SPECIAL SERVICE CLUB

Forsyth Amateur Radio Club, Inc.

Newsletter

OUR 77TH YEAR!

Founded December 30, 1930

July & August, 2007

July's Club Program

One version of the SCR-299.

Although we had a speaker planed for July's meeting, she had to cancel at the last minute. It has been rescheduled for September. For July we were ~~tortured~~ treated to one of my old DVD's. This was from the time when men were men, hams were hams, and ham receivers weighted as much as a major kitchen appliance. But not transmitters. They were heavier. The July program was a WWII-era industry film on the building of the Hallicrafters HT-4, also known as the BC-610. A beast of a transmitter so powerful it affected the earth's rotation. And that was just by weight. This mini-elephant was built into a truck or van, along with 2 BC-342 receivers and an antenna tuner. It pulled a large generator behind the van for power. The entire system was called SRC-299. Just one system filled an entire railroad box car for shipping. A colossus of a radio system. Today it could be replaced by 2 Icom-706's, an LDG tuner, and ran from 12-volts. To be fair the IC-706's only run 100-watts and the BC-610 was 300 watts AM (400 CW). But a pair of IC-706's would have 2 transmitters, SSB, greater frequency coverage and more modes. Also you could have air conditioning. I would imagine the radio operator inside one of the WWII vans with all that tube gear running was a sweltering experience, especially in the tropics. *Don, WS4NC*

Club Contest Group 2006 CQWW-SSB

2nd Place USA in the Big One!

The W4WS contesters stunned the contesting world (OK, not really, but we stunned ourselves. . .) as our score in the 2006 CQWW SSB contest put us as #2 in the US, #1 in 4 Land. This represents the best finish EVER by our group, and in a new category no less (we recently switched from M/S- Multi operator/single transmitter to M/2- Multi operator/two transmitter.) #1 went to N3RS, a massive station in Pennsylvania that sports 2 140' towers with 5/5/5 stacks on each band and a rotatable dipole on 80 meters! Their effort was close to 3 million better than ours. But the great news is that we bested W4RM, a huge station in Virginia which sports a very similar station as N3RS- in other words, we really squeezed everything we could out of Robert's station and it showed in the score. We even beat all competitors with our 20 meter QSO total. Congrats to all involved. Now it's time to figure out what to do for this year's CQWW. There is some talk about a field day style operation, so if you have any ideas, let Henry or Robert know!

Receiver/Transmitter Interfacing

by Lewis "Tink" Kanoy, W4DCW

Excellent technical article. The full article with schematics appears on page 3.

W4NC Field Day

First thing - go to www.youtube.com and search on FARC. Phill KD4JZZ shot the video and Raymond WX5AAA edited and added the sound. It is a very professional job and both Phil and Raymond deserve kudos. Pictures are on page 6.

QRZ de W1AW/4 . . .

Several NC stations were invited to operate as W1AW/4 as a bonus station in the recent IARU Contest. Here in Forsyth County we operated from Robert's KG4NEP station on 10 and 15 SSB and Gene's WB4MSG station on 80 meter SSB. It was an exciting experience to call "QRZ W1AW/4" and hear the buzz from hundreds of stations calling. In a couple of remarkable QSOs we (W1AW/4) worked W1AW (as in Newington, Conn.) In total the NC operators were AA4NC NT4D KA1ARB K4MA WB4MSG AG4RZ W2DZO KG4NEP WS4NC KU4BP W0UCE W4MY N4AF. Although as a bonus station our score doesn't count - the total score was 6,049,638.

Club Meeting, Monday August 13, 2007

We will meet, as usual, on the 2nd Monday of the month at 690 Coliseum Drive in the Red Cross Building at 7:30 PM sharp in Room 09, but come early, say, 7:00-ish, to "hob-nob" with your fellow hams. The program will be by David Rawley, N4XO and his historical QSL collection. He has a number of QSL's from Winston-Salem hams from the 1920's and 1930's including a number of early W4NC QSL's. This will be a really interesting program.

Forsyth Amateur Radio Club, Inc is a non-profit (IRS 501(c)3) North Carolina corporation for the promotion of Amateur Radio, and for the education and training of hams and the general public primarily in Forsyth County, North Carolina.

FARC was originally incorporated as the Winston-Salem Radio Club on December 31, 1930 and has been in operation ever since. We currently maintain a state-of-the-art ham station in the basement of the Red Cross, 690 Coliseum Dr., Winston-Salem, NC and also maintain two 2-meter repeaters, 146.64 (100 Hz tone) and 145.47 (100 Hz tone).

