



HARMONICS

1916

South Jersey Radio Association

2015



Award Nominations Please!

Each year SJRA recognizes significant accomplishments of its members by presenting three prestigious awards. These awards bring distinction and recognition to deserving amateur radio operators for their exceptional contributions to the hobby and the SJRA.

The "Nominate Button" on the Awards section of the SJRA website is designed to allow members to easily submit nominations online. Online nominations are sent directly to Rick Lawn. Alternately, you can submit your written nominations to any board member, or use the nomination form recently emailed to the entire membership. Your nominations need not be lengthy and can be emailed to Rick Lawn, W2JAZ at rjlawn@gmail.com or to his home address: 1021 Owl Lane, Cherry Hill, NJ 08003. Because of the earlier date of the holiday party this year (12/9/15) when awards are presented, the **deadline to submit nominations for consideration by the ad hoc awards committee is the November meeting on Wednesday, November 18th.**

To help in your selection of nominees, a brief description of the award and its criteria is provided as follows along with a list of more recent past recipients. Remember, however, that awards can be made more than once. We have failed on rare occasions to make an award and ideally awards should be made each and every year.

The SJRA Amateur of the Year Award was established in 1950 to recognize individual members for their work in the advancement of amateur radio and their contributions to SJRA. The award was renamed for Harry W. Densham in 1965, the year of his death. Harry Densham was one of the original founders of SJRA (then known as the South Jersey Wireless Association). He attended the very first organization meeting on June 12, 1916 and was elected Treasurer of the newly formed group. He served as president from 1922 to 1925 and was widely respected for his contributions to the association as well as his on-air activities and experimentation with VHF. His interest in amateur radio began in 1911 and he was first licensed as 3LP in 1914. His other call signs included 3EH, W2EH, and finally W3EH. Harry's entire amateur affiliation was an outstanding example of the true "ham" spirit and those who receive this award are recognized by the club for carrying on his tradition. Past recipients include:

- ◆ 2000 - Pat Doyle, KD2P
- ◆ 2001 - Shawn MacDonald, K2SMD
- ◆ 2003 - Rick Stoneking, W2RDS
- ◆ 2005 - Ted Groke, W2TAG
- ◆ 2006 - Mario Dianora, N2AK
- ◆ 2007 - Mark O'Brien, K2AX
- ◆ 2008 - Jerry Parker, KC2JTT
- ◆ 2009 - Deb Pularo, W9QWN
- ◆ 2010 - Mary VonLintig, KV2M

(Continued on page 6)

SOUTH JERSEY RADIO ASSOCIATION

HARMONICS is published monthly and is the official news letter of the South Jersey Radio Association. The SJRA was established on June 16, 1916 and has been meeting continuously since its inception. The club has been affiliated with the American Radio Relay League since 1920.

The SJRA meets each month on the fourth Wednesday, January through September; and usually the third Wednesday, October, November and December; in one of the Meeting Room of the Gibson House at 525 East Main Street, Marlton, NJ 08053. Visitors are always welcome at our general meetings. **“Our Meetings are Smoke Free”**

SJRA operates the K2AA Repeater (145.290 - PL 91.5) located in Medford, NJ and the K2UK Repeaters (146.865 and 442.350 - PL 131.8) located in Pine Hill, NJ. The repeaters are open for use without restriction to all licensed amateur operators.

