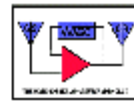




FEEDBACK



Warminster Amateur Radio Club Web Page www.k3dn.org

February 2000

President's Message

Congratulations to Bob Phillips (KA3VKU) and George Brechmann (N3HBT) who were re-elected to the Board of Directors at the January general meeting. Directors are members of the Executive Board who devote their time by attending both board and general meetings and guide the club with an equal vote in all decisions. Our nominating committee, Steve Larson (KA3ZLY) and Marty Squicciarini (NR3Z), assembled a slate of three dedicated members for the two open positions. Members who may be interested in running for office in the upcoming May elections should contact the Steve or Marty to let them know your interest. Taking an active part as an officer is a rewarding responsibility and a great way to support the club.

I hope you had the opportunity to participate in the 2000 ARRL January VHF Sweepstakes. As Joe Bagnick (N3EMA) discussed at the January meeting, this is one of the club-supported contests. Even if you worked only a few stations, don't forget to submit your log to Joe by the February general meeting so he can compile the total club contacts. If you used computer logging, submit your log on a 3.5" floppy in ARRL accepted format.

The Annual Club Auction will be held at the general meeting on February 3, 2000. Tom Michaud (WA3TQJ) will again be our auctioneer. Tom puts on quit a show and is very quick, so don't scratch your nose or you bought it! Proceeds from auctioned items are donated to the club treasury, so clean out those closets and bring lots of money.

The club has acquired a new antenna for the 147.09 repeater. This antenna will replace the current aging antenna and will find a home on the new tower to be erected at the Warminster Township building in the near future. This move will relocate the controller, increase the antenna height and (we hope) significantly improve the performance of the ".09" repeater. Stay tuned for further updates.

See you at the next meeting.

73, Rocky N3FKR

Minutes for January Meeting.

WARC Meeting Agenda - January 6, 2000

Meeting called to order at 19:35 - 58 people signed the log

Officer Reports

President (Rocky N3FKR)

Holiday Dinner

January VHF Sweepstakes 1-22-00 to 1-24-00

Buckingham Township 300th year celebration at Hansel Park - June 3rd Sat. 10am to dusk - club

to volunteer to help with run

Air Show at Willow Grove - not sure if it is 3rd or 4th weekend

Election of Directors - N3HBT, WA3QVU and KA3VKU on ballot - no more nominations from floor results N3HBT and KA3VKU elected

Vice President (Mark N3GNW)

Future Meeting Programs

January 6, License Restructuring (tower installation and safety postponed);

February 3, Auction; March 2, Home Brew

Treasurer (John N3ZMJ)

Report

Secretary (Ron NY3J)

Report: Secretary to send a letter to Area Repeater Coordination Council in reply to their request for dues - we would like a summary of their expenditures

Committee Reports

Classes- (George KA3WXV) class will start Tuesday, March 14, 7:30 to 9:15 to last Tuesday in May Will take survey for code class

PA Adopt a Highway Program- Jacksonville Road (Hugh N3SOQ) Need new cleanup date

Repeater- (Brian N3EXA / George N3HBT) - report N3EXA to pick up antenna - N3HBT will store it

January VHF Sweepstakes (Joe N3EMA) - contest package handed out - N3EMA to collect logs and send to ARRL for club score

RACES Liaison (Bob KA3VKU)

Special Interest Group - NY3J reported that SIGs are active - meeting times vary - see group chairperson

Others (as needed)

Old Business

QSL card design contest - no entries yet for new card and new club logo

New Business

Good and Welfare

MOTION to adjourn - meeting adjourned at 20:07

Respectfully submitted by Ron Wenig NY3J

Earth and Space Science

Lightning and Thunder

At any given time there are an estimated 2000 thunderstorms in progress on Earth. About 45,000 thunderstorms take place each day and more than 16 million occur annually around the world. Lightning from these storms strikes the Earth 100 times each second! Annually, the United States experiences about 100,000 thunderstorms and millions of lightning strikes. Fortunately for us here in the eastern United States, thunderstorms are most frequent(averaging 70- 100 days per year) in the eastern Gulf Coast region and Florida because of their close proximity to the source region for warm, humid, and unstable air masses. The southeastern Pennsylvania region averages about 30 to 40 thunderstorms per year. The lightning and thunder generated by a severe thunderstorm can be a spectacular event that elicits both awe and fear, especially if you're an amateur radio operator with a radio antenna located on your property.

Lightning results from a gigantic electrical discharge, either between a cloud and the ground, or between points inside the same cloud or between adjacent clouds. It is analogous to the flash that occurs when opposite terminals of a battery are almost connected, and a small spark or electrical discharge jumps the gap. This spark and a lightning flash mark the path heated almost instantaneously by the electrical discharge, to such a degree that it radiates visible light. Thunder, the generation of sound, results from the rapid expansion of air along the path of the electrical discharge. In the case of the electrical discharge between the two terminals of the battery, there is a small crackle; while in the case of the large electrical discharge during a thunderstorm, there is a loud thumping, banging, or rumbling. The difference in the two is a matter of scale. A car battery is usually 12 volts, while a typical lightning flash involves a difference in electrical potential of from 100 million to 1 billion volts! The highest electrical gradients measured inside thunderstorms by rocket are a colossal 100,000 volts per meter.

