

\*\*\*\*\*

# SIGNALS

**Rockwell  
Collins**

Monthly Newsletter of the

**Amateur Radio Club**

Volume 38 Issue 07

Web Site <http://www.w5rok.us>

April 2017

\*\*\*\*\*

## RCARC Membership Meeting

Tuesday 25 April 2017  
1700 Social      1730 Meeting  
1800 Program

Methodist Richardson Medical Center  
At Bush/Renner/Shiloh Intersection  
Conference Room A in Hospital Building

**Subject:**

**The Outernet's  
Ham Radio Connection  
By Frank Krizan K5HS**

A native Texan, Frank was first licensed as a Novice in 1961. He enjoys operating, DXing, contesting and trying new concepts in Ham Radio. Frank and his lovely bride, Nancy, K5NCK, live in Garland.

### RCARC Community Service Activities

**Siren Testing** Dennis Cobb WA8ZBT, John McFadden K5TIP, Frank Krizan K5HS and Jim Skinner WB0UNI participated in the Richardson emergency siren testing. The testing on 5 April 2017 went well with almost all sirens operating normally. Two sirens had no report. The siren testing is performed at 12:00 on the first Wednesday of each month. The sirens are monitored by amateur radio operators and reports made using the Richardson Wireless Klub (RWK) repeater at 147.120 MHz. Siren testing occasionally uses the University of Texas at Dallas (UTD) repeater at 145.430 MHz, which is designated as the backup repeater.

**Crime Watch Patrol** Jim Skinner WB0UNI participated in Richardson Duck Creek Crime Watch Patrol (CWP). CWP members, after successful completion of Richardson Police Department Training, patrol their neighborhoods and report all suspicious activities to the Police Department.

## Local Club News

### Meeting Notice

The program for this month's meeting be presented by Frank Krizan, K5HS. The title of the presentation is **The Outernet's Ham Radio Connection**. Frank provided the following brief description:

Most of us take the Internet for granted, but around 4.3 billion people around the world don't have access to the Internet. Recognizing an opportunity, entrepreneurs are seeking ways to provide a solution.

One of those is Outernet [www.outernet.is](http://www.outernet.is). The Outernet makes use of the existing world-wide satellite coverage offered by INMARSAT satellites.

Frank will describe the Outernet, what you need to receive the Outernet signals and the amateur radio (APRS) "channel" that's been included. You'll learn about resources and how to send messages via the Outernet.

### OPPORTUNITY: Sam's Club Round-Up Ride

Ham operators are needed to support the Sam's Club Round-Up Ride 2017 over the weekend of May 5 and 6th, 2017. This is the 30th year for the bike rally supporting the National Multiple Sclerosis Society.

This is an opportunity for the new hams to put their radio to use in supporting a well-organized public service event.

Details about the event: [http://main.nationalmssociety.org/site/TR/Bike/TXHBikeEvents?pg=entry&fr\\_id=28791](http://main.nationalmssociety.org/site/TR/Bike/TXHBikeEvents?pg=entry&fr_id=28791).

Volunteer for communications: <https://sites.google.com/site/dfwmsridecomms/volunteering>.

For additional details, contact KB5ZDG James Marple at [j.marple@verizon.net](mailto:j.marple@verizon.net).

It's a fun event. Try to help.

(Contributed by Doug Kilgore KD5OUG)

