

# Nacogdoches Amateur Radio Club

## 2019 CLUB OFFICERS

Pres: Jack York - KG5POU

Vice Pres: Bill Rascher - KT5TE

Sec/Treas: Army Curtis - AE5P

Visit our web site at

<http://w5nac.com/>

## MISSION STATEMENT

The Mission of the Nacogdoches Amateur Radio Club is to support and promote Amateur Radio by public service, offering training to unlicensed interested parties and licensed Amateurs, mutual support of other Amateurs, engaging events that promote Amateur radio to the general public and other Amateur radio operators, and continuing fellowship by regularly scheduled organized meetings and events and having fun.



## MARCH MINUTES

The March meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on March 6th. **President Jack KG5POU** opened the meeting at 7:00 p.m. in the Lunch Room of Christ Episcopal School. Twelve members were present. Each person present introduced them self. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

Army AE5P gave an update on the number of QSL cards sent out so far for the Shuttle Columbia

Special Event Station. The count now stands at 144.

In various HF contests this past month, three club members report participation in the ARRL International DX CW competition, one member participated in the CQ WPX RTTY contest, and one member participated in the ARRL International DX SSB competition.

Bill Krause WK5F, long time club member and active participant in many club activities, has announced he and his wife Phylis will be moving to Dallas April 15<sup>th</sup>. Bill will be greatly missed.

RM K5AGE spoke on the upcoming Old Stone Fort Bike Ride planned for April 13. RM asked the club to assist in providing communications for the

ride and received a positive response. More details to follow. (Editor's note: please see the article at the end of this newsletter.)

Neches River Rendezvous is scheduled for June 1. If you can help please contact Steve KB8QWN or Army AE5P for more info.

Discussion held on Field Day coming up June 22-23. Motion made and carried to hold Field Day this year at the County EOC on FM3314. Jack KG5POU will be the coordinator.

The Technical Question in the last newsletter was won by Phillip WB5TAL. The prize was a copy of the ARRL Antenna Compendium. Please check this month's Technical Question for a slight change to the rules.

The March book raffle was won by Ralph N6RH, who received a copy of 'Grounding and Bonding for the Radio Amateur'.

Meeting closed at 8:08 p.m.

**Program:**

Army AE5P presented a program on Ham Radio Logging Programs.

**2019 DUES ARE DUE**

Dues are now just \$20 a year and cover all licensed hams in a family.

Please get your dues to our Secretary/Treasurer either in person or by mail.

Help support your NARC.

**FROM THE  
PRESIDENT**

73 de Jack York

KG5POU

[gtjakco@yahoo.com](mailto:gtjakco@yahoo.com)

## FROM THE VP CHAIR

As March ends and April arrives I'm heading out on a road trip to St. Louis to help my Uncle Jim move from his home of 60+ years to an assisted living apartment. His home is 900 sq ft with a basement of the same size. The apartment is 720sqft, so most furnishings should fit. Jim should have become a ham years ago so he could properly utilize that empty 900sqft basement as a ham shack. In a few days Jim will breach 90 with no plans for slow down by continuing to take cruises and attending baseball games (preseason & season).

My partner on this road trip will be John, my younger brother. John has become a ham recently, but hasn't really got his feet wet. I've tried to encourage him to rove with us, but no luck. His home in Keller has restrictions on minor

things like towers, so he has not put the Yaesu FT-991 I sold him a few months ago to good use. He does have a tower setup next to his Watership Farm Observatory. We have a few more items to finish setting up, but he has used the radio for a night or two in December at his observatory. I've been encouraging him to give FT8 a try from home since he can hide a compromised antenna in the landscaping. Maybe it is time for a little more of a push! :-)

As AE5P knows I have a few Elecraft radios, :-) so which one is best for this trip? My choice is the 10W (I use only 5w for digital), 80-10m KX2, with a pretty good ATU and CW key. Now toss in a USB cable, 20/17m BNC whip antenna, a metal plate with BNC male/male for a tripod, the micro tripod, 1' and 10' RG8x coax, 13' of coated 24awg w/ spade soldered at one end, couple of battery packs, and one little 7" x 7" x 3.5" case to fit all

this in except the 10' cable and tripod. Oh yeah, one other item, an Acer Travelmate micro dual core Pentium laptop with Windows 7 & WSJT-X.

