

# 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.



## APRIL MINUTES

The April meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on April 3rd. **President Jack KG5POU** opened the meeting at 7:00 p.m. in the Lunch Room of Christ Episcopal School. Sixteen members and two guests were present. Each person present introduced them self. Minutes of the previous meeting were approved as published. The Treasurer's report was read.

### Contest Report

The North American SSB Sprint was entered by

**Jonathan W5WJC** and **Army AE5P**.

The CQWW WPX SSB contest saw participation by **Jack KG5POU**, **Jonathan W5WJC** and **Army AE5P**.

**Bill Krause WK5F**, long time club member and active participant in many club activities, has relocated to Dallas. Bill is greatly missed.

Field Day 2019 has been confirmed for the new City/County EOC on FM3314 behind McCoys. **Jack KG5POU** is the FD Chairman.

**RM K5AGE** spoke on the upcoming Old Stone Fort Bike Ride planned for April 13. The club will be providing communications support for the race, weather permitting.

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

This was the lucky night for **Bob K5ME**. Bob submitted the closest answer to the Technical Question in the last newsletter and received a copy of the ARRL Antenna Compendium. Bob also won the April book raffle and received a copy of the new ARRL book "HF Dipole Antennas for Amateur Radio".

Meeting closed at 8:12 p.m.

#### Program:

**Army AE5P** and **Philip WB5TAL** presented a program how to solve the Technical Question for the month. Several methods were shown.

### 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

This is a reprint of an article I thought would be useful to new hams. It will be a multi-part article.

ARTICLE BY ALAN WOLKE featured in [www.tek.com](http://www.tek.com)

### HAM RADIO FACTS

First let me introduce myself W2AEW. Amateur radio, commonly known as "ham radio" is a venerable hobby dating back to the inception of radio itself. With roots in the experiments of some of science's greats, there is a homebrew aesthetic associated with radio that exists to this day despite the plethora of communications methods available to us now. While

the lure of communicating around the globe drew many hams into the hobby in the past, the draw today is generally an interest in technology or public service, or even designing and building equipment.

### A Brief History

The development of radio for communication was preceded by the telegraph, and many conventions were carried over into radio communications. These include the use of various codes and abbreviations as well as the term "ham" itself.

Since telegraphy required a physical connection, communications by telegraph were handled by professional operators. Many of these operators went on to handle radio communications, bringing their vernacular and culture with them. "Ham" in telegraphy was a derogatory term used to describe a poor operator, and was thus carried over to radio and used against amateur operators (possibly for good

reason). Amateurs, in turn, owned the term and now wear it proudly.

As radio developed further, a need for regulating the available frequencies became apparent and amateur transmissions were restricted to a range of shorter wavelengths, essentially crippling them for long distance communications at the time. Hams were given access to "200 meters and down," meaning frequencies whose wavelengths were shorter than 200m. In other words, anything above about 1.5MHz was fair game. These bands were deemed "useless" for commercial and government use. Unknown to the regulators at the time, the HF bands about 1.5MHz turned out to be ideal for world-wide communication via ionospheric propagation (lucky hams!). Even these modest frequencies were banned through World War I, but the restriction was lifted after.

Ham radio soon saw a flourishing that led to wireless communication between the UK and the USA, and subsequently many other locations around the world. This prompted a need for international standards, which were established by treaty around 1928.

Ham radio was interrupted once more during World War II and subsequently went through a few revisions to the allocated frequency bands, leading to the current standards. Today, about two million hobbyists worldwide participate in ham radio.

73 de Jack York

KG5POU

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

## FROM THE VP CHAIR

The fastest way to make time pass is to have a deadline. April is gone and May is here. These are the fastest months for me since every weekend there are multiple items on my agenda. Actually I'm looking forward to June since there is a VHF contest and field day. Both of these are excellent ham radio opportunities, good fun and excellent food (Dairy Queen time...there are worse addictions).