RCARC OFFICERS			
<b>PRESIDENT</b>		<b>VICE-PRESIDENT</b>	
Mike Schmit	WA9WCC	Gene Duprey	K1GD
214.862.4249		319.270.8159	
<a href="mailto:Wa9wcc@arrl.net">Wa9wcc@arrl.net</a>		<a href="mailto:geneduprey2015@gmail.com">geneduprey2015@gmail.com</a>	
<b>SECRETARY</b>		<b>TREASURER</b>	
Jim Brown	AF5MA	Mike Montgomery	WD5TX
972.495.2209		972.705.1498	
<a href="mailto:jhksbrown@verizon.net">jhksbrown@verizon.net</a>		<a href="mailto:dmmontgo@rockwellcol-">dmmontgo@rockwellcol-</a>	
<b>ACTIVITIES</b>		<b>WEBSITE MANAGER</b>	
<b>VACANT</b>		Mike Hollingsworth	W5QH
		972.571.6060	
		<a href="mailto:w5qh@arrl.net">w5qh@arrl.net</a>	
<b>STATION TRUSTEE</b>		<b>NEWSLETTER EDITOR</b>	
Bob Kirby	K3NT	Jim Skinner	WB0UNI
319.360.0500		214.535.5264	
<a href="mailto:k3nt@arrl.net">k3nt@arrl.net</a>		<a href="mailto:wb0uni@arrl.net">wb0uni@arrl.net</a>	
<b>MEMBERSHIP</b>		<b>W5ROK CLUB STATION</b>	
Joe Wolf	N5UIC	972.705.1349	
214.202.2757		461-290	
<a href="mailto:n5uic@arrl.net">n5uic@arrl.net</a>			

church building. For further information contact Dave Russell W2DMR, at 972.690.9894 or E-mail [warhog4@tx,rr.com](mailto:warhog4@tx,rr.com).

**SIGNALS** is the monthly newsletter of the Rockwell Collins Amateur Radio Club, published by and for its members. The entire contents of this newsletter are copyright © 2017 by the Rockwell Collins Amateur Radio Club. Permission is hereby granted to any not-for-profit amateur radio publication to reprint any portion of this newsletter provided both the author and Rockwell Collins Amateur Radio Club are credited.

## President and VP Messages

The weather is getting nicer, so it's time for projects. I am finally ready to get my OCF antenna up in the air. I have purchased the mast and have almost all the hardware and bits and pieces ready to go. I am short one item: 2 inch panel clamps—I need 9 of them. Tractor Supply had them, but they are \$8 each and when I got them home, the bolts were too short!! So, they go back tomorrow, and I will continue the search. In the mean time I can do some prep with the parts I do have. Does anyone have a ground rod driver? If so contact me, as I would like to borrow it.

Alongside projects, we have Ham-Com, and Dayton Hamvention coming up. There will be lots of new stuff to check out and of course Dayton is going to be in their new location. Unfortunately, I will not be able to make Dayton, but I am looking forward to Ham-Com. There are lots of opportunities for public service also coming up, so let's get out there and have some fun.

We have Frank Krizan, K5HS, giving our program at the meeting this month; he will be talking about the Outernet for ham radio, should be an interesting program.

See you at the meeting & 73's,  
Gene, K1GD  
RCARC Vice President

## VE SESSIONS

**Dallas** tests are held on the fourth Saturday of each month at 1000 hrs. 13350 Floyd Rd. (Old Credit Union) Contact Bob West, WA8YCD 972.917.6362

**Irving** tests are held on the third Saturday of each month at 0900. Fifth and Main St. Contact Bill Revis, KF5BL 252-8015

**McKinney** VE test sessions are held at the Heard Museum the first Sunday of the month. The address is 1 Nature Place, McKinney TX. The time of the testing is 1430, ending no later than 1645. **Note: no tests given on holiday weekends.**

**Garland** testing is held on the fourth Thursday of each month, excluding November, and begins at 1930 sharp. Location is Freeman Heights Baptist. Church, 1120 N Garland Ave, Garland (between W Walnut and Buckingham Rd). Enter via the north driveway. A HUGE parking lot is located behind the church. Both the parking lot and the Fellowship Hall are located on the east side of the church building, with big signs by the entrance door. Contact Janet Crenshaw, WB9ZPH at 972.302.9992.

**Plano** testing is on the third Saturday of each month, 1300 hrs at Williams High School, 1717 17<sup>th</sup> St. East Plano. Check Repeater 147.180+ for announcements.

**Richardson** The Richardson Wireless Klub (RWK) VE team hold license testing on the third Thursday of each month at St. Barnabas Presbyterian Church, 1220 West Beltline Rd. Testing begins at 1900 hrs in room 12. Enter through the Northern most door on the east side of the

## Secretary's Report

28 Mar 2017

President Mike Schmitt WA9WCC called the meeting to order at 1738.