To test this setup so John would be successful I put it all together on the south porch with a glass of ice tea. The whip has a slide switch for 20m or 17m. I selected the 20m band and hit the tune button. It instantly gave a 1:1. I guess that wasn't necessary... So in wsjt-x I selected the first station calling CQ after decoding. K1EK, FN42 was at +00db and he immediately responded with a -6db. Wow, New Hampshire on 5 watts. That is a distance of 1517.3 miles. Not bad for a 20m whip. OK, it works!

I spent another hour testing until June bugs crashing into me got annoying. During that time I made 14 QSOs. Today everything is now packed up and ready to go. Hmmm, maybe I

should get out the BNC  
magmount...

Until next month,

73, Bill KT5TE

[bill@watershipfarm.com](mailto:bill@watershipfarm.com)

## NOTES FROM OUR EC

April showers bring...  
We've entered Spring and  
the abundance of weather  
that it brings. The  
hazardous outlook for the  
next 7 days: scattered  
showers and  
thunderstorms across LA  
and TX. Like we haven't  
had enough rain in the  
first 3 months of 2019.

Spring also brings a lot of  
outdoor activities. There  
are 2 bike rides coming  
this month. The Old Stone  
Fort ride sponsored by the  
Nacogdoches Rotary and a  
ride in Rusk. RM is looking  
for support for the Old  
Stone Fort ride. Please  
volunteer as you can. AND  
remember to log your time  
with net control. I report

those hours in my monthly  
activities report.

We'll cover a couple of  
other things that go along  
with these events: Tactical  
Callsigns, FCC call signs  
and phonetics.

Tactical call signs are call  
signs assigned for a special  
event, SAG 1, Rest Stop 5,  
Gopher 2, etc. The call  
sign is usually assigned to a  
specific task during event  
operations. But wait,  
there's more: Remember,  
any time you communicate  
over the radio you must  
give your FCC call sign as a  
minimum, when you  
complete your comms, or  
every 10 minutes if you are  
long winded or sooner.  
General rule of thumb, if  
you are about to unkey the  
radio, even to hand it over  
to the next one in the  
repeater chat group, give  
your call sign. It doesn't  
hurt.

And to follow along with  
giving your call sign, how  
do you sign? What kind of  
phonetics do you use? Me,  
ITU. Why? Well it is  
international. Not just  
part of the ITU but

international civil aviation,  
international maritime,  
just to name a few  
agencies. AND why use  
ITU phonetics, simply Bee,  
Cee, Dee, Eee, Pee and  
Tee, they sound so similar.  
Of course as Army  
reminds us, morse does it  
better.

We'll close it up with, did  
you change your batteries  
for DST and are you ready  
for the 2019 bad weather  
season?

I will be in Tyler 13 April  
for a District EC meeting.  
Look to here next month  
for notes from that  
meeting.

73 de John Chapman  
KC5MIB  
[jlchapman2@juno.com](mailto:jlchapman2@juno.com)

## VE TESTING

Our next VE testing is scheduled for **Wednesday April 17 at 7:00 p.m.** in the Lunch Room of Christ Episcopal Church School.

Applicants should bring a picture ID, the original and a copy of their current Amateur license, the original of any CSCE's and \$15 to cover the cost of the exam(s). Correct change is always very much appreciated. 73 de AE5P

email: [ae5p@arri.net](mailto:ae5p@arri.net)

## NEW HAMS

At our VE testing session March 20, we had three applicants. Norman KI5DOF upgraded from Tech to General. Daniel KI5DZI passed his Tech and General. And we were delighted when Israel, the young son of Daniel Donovan KI5CZS passed his Tech exam and is now KI5DZH. Congratulations to all.

## TWO METER CLUB NETS

Remember to join us each week for the two meter nets sponsored by NARC. Each **MONDAY** is the **NARC ARES/RACES** net, at 8:00 p.m. on the club's 146.84 repeater (PL 141.3). Second, on **THURSDAY** evenings at 8:00 p.m. is the **Deep East Texas Skywarn Emergency Weather Net** on the 147.32 repeater (PL 141.3). Please join us for one or both.