FARC has a general membership meeting with a program on the 2nd Monday of every month at the Red Cross building, 690 Coliseum Drive in Winston-Salem. The club conducts its main business meeting (sometimes called the Board Meeting) on the 3rd Monday generally at the same location. This is where most of the club's business is conducted and all attending members have a vote. All club members are strongly encouraged to attend the business meeting. For more information about FARC mail us at FARC, Inc., PO Box 11361, Winston-Salem, NC, 27116; call 336-723-7388; or visit out web site at www.w4nc.com . Club email is to w4nc@triad.rr.com .

Officers for 2007 are:

President: Don Edwards, WS4NC
ws4nc@arrl.net

Vice-President: Austin Tindal, KI4KNS
ki4kns@w4nc.org

Secretary: Megan Hardy, KI4KNM
medik286@yahoo.com

Treasurer: Henry Heidtmann, W2DZO
henry@summitschool.com

Newsletter Editor: Don Edwards, WS4NC
ws4nc@arrl.net

To join our list server send a blank email to w4nc-subscribe@yahoogroups.com

 If you would like to help support the newsletter with an ad, please contact Don Edwards (email: ws4nc@arrl.net). Ad deadlines are 7 days before the end of the month. Rates are $50 for 12 months. *Cheap!*

We trade newsletters with other clubs, and many local clubs are on our mailing list. If your club has a newsletter and would like to trade please send us a copy.

Short Circuits

V26H: 6141 QSOs/48 hours in ARRL DX

As of press time, Robert KG4NEP and Henry W2DZO are still awaiting the results of their operation at V26H in Antigua for the ARRL DX SSB contest this past March. The results should be posted in the September QST. Their claimed score of just over 5 million points placed them in 1st place in the World in the Multi/single category with VP2E a very close 2nd. Log checking will decide who gets the #1 World plaque and who gets the #1 North America plaque. Way to go guys!

Blue Ridge Parkway Special Event

The 2nd Annual Blue Ridge Bonanza, a special event sponsored by the Roanoke Valley ARC will take place on Saturday, September 22 and 23 from 9am-5pm. The FARC has agreed to man 2 stations this year- one at Doughton Park (MP 240) and one at Linville Falls (MP 315). Frequencies will be on 20 and 40 meters SSB (around 14.250 and 7.275). Henry W2DZO will be at Doughton and will be camping overnight - John N0KTY will be at Linville Falls camping as well. Both Henry and John invite all to come visit and camp if they'd like.

FARC SK Plaque Updated

For years we have honored our departed club members with a plate on the SK plaque located on the wall in the Club station. The plaque has grown full and so a new one is in production. We hope to have the new plaque back on the wall by the September meeting.

NCQSO Party Featured on SERA Journal August Cover

The August 2007 SERA Journal cover photo featured FARC's W2DZO presenting Pennsylvania's Keith WA3HAE an award for the NC QSO Party. FARC has sponsored the NC QSO party for the last several years.

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Transmitter/Receiver Interfacing
by Tink Kanoy, W4DCW

Editor - Ok - I have to confess. Tink doesn't know about this Newsletter article. You see - it was a dark and stormy night. Ok, it wasn't stormy. It was night however; the night after the June Hamfest. I was pawing through some old 1940s and 1950s QSTs I saved from the Big Green Bin at the hamfest. I have the CD versions but holding a computer on your lap isn't the same thing as holding the original item. There's the feel of the pages. And the smell. And the original is like living in the past. Some might say I never left the past. And also maybe I smell like it.

Anyway, as I'm flipping through the pages admiring the ads for all the WWII surplus goodies and the articles I happen upon this really great technical article that has an exceptionally well thought out schematic of what is called "relay logic". Power is on the left and runs down the page. The neutral line is on the right and also runs down the page. Control items like switch and relay contacts are on the left and loads are on the right. Industrial control circuits have been done in relay logic almost since the steam age. While simple circuits are easy to understand the complexity can be deceiving.

Strange as it may seem in these days of radios-in-a-box there was a time not that long ago that separate receivers and transmitters ruled the day. It was up to you to work how to make them share one antenna and switch between transmit and receive among other things. It was not necessarily an easy problem. Even if you are not facing this problem it is still very educational to read and study this article. This is a great article for learning how to sequence

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Versatile Control Systems for Transmitters

Building Safety and Convenience into Your Transmitter Power-Switching Circuits

BY LEWIS KANOY,* W4DCW

A CONTROL SYSTEM is probably the last thing the average ham thinks about when he builds his transmitter, and yet it is a factor that requires considerable thought and planning if the rig is to be operated with convenience and safety to the operator and equipment. In designing a control circuit for the half-kilowatt 'phone-c.w. transmitter at W4DCW, several requirements were set forth:

1) A single switch must perform all the functions of changing from transmit to receive.

2) A single switch must shift from c.w. to 'phone.

3) A safety interlock should remove all dangerous voltages when the transmitter enclosure is opened.