The following were present at the meeting:

Jim Brown	AF5MA
Dennis Cobb	WA8ZBT
Gene Duprey	K1GD
John McFadden	K5TIP
Mike Schmit	WA9WCC
Jim Skinner	WB0UNI
Bill Swan	K5MWC
Rohan Thomas	KG5RCN
Joe Wolf	N5UIC

### Officers and Committee Reports:

There were no formal reports other than the Secretary's Report, which is contained in this newsletter.

### Old Business:

Mike Schmit WA9WCC reminded that Field Day would be held on 24-25 June 2017. He encouraged advanced planning to assure club success.

Mike also reported that Bob Kirby K3NT had the club's newly-purchased Elecraft K3S transceiver up and running, and was continuing testing before it is integrated into the W5ROK ham shack. All is going well.

### New Business:

Jim Skinner WB0UNI directed the membership to the current newsletter and the writeup about next month's program. Frank Krizan K5HS will be discussing the Outernet, a worldwide communications network using the existing the INMARSAT constellation.

Joe Wolf N5UIC offered a presentation on two Kenwood handheld transceivers, the TH-D72 FM dual bander and the TH-74A tri-bander. As is usual for a Joe Wolf presentation, real hardware was on hand for inspection and demo.

### Adjournment:

The meeting was adjourned at 1817.

## 65 Great Things About Ham Radio

Five years ago, on CQ's 60th anniversary, we ran a feature throughout the year titled "60 Great Things About Ham Radio," in which we listed five "great things" each month. The series was quite popular and we have continued to receive requests to reprint it. So now, in honor of our 65th anniversary, we're repeating the list—with a few updates as well as five more "Great Things About Ham Radio."

1. It works when nothing else does

2. It makes you part of a worldwide community

3. The opportunity to help neighbors by providing public service and emergency communications

4. Some of the nicest people you'll ever meet

5. Some of the smartest people you'll ever meet

6. Some of the most interesting people you'll ever meet

7. Some of the most generous people you'll ever meet (along with some of the cheapest!)

8. Lifelong friendships

9. Friends around the world (including those you haven't met yet)

10. The opportunity to go interesting places you might not otherwise go to

11. The opportunity to do interesting things you might not otherwise get to do

12. The opportunity to expand your knowledge of geography

13. The opportunity to expand your knowledge of earth and space science

14. Practical uses for high school math

15. Practical uses for high school physics

16. A good way to practice a foreign language

17. A good way to keep in touch with faraway friends and relatives

18. A good way to get driving directions when visiting someplace new (with or without GPS)

19. A good way to find the best places to eat when visiting someplace new (with or without GPS)

20. Finding "non-touristy" off-the-beaten-path places to stay, eat, visit, etc.

21. A good way to learn about virtually any topic

22. A good way to bridge the generation gap

23. A good way to keep tabs on elderly/infirm people

24. People named Joe (Walsh, Rudi, Taylor)

25. How many of your non-ham friends have actually talked to someone in some remote place such as Cape Verde or the Seychelles?

26. How many of your non-ham friends might have talked to an astronaut aboard the space station?

27. How many of your non-ham neighbors might have a satellite uplink station in their basements—or in the palms of their hands?

28. How many of your non-ham neighbors might have a TV studio in their garage?

29. What other hobby group has designed, built, and had launched its own fleet of communication satellites?
30. Where else can you play with meteors?
31. Moonbounce
32. Informal way to improve technical skills
33. Informal way to improve communication skills
34. Introduces a variety of career paths
35. Offers unparalleled opportunities for career networking
36. Opportunities for competition in contesting and foxhunting
37. A good way to collect really cool postcards from around the world (despite the growth of electronic confirmations)
38. Nearly endless variety of different things to do, on and off the air
39. Hamfests
40. Dayton
41. Field Day
42. Working DX
43. Being DX
44. DXpeditions
45. Contesting
46. Award-chasing
47. Double-hop sporadic-E
48. Worldwide DX on 6 meters (once or twice every 11 years)
 