There are currently over 100 SJRA members active in most all aspects of amateur radio. Membership is by application and is subject to the approval of the Board of Directors. Club dues are currently \$30/yr. for memberships, \$22.50/yr. for retired-person membership (62 plus 1 yr membership), and \$15/yr. for additional family members and student membership. Membership information is available on the K2AA Repeater or from Mary Von Lintig, KV2M, 856-772-6475

EMAIL: sjra@sjra.org SJRA's web page: www.sjra.org

SJRA VE Team: ve@sjra.org is the SJRA/ARRL VUCC card checker

Joe Fisher, KC2TN, is the SJRA/ARRL WAS card checker

 ★ **Harmonics** is now available for SJRA members on the WEB in pdf ★
 ★ format at: <http://www.sjra.org> ★
 ★ **South Jersey ARRL Section News** is available on the WEB at: ★
 ★ <http://www.arrl.org/sections/?sect=SNJ> ★

Officers

President: Ken Botterbrodt, K2WB
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 Al Witner, N3AVT

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Membership: Mary VonLintig, KV2M
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Contests: John Doran, W2FDJ
Repeater: Joe Fisher, KC2TN
Programs: Rick Lawn, W2JAZ
H&W: Roy Herman, WB2EOD; and Dara Herman, KC2THQ
Awards: Rick Stoneking, W2RDS
Hospitality: Jean Priestley, KA2YKN
Nets: John Fogleboch, WY2J
Publicity: **Vacant (Please Volunteer)**
Picnic: **Vacant (Please Volunteer)**
Ways & Means: Ray Golley, N3RG
Property: Jon Mac Millan, W2MC
Web Site: Ira Weinstein, W2IRA

Harmonics Staff:

Publisher/Editor: Ted Groke, W2TAG
Alternate Editor: Rick Stoneking, W2RDS
Circulation: Mary VonLintig, KV2M; Jim Vecchiola, KR2T

LOCAL WEEKLY NETS

| | | |
|----------------------|-------------------|---------------|
| Monday | K2AA, Medford | 145.290 @ 8PM |
| Alternating Thursday | Various Locations | 28.405 @ 8PM |

Harmonics Deadline

Articles submitted for the next Harmonics will be accepted until Monday, November 9, 2015. Email: ted.w2tag@gmail.com

SWAP SHOP - For Sale/Wanted ads are free of charge and are accepted for Amateur Radio related items only. While ads are not restricted to SJRA members, there is only limited space available and members have priority for listings. No items will be accepted for inclusion in the Swap Shop from commercial vendors or traders. All ads must be submitted at least three weeks prior to the scheduled SJRA general meeting date.

GENERAL ADVERTISING - Limited commercial advertising is accepted on a space available basis. Annual advertising rates range from \$25/yr (Min 1/8 page) to \$200/yr (Full Page). Information is available from Ken Botterbrodt, K2WB.

Meeting Minutes

Minutes of General Meeting of 9/25/2015

The meeting was held at the Gibson House in Marlton, NJ, opening at 1930 sharp by Ken, K2WB. A salute to the American Flag was held, followed by introductions around and answers to the question, "Did you participate in the NJ QSO party?" It was reported that K2AA mobile, worked 166 Q's from all nine counties in the SNJ section.

New members- Mary, KV2M: Joe KD2IDL. Minutes of the August meeting were approved as printed, motion by N2HQL/KE2D (Bob). Programs: tonight, Storm Robotics Team; October- Gridless Power; November, Tony, N2ATB, Digital Modes; December 9TH Christmas Party (*Note date change*); January, Estate Sale; : February; White Elephant Sale.

Contests: October 24, CQ WW SSB Starts Friday 10/23 at 8 PM (that's midnight UTC) therefore the 24TH; 11/7 ARRL CW Sweeps; 11/21 ARRL SSB Sweeps; 11/27 CQ WW DX CW. A rough draft regarding the 100th Anniversary Contest was presented.

Website by Burton, NJ2IT- It's there.

Awards- Rick, W2JAZ, to be presented in October.

VE Team- by Al, N3AVT- Hats off to the team, 146 exams given, so far.

A quick break was taken, the on to the program- presentation of the 2015 Storm Team's robot- this year the challenge was to recycle goods on the field.

A motion by W2MC/ N2HQL to give the Club portion of the 50-50 to the Storm team passed. Adjournment was at 2100.