4) It should be impossible to turn on plate or bias voltages until filament voltage has been applied, and impossible to turn off filaments without also turning off plate voltage. It is also desirable to have an automatic time delay between the applications of filament and plate voltages.

5) Indicator lamps should show which supplies are on and indicate blown fuses.

6) The system should be readily adaptable to either 115- or 230-volt lines.

7) Provision should be made for shifting to reduced power for tuning up without a Variac.

8) The remote-control wires to the operating position should not have to carry heavy current.

The systems shown in Figs. 1 and 2 meet all of these requirements. Referring to Fig. 1, the control system starts out with a polarized plug, P_1, for the line connection. The side of the line indicated should be grounded. One or more utility outlets, which are not affected by the switching, may be connected at J_1. The line-fuse indicator lamp, I_1, should not light unless the line fuse, F_1, is blown.

Turning on S_1 at the transmitter or S_2 at the operating position turns on all r.f. and r.f. power-supply filament transformers, which are connected in parallel at T_1, and the indicator lamp, I_2, lights. If the 'phone-c.w. switch, S_3, is thrown to the 'phone position, all audio and a.f. power-supply filament transformers, which are connected in parallel at T_2, will also be turned on by S_1, and the 'phone-indicator lamp, I_3, will light. If S_3 is in the c.w. position, the c.w. indicator lamp, I_4, will light, but the a.f. supplies will be

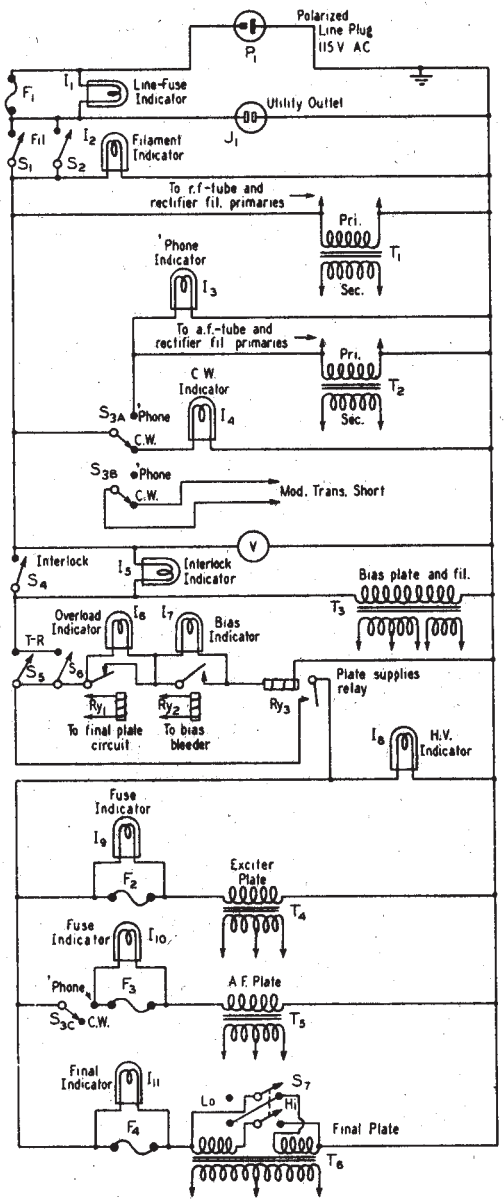

Fig. 1 — 115-volt control circuit. All switches, except S_3 and S_7, may be 5-amp. S_7 should be 10-amp. and S_3 a ceramic rotary. The lamps are ⅜-inch panel type.

* 114 Idlewilde Drive, Winston-Salem, N. C.

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Upcoming Hamfests & Other Ham Dates

August 4 - Roanoke Hamfest, Vinton, VA
August 13 - FARC Club Meeting, Red Cross, Winston-Salem
August 20 - FARC Board Meeting, Red Cross, Winston-Salem
August 27 - PVRC NC-West Meeting, Location TBD, Winston-Salem

August 31, Sept. 1 & 2 Shelby Hamfest, Shelby, NC
September 10 - FARC Club Meeting, Red Cross, Winston-Salem
September 17 - FARC Board Meeting, Red Cross, Winston-Salem
September 15 & 16 - Va. Beach Hamfest, Virginia Beach, VA.
September 24 - PVRC NC-West Meeting, Location TBD, Winston-Salem

October 6 - Rock Hill Hamfest, Rock Hill, SC
October 8- FARC Club Meeting, Red Cross, Winston-Salem
October 15- FARC Board Meeting, Red Cross, Winston-Salem
October 20 - Pfafftown Hamfest, Winston-Salem, NC
October 22 - PVRC NC-West Meeting, Location TBD, Winston-Salem
October 26 - 28 - CQWW Contest
October 29 - Fifth Monday of the Month!!