It looks like FT4 might be useful for RTTY contests, and I hope RTTY contests don't end up becoming an FT4 contest. I haven't ventured into RTTY contesting in a serious way, but I'm interested and would hate to see RTTY fade away. Most new radios have PSK and RTTY built into them. My radio permits the use of the CW key to send data in PSK or RTTY

modes. The idea is when you're portable you don't need to bring a laptop to use these modes. When I say portable I mean pulling the radio out of your back pocket and sending a PSK message. :-)

Maybe FT4 will draw more operators into the RTTY contests and/or contesting in general. You might check out "The FT4 Protocol for Digital Contesting" at: [http://physics.princeton.edu/pulsar/k1jt/FT4\\_Protocol.pdf](http://physics.princeton.edu/pulsar/k1jt/FT4_Protocol.pdf)

Until next month,

73, Bill KT5TE

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

## NOTES FROM OUR EC

To heck with the old ditty, April brings rain (4.03 inches as of 24 April), weeds and furiously growing grass, hail, strong winds, tornadoes, destruction, injury and loss of life. A very good acquaintance was the man trying to get people to safety at Caddo Mounds. Unfortunately, he is now hospitalized with a severe neck injury. It will be a long and slow road to recovery.

April seems to be a rough weather month, lots of rain and the above mentioned severe weather. There's really nothing we can do to prevent the storms or to mitigate the damage; it's real hard to move a milking shed or a house.

The SKYWARN program helps get the storm activities to the National Weather Service and to local authorities. It has been awhile since NARC has hosted a training

session. Did you know you can also take the training and get your certificate on-line? The NWS-Shreveport has a link to the training. I'm not sure how long the on-line class is. If there is any interest in having the NWS come to Nacogdoches, please let me know. I do not know how far in advance they schedule the classes.

Please keep a radio watch on the .32 repeater and the NWS radio (162.550 MHz) when we get into weather like this. You may not be able to dispatch and track the impending storm, but more eyes are much better than none.

In last month's newsletter I mentioned a report on the District EC meeting scheduled the 13th. This and many other activities were cancelled or postponed due to the weather. No make-up date has been set. I'll keep you posted.

Don't forget our local nets for ARES/RACES and SKYWARN. You lurkers can join us, at least listen

in, there are usually announcements and remember we always handle Emergency, Priority or Time Valued traffic before we get into the net. This has taken me a little longer to prepare. A friend was hurt, 2 young boys and a lady lost their lives locally. When it hits this close to home, you always wonder how to do it better.

<https://www.weather.gov/shv/skywarn>

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

## VE TESTING

Our next VE testing is scheduled for **Wednesday May 15 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@arrl.net](mailto:ae5p@arrl.net)

## NEW HAMS

At our VE testing session April 17, we had two applicants. Terry from Longview passed his Technician exam is now KI5ELS and Randy from Tyler passed his Technician exam and is now KI5ELT. Congratulations to both.

## 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 May 1st at 7:00 p.m.** in the Lunch Room of Christ Episcopal Church School.

## BOOK RAFFLE

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 May will be "International Antennas" from the RSGB via ARRL. 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.

## FROM OUR SECTION MANAGER

I am seeking Nominations for a Ham Of The Year of North Texas. Nominations are to be emailed to [KG5VK@ARRL.org](mailto:KG5VK@ARRL.org)

**The Nominee must be an ARRL member and reside in North Texas**

Nominations should be in Bullet Statement Format with details between each Bullet statement and a closing statement or summary.

**Emails should include the subject line "Ham of The Year"**

Also.....

I am recruiting 16-20 year old Amateurs to become leaders of the youth area of our Section Manager Team.

Those under 18 must have Parents permission..

Please email me [KG5VK@ARRL.ORG](mailto:KG5VK@ARRL.ORG)

Why you feel you would be

a good candidate for this leadership Position, or why you are recommending someone.

They Must be a current ARRL member.