Minutes of BOD Meeting of 10/7/2015

Meeting opened at 1930 at the Gibson House. All board members were present. Minutes were accepted as printed, motion by N2HQL/AC2FO. Ray, N3RG, gave a treasurer's report accepted on motion by N2HQL/KV2R.

New Members by Rich, KV2R- Mark Walters, n/c (yet), an EE from Sewell and Kenneth Windsor, N3XEY, a general from Philadelphia. They were accepted into membership contingent upon receipt of funds. Motion KV2R/W2JAZ. A new membership form is being constructed on the website, this form can be filled out on line and automatically sent to the membership committee, this will hopefully, do away with misspellings due to hard to read handwriting. Copies will be available for those not on line or applying at a meeting. Ken is still working at getting badges printed.

Health & Welfare- Cards out. Ben Heady became S/K.

Programs- Booked thru February- see General Meeting Minutes.

Corresponding Secretary- dennis, AC2FO, has received two requests about holding of classes.

Web Team- Another security update due.

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HAM TECH

Vol 6 No. 10 by John - WY2J

wy2j at arrl dot net

Giving Ham Radio a Voice

Part 1 of 3: The Early Days of AM

Introduction - Communication in the first two eras of ham radio was by telegraphy, the first with spark the second by CW. The third era put a voice into ham radio starting in the early 1920's with the emergence of vacuum tube technology. Spark was not capable of supporting voice modulation due to the quenching action of the spark transmitter that put large amounts of energy into the audio spectrum. It was theoretically possible to voice modulate the early CW Alexanderson alternator and Arc transmitters but it was not practical. Voice modulation had to wait for the vacuum tube technology to arrive.

In 1921 Westinghouse put KDKA 1020 KHz on the air in Pittsburgh using amplitude modulation while the hams were dumping spark for CW MOPA transmitters and oscillating regenerative detector receivers using vacuum triodes. Commercial AM broadcasting was a big hit with the public, more stations went on the air and the new RCA Corporation turned out triodes and regenerative detector radios by the boat load. In 1925, four years later RCA stock hit \$500 a share thanks to AM. The hams learned how to add AM to their rigs inexpensively using the components of the commercial world but at a bit slower pace as 1929 and the great depression was just around the corner. In part 1 of this series we look at how AM entered ham radio.

Amplitude Modulation Characteristics - AM is easy to visualize in the time domain as shown in Figure 1. In Figure 1-A, the RF carrier signal is identical to the output of our

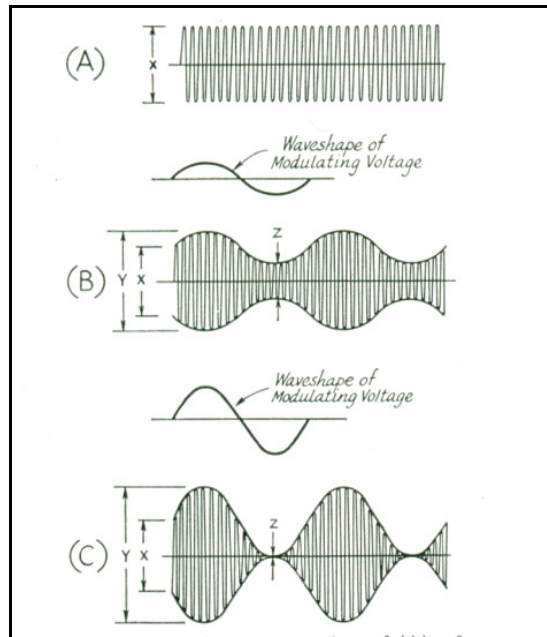


Figure 1 - Amplitude Modulation Characteristics

1920's Master Oscillator Power Amplifier (MOPA) transmitter operating key down. See Harmonics HAM TECH March 2015 for a discussion of the MOPA transmitter. By varying a fixed bias on the amplifier we can reduce the gain such that the output drops by 6 dB from maximum. An audio modulating signal added to the bias through a small transformer varies the output amplitude according to the modulating audio signal amplitude. In Figure 1 - B, the modulation level is below maximum and in Figure 1 - C, the modulation is maximum or 100 percent. A typical modulated amplifier stage is shown in Figure 2.

