAF Headquarters, HHC, 44th served as the network hub, based in Bagram responsible for the operation of the Systems Control (SYSCON) and Master Reference Terminal (MRT) which controlled 27 tactical sites supporting battalion and brigade size elements in forward operating bases (FOBs).

Alpha Company was the communications support for the Regional Command East, 1st Brigade, 82nd Airborne Infantry, and "Task Force Devil" based in Salerno.

Bravo Company was based in Kandahar providing communications support to Regional Command South, 173rd Airborne Infantry Brigade "Task Force Bayonet."
Task Force Lightning provided mission essential tactical communications support via satellite based systems in the form of DSN phones, Video Teleconferencing, NIPR, SIPR, and Secure Voice over IP, in austere and dangerous remote sites to platoon, company, and battalion size elements with various types of missions.
The unit utilized some of its organic Deployable Communications Packages-Tactical (DCP-T) and Single Shelter Switch (SSS) to provide tactical communications; however, they also had to fall in on equipment that they had never used before, namely the Base Band Node/Phoenix Tactical Satellite system (BBN/Phoenix), a new traffic terminal system (TT) and the Global Broadcast System (GBS). The 44th not only mastered the operation of these new systems but vastly improved their operation efficiency, particularly the GBS which is the means of receiving intelligence imagery and Predator feeds. The improvement of the GBS was directly responsible for saving uncounted human lives.

The 44th also became responsible for installing and providing the Combined Enterprise Regional Information Exchange System (CENTRIXS) network utilized by the Coalition forces at the tactical site in theater. Remaining true to their form, the 44th found ways to improve the CENTRIXS network by 100% hosted at 24 sites.
The 44th gained such a reputation of unmatched excellence that they were sought out by other both joint and combined for their tactical communications support and expert assistance in solving difficult technical communications related problems.

Prior to the 44th taking over the tactical network in Afghanistan, the quality of service and success rate of communications in theater left much to be desired. Through their steadfast determination and unrelenting efforts, the 44th affected a 400% total bandwidth increase and an improvement to the success rate of communications from 70% to 97%.

The 44th communications support played a huge role in the resounding success of the Afghanistan national elections in September 2005. DCP-Ts and TTs were utilized at main election headquarters throughout the country ensuring the safety and security of those headquarters.

Early Radio: Radio At War

Throughout all previous deployment rotations, there was no Unit Level Logistic System- Ground (ULLS-G) capability over the tactical network in Afghanistan. The 44th was given the daunting task of solving this seemingly unsolvable problem. Within a matter of a couple weeks, with great tenacity and determination, the 44th was able to successfully implement the ULLS-G on the tactical network, vastly improving logistical operations and capabilities across the entire Afghanistan Theater.

In the past year, FOB Salerno saw unprecedented growth in terms of missions and personnel. All along, 44th stretched its equipment resources and Soldiers to support this expansion and built a strong infrastructure for communication around the FOB. 44th developed a systematic plan of communication vaults to protect commercialized fiber optic lines, and installed shielded phone cables to provide data and voice quality of service comparable to bigger bases in theater. Initially supporting the 25th Infantry Division, Regional Command West in Heart, 44th remained on site and continued to provide tactical communications support to International Security Assistance Force (ISAF), Italian military.

When political unrest forced the K2 Air Force base to be shut down, the 44th dispatched a BBN/Phoenix team to provide critical command and control communications during the base closure.
Immediately after the devastating earthquake in Pakistan in August, the 44th provided one TT and DCP-T to support the United States humanitarian aid mission. The DCP-T remained well after the redeployment providing communications support to the main medical effort, the 212th Mobile Army Surgical Hospital (MASH) out of Giebelstadt, Germany.

In addition to the humanitarian aid mission to Pakistan, the 44th also provided 6 personnel for the 30 personnel CJTF-76 force protection task force to Pakistan.

The 44th was called upon to provide support for the Commander, CJTF-76 AM/FM Radio campaign, broadcasting news, music, and Coalition promotional messages to remote areas in an effort to win the hearts and minds of the citizenry. Immediate and positive results were realized from the program promoting goodwill between Coalition forces and the citizens of Afghanistan. Crucial intelligence information regarding insurgents, weapons caches, and narcotics activity were gained in response to this program.

The 44th was very actively involved in numerous Humanitarian Aid (HA) Missions throughout the country. The Soldiers coordinated HA Missions and volunteered their time, energy, effort, and resources to provide various articles of clothing, school supplies, hygiene supplies, and food and water to orphanages and schools.