[The current extended sunspot minimum has shown that mechanisms other than F2 propagation can offer intercontinental DX on the "magic band" at any point in the solar cycle.]
49. Tropospheric ducting
50. Gray-line propagation
51. TEP, chordal hops, etc.
52. Getting through on CW when nothing else will
53. Unexpected band openings
54. Building your own gear
55. Using gear you've built yourself
56. Operating QRP from some remote location
57. Experimenting with antennas
58. Working DX while mobile or while hiking
59. Experimenting with new modes and new technology

60. The opportunity to help build an internet that doesn't rely on the internet
61. DXing on your HT via IRLP and Echolink
62. Contributing to scientific knowledge about propagation
63. Keeping track of other people's GPS units via APRS
64. Ham radio balloon launches to the edge of space, and as always...
65. Reading CQ!

(Reprinted with permission by CQ magazine. <http://www.cq-amateur-radio.com>.)

(Contributed by Frank Krizan K5HS)

### That's Not Real Ham Radio

12 April 2017 by Bob KØNR

Things had been pretty quiet on the ham front lately but then I ran into a string of "That's Not Real Ham Radio" discussions. This happens from time to time...I usually ignore it...but this time I got sucked into the topic.



It started with some HF enthusiasts I know talking about how "digital modes" are just not very satisfying. Their point is that with CW and SSB, there is an audio connection to your ear that makes you an integral part of the radio communication. The extreme-DSP modes such as JT65 insert serious signal processing that essentially removes the human connection. This can quickly lead to the generalization that these digital modes "aren't real ham radio."

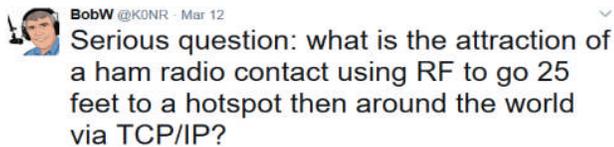
I think it's fair to say that most hams think of the HF bands as the center of the hobby...getting on the air, bouncing signals off the ionosphere to talk to someone over the horizon. Some hams will go even further and say that CW is the only way to go. Anything less is just phone. FM and repeaters? Forget that stuff...not enough skill required. And certainly, don't get stuck on 2 meters.

In a previous post, I argued we should not confuse religion with modulation. I do occasionally make snarky comments about the continued use of AM (AKA Ancient Modulation), but I've tried to tone that down in recent years.

What About DMR?

Just last week, I was playing around with a DMR hotspot on the Brandmeister network. It really struck me that people on the system were having a blast talking to each other across North America and around the world. But then that nagging little voice in the back of my head said "hey, wait a minute...this is not real DX...the RF signal might only be traveling 20 feet or so from an HT to a hotspot."

This caused me to put out a plea for insight on twitter:



I received a lot of good replies with the answers tending to clump into these three categories:

- I don't know ("That's Not Real Ham Radio")
- It's fun, new technology
- It's a digital network that brings ham radio operators together

My interest seems to fall into the second category: this is fun, new technology. Which does make me wonder how long this new technology will remain interesting to me. Well, that is difficult to predict but I'll invoke the principle of try not to overthink it. The idea that DMR is a digital network that brings ham radio operators together makes some sense. In the past, I have argued that amateur radio is not for talking. In other words, if you just want to talk someone, there are much more convenient ways of doing that. Still, there is something attractive about this ham-radio-only digital network.

It really is important to not overthink this kind of stuff. Ham radio is supposed to be fun, so if you are having fun, you are probably doing it right. If you are not having fun, then you might want to examine what you are doing. See my post on the Universal Purpose of Amateur Radio.

Sometimes hams can get a little spun up about those other guys that don't appreciate our way of doing ham radio. What the heck is wrong with them anyway? I've always been inspired by the Noise Blankers Mission Statement:

- ✓ Do radio stuff.
- ✓ Have fun doing it.
- ✓ Show people just how fun it is.