Control Grid Modulation - The earliest ham AM transmitters used control grid modula-

(Continued on page 5)

(Ham Tech from page 4)

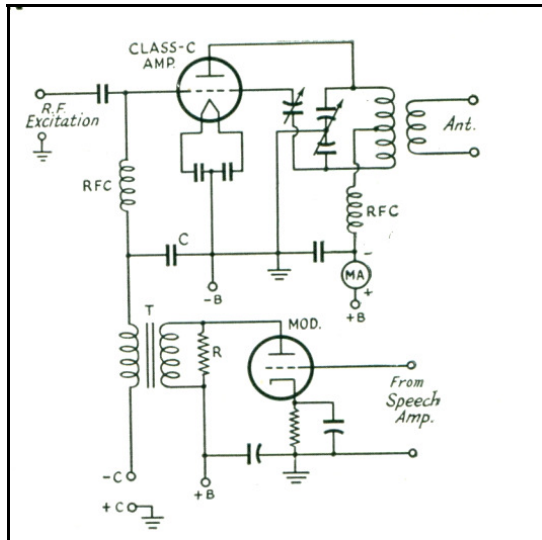


Figure 2 - Control Grid Modulated Triode Amplifier

tion due to its simplicity, low required audio modulation power and compatibility with triode transmitting tubes. It does have two significant drawbacks. It is difficult to adjust properly for 100 percent modulation without an oscilloscope, a device that was very rare in the ham tool kit of the pre-world war 2 era. Second, the carrier level efficiency of the modulated amplifier is very low rarely

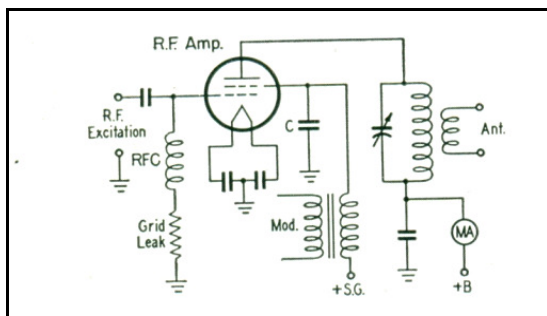


Figure 3 - Screen Grid Modulated Amplifier

exceeding 33 percent. This means you get about 20 watts out of a pair of T20 triodes in AM vs 44 watts in CW for the 1920's MOPA transmitter described in March 2015 Harmonics. This low efficiency is true of all forms of grid modulation including screen and suppressor.

Screen Grid Modulation - Tetrodes began to replace triodes by the mid 1930's in ham transmitters. This made it possible to use screen grid modulation of the final amplifier. It has the same low efficiency problem as control grid modulation but it is a lot easier to set up properly. An oscilloscope is not required. A typical implementation is shown in Figure 3.

The critical fixed bias of the control grid is not required and we can return to grid leak bias which automatically adjusts with RF drive level. The plate voltage should be the maximum the tube will take while the screen DC voltage is reduced to drop the plate current to half of maximum. The audio power into the screen is increased until 100 percent modulation is reached. The audio power required is a fraction of the normal DC screen power in CW mode.

The Heising Plate Modulator - Class C RF amplifiers can be plate modulated and retain their high efficiency typically 65 to 75 percent vs 33 percent for grid modulation. Plate modulation is much more linear than any of the grid modulation methods however it does require audio power equal to 50 percent of the DC input power to the final amplifier. For a 1 KW power input transmitter the modulator must supply 500 watts of audio power.

The first plate modulators were known as the Heising or choke coupled modulator. A typical circuit is shown in Figure 4.