November 12 - FARC Club Meeting, Red Cross, Winston-Salem
November 19 - FARC Board Meeting, Red Cross, Winston-Salem
November 26 - PVRC NC-West Meeting, Location TBD, Winston-Salem

December 10 - FARC Club Meeting, Red Cross, Winston-Salem
December 17 - FARC Board Meeting, Red Cross, Winston-Salem
December 24 - Christmas Eve - No PVRC Meeting
December 31 - Fifth Monday of the Month!! Also New Years Eve.

Continued from page 3

power circuits and to illustrate little niceties like lamps to indicate open fuses.

In today's industrial world ran by computers you may think that relay logic diagrams are relics of the past. Not so. Complicated hard wiring of relays and switches is not practiced much anymore since computers offer more flexibility. Although there are other ways to do the programing for PLCs (Programable Logic Controllers - essentially an industrial computer with lot of inputs and outputs) programming in relay logic is still an option, even popular. It is easy to read and understand, although there is not an exact one-to-one correspondence with the wires in the machine. And unlike the old world where the lines were actual wires and relays any changes to machine operation is as simple as changing a few lines of code. The complexities of sequencing logic can still humble the programmer and the technician who has to fix it.

When I was training technicians at a certain local (ahem) company we built a small conveyor system that sorted metal and plastic blocks to use for training purposes. The schematic lightly covered one 11X17 page. It was partly to illustrate industrial control diagrams and partly to teach troubleshooting theory. Repairing broken things is a thought process completely separate from the knowledge of wiring and parts. While that thought process can be taught, the skill of repair has to be practiced to be learned. A few hours of playing with the conveyor gizmo and finding all the parts and it appeared simple. Just like Satan intended. I'd put a little problem in the machine and watch some hapless

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cut off. A third section of S_3 shorts the modulation-transformer secondary, T_5, when using c.w.

If the safety interlock switch, S_4, is closed, the bias-supply plate and filament voltages (T_8) will be turned on. As soon as the rectifier of this supply (an indirectly-heated rectifier such as a 6X5G) warms up and the supply delivers full voltage, the time-delay relay, Ry_2, will close, extinguishing the bias-indicator lamp, I_7, and setting up the circuit

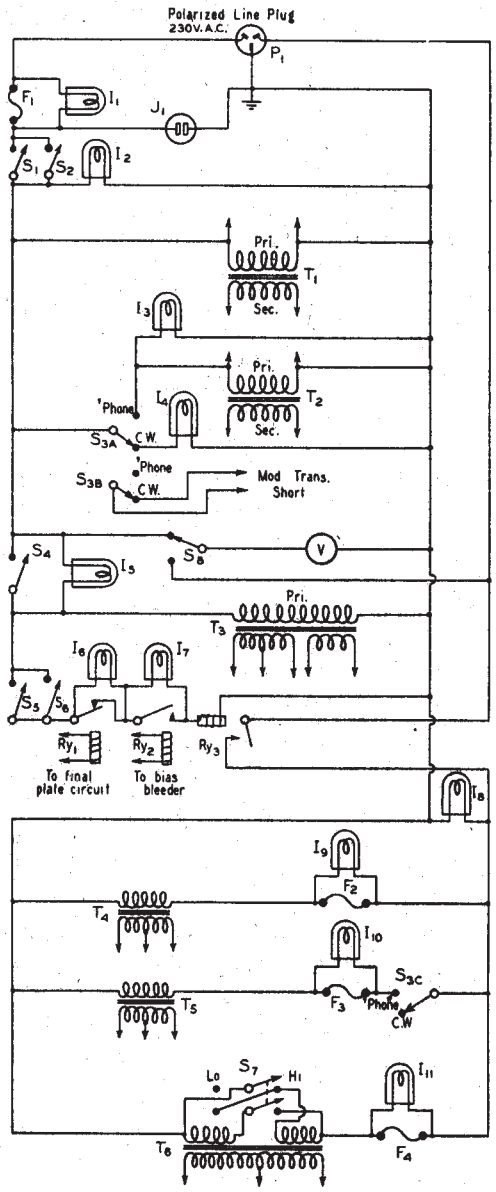


Fig. 2 — 230-volt control circuit. Ry_1 is an overload type, Ry_2 is a light-current relay, and Ry_3 is a 115-volt a.c. relay with heavy contacts.

for the plate-supply relay, Ry_3. The time that the bias rectifier takes to come up to temperature provides the required delay between the application of filament voltage and the time when it becomes possible to turn on the plate voltages on the r.f. and a.f. tubes.

With the contacts of Ry_2 closed, the plate-supply relay, Ry_3, can be operated by closing the transmit-receive switch, S_5, or its extension, S_6, at the operating position. Ry_3 turns on all plate voltages, lights the high-voltage indicator, I_8, and the transmitter is then ready for operation.