Steve

Tele 318-470-9806

2019 ARRL NTX Section Manager

**KG5VK**

## 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 - CW

May 24-26, 2019

<http://www.cqwp.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 7

by

Thomas Atchison W5TV

Some of you may want to see more detailed information about the common emitter amplifier circuit we talked about at the NARC Club meeting. If so here is an excellent URL: [https://www.electronics-tutorials.ws/amplifier/amp\\_2.html](https://www.electronics-tutorials.ws/amplifier/amp_2.html).

Now I want to go into some discussion concerning a particular NPN common emitter amplifier. For this amplifier we will use a 2N2222 transistor, Fig. 1.

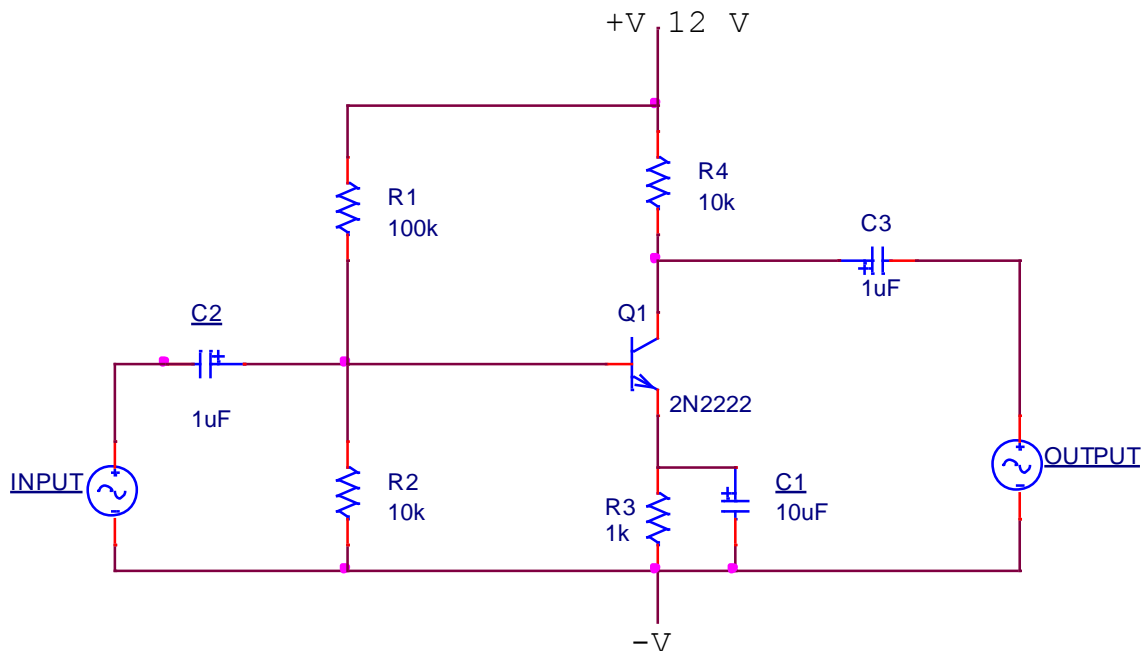


Fig. 1

Note that the input signal goes between the base and emitter and the output signal comes from the collector and emitter. That is, the emitter lead is common to both the input and output circuits. That is why we call this a common emitter amplifier.

Resistors R1 and R2 form a voltage divider circuit to get the correct base/emitter bias voltage. Resistor R3 is usually called the emitter resistor. The capacitor C1 is an emitter bypass capacitor that takes the signal current around the emitter resistor. This aids in circuit stability. If the signal current traveled through R3 it would have an undesired effect on the bias conditions for Q1. Collector current through resistor R4 creates the output voltage. C2 and C3 couple the AC signal into and out of the amplifier. The amplified output signal is 180° out of phase with the input signal.



Now let's consider a PNP common emitter amplifier. For this amplifier we will use a 2N3906 transistor as shown in Fig. 2.