Decorations

- Meritorious Unit Commendation (Army) for VIETNAM 1967-1968
- Meritorious Unit Commendation (Army) for VIETNAM 1968-1969
- Meritorious Unit Commendation (Army) for SOUTHWEST ASIA
- Meritorious Unit Commendation (Army) for OPERATION IRAQI FREEDOM 2007-2008

Company C additionally entitled to: Meritorious Unit Commendation (Army) for VIETNAM 1966-1967

From the ARRL Newsletter

Texas Hams Injured at Field Day Site

On the morning of June 26, two Texas radio amateurs -- Danny Caldwell, AD5IP, of Kamay, and Mike Byrne, AE5CO, of Iowa Park -- received electric shocks as they took down an inverted V antenna. According to Wichita County Emergency Coordinator Larry Ballard, KE5KNV, the two were taking part in Field Day as part of the Wichita Amateur Radio Society (WARS).

WICHITA AMATEUR
W.A.R.S.
RADIO
SOCIETY

"The Wichita Amateur Radio Society decided to terminate the participation in the exercise at 10 AM on Sunday, due to extreme heat and gusty wind conditions," Ballard told the ARRL. "Danny and Mike were injured while lowering the center pole of the inverted V dipole antenna to the ground. They were knocked to the ground when a guy wire, or the antenna lead-in, was hit with very high wind gust that blew it into a high [power] line wire." According to reports from witnesses, winds were gusting up to 40 miles per hour.

Ballard said 911 was called immediately and a rescue van arrived in a matter of minutes. The Fire Rescue Team determined that the two men were stable and they were transported to United Regional Hospital in Wichita Falls. Caldwell received CPR at the scene and was air lifted to Parkland Hospital in Dallas. Byrne was transported to Parkland later by ambulance.

"This was the second year that the Wichita Amateur Radio Society had set up at Oscar Park in the City of Iowa Park for Field Day event," Ballard explained. "The antennas were located in the same location as the prior year, using the same safety practice of locating the antennas a safe distance from power lines and structures. The inverted V dipole antenna had yellow caution tape, marking guy wires and antenna end locations."

Ballard said that Byrne was released from the hospital on Monday, June 27 and was resting at home. Caldwell, who suffered more serious injuries, was released a day later.

Testing & Local Swapfests

VE Testing

Saturday, July 30th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, September 24th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, October 29th, 2011 - AES - 9:30 AM-11:15 AM

Saturday, November 26th, 2011 - AES - 9:30 AM-11:15 AM

ALL testing takes place at: Amateur Electronic Supply 5720 W. Good Hope Rd. Milwaukee, WI 53223

Area Swapfests:

July 17th, KARSFEST 2011 Location: Peotone, IL
ARRL Hamfest, Kankakee Area Radio Society
Website: http://www.w9az.com

August 6th **WIARC Swapfest** Location: Quincy, IL
ARRL Hamfest, Western Illinois ARC
Website: http://www.w9awe.org/

August 13th 2011 Sturtevant, Wi

Racine Megacycle Club SwapFest

Website https://sites.google.com/site/kb9zaf/

Working Committees

Field Day

- Open

FM Simplex Contest

- Joe – N9UX
- Jeff – K9VS
- Brian— K9LCQ

Ticket drum and drawing

- Tom – N9UFJ
- Jackie – No Call

Newsletter Editor

- Michael-KC9CMT

Webmaster

- Joe Schwartz—N9UX

Refreshments

- Hal-WB9OZN

Membership Information

The Hamateur Chatter is the newsletter of MRAC (Milwaukee Radio Amateurs' Club), a not for profit organization for the advancement of amateur radio and the maintenance of fraternalism and a high standard of conduct. MRAC Membership dues are $17.00 per year and run on a calendar year starting January 1st. MRAC general membership meetings are normally held at 7:00PM the last Thursday of the month except for November when Thanksgiving falls on the last Thursday when the meeting moves forward 1 week to the 3rd Thursday and December, when the Christmas dinner takes the place of a regular meeting. Club Contact Information Our website address http://www.w9rh.org

Telephone (414) 332-MRAC (6722)

Address correspondence to:

MRAC, Box 240545, Milwaukee, WI 53223

Email may be sent to

w9rh@arrl.net

Our YAHOO newsgroup:

http://groups.yahoo.com/group/MRAC-W9RH/

CLUB NETS:

• Our Six Meter SSB net is Thursday at 8:00PM on 50.160 MHz USB

• Our Ten Meter SSB net is Friday at 8:00PM on 28.490 MHz ± 5 KHz USB.