If your preferred form of ham radio is so superior, it ought to be easy to show other hams how cool it is. If not, then maybe you aren't doing it right. Conversely, as long as other hams are having fun and operating legally, don't knock what they are doing. In fact, encourage them. We

need more people having fun with ham radio, even if it's not your favorite kind of fun.

That's my opinion. What do you think?

73, Bob K0NR

The post That's Not Real Ham Radio appeared first on The K0NR Radio Site.

Bob Witte, K0NR, is a regular contributor to AmateurRadio.com and writes from Colorado, USA. Contact him at [bob@k0nr.com](mailto:bob@k0nr.com).

*(Reprinted with permission of Bob Witte K0NR)*

## Animated Article on Antennas

The following website contains a very interesting discussion on dipole antennas, with animations: [https://en.m.wikipedia.org/wiki/Dipole\\_antenna#](https://en.m.wikipedia.org/wiki/Dipole_antenna#).

## History of the Car Radio

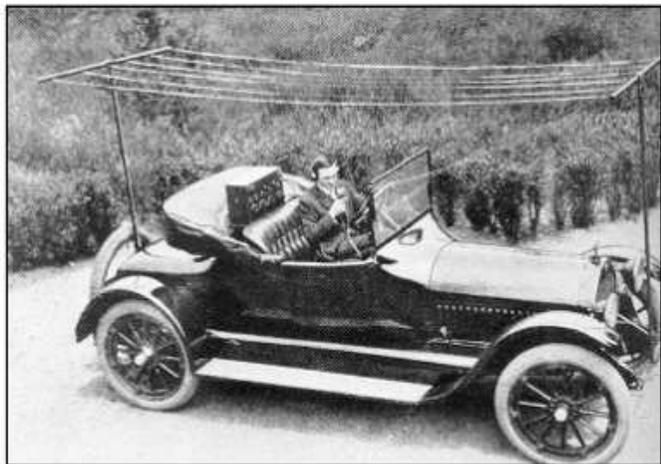
For most people today, it seems like cars have always had a radio, but let's face it, they didn't. Here is a short history of the car radio along with a few other tidbits you might enjoy.



Back in 1929, two young men named William Lear and Elmer Wavering drove their girlfriends to a lookout point near the Mississippi River in the town of Quincy, Illinois, to watch the sunset. It was a romantic night; however, one of the girls commented that it sure would be nicer if they could listen to music in the car.

Lear and his buddy, Wavering, thought about that idea. Both men had tinkered with radios (Lear served as a radio operator in the U.S. Navy during World War I). That week

the two buddies took apart a home radio and tried to get it to work in a car.



Radio manufacturer Alfred H. Grebe installed an amateur radio station in his vehicle in 1919—even before entertainment radio began. Notice the elaborate wire antenna stretched between the two masts.

It wasn't easy; automobiles have ignition switches, generators, spark plugs, and other electrical equipment that generate static interference, making it nearly impossible to listen to a radio while the engine is running. One by one, Lear and Wavering were able to identify and eliminate each source of the electrical interference they encountered. When they finally got their radio to work, they took it to a radio convention in Chicago.

There they met Paul Galvin, owner of Galvin Manufacturing Corporation. Galvin made a product called a "battery eliminator", a device that allowed battery-powered radios to run on household AC current. But as more homes were being wired for electricity, more radio manufacturers were making AC-powered radios so Galvin needed to find a new product to manufacture.

When Galvin met Lear and Wavering at the radio convention, he found his new product. He believed that "mass-produced" affordable car radios had the potential to become a huge business. He convinced Lear and Wavering to set up shop in his factory, and that is where they perfected their first fully functioning car radio which they installed in Galvin's personal Studebaker.

A few months later, Galvin drove his Studebaker 800 miles to Atlantic City to the 1930 Radio Manufacturers Association Convention. He wanted to show off his new radio that was installed in his car. Upon arriving at the convention, Galvin didn't have enough money to rent a booth at the convention so he parked his Studebaker outside the convention hall and cranked up the radio real loud so every passing conventioneer could hear it playing. That idea worked and Galvin got enough orders to go ahead and put the radio into full production.