## NEXT MEETING

The next meeting will be **Wednesday March 6th at 7:00 p.m.** in the Lunch Room of Christ Episcopal Church School.

## BOOK RAFFLE

At the suggestion of Rusty KD5GEN, we are going to have a book raffle/giveaway beginning with the February

meeting. Each month, we will have a current book on a topic of interest to Amateur Radio operators. Everyone present at the meeting will receive one ticket. Additional tickets can be purchased at \$1 per ticket, or 6 tickets for \$5. A ticket will be drawn at the end of the meeting for the book of the month.

The book for April will be "HF Dipole Antennas for Amateur Radio". You must be present at the meeting to win.

We are interested to know which books members would be most interested in being a part of the raffle. Send your ideas and suggestions to the Club Secretary.

## MORE TRIVIA

Early politicians required feedback from the public to determine what the people considered important. Since there were no telephones, TV's, radios nor internet, the politicians sent their assistants to local taverns, pubs, and bars. They were

told to 'go sip some Ale and listen to people's conversations and political concerns. Many assistants were dispatched at different times. 'You go sip here' and 'You go sip there.' The two words 'go sip' were eventually combined when referring to the local opinion and, thus we have the term 'gossip.'

\*\*\*\*\*

At local taverns, pubs, and bars, people drank from pint and quart-sized containers. A barmaid's job was to keep an eye on the customers and keep the drinks coming. She had to pay close attention and remember who was drinking in pints and who was drinking in quarts, hence the phrase 'minding your Ps and Qs.'

**UPCOMING****EVENTS OF NOTE**

Mark your calendars for the following events coming up in the next few months. Full information on these events and much more can be found at <http://www.hornucopia.com/contestcal/contestcal.html>

Note that all dates shown here are local, CST dates while all contest logging uses UTC dates and times.

**CQ WW WPX - SSB**

Mar 29-31, 2019

<http://www.cqwpw.com/rules.htm>

**THE OLD STONE FORT BICYCLE RIDE 2019**

Apr 13, 2019

**SAN JACINTO DAY SPECIAL EVENT**

Apr 20-21, 2019

**K5T****CQ WW WPX - CW**

May 24-26, 2019

<http://www.cqwpw.com/rules.htm>

**MENTORFEST 2019**

April 27, 2019

9 a.m. - 4 p.m.

Garland, TX

**HAMCOM 2019**

June 7-8, 2019

<https://sites.google.com/hamcom.org/ham-com>

**ARRL JUNE VHF**

June 8-10, 2019

<http://www.arrl.org/june-vhf>

**ARRL FIELD DAY**

June 22-23, 2019

<http://www.arrl.org/field-day>

**IARU HF WORLD CHAMPIONSHIP**

July 13-14, 2019

<http://www.arrl.org/iaru-hf-championship>

## Solid State Devices Part 6

by  
Thomas Atchison W5TV

Now suppose we discuss biasing a transistor. The first question that occurs is, 'Why do we need to bias a transistor?' Consider the following circuit with an NPN transistor (Fig. 1).