Should interlock S_4 be open, the indicator lamp, I_5, will light. This lamp, in series with the primary of the bias-supply transformer, has sufficient resistance to prevent voltage output from the bias pack, and therefore Ry_2 does not close so that Ry_3 cannot be operated and the transmitter is safe so long as the interlock switch is open.

Ry_1 is an overload breaker which breaks the line to the plate-supply relay whenever the plate current to the final amplifier exceeds a value to which it has been set. The winding of this relay is in the filament center-tap of the final-amplifier tubes. It should be of the reset type so that it will not continue to close and open repeatedly until S_5 is opened, as it would do if it were not. I_9, I_{10} and I_{11} are fuse-indicator lamps which light when their associated fuses blow. S_7 is a switch for changing to low power for tune-up. This system is, of course, applicable only to transformers with dual primaries. With single-primary transformers, a 150- to 200-watt lamp, with a switch to short it out, can be connected in series with the primary for reducing power. Power-amplifier high voltage may be removed for neutralizing by taking out F_4.

The only switch that need be thrown for stand-by is S_5. Only S_3 need be manipulated in changing from 'phone to c.w.

Fig. 2 shows the same system applied to a 3-wire 220-volt line, the only difference being that the filament and bias transformers are operated from one side of the line, while the plate supplies are operated from the other.

All indicator lamps and panel switches should be marked plainly so that there will be no question as to which circuit each belongs.

About the Author

• The inspiration for the shipshape control circuit that Lewis Kanoy describes can be traced to one influence: Naval radio-technician training. Signing W4DCW since 1934, our author has in the meantime acquired not only his Class A ticket but also radiotelephone first-class and radiotelegraph second-class tickets. Lew has been a technician at b.c. station WSJS for a number of years.

ARES NET

Just a reminder, please join us on the Forsyth County Ares Net Thursday evenings at 8:30 p.m. on the W4NC repeater, frequency 145.47 Mhz

73, John, N0KTY, Forsyth EC

Forsyth County ARES Reports

June 7, 2007

Net Started - 8:30 PM. Net Control - N4PAA Carl.

Check-ins - 13. Stations were KG4FGC Ken, WF4DD WFU Club, KF4EOD Mike, K4GHS Ben, WB4QXG Fred, N0KTY John, NA4P Fred, WB9SZL Dale, KC8OEX Terry, KI4NHP Boyce, KI4NHQ Karen, KC8OEX Terry and N4PAA Carl.

KG4FGC Ken announced an Advanced Skywarn Spotter training class to be held Thursday, June 28th at the main Kernersville fire station at 316 West Bodenhamer Street. Classes are free but confirm a space with Michelle Brock at Forsyth EMS, phone 767-6161. NA4P

Fred announced that the WF4DD Net will meet this evening after the ARES net or at 9 PM, which ever is later. N0KTY John held the ARES meeting. He thanked the operators who helped with the Three Mountain Madness bicycle event this past Saturday and gave a brief summary of the event and the activities involved. John also reminded us of the FARC Hamfest this Saturday, June 9.

Formal Session - 20 minutes. Informal Session - 5 minutes. Total time -25 minutes.

N4PAA Carl

June 14, 2007

Net Started - 8:30 PM. Net Control - KG4ECI Dan.

Check-ins - 19. Stations were KG4FGC Ken, WF4DD WFU Club, KF4EOD Mike, K4GHS Ben, W4ASH Steve, N0KTY John, KG4JWU Steven, KC8OEX Terry, NA4P Fred, WX5AAA Raymond, KE4DTX James, WB4QXG Fred, N4PAA Carl, KF4PLQ Woody, KB6MTH Raja, KC4WSK Van, KI4NHP Boyce, KI4NHQ Karen and KG4ECI DAN.

KG4FGC Ken made two announcements. The WF4DD Net will meet this evening after the ARES net or at 9 PM, which ever is later. There will be an Advanced Skywarn Spotter Training class at the main Kernersville Fire Station on Bodenhamer Street starting at 7 PM on Thursday, June 28. Classes are free but confirm a space with Michelle Brock at Forsyth EMS, phone 767-6161.

N0KTY John held a very brief ARES meeting as he was having rig problems. He found a radio that worked and reminded us of why we have our weekly nets to make sure things are working - like his main rig wasn't at the time.

Formal Session - 15 minutes. Informal Session - 10 minutes. Total time -25 minutes.

N4PAA Carl

June 21, 2007

Net Started - 8:30 PM. Net Control - KC8OEX Terry.

Check-ins - 12. Stations were KC4WSK Van, KJ4IC Bob, N4PAA Carl, NA4P Fred, WF4DD WFU Club, KI4PNL Shane, KF4EOD Mike, KG4ZFE Doug, KI4NHP Boyce, KI4NHQ Karen, KG4YVL K.D. and KC8OEX Terry.