His first production model was officially called the 5T71; however, he needed to come up with a name that was a little catchier. Back in those days, companies in the phonograph and radio businesses like to use the suffix "ola" in their names Radiola, Columbiola, and Victrola those were the big three. Galvin decided to do the same thing with his product. Since his radio was intended for only use in a motor vehicle, he decided to call it the Motorola.

When the Motorola went on sale in 1930, it cost about \$110 uninstalled. A brand-new car back then cost around \$650 and the country was sliding into the Great Depression. (By that measure, a radio for a new car today would cost about \$3,000.)

The kicker was it took two men working several days to install the car radio. The dashboard had to be taken apart so that the receiver and speaker could be installed, and the roof had to be cut open to install the antenna. Since those early Motorola's ran on their own batteries, not the cars battery, holes had to be cut into the floorboard to accommodate the new batteries.

Galvin lost money in 1930 and then struggled for a couple of years. But things picked up dramatically in 1933 when Henry Ford was so impressed with the car radio he became the first auto manufacturer to begin offering the Motorola pre-installed at the factory. In 1934 Galvin got another major boost when he struck a deal with the B.F. Goodrich Tire Company to sell and install his radios in its national wide chain of tire stores across the country.



An early Motorola car radio: [Jim's Antique Radio Museum](#)

Soon the price of the Motorola, installed, dropped to \$55. The Motorola car radio was now off and running. Galvin decided to officially change the name of his company from the Galvin Manufacturing Company to "Motorola" in 1947.

In the meantime, Galvin continued to develop new uses for car radios. In 1936, he introduced push-button tuning so a driver could preset channels. Then he introduced the

Motorola "Police Cruiser, a standard car radio that was factory preset to a single frequency to only pick up police broadcasts. In 1940, he developed the first handheld two-way radio -- The Handy-Talkie -- for the U.S. Army.

Consequently, a lot of the communication technologies we take for granted today were created by Galvin's Motorola labs in the years following World War II. For example, in 1947, Motorola came out with the first television set for under \$200. In 1956, the company introduced the world's first telephone pager; in 1969, Motorola designed the radio and television equipment that was used to televise Neil Armstrong's first steps on the moon. In 1973, Motorola invented the world's first handheld cellular phone.

Today Motorola is one of the largest cell phone manufacturers in the world. And it all started with the idea of a car radio.

So here is the \$64,000 question: whatever happened to the two men who built and installed the first radio in Paul Galvin's Studebaker - Elmer Wavering and William Lear? Well, sad to say they ended up going their separate ways and taking very different paths in life. Wavering decided to stay with Motorola and during the 1950's, he helped change the automobile again when he developed the first automotive alternator, replacing the inefficient and unreliable generator. His invention of the alternator lead to such automobile luxuries as power windows, power seats and eventually air-conditioning.

Lear left Motorola but continued inventing as well. He received more than 150 patents. Remember eight-track tape players? Yep, Lear invented that. But what Lear is really famous for are his contributions to the field of aviation. He invented the first radio direction finder for aircraft and aided in the invention of the autopilot. He then designed the first fully automatic aircraft landing system. In 1963 Lear introduced his most famous invention of all, the Lear Jet, the world's first mass-produced, affordable business jet. Now this is what blew my mind Lear did it all with an eighth-grade education.

## Upcoming Events

### JUNE

**10-12 June VHF Contest**—For amateurs in the US and Canada to work as many amateur stations in as many different 2 degrees x 1 degree Maidenhead grid squares as possible using authorized frequencies above 50 MHz. Stations outside the US & Canada (and their possessions) may only work stations in the US (and its possessions) and Canada. Stations in KH0-9, KL7 & KP1-KP5, CY9 and CY0 count as W/VE stations and can be worked by DX stations for contest credit. Begins 1800 UTC Saturday, runs through 0259 UTC Monday. Details at <http://www.arrl.org/june-vhf>.