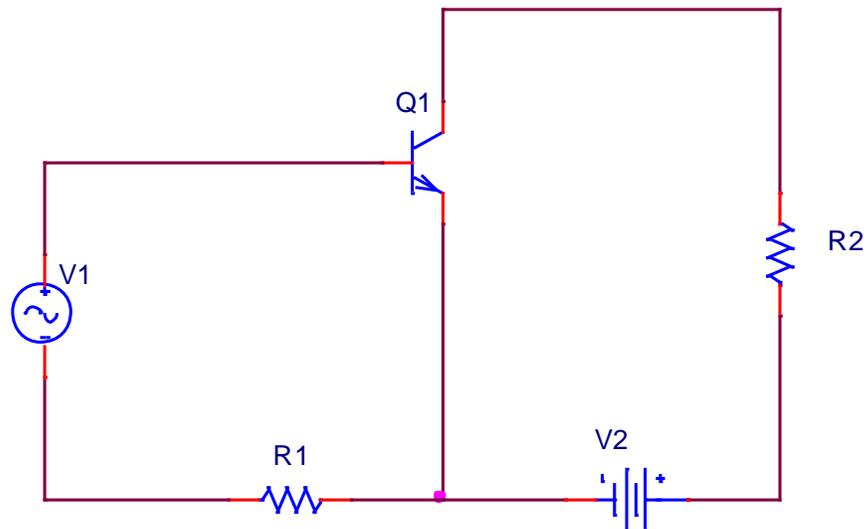


Fig. 1

If the only voltage we apply to the transistor base is an AC signal we observe that when the signal voltage is positive it puts a forward-bias voltage on the base/emitter junction. This creates base current and that will cause a collector current to flow. When the base signal voltage is negative it puts a reverse-bias voltage on the base/emitter junction and no base current flows. This means that no collector current flows. In other words, there is a pulse for every half cycle of the input voltage. This is basically a half-wave rectifier. We don't want this kind of output from our transistor circuit because it does not provide an amplified version of the input signal.

To avoid the situation we have described above we provide a DC bias voltage on the base so the operating point of the transistor will have an input signal that is always positive. This will allow a collector current to flow and the output signal will be an amplified version of the input signal. Proper bias voltages set what is called the **quiescent point** or **Q point** of the transistor. This Q point is a point on one of the characteristic curves of the transistor that will cause the input signal to always be positive. The Q point is normally near the middle of the transistors operating range,

which is approximately halfway between cut-off and saturation. This allows the output current to increase and decrease around the amplifiers Q point without distortion as the input signal swings through a complete cycle. That is, when we establish the Q point, alternating input signals will vary the base/emitter junction bias voltage. If the input signal voltage is within certain limits it won't reverse bias the base/emitter junction and the output signal will be an amplified version of the input signal. In this case we say that the transistor amplifier is operating in its linear range.

The circuit in Fig. 1 is called a **common emitter circuit** because the emitter is used in both the base loop and the collector loop. The circuit in Fig. 2 below shows more information about a common emitter amplifier.

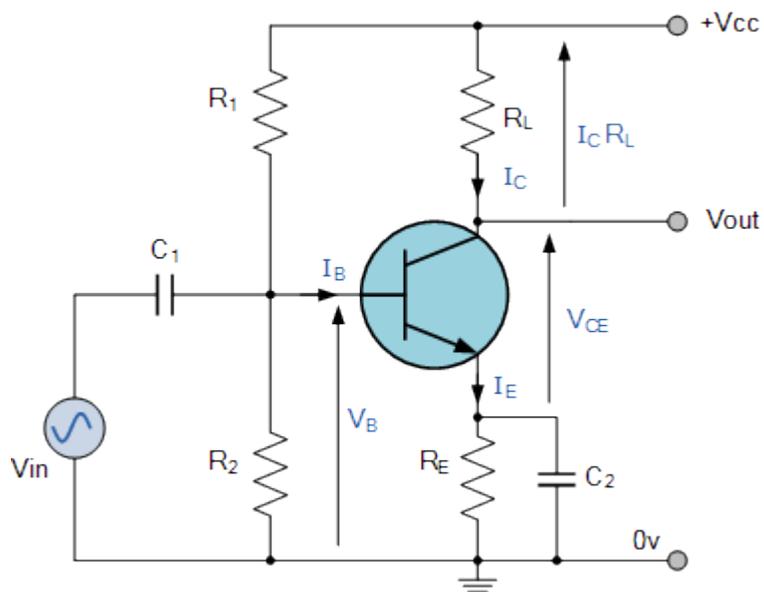


Fig. 2

This bias of this circuit is determined by the  $R_1$  and  $R_2$  voltage divider. The bias is given by the formula