Early lightning strokes in the lifespan of a thunderstorm are usually within or between clouds and are followed by muffled thunder. Often visible from the ground only at night as blurred areas of light, these lightning strokes are commonly called "sheet lightning." The first lightning strokes to occur between the cloud and the ground begin when or just before rain or hail reaches the surface. These strokes result as negatively-charged melting hail(rain) falls close enough to the usually positively-charged ground to create electrical breakdown. These strokes are distinct jagged lines, where lightning takes the path of least resistance through all the slight variations of temperature and humidity through the air. Studies have shown that often the first stroke from cloud to ground is followed almost instantaneously by a return stroke in the opposite direction. This is thought to be the result of ionization(effectively a loss of insulation) along the path of the first pulse, which immediately encourages a stronger discharge. Sometimes the strokes take several paths to ground from a main channel, this is called "forked lightning."

At close range, thunder is a startling loud crack rather than a rumble because the sound is less distorted over the shorter distance. Light from lightning travels at approximately 300 million meters per second(186,000 miles per second) and may be regarded as instantaneous. Thunder travels at the much slower speed of sound, around 333 meters per second(0.2 miles per second). Thus the explanation for why we see the flash before we hear the sound. If the delay between a flash and the bang is timed in seconds, dividing the result by two(2) will provide a good estimation of the distance of the storm from the observer in miles.

Any electrical current or discharge takes the path of least resistance, and lightning is no exception, striking wherever the path to the Earth is easiest. This may be through the fabric of a building or the body tissues of a person. The result is usually structural damage or injury/death. The chances of a person being struck by lightning are small. One of the safest places to be during a lightning and thunderstorm is in a motor vehicle. Any electrical charge to earth will pass through the outside of the metal body and not affect the passengers, similar to the "Faraday cage" effect discussed in science class. On the other hand, being outdoors during a lightning and thunderstorm, it is wise to have regard to the possibility of lightning strikes.

Ordinarily, amateur radio antennas are no more likely to be hit by a direct strike than any other object of the same height. However, the antenna system should be grounded since an ungrounded system could pick up large electrical charges from storms in the area. Disconnect the antenna

feedline from the equipment and make sure BOTH SIDES of the system are connected to the station ground. Unplugging power cords is also advisable since electrical charges can find there way into equipment through this route. Power lines can act as long antennas, picking up sizable charges during a storm and transmitting them through power lines to the home.

Severe weather has a fascination that everyday weather phenomena cannot provide. Lightning and thunder storms are no exception. They are at the same time spectacular visual and auditory events as well as incredible and dangerous forces of nature.

Keep Looking Up!

Mike
W3MJP

P.S. The Earth and Space Science column needs articles! Please feel free to submit an article on a topic which involves earth or space science and interests you.

Special Interest Group Update

Just wanted to give everyone an update to our club's Special Interest Groups, SIG. Scheduling time for the SIGs to get together is very difficult with everyone's busy schedule. Meeting before the general meeting doesn't look good because by the time everyone settles down the heavy gavel of N3FKR sounds out the start of the club's meeting. So I would recommend the SIG leaders to try to get together with their groups at another time. Maybe during the club station night, after a board meeting, a Saturday, or on the air. Just having a group of people with the same interest is a great concept for the club with or without formal meetings.

Here is a rundown on the groups:

CW/QRP - Marty, NR3Z

HF - Dennis, N3KRE,

Satellite - Joe, N3EMA

VHF/UHF/MW - Al, N3ITT

FM&Repeaters - Mark, WA3QVU,

Tubes and Rigs That Use Them - Tom, WA3TQJ

Digital - Ron, NY3J

Make sure you talk to these experts if you have any questions about these modes.

The Digital SIG has been very active. We have been getting together after Board meetings to chat and compare notes about APRS. We have 6 people in our group. Three of us are using the new Kenwood D7A. This is a dual band HT with a built in TNC. W3MJP is using APRS to take check-ins on the Sky Warn Net he runs. WI3Z has a WX station set up which he plans to set up down the shore. This will allow him to see conditions down there from his home station. Al also is setting up a digi-peater in the Sellersville area. N3GNW built a circuit to interface with a low cost GPS engine.

We have also learned how to network personal computer's together to communicate with an APRS machine. This will allow one or more pc's to link to a pc connected to a TNC using ethernet. This is useful in a large Emergency Operations Center. PC's in an EOC can talk to each other over the LAN. These machines can see what is happening on the outside via the PC connected to a radio. They can also send messages to other people within the EOC. The outside RF network can send locations of emergency vehicles or WX conditions to the PC's on the inside network. This was a great network learning experience.

APRS doesn't necessarily have to be used just for tracking positions of other stations. It's also a way to send messages to other hams either local or dx.

The network grows daily not only on 2 meters but also on HF and the Internet. You could leave the message screen displayed and send and receive messages anytime. If someone sends you a message you don't have to be at the computer, it will be on the screen next time you look. This would be great for people in the club to communicate with each other. Also great for announcing DX spots. Send me a message to either NY3J at home or NY3J-1 when I'm on the road and I will get the message. If you have a D7A you could even message someone walking around in a portable mode.

So that's it for the update on WARC's Special Interest Group program. Thanks for letting me sneak in a plug for the APRS group. I would love to hear about the other groups so if anyone is doing anything else please write an article about it. This is a great concept that the PC clubs have been using.

I don't know of any other Ham club doing this so WARC is leading the way.

73, de Ron ny3j@home.com

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