(Continued on page 7)

(Award Nominations Please! from page 1)

- ◆ 2011 - John Fogelbach, WY2J
- ◆ 2012 - Richard VonLintig, KV2R

The 2014 recipients were Ira Weinstein, W2IRA, and Ken Botterbrodt, K2WB.

Gordon Kressel, W2BQ, was one of the founding fathers of the SJRA when it all started in 1916. His original call sign was 3BQ and during World War I he taught code at the wireless training school held at the Collingswood High School Physics lab. Gordon was a very active member of SJRA from 1916 to his death in the late 1980's. In 1980, SJRA created a very prestigious award for members that had performed outstanding long-term (at least 5 years) service to the club and amateur radio. This award was known as the Gordon Kressel Award and naturally the first presentation was made to Gordon in recognition of his contributions to the club during the first 64 years of SJRA. If you look through the list of the recipients, you will recognize people who have made major contributions to the club for many years. Past recipients include:

- ◆ 2000 - Ken Botterbrodt, K2WB
- ◆ 2002 - Jim Vechiolla, KR2T
- ◆ 2003 - Shawn MacDonald, K2SMD
- ◆ 2004 - Loretta Hausman, KA3QBT
- ◆ 2005 - Richard Von Lintig, KV2R
- ◆ 2005 - Mary Von Lintig KV2M
- ◆ 2006 - Ray Golley, N3RG
- ◆ 2006 - Lou Priestley, N2HQL
- ◆ 2007 - Rick Conner, WC2K
- ◆ 2008 - Rick Stoneking, W2RDS
- ◆ 2009 - Ted Groke, W2TAG
- ◆ 2011 - Gordon Skorup, N2YU
- ◆ 2012 - Jon MacMillan, W2MC

This past year Al Witner, N3AVT, received the Gordon Kressel Award.

E. Miles Brown Award for Technical Merit - The SJRA celebrated their 80th Anniversary in 1996 and a new award was created that year and presented during the December membership meeting. There are many aspects of amateur radio and some amateurs have unequal talents in their technical abilities. So for the first time ever the SJRA award for Technical Achievement was presented to E. Miles Brown in 1996. If you know W2PAU at all you know he has great technical abilities and is very free to share his knowledge with all who have need of technical information. After the award was presented to W2PAU, it was announced that future bestowals would be known as the "E. Miles Brown Award for Technical Merit". Mario Dianora, N2AK, most recently won this award for designing and kiting the SJRA QRP station.

Remember to submit your awards no later than Wednesday, November 18th.

Test Session Report for: October 14, 2015

The SJRA would like to congratulate the following on their recent achievements:

Mark Walters
94 Goodwin Pwy,
Sewell, NJ 08080
Passed his Tech

Holden Correia-Fisher
401 Collings Ave
Collingswood, NJ 08108
Passed his Tech

| | Tech | General | Extra | Total |
|---------|------|---------|-------|-------|
| To Date | 90 | 38 | 20 | 148 |

(Ham Tech from page 5)