NA4P Fred announced that the WF4DD Net will meet this evening after the ARES net or at 9 PM, which ever is later. N4PAA Carl announced will be an Advanced Skywarn Spotter Training class at the main Kernersville Fire Station on Bodenhamer Street starting at 7 PM on Thursday, June 28. Classes are free but confirm a space with Michelle Brock at Forsyth EMS, phone 767-6161.

Net members were reminded by KJ4IC Bob that field day is this weekend with the club activities at Hobby Park on Clemmonsville Road. It will be a Saturday thru Sunday affair with the traditional picnic meal Saturday evening. All are welcome.
N0KTY John was not available for the ARES meeting.
Formal Session - 9 minutes. Informal Session - 14 minutes. Total time -23 minutes.

N4PAA Carl

July 12, 2007

Net Started - 8:30 PM. Net Control - N4PAA Carl.

Check-ins - 8. Stations were WX5AAA Raymond, KG4FGC Ken, KC8OEX Terry, NA4P Fred, WF4DD WFU Club, KC4WSK Van, KF4EOD Mike and N4PAA Carl.

KG4FGC Ken announced that the WF4DD Net will meet this evening after the ARES net or at 9 PM, which ever is later. He also announced that Emergency Preparedness Night at the Ball Game will be Friday, August 31 this year. There will be a baseball game between the Winston-Salem Police and Fire Department before the game between the Warthogs and the Kingston Indians. More details on this later as FARC had a simulated emergency station set up and operational at last year's event.

N0KTY John was not available for the ARES meeting.

Formal Session - 11 minutes. Informal Session - 6 minutes. Total time -17 minutes.

N4PAA Carl

July 19, 2007

Net Started - 8:30 PM. Net Control - KC8OEX Terry.

Check-ins - 7. Stations were KG4ECI Dan, N4PAA Carl, NA4P Fred, WF4DD WFU Club, KI4VUU Jack, KF4EOD Mike and KC8OEX Terry.

NA4P Fred announced that the WF4DD Net will meet this evening after the ARES net or at 9 PM, which ever is later. N0KTY John was not available for the ARES meeting. He was vacationing in Michigan.

Formal Session - 9 minutes. Informal Session - 9 minutes. Total time -18 minutes.

N4PAA Carl

JUNE ARRL NC SECTION NEWS

GOVERNOR EASLEY SIGNS NC PRB-1 ANTENNA BILL

Beginning October 1, 2007, Article 19 of Chapter 160A of the North Carolina General Statutes will require "city and county ordinances regulating antennas to reasonably accomodate amateur radio communications." Governor Easley signed the bill on Friday, June 29. North Carolina is the 25th state to have PRB-1 type accomodations included in state law. Thanks to all of you for the phone calls, letters and emails to your legislators. Please thank your representatives for their support. Thanks again for the leadership of Ham Hicks, KB4BR and the bill writing talents of Gerry Cohen, N4GC.

NC TEENAGER NAMED YOUNG HAM OF THE YEAR

Grant Morine, W4GHM, of Wilmington has been named the 2007 Young Ham of the Year. The award is sponsored by Amateur Radio Newsline and will be given to Grant as part of the 2007 ARRL National Convention at the Huntsville Hamfest. Grant is a 17 year old Eagle Scout who has also been nominated for ARRL's Hiram Percy Maxim award. Grant's Eagle Scout

project was the construction and donation of 30 220MHz J-pole antenna to the Carolinas Amateur Radio Emergency Services (CARES). Grant is the son of our Section Public Information Coordinator, Bill Morine, N2COP. Congratulations Grant!

NC JOTA PREPARATIONS UNDERWAY

The 50th annual Jamboree On-The-Air (JOTA) will be held October 21 & 22. JOTA is scouting's largest annual event and involves about 500,000 scouts from all of the world. It's also the single best opportunity we have to share amateur radio with lots of enthusiastic young people. This year's event will last 50 hours, which gives you time to offer the radio merit badge, a Technician licensing class and a VE session along with the JOTA stations on the air! "NCJOTA" is a Yahoo Groups reflector dedicated to JOTA in North Carolina. If someone is interested in leading a NC section-wide JOTA event in some central location, contract Bill Morine, N2COP at n2cop@ec.rr.com.