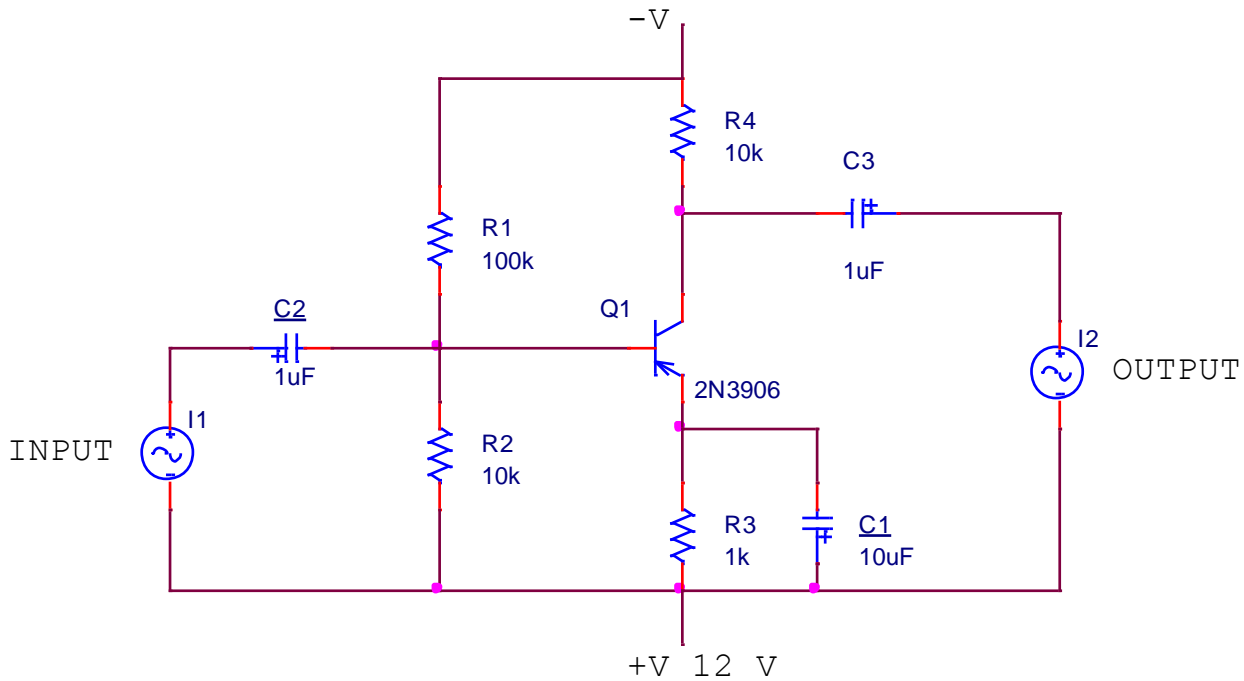


Fig. 2

This remains a common emitter amplifier and the circuits of Fig. 2 and Fig.1 are very similar. The main difference is that we have reversed the polarity of the bias voltage. The other parts of the circuit are as described above. The amplified output signal is also  $180^\circ$  out of phase with the input signal.

The input impedance of these circuits is almost equal to the resistance of R2 i.e. about 10k ohms. The output impedance is approximately equal to the resistance of R4, i.e. about 10k ohms. This says that these common emitter amplifiers have high input and output impedances.