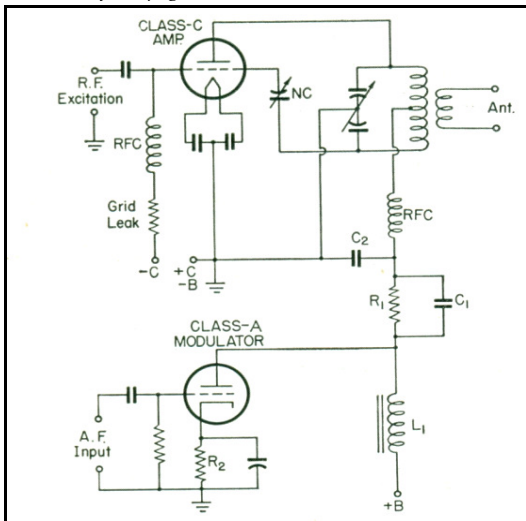


Figure 4 - Early Heising AM Plate Modulator

The modulator tube must operate class A so the typical efficiency of the modulator never exceeds 30 to 40 percent making it suitable for the 50 watt or less power transmitter. In addition without the dropping resistor R_1 installed the modulation percentage can never exceed about 80 percent because the modulator plate voltage cannot drop to zero. This resistor reduces the plate power input to the final to achieve full 100 percent modulation. The author used this modulator in a home brewed 10 watt 10 meter mobile AM transmitter in the early 1950's. The final was a 2E26 and the modulator was a 6L6. The choke was replaced with an 80 percent tapped autotransformer to get rid of the dropping resistor. It worked quite well.

Next Month - In part two of this series, HAM TECH explores the post WW-2 high power high efficiency class B plate modulators and what it took to put a kilowatt, about 600 watts output, on the air.

Monthly Puzzle

Don - WA2DUE, wa2due at arrl dot net

Last months puzzles were:

There is a tank circuit consisting of a coil, a fixed capacitor, and a variable capacitor all connected in parallel. The coil has an inductance of 30 microhenries, the fixed capacitor has a value of 200 picofarads and the variable capacitor maximum is 80 and its minimum is 10 picofarads. What is the minimum and maximum frequencies this circuit can tune?

Answer: Using the equation $f = 106 / (2\pi(LC)^{0.5})$ for $C = 280$ picofarads $f_{low} = 1737$ kilohertz and for $C = 210$ picofarads $f_{high} = 2005$ kilohertz.

What is the number when doubled is greater than its half by 66?

Answer: Let N equal the number. Then $2N = N/2 + 66$. Multiplying both sides by 2 we get $4N = N + 132$. Subtracting N from both sides we get $3N = 132$. Dividing both sides by 3 we find $N = 44$.

For this month we present the following:

During World War II I served on a Destroyer in the South Pacific. On this ship was a room called the "Crypto Room" where messages were encoded and decoded. On the only door to this room was a keypad lock which would open upon the insertion of four digits in correct order. The last digit was one more than the first digit, the first digit was four less than the second digit, and the third digit is double the last digit. The middle two digits were the same. Can you unlock this door?

A fraction has a denominator that is 13 larger than the numerator. If 3 were to

(Continued on page 10)

Start an amateur radio virtuous circle

By Dan Romanchik, KB6NU

On the ham_instructor Yahoo Group (https://groups.yahoo.com/neo/groups/ham_instructor/info) recently, we talked about the classes that we are going to be offering this fall. About his Tech class, Bob, K0NR, noted, "Currently have about 30 students signed up. We keep thinking we'll run out of interested people but they keep coming."

I've noticed the same thing here, too. I keep thinking that I am going to run out of people to teach, but I have no problem at all filling my classes. In fact, I'd go so far as to say that the more people that have taken my class, the more people there are that want to take it.

Of course, this makes perfect sense. If there are more people out there who have amateur radio licenses, there are more people out there talking about amateur radio, and actually doing amateur radio. And, the more people out there talking about and doing amateur radio, the more likely it is that other people will become interested in amateur radio and get their licenses as well.

It's an amateur radio "virtuous circle."

What does this tell you? Well, if you're in a place where amateur radio seems to be dying out, or belong to a club that is slowly fading away, start a class! I think every club should hold classes at least once a year, even if that first class has only one or two students. Those first few students are the start of your virtuous circle.

Don't know how to start a class? I can help you there. Start by reading my blog post, "Teaching a one-day class" ([http://](http://www.kb6nu.com/teaching-a-one-day-tech-class/)

www.kb6nu.com/teaching-a-one-day-tech-class/). It has a lot of practical information, including tips on how to select a venue, how to publicize the class, how to get people to sign up for the class, and finally, how to teach the class.

You might also want to join the ham_instructor mailing list I mentioned earlier. It's a relatively low-volume list, but the subscribers have a lot of experience that you can tap into.