$$V_B = \frac{R_2}{R_1 + R_2} V_{CC}.$$

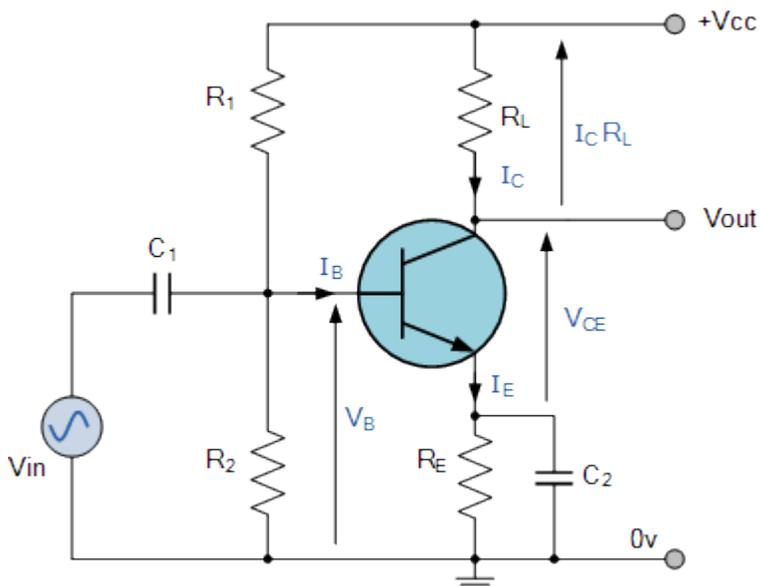
Notice that we are producing a bias voltage,  $V_B$ , using the main supply voltage,  $V_{CC}$ . The resistors,  $R_1$  and  $R_2$ , are chosen to provide an appropriate bias voltage to set the Q point.

I do not intend to discuss how we determine the Q point of a transistor. If you want to get deeper into circuit design there are many articles available on the internet.

## TECHNICAL QUESTION FOR APRIL

Editor's note: This month we continue a new column where we challenge our members with a technical question. The closest correct answer sent to AE5P from a current dues paying NARC member will be eligible for a special prize. The prize will be awarded at the upcoming meeting. You must be present to win. Members are limited to winning once per calendar year.

Suppose  $V_{CC} = 12$  volts and we needed a bias voltage of 2.6 volts in the amplifier below.



Determine the values of  $R_1$  and  $R_2$  in terms of standard resistors ( $\pm 5\%$ ), as shown in the Mouser catalog, that will provide the required bias voltage. Total bias current should not exceed 1 mA. The solution received that provides the lowest deviation from the desired bias voltage will be declared the winner. Entries must be received no later than Tuesday April 2, 2019 at 10:00 a.m.

## MIRACLE 160M ANTENNA

Have you been looking for a great 160 meter antenna? One that not only receives great, but also transmits great as well? And doesn't require a 20 acre pasture to hold it or several 100 foot (or higher) towers to support it?

Have I got a deal for you.

A new design just released almost seems too good to be true. Here are the details:

Get a piece of #10 copper wire cut to exactly 3.5765 meters long. Connect your coax to one end of the wire and hang the wire vertically. No ground radials are required.

Measurements on this miracle antenna have shown gain of more than 15dB for both transmit and receive modes, but only on FT8. It does not seem to do quite as well on CW or SSB for reasons that are not quite clear. More research is needed to determine the reason for this difference.

Oh yes, one more small detail. This antenna is time sensitive. It can only achieve this incredible performance on the first Monday of the fourth month of the year.

Hurry! That date is fast approaching.



### UPDATE - Old Stone Fort Bike Ride

I am looking forward to this event, I hope you are as well. I have some updates to share along with general information. We are still looking for a few more ham radio operators (Sag and Rest Stop), so if you would like to help, please email me or text me (contact info below).

