



The Greensboro Amateur Radio Association

Feed Line

Providing Amateur Radio news for the Triad



Brian Wilson, NX4U, Editor

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Azimuthal-Equidistant Projection

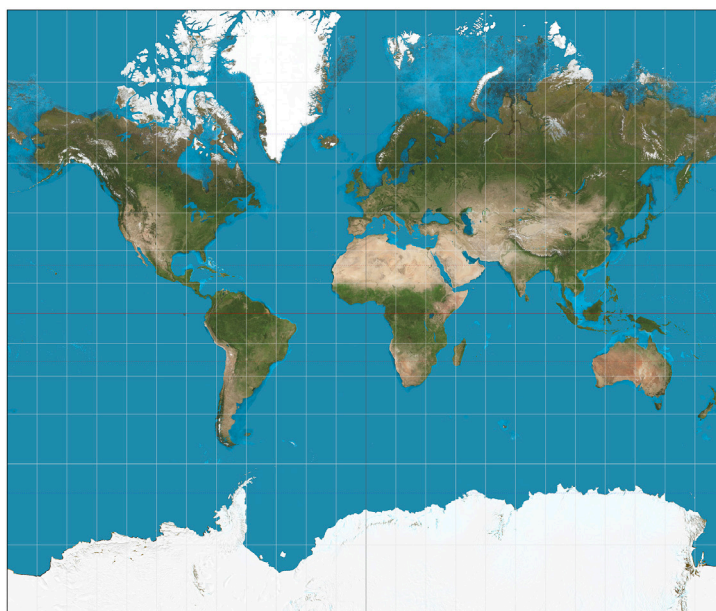
By Chris Thompson, K4HC

For those of you who work any DX, you may find yourself in for a shock. You may not be pointing your antenna in the correct direction to work the DX station you're trying to reach. It's time to introduce you to the world of Azimuthal-Equidistant map projection.

Why is this important, you may ask? It has to do with what's called the "Great Circle" path to a distant location. This is the shortest distance between two points on the globe. While there are propagation modes that do NOT use the Great Circle path, by and large, this is the most common mode of propagation.

In short, we've become used to the map projection invented by Gerardus Mercator in 14th century, called the "Mercator Projection".

see Azimuthal, page 7



Annual Doggett BBQ

September 29, 2012, It is time for the annual Doggett Picnic.

The Doggett's have been hosting a picnic for many years and started inviting the local Hams. I spoke with John and he gave me the date. The time is usually 6pm. You need a chair and appetite. Some of the best BBQ around.

The Doggett family includes the following hams: Clark, KG4HOM; Jane, KG4ZQK(Wife); John, AJ4DV(son); Mary, KJ4ZQL(Daughter); and Lexie, KI4QNC(Granddaughter)

If you have never attended, you don't want to miss this event. Go ahead and mark your calendars and plan to attend. Even though this is several months away, calendars have a way of filling up. This is a great time of food and fun.

NEXT MEETING

Monday, September 24

The next meeting of the Greensboro Amateur Radio Association will be Monday, September 24th, at Captain Bill's Seafood & Steakhouse, 6108 West Market Street, Greensboro, NC 27409, between Guilford College Road and Swing Road. This program for this month's meeting is to be determined.

GARA Meeting Minutes

Regular Meeting Minutes August 27, 2012

The Greensboro Amateur Radio Association held its monthly meeting on August 27th, 2012, at Captain Bill's Seafood & Steakhouse located at 6108 West Market Street in Greensboro. GARA president, Donna Ferguson, KD4WIK, called the meeting to order at 7:15pm.

Officer reports

David Macchiarolo, AJ4TF, gave the engineering report stating that every thing is good. David said that the recent problems with the D-Star equipment have been repaired and hopefully it will stay that way. He also said that he has implemented a way to monitor remotely the temperature in the repeater building so if the air conditioning goes out again he can let the property owner know before the equipment is damaged.

Craig Bondy, N8STA, said that we are up to 128 members at this time.

Greg Spencer, KG4UQV, had nothing to report.

Gaither Frye, W4GCF, said that he and David met with the Guilford County School personnel from the new McNair elementary school to talk about the space station contact that will be coming up in a few months. They also participated in a teleconference with NASA where they were advised about what we will need to provide and what to expect from NASA. Gaither also said that the new McNair elementary school staff has shown interest in setting up a ham station at the school.

Roy spoke about the upcoming bike ride from Oak Ridge to Hanging Rock State Park on September 22nd. Roy said that he still needs at least four more volunteers.

Roy said that John Strandberg, W4DX, worked the thirteen colonies contest and after getting all thirteen he called Roy and asked permission to use the W4GSO call sign. John then got all thirteen again in GARA's name.