**18 Kid's Day**—Kids Day is designed to give on-the-air experience to young people and hopefully foster interest in getting a license of their own. It is also intended to give older hams a chance to share their station and love for Amateur Radio with their children. Kids Day always runs from 1800 UTC through 2359 UTC. Operate as much or as little as you like. Details at <http://www.arrl.org/kids-day>.

**24-25 Field Day**—Objective: to work as many stations as possible on any and all amateur bands (excluding the 60, 30, 17, and 12-meter bands) and to learn to operate in abnormal situations in less than optimal conditions. Field Day is open to all amateurs in the areas covered by the ARRL/RAC Field Organizations and countries within IARU Region 2. DX stations residing in other regions may be contacted for credit, but are not eligible to submit entries. Details at <http://www.arrl.org/field-day>.

### JULY

**8-9 IARU HF World Championship**—Objective: to contact as many other amateurs, especially IARU member society HQ stations, around the world as possible using the 160, 80, 40, 20, 15 and 10 meter bands. Beginning 1200 UTC Saturday and ending 1200 UTC Sunday. Details at <http://www.arrl.org/iaru-hf-championship>.

**Daily** DFW Early Traffic Net (NTS) at 6:30pm 146.88 – PL 110.9Hz

**Daily** DFW Late Traffic Net (NTS) at 10:30pm 146.72 – PL 110.9Hz

**Daily** Texas CW Traffic Net at 7:00pm on 3541 KHz and at 10pm on 3541 KHz [www.k6jt.com](http://www.k6jt.com)

**1<sup>st</sup> Wednesday** Richardson Emergency Siren Test. At noon using the Richardson Wireless Klub (RWK) repeater at 147.120 MHz.

**2<sup>nd</sup> Wednesday** ARES North Texas HF Net Every month—3860 KHz at 8:30 pm—9:30pm

# Rockwell-Collins

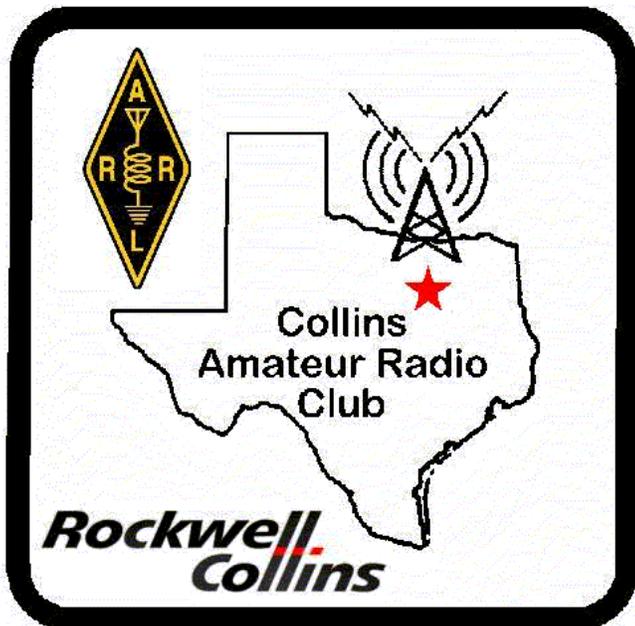
Amateur Radio Club

Mail Station 461-290

P.O. Box 833807

Richardson, TX 75083-3807

TO:



### CLUB STATIONS

(972) 705-1349

#### W5ROK REPEATER

441.875 MHz +5 MHz Input  
131.8 Hz PL - RX and TX

#### W5ROK-1 PACKET BBS ROK Node

145.05 MHz

W5ROK-N1, W5ROK-N2 & W5ROK-N3 HSMM-  
MESHNET Nodes 2.4 GHz

Tuesday 25 April 2017

1700 Social      1730 Meeting

Methodist Richardson Medical Ctr  
At Bush/Renner/Shiloh Intersection

*Conference Room A in Hospital Building*

**NEXT SIGNALS INPUTS DEADLINE:**

**→→→ 12 May 2017 ←←←**