Also, get a copy of my free Tech study guide (<http://www.kb6nu.com/study-guides/>). Not to brag (well, OK I am bragging), but I really think that it's the best study guide for a one-day class. The study guide presents the topics in exactly the same order as I cover them in class. Read through it and you'll see what I mean.

If you need more help, or even just some encouragement, e-mail me, and I'll do what I can to help you. Seriously.

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When not teaching ham classes or publishing amateur radio study guides, Dan, KB6NU, operates CW on the HF bands (mostly 40m and 30m). His No.1-rated amateur radio blog can be found at KB6NU.Com, and you can e-mail questions, comments, or complaints to cwgeek@kb6nu.com.

Please check out this month's Monthly Puzzle so you can prove that you're as smart as you think you are; then email Don, WA2DUE, and tell him how you came to your solutions.

ed, W2TAG.

President's Message

Ken – K2WB

As the leaves start turning and will eventually fall to the ground. This is a time for cooler weather in the evenings and warm days. It is also the start of the contest season for those who enjoy contests.

I heard a couple of SJRA members in the NJ QSO Party. Jon, W2MC, and I activated all of the South Jersey Counties using K2AA. Imagine doing one Field Day type of operation in one weekend. Our operation was the equivalent of setting up a 2A operation 9 times over one weekend. This year we added a tri-band beam to the mix, allowing us two complete stations. There were two individuals who worked us at all 9 counties. Joe, KC2TN, and Steve, KZ2I, from North Carolina. We already are working out plans for next year. Hopefully our combined scores will put the SJRA on top of the club competition.

The next big "SJRA" event will be the November Sweepstakes. Traditionally the SJRA will provide any member who submits their log with the SJRA as their club affiliation the normal ARRL awards should you qualify. These would be a participation pin for anyone who makes at least 100 contacts and a clean sweep coffee mug for anyone that contacts all 83 ARRL/RAC sections. CW is November 7-9 and SSB is November 21-23. For more information go to the ARRL webpage for rules and more information.

There has been some interest in putting K2AA on the air (since this the last time before the club turns 100 years old. If you are interested in operating K2AA this year contact me as soon as possible.

CQWW - I encourage anyone to operate in the contest. This is one that is easy and

you can achieve DXCC in one weekend with 100W transmitter and a simple antenna farm. From New Jersey & Pennsylvania the exchange is easy... Just remember 59 05 (Signal) and CQWW Zone and have fun.

If you do participate in a contest, you can help the SJRA by listing the SJRA as your affiliated club. The club robot needs it put as "South Jersey Radio Assn" to count. Also, please send your summary sheets to contests@sjra.org

Awards -Rick, W2JAZ, will start looking for nominations for the club awards. These are the Amateur of the Year and the Gordon Kressel award. To nominate someone who is deserving of an award email Rick with details of why and the award you'd like them to receive. Send your nominations to awards@sjra.org.

Renewals - It is that time of year again, time to renew your membership. Ray, N3RG, will be sending out renewal forms soon. Renew early so that you don't miss any editions of Harmonics.

In addition, there are several SJRA members who would like to come to our meetings but are unable to drive. If you can help (especially from the Mount Holly area) contact me or Jon, W2MC.

As always we are always looking for new members of the SJRA. One of the best and easiest ways to help the SJRA is to encourage anyone that is not a member to become a member. If you know someone who would like to join the SJRA contact Mary, KV2M, or Allen, K3WWT, (membership committee).



(Monthly Puzzle from page 7)

be added to the numerator the fraction would be equal to one-third. What is the fraction?

Please submit solutions and/or comments to wa2due at arrl dot net.

(Meeting Minutes from page 3)

Repeater- Joe, KC2TN- Will order 2 new fusion repeaters ASAP. They will make good backups for our analog repeaters if the fusion portion does not prove necessary.

Centennial Membership Applications: Michael Novelle (Texas), K9MRN, accepted on motion by W2MC/W2JAZ.