New Business

John then spoke about the upcoming Open House that he is coordinating. John said that the Open House will be held on October 20th at Hinshaw Methodist Church from 10am to 4pm. John asked that anyone with ideas for the Open House contact him.

John also said that he is working on a Ham Radio Expo at the Natural Science Center, which is scheduled for October 6th.

Donna asked for everyone to identify themselves.

David gave the program on a Soft Rock SDR transceiver kit that he built for the 40, 30 and 20 meter bands.

The meeting ended at 8:19pm.

Respectfully submitted by Greg Spencer, KG4UQV, GARA Secretary.



The Greensboro Amateur Radio Association

President Donna Ferguson, KD4WIK
Vice-President Todd Smith, AK4TS
Treasurer Craig Bondy, N8STA
Secretary Greg Spencer, KG4UQV
Financial Vacant
Engineering Chair David Macchiarolo, AJ4TF
Operations Roy Smith, N4BYU
Member-at-Large Fred Lomax, KK4BAW
Member-at-Large Gaither Frye, W4GCF
Appointed Position:
Webmaster & Newsletter Editor
Brian Wilson, NX4U

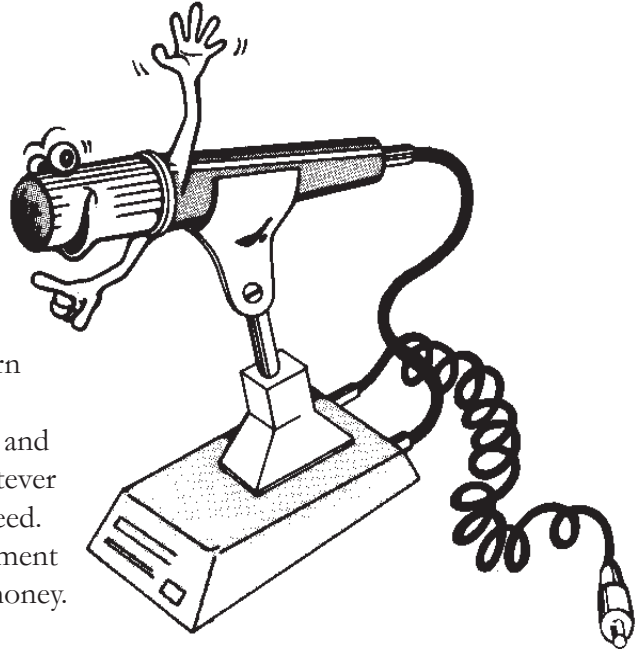
The Feed Line is ©2012 by the Greensboro Amateur Radio Association and published monthly. Our address is P.O. Box 7054, Greensboro, NC 27417. The purpose of the newsletter is to provide the club and prospective members information about the club and amateur radio in general. Material and information should reach the editor by the first Friday of the month for the next edition of the newsletter. Opinions expressed in "The Feed Line" do not necessarily represent the views of the officers, directors, editor or members of the Greensboro Amateur Radio Association. Material may be reproduced, provided proper credit is given to GARA.

Board Meeting Minutes September 10, 2012

The GARA board of directors held their monthly meeting on September 10th, 2012, at the Katherine Clay Edwards Branch library. The members present were: Donna Ferguson, KD4WIK; Craig Bondy, N8STA; Roy Smith, N4BYU; David Macchiarolo, AJ4TF; Fred Lomax, KK4BAW; Todd Smith, AK4TS; and Greg Spencer, KG4UQV. Bob Mays, KE4MOW, was visiting.

The board welcomed Jim Young with State Farm investments who spoke about some of the products that they offer. The board is looking at ways to get more return than what a savings account offers.

After Mr. Young left we discussed the requirements and benefits and what we could do. Todd suggested that whatever we do should be put before the club for approval, all agreed. Todd said that he would check with the ARRL for investment advice or options. We discussed ways to generate more money.



The board started the regular meeting at 7:52pm.

David said that the Spencer Mountain repeaters were hit by lightning over the weekend and he spoke about the lightning protection that we have at our site.

David also spoke about the ARISS contact that is coming up in the spring at McNair Elementary School.

David said that we should ask Gary Grant, N5ODE, at RF Micro for assistance with equipment.

David also said that the school staff wants to set up a ham station at the school and that Gaither Frye, W4GCF, is looking to get some of McNair's staff to come to the technician class on October 27th.

Craig said that he will send a letter to our insurance company to see if there are any cost savings available. Craig will also check with State Farm to see if they could save us money on insurance.