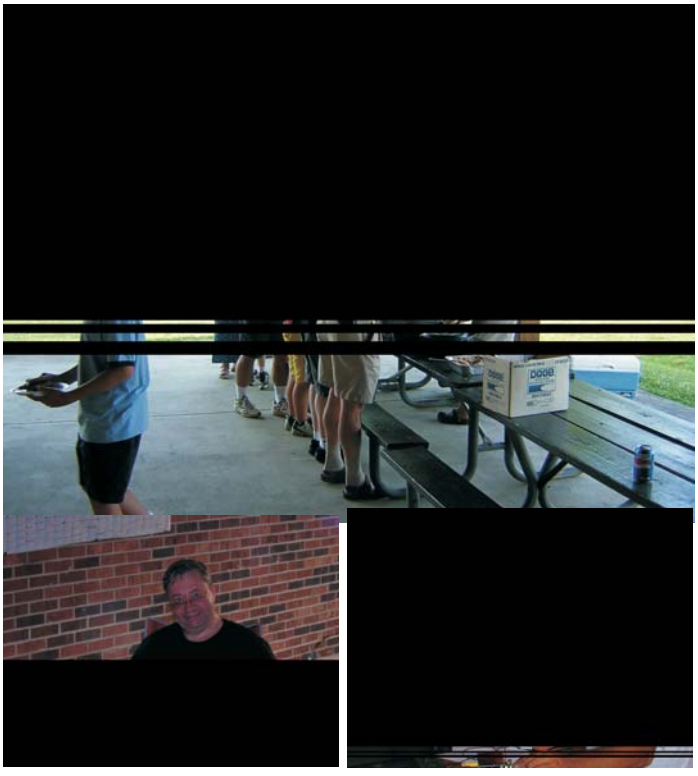
73, Tim Slay, N4IB
ARRL NC Section Manager

Congrats to KU4BP

There has been lots of news with Ed in the last few weeks. Ed started a new job with Lockheed. He will be traveling around the country a lot doing equipment installations. He will be checking his email address so let's keep him in touch with the club. Also Ed just bought a new house around the Forsyth/Davidson line. And for icing he also received 3rd USA - 1st NC Hilltopper certificate in the 2006 CQ WW VHF Contest. Way to go Ed!

Field Day Photos

Thanks to Phil KD4JZZ and Bob KJ4IC for providing photos of Field Day. We had a great time running QRP with no generator. And probably made the highest score we have ever had!



AG4RZ - One bad Sunday

Tim was having a bad day flying back in June.

< Before

After>

Editor's Corner

Summer is here and it is a good time to make sure that you have an up-to-date "go bag" with gear for emergencies. Don't forget a few water bottles. Emergency batteries are no good if they are not charged, and if the power is out that's a problem. I like to keep a small 117-VAC inverter in my truck for emergency power. I'm thinking about getting a bigger one and wiring it in permanently. Just something to think about. All for this month!

73, Don WS4NC

It's a Bad, Bad World

Or, at least it can be. The following awareness cards were provided by Raja Chatterjee, KB6MTH. Hams are frequently helping on the communications scene after disasters. Please read and don't be a victim.

Improvised Explosive Devices (IED)
FIRST RESPONDER AWARENESS CARD

It is important to remember that in many IED attacks around the world first responders have been the primary target. When responding to a post or pre IED event or even a suspected IED event, first responders need to become more"tactical" in their thinking.

DISPATCH AND RESPONSE PHASE

• Nature of the call and location are important. When responding get all the dispatch information available via pager, cell phone or MDT (mobile data terminal). DO NOT discuss over radio if possible.
• Current threat environment is applicable to an IED response. Any current threats, planned events or intelligence reference the location?

ARRIVAL ON SCENE

• Slow down when approaching the area and conduct a 360-degree scan during your "windshield survey".
• Look for objects and people that seem out of place for the location or time of the call - if it looks suspicious it probably is.
• Use Staging Area to limit number of responders - don't stack up responders and resources in one location.
• Establish an outer security perimeter.
• **ALWAYS BE AWARE OF SECONDARY DEVICES!**

APPROACHING THE AREA

• Utilize Incident Command System (ICS) and the necessary components for that response. Unified Command, Staging Officer, Safety Officer, etc.
• Establish hazard Control Zones around the suspected IED (Hot, Warm, Cold). Limit the number of responders entering the Hot Zone.
• Always have an escape route open to leave the scene quickly if needed.
• Beware of locations where the suspect package or device has been placed in a choke point or other critical areas.
• The bigger the suspicious device - the bigger the Hot Zone (300 feet minimum). Do not use radios or cell phones in this area.
• Scan the area using binoculars; spotting scopes or vehicle mounted cameras before approaching.
• If you must approach the device use shielding and cover to you advantage.
• **RESPONDERS SHOULD BE VERY CAUTIOUS OF ANY ITEMS THAT AROUSE YOUR CURIOSITY!**

Response sheet is for training and informational purposes only. Please utilize local guidelines and procedures.

Version 1, Page 1, February 2007, August Vernon fdtac@yahoo.com

An IED (Improvised Explosive Device) can be discovered during a terrorist or criminal explosives incident response or can be discovered when conducting routine response activities. Improvised explosive devices can be designed to be concealed or look like ordinary items.