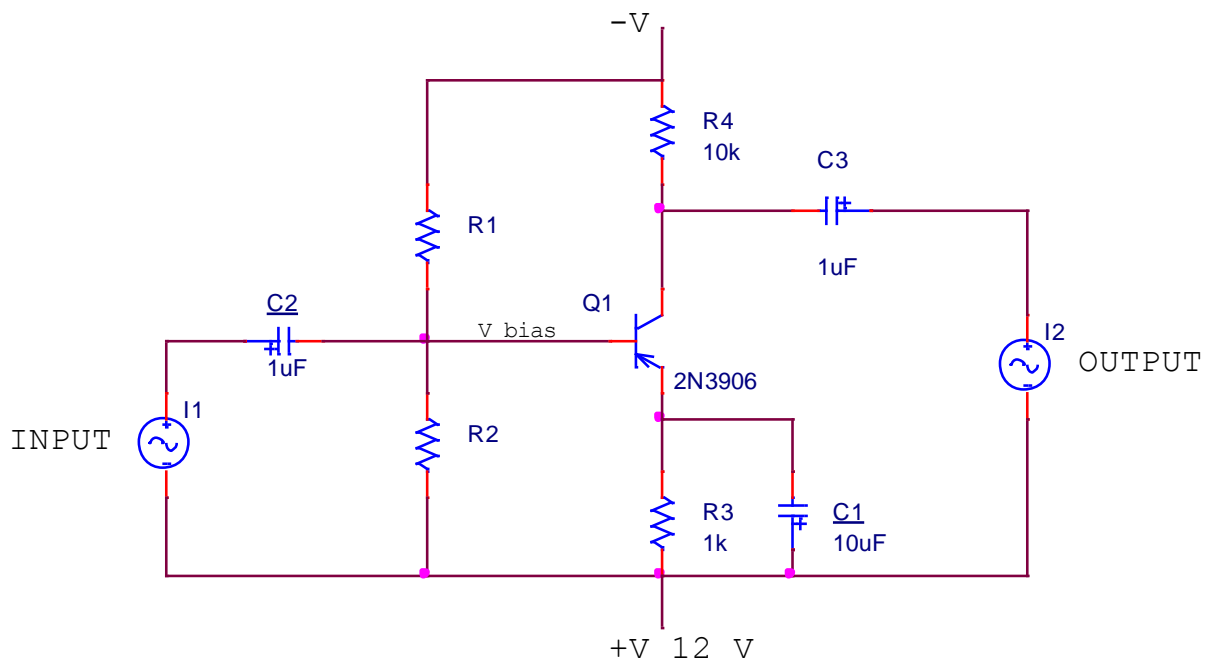
The NPN common emitter amplifier (Fig. 1) is a very popular bipolar transistor amplifier type; however, there are common base amplifier circuits and common collector amplifier circuits. We will look at these later.

Reference: *Understanding Basic Electronics*, First Edition by Larry D. Wolfgang, WR1B, published by the American Radio Relay League, 2002.

## TECHNICAL QUESTION FOR MAY

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 30, 2019 at 10:00 a.m.

## JULIE ANDREWS

This wouldn't be as funny if it wasn't so true... ☐

Julie Andrews turned 80 - To commemorate her 80th birthday on October 1, actress/vocalist, Julie Andrews made a special appearance at Manhattan's Radio City Music Hall for the benefit of the AARP.

One of the musical numbers she performed was "My Favorite Things" from the legendary movie "Sound Of Music."

Here are the actual lyrics she used:

Maalox and nose drops and needles for knitting, Walkers and handrails and New dental fittings, Bundles of magazines tied up in string, These are a few of my favorite things.

Cadillacs and cataracts, and hearing aids and glasses, Polident and Fixodent and false teeth in glasses, Pacemakers, golf carts and porches with swings, These are a few of my favorite things.

When the pipes leak, When the bones creak, When the knees go bad, I simply remember my favorite things, And then I don't feel so bad.

Hot tea and crumpets and corn pads for bunions, No spicy hot food or food Cooked with onions, Bathrobes and heating pads and hot meals they bring, These are a few of my favorite things.

Back pains, confused brains, and no need for sinnin', Thin bones and Fractures and hair that is thinnin', And we won't mention our short, shrunken frames, When we remember our favorite things.

When the joints ache, When the hips break, When the eyes grow dim, Then I remember the great life I've had, And then I don't feel so bad.

Ms. Andrews received a standing ovation from the crowd that lasted over four minutes and resulted in repeated encores.