Craig said that the ARRL has a program that will credit affiliated clubs when one of their members joins the ARRL. Todd said that we had looked at this before and there was not any interest at the time. Todd said that he thinks we should look into it.

Fred said that we need to give members a chance to participate in club activities if they desire.

Roy said there are now 20,356 hams in NC.

Roy said that we were affiliated with the ARRL and we were doing signups for the ARRL at one time but that is something that got dropped. Roy said that we should have someone who keeps track of what needs to be done. Roy said that there are many people in the club who pay their dues but we never see or hear them on the repeater. Roy suggested we send a letter to all members to let them know what the club is doing and thank them for being a member.

Roy said there is a bike ride coming up in two weeks, and they will be using the repeater for this event.

Roy made a motion to adjourn, Craig seconded and the motion passed. The meeting ended at 8:37pm.

Respectfully submitted by Greg Spencer, KG4UQV, GARA Secretary.

From the President's Shack

From Donna Ferguson, KD4WIK

Wow! Where did this year go! I cannot believe that September is almost over, but we still so much left to do.

October is going to be a busy month. October 6th is the Expo at the Natural Science Center. October 13th is testing. October 20th is the Open House and October 27th is the tech class. What a busy month loaded with lots of ham radio fun!

The ARISS contact with McNair Elementary is coming together. We had another meeting with them and even though the school is not open yet, we are still moving forward. We are currently helping them to fill out a grant application with the ARRL Education and Technology Program so that they can get money to put a ham shack in the school. They are really excited about bringing ham radio into the schools and partnering with GARA to do it. Several of the teachers that we have been working with are going to be at the tech class on the 27th. The teachers are looking forward to learning more about ham radio. Once they have the education they can be an encouragement to the students and have the ability to create the desire to learn.

Thomas Fleming, KJ4YDP, and Asa Hildreth, KK4EXW, are on our nomination committee. I am still looking for a third person. If you are one of the several that

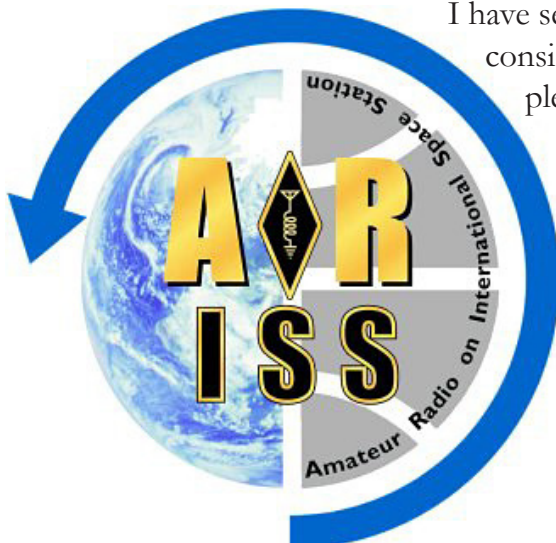
I have sent an e-mail to asking you to be on the committee, please consider it. If you are interested in serving on a board position, please let Thomas or Asa know. We need to fill the financial officer position and I know that at least one member-at-large position will need to be filled for next year. Serving on the board is a great way to give back to the club. The term is only for one year so please consider it.

The Christmas party is still a work in progress. More details to come.

Board elections are just 2 months away. Please plan on attending the November meeting so you can vote.

Until Next Month

Donna



Engineering Update for September, 2012

From David Macchiarolo, AJ4TF

VHF Repeater:

Not much to report this month, as usual the VHF FM repeater is running well..

D-Star Repeater:

It's been an interesting summer with the D-Star repeater. As I told you last month, the Linux-powered gateway computer, which connects the repeater to the internet and other repeaters, failed twice this summer. However, since the air conditioner was replaced at the repeater site, it's been more stable. Partly as a result of the gateway hardware difficulties this summer, I created a web page to monitor the gateway operation. It is updated every two minutes. You can see the gateway status by pointing your web browser to: <https://w4gso.dstargateway.org/gwstatus.html> Be sure to use https (not http).

We have several new D-Star users registered on our system, I hope to hear you on the air soon!

As always, if you have any questions or concerns about your club repeaters, either VHF or D-Star, or any other technical topic, please contact me at aj4tf@arrl.net



73, David AJ4TF

List Public Service Events Here

By Tom Bertolino, KB1P

In an effort to support area public service events and assist ham coordinators with their recruitment efforts the Feed Line will publish a list of Public Service Events held in the Triad area. The event will appear in Feed Line until the event's date has pasted. It will contain the event name, date, where the event will take place, and the ham coordinator's contact information. If you want to list your event in the Feed Line please contact Tom Bertolino at kb1p@arrl.net with the following information: name of event, date of event, where the event take place, and your contact information and any special radio equipment required.