IDENTIFICATION

• Responders should be very cautious of any items that arouse your curiosity.
• The exterior inspection of a suspected device does not ensure its safety.
• When remotely surveying a suspected IED think how it works - it needs an explosive payload, a power source (battery), and an initiator (blasting cap). Can your item or package incorporate these three things?
• Unusual devices or containers with electronic components such as wires, circuit boards, cellular phones, antennas and other items attached or exposed.
• Devices containing quantities of fuses, fireworks, match heads, black powder, smokeless powder, incendiary materials and other unusual materials or liquids.
• Materials attached to an item such as nails, bolts, drill bits, marbles, etc. that could be used for shrapnel.
• Ordinance such as blasting caps, detcord, military explosives, commercial explosives, grenades, etc.
• **ANY COMBINATION OF THE ABOVE DESCRIBED ITEMS!**

EXIT STRATEGY

• If there are several strong indicators that you have an IED - leave the area and withdraw your personnel to an area outside the Warm Zone.
• Call for EOD assistance.

FIRST RESPONDERS SHOULD NOT ATTEMPT TO MOVE, HANDLE OR DISARM A CONFIRMED OR SUSPECTED IED; THIS IS A JOB FOR SPECIALLY TRAINED PERSONNEL.

Response sheet is for training and informational purposes only. Please utilize local guidelines and procedures.

Version 1, Page 2, February 2007, August Vernon fdtac@yahoo.com

Vehicle Borne Improvised Explosive Device (VBIED)

FIRST RESPONDER AWARENESS CARD

IDENTIFICATION

VBIEDs can be discovered during a terrorist or criminal explosives response or will be discovered when conducting normal, routine activities. VBIEDs will be designed to be concealed or blend in as an ordinary vehicle:

VISIBLE INDICATORS:

• **Responders should be very cautious of any vehicles that arouse your curiosity.**
• A vehicle is parked suspiciously for a prolonged amount of time in a central location or strategic location.
• The vehicle or vehicles rear appears to be weighted down.
• Stolen, non-matching plates or no plates at all.
• Wires, bundles, circuit boards, electronic components, unusual containers, devices or materials visible in the vehicle.
• Ordinance such as blasting caps, detcord, military explosives, commercial explosives, grenades, artillery, etc.
• Unknown liquids or materials leaking under vehicle.
• Unusual attachments or bodywork.
• **Any combination of the above described items.**

FIRST RESPONDERS SHOULD NOT ATTEMPT TO APPROACH A CONFIRMED OR SUSPECTED IED OR VBIED; THIS IS A JOB FOR SPECIALLY TRAINED PERSONNEL.

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Transmitter/Receiver Interfacing

Continued from page 4

new technician-trainee stumble around trying to fix it for hours. Ah, those were good days. For the most part the problems we used for training were all real world-type failures. Bad relays, incorrect timing settings, loose wires - things like that. But there were also little issues that only Satan himself can inspire. Trainee - "But it can't do that!" Me - "It's doing it. Fix it." And then I got to watch the fun. Some readers of this Newsletter were 'treated to' (those who say 'abused by' have no sense of humor) the er, 'delights' of my teaching.

So seeing a really nicely done relay logic diagram was like meeting an old friend. As I was flipping through the magazine I stopped to read the text and study the diagram. Very nice job. Then I start to turn the page and I see the name "Kanoy". "Lewis". That sounds familiar. "W4DCW" I know that call. Whoa! That's Tink! Although this work is from a time when most hams built their own equipment this is a superb example of engineering and still deserving of recognition. I urge you to work through the logic of how this circuit works.

I really enjoyed reading the article. Technically it is a stellar example of relay logic. But I have enjoyed knowing Tink even more. I first met Tink around 1969 or 1970. (I didn't even know his real name was Lewis for about 20 years.) I'm not telling Tink about this article - I want to surprise him. Also the original October, 1947 QST is on it's way to him along with this Newsletter. Very nice job Tink. Thank you.

Don, WS4NC

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ADDRESS CORRECTION REQUESTED

Monthly Moment of Zen

A ***Mathematical*** Monthly Moment of Zen. When you don't know how to do the problem (or maybe even the question) you can always hope for points for creativity for restating the problem. Or not. If your Calculus skills are rusty (or not even there) the equation would read "Integrating Batman from zero to 'bat' with respect to 'bat' equals Bruce Wayne."

A proton approaches a long line of positive charge so that with it's initial trajectory it would intersect the line. The line has a uniform charge density of .5 nanoC/m. If the proton starts off with velocity 300 km/s a distance 1 km from the line charge, what is the distance of closest approach?
Mass of proton=1.67E-27 kg
K=8.99E9 Nmm/CC
Hint: find the field and potential that affect the proton.