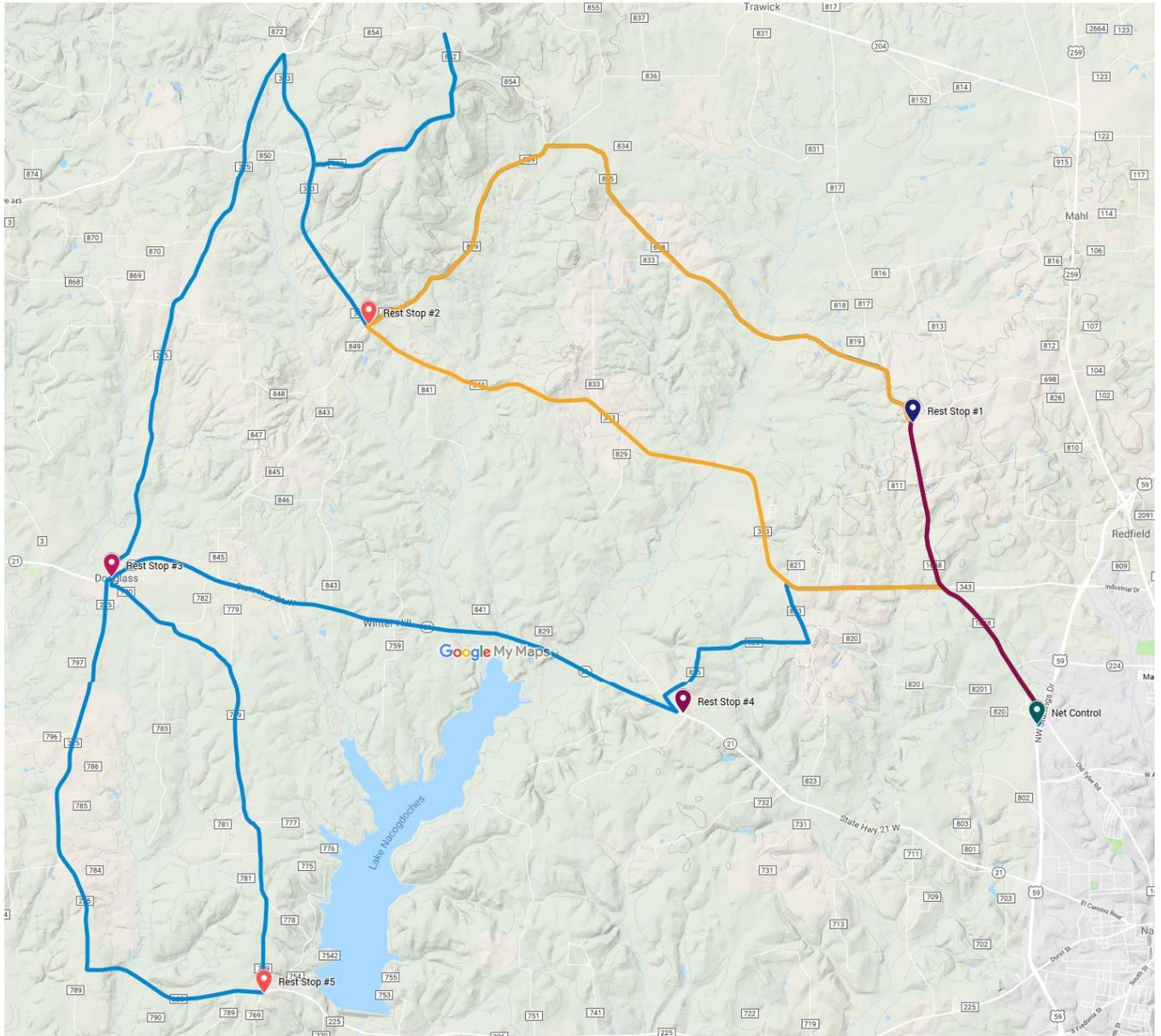
- There has been a course correction. Attached is the new map with rest stop locations. I will provide printouts during the next meeting and a short discussion will be available for any questions about the event. Assigned positions will be discussed as well. Please see the link below for an interactive map I put together showing the routes and rest stops. This link is available to use on your phone.

[https://drive.google.com/open?id=1RO2lZca2KAaAYg65V0U\\_frA7IH0JRI6m&usp=sharing](https://drive.google.com/open?id=1RO2lZca2KAaAYg65V0U_frA7IH0JRI6m&usp=sharing)

- Chicken Fajitas will be available for everyone after they finish the race, including the radio operators. It would be wise to pack snacks and water to sustain you until your position is closed.
- Official race start is 8:30am and the course officially closes at 3:00pm.
- Mobile radios are recommended. If you need radio equipment for this event, please reach out to me or Army Curtis.

Rm Blake - [k5age@fastmail.com](mailto:k5age@fastmail.com)

Text or Call - 512-777-9436



The Old Stone Fort Bike Ride route.

This is a picture of KT5TE's porch and the setup he used for the contact in his column this month. Wow, 5 watts to a hamstick on a camera tripod. Well done Bill!!