DATE

EVENT

POC

No events listed

[In order to make this column a success I need the help of the GARA membership. If you have volunteered for a Public Service Events in the past or are currently scheduled to help out in an upcoming event please let the person who recruited you know about this column (or send me their contact information and I will let him know about this service). Publishing their event in the "Feed Line" might stop their last minute requests for help over the local nets.

If you are a Public Service Event Ham coordinator list your event here, you cannot always depend on Ham's who worked your event in the past. There will always be scheduling problems that will prevent those who volunteered in the past to volunteer again or those last minute family or work problems that will leave you shorthanded. By advertising your event early an often you will increase your volunteer base. The "Feed Line" will give you a way to advertise your event to over 100 club members not to mention the non-member who read the club's newsletter.]

Congratulations! You Passed!

Every month on the second Saturday, except in March when it is the third Saturday, W4VEC holds a testing session for those who live in the area. This provides an opportunity for individuals to be able to test for their amateur radio license or upgrade. Thanks to Glenda Nicholson, AG4NC, and a group of volunteers, each month there are new or upgraded hams in our area.

In September, we had three (3) individuals who passed their test(s) and earned either their Technician, General or Extra class license.

Next month's testing session will be on October 13th at #3 Centerview Dr, Hickory Building, Greensboro, NC 27407 at 9:00am. While walk-ins are welcome contacting the lead VE is preferred. Please contact Glenda Nicholson at (336) 674-3810 or by email at ag4nc@bellsouth.net

All Photos Courtesy of David Macchiarolo, AJ4TF



*JMichael Speth - Upgraded to Extra -
K16SQK*



*Roy W Terwilliger, Jr. Passed Tech -
KK4LLZ*



*Layman W Idol, Jr. - Passed Tech &
General - KK4LLY*



During the testing session the Volunteer Examiners watch while the participants work to answer the questions correctly.

Azimuthal (continued from page 1)

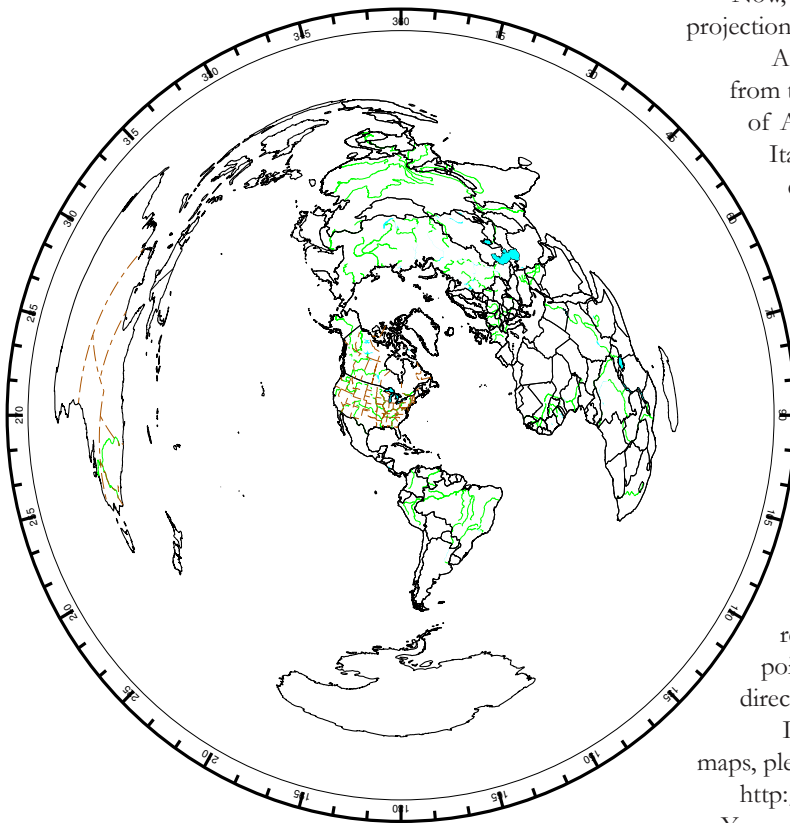
It has some unique advantages, especially in navigation, where a course of constant bearing between two points (called a "Rhumb Line") is drawn as a straight line. It however has a significant disadvantage, especially over longer distances, or as one gets closer to the poles of the earth, in distorting the proper shapes of land masses, exaggerating them the further north or south of the equator you move. A typical Mercator Projection of the earth is shown below in figure 1.