• Our Two Meter FM net follows the Ten meter net at 9:00PM on our repeater at 145.390MHz - offset (PL 127.3)

Milwaukee Area Nets

Mon.8:00 PM 3.994 Tech Net

Mon.8:00 PM 146.865- ARES Walworth ARRL News Line

Mon.8:00 PM 146.445 Emergency Net

Mon.8:00 PM 146.865- ARES Net Walworth

Mon.8:45 PM 147.165- ARRL Audio News

Mon. 9:15 PM 444.125+ Waukesha ARES Net

Mon.9:00 PM 147.165- Milwaukee County ARES Net

Tue.9:00 AM 50.160 6 . Mtr 2nd Shifter's Net

Tue. 7:00 PM 145.130 MAARS Trivia Net

Tue. 8:00 PM 7.035 A.F.A.R. (CW)

Wed. 8:00 PM 145.130 MAARS Amateur Radio Newsline

Wed. 9:00 PM 145.130 MAARS IRLP SwapNet d FM-38 Repeaters (IRLP 9624)

Thur. 8:00 PM 50.160, 6 Mtr SSB Net

Thur. 9:00 PM 146.910 Computer Net

Fri. 8:30 PM 28.490 MRAC W9RH 10 Mtr Net SSB

Fri. 9:00 PM 145.390 W9RH 2 Mtr. FM Net

Sat. 9:00 PM 146.910 Saturday Night Fun Net

Sun 8:30 AM 3.985 QCWA (Chapter. 55) SSB Net

Sun 9:00 AM 145.565 X-Country Simplex Group

Sun 8:00 PM 146.91 Information Net

Sun 8:00 PM 28.365 10/10 International Net (SSB)

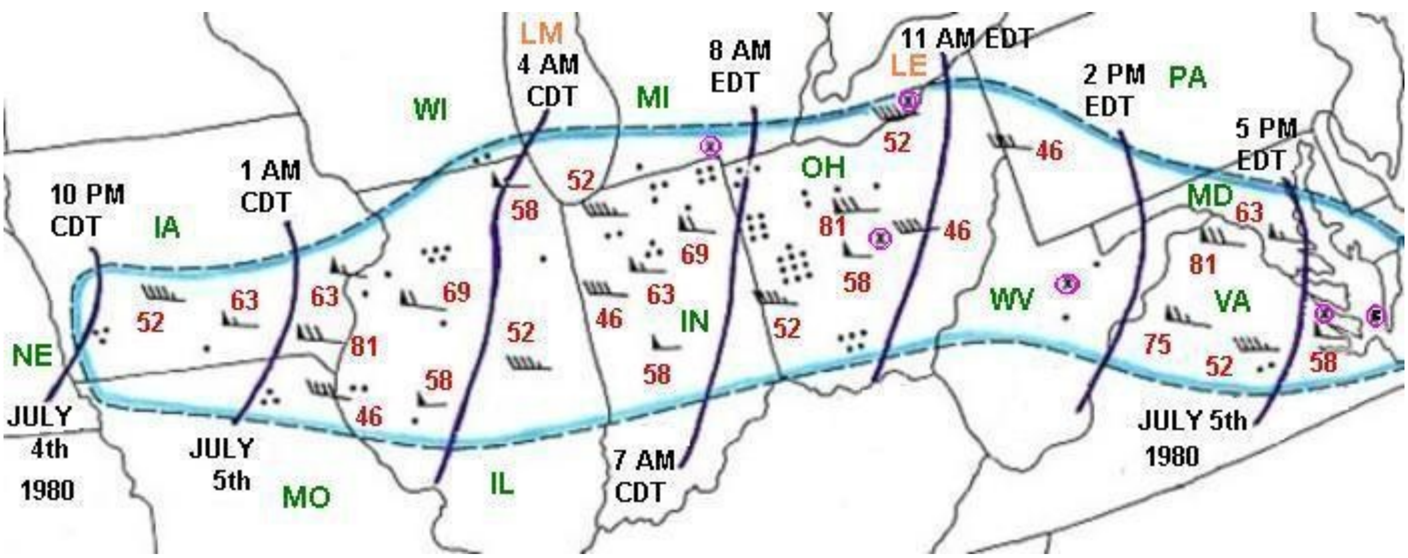
Sun 9:00 PM 146.91 Swap Net

2 meter repeaters are offset by 600KHz - - 70 centimeter repeaters are offset by 5 MHz

SSB frequencies below 20 meters are LSB and for 20 Mtr and above are USB.

JULY 4-5, 1980 DERECHO

The "More Trees Down" Derecho



Area affected by the July 4-5, 1980 derecho event (outlined in blue). Curved dark purple lines represent the approximate locations of the gust front at three hourly intervals. The "x" symbols circled in purple represent deaths, and the "black dots" denote personal injuries directly attributable to derecho winds. The flag symbols denote measured wind gusts, with the direction of the wind being from the flag end toward the lower end of the staff. Maximum wind gusts (red numbers) in mph. (From Johns and Hirt 1987)