An e-mail received from Simon Kenny of the Limerick club will work our centennial as a joint effort. They have purchased a memento of the 100TH and will forward it to SJRA. Their members will identify as SJRA members (Limerick is our sister club in Ireland) . This was authorized on a motion by W2MC/AC2FO.

Awards- Rick, W2JAZ, discussed a downgrade of the awards. This idea was dropped quickly. He will write an article for October Harmonics.

Club Stuff- Joe, KC2TN, reported a problem making the 'bucket hats' orders will be cancelled a money returned.

NJ QSO Party- K2AA set up and worked from all 9 counties in the SNJ section. Joe, KC2TN, worked them in all 9 counties, as well as a South Carolina station (Call sign not available).

New Business: Christmas Party details to be settled to make it similar to last years party. Adjourn at 2120.

By Lou, N2HQL, Recording Sec.

100TH Anniversary Happenings

Ken – K2WB/100

So far the 100TH anniversary committee has had 12 meetings (many more to come). Just to keep everyone up to date here is where we are.

Over 60 coffee cups have been sold. There are plenty more to go. Mugs may be acquired to SJRA members by a minimum donation of \$10.00. There will be coffee mugs available at the General Membership Meeting on September 24th.

We now have 11 centennial members, the growth rate is very slow. Our goal would be to have at least 2 members in each of the States. At least 1 member in each of the ARRL sections and at least 1 member in 100 countries. This will make some of radio sport events planned very exciting. Pass the word around, we need to get more members before 2016 so that our activities will be well represented.

Our 100TH Anniversary banquet will be held at the Trump Country Club in Pine Hill, NJ on Saturday July 30th, 2016. So mark your calendar.

Work has begun with the SJRA QSO Party, help is needed to administrate and operate. Also, discussions of the SJRA large area special event.

Joe, KC2TN, is already selling 100th Anniversary clothing and hats, in addition he has patches. Contact Joe should you want to have the "New" SJRA Look.

Our anniversary is only 244 days away.

There is still a lot to do and we need your help. Please contact me if you are interested in helping with the 100TH.

SJRA Jackets, Shirts, Hats

Order NOW - Next order going in soon!



Spring Jacket is \$44 (S,M,L,XL), Fall Jacket is \$55 (S,M,L,XL),
Shirts are \$27 (S,M,L,XL), Hats are \$20 (*New Lower Price*, one size fits all)
Name and Call Sign embroidery included....Larger sizes slightly more!
Email Joe, KC2TN, with orders or additional info: *kc2tn at comcast dot net*

Amateur Radio FCC License Testing

The SJRA sponsors *FREE* Amateur Radio FCC License testing on the second Wednesday of each month. The location is: 443 Commerce Lane, Suite 5, West Berlin, NJ 08091. Registration is at 7:00 PM and testing begins at 7:30PM. Walk-ins are accepted.

VE team members can be reached at VE *at* SJRA *dot* org. A calendar and more information can be found on the SJRA web site.

October Meeting:**Fourth Wednesday, October 28, 2015**

The meeting commences promptly at 7:30PM in the first floor Meeting Room of the Gibson House on Main Street, Marlton, NJ 08053. Guests are always welcome.

Program For October:

Jason Halpern from Gridless Power discusses alternate sources of emergency power.

SJRA Member November Birthdays

Art Arnold, N2CPR; Mike Fischbach, KB2RHI; Joseph Lameiras, K2WJL; Jerry Parker, KC2JJT; Richard Von Lintig, KV2R; Mary Von Lintig, KV2M.

Health and Welfare Co-chairpersons: Roy, WB2EOD, and Dara, KC2THQ

List Your "For Sale" Ham Stuff in the SJRA Harmonics

Email Ted, W2TAG, with your listing, *ted.w2tag at gmail dot com*

First Class Mail

South Jersey Radio Association
PO Box 1026
Haddonfield, NJ 08033