Most of us are used this map projection. Using this map, many of us might think to point our antennas almost due east to reach Italy, or almost due West to reach Japan, or somewhat south of east to reach India. In some cases, you might be reasonably close, but in others, you would be significantly off the Great Circle path to your destination.



Figure 1 – Mercator Projection of the Earth between 82 N and 82 S
photo courtesy of: http://upload.wikimedia.org/wikipedia/commons/f/f4/Mercator_projection_SW.jpg

Test Map from Greensboro, NC



Azimuthal Equidistant Projection
From Greensboro, NC
Radial scale: 2000km/cm

AZ_PROJ v1.1.7, Dec 2011, (C) 1994-2002,2010-11 Joseph Mack NA3T, Michael Katzmann NV3Z
<http://www.wm7d.net/azproj.shtml>

Now, here in Figure 2, is a Azimuthal-Equidistant projection centered on Greensboro, NC.

As you can see, by drawing a straight line due east from the center crosshairs, you would strike the west coast of Africa, and eventually the island of Madagascar.

Italy actually has a Great Circle bearing nearer to 50 degrees. India is reached by pointing your antenna at approximately 30 degrees. Japan lies approximately 320 degrees from Greensboro. Due west points your antenna to eastern Australia.

Now, the 3db beamwidth of a 3 element tribander is approximately 60 degrees (or plus/minus 30 degrees from where you're pointed); so in some certain cases you might end up ok, but Italy at 50 degrees is 40 degrees different from what you might have initially thought – possibly putting your signal at a significant disadvantage.

You can prove the above by using a globe and a string. Stretch the string from central North Carolina to your destination of choice. This represents the shortest distance between the two points, and will allow you to interpolate the approximate direction you should point your antenna to.

If you'd like to learn more, and generate your own maps, please point your browser to:

<http://www.wm7d.net/azproj.shtml>

You can generate your own custom Azimuthal-Equidistant maps centered on your own location.

73, and good DX!

Chris, K4HC

Area Happenings

FOURTH MONDAY – at 6:30pm, the Greensboro Amateur Radio Association have their regular monthly meeting at Captain Bill's Seafood & Steakhouse, 6108 West Market St., Greensboro, NC 27409. Please plan to gather at 6:30pm for dinner. The meeting is scheduled to start at 7:15pm

CLUB NETS:

SUNDAYS – at 7:30pm, the **Technical Forum** on the 145.150;

- at 9pm, the **GARA News and Information Net**. This net features *NewsLine* and is on the 145.150, W4GSO repeater. Roy Smith, N4BYU is always looking for net controls. Contact him if you would like to help.

TUESDAYS – at 8:30pm **The Triad SkyWarn Net** meets on the 147.225, K4ITL repeater, no tone required.

TUESDAYS – at 9pm, the **D-STAR Net** meets on 442.8625 (W4GSO B and Reflector 17C)

WEDNESDAYS – at 8:30pm, **The Guilford Amateur Society Rag Chew Net** holds their weekly net on the 145.250, W4GG repeater with an 88.5 Hz. tone. Jim Hightower, W4JLH is the net control.

THURSDAYS – at 9pm, **The Guilford County ARES Net** meets on the 145.150 repeater (100 Hz. tone).

OTHER ACTIVITIES :

FIRST MONDAY – **The Guilford County A.R.E.S.** monthly meeting is held at 1002 Meadowood St. off W. Wendover Ave, in the EMS building, beginning at 7pm.

THIRD MONDAY – at 6:15pm **The Guilford Amateur Society** holds their monthly meeting at Tex & Shirley's Restaurant in Friendly Shopping Center. Eat at 6:15pm and the business meeting begins at 7pm.

THURSDAY – at 11:15am, Greensboro Hams get together for lunch. Thursday lunch group is meeting at the K&W Cafeteria, 300 Forum VI Mall at Friendly Shopping Center. Talk-in is on the 145.150, W4GSO repeater with a 100 Hz. tone.

EVERY FRIDAY – at 8pm (approximately) Greensboro Hams get together for coffee at Starbucks at Edney Ridge Rd.

The W4VEC Testing Schedule Oct 2012 to Mar 2013

October 13, 2012
November 10, 2012
December 8, 2012
January 12, 2013
February 9, 2013
March 16, 2013

Location: #3 Centerview Dr,
Hickory Building,
Greensboro, NC 27407

Time: 9:00am

Contact: Glenda Nicholson

Phone: (336) 674-3810

E-mail: ag4nc@bellsouth.net

GARA REPEATERS

145.150 MHz - offset, 100 Hz. tone

442.8625 MHz. + offset, Digital D-Star



Greensboro Amateur Radio Association

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FIRST CLASS MAIL

The Official Publication of GARA