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# SIGNALS

Rockwell  
Collins **Amateur Radio Club**

Monthly Newsletter of the

Volume 33 Issue 08

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

May 2012

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## RCARC Membership Meeting

Thursday, 24 May 2012  
1700 Social      1730 Meeting  
1800 Program

Methodist Richardson Medical Center  
At Bush/Renner/Shiloh Intersection  
Second Floor Conference Room 200

*Subject:*

**Communicating Using the Earth's  
First Satellite; the Moon!**  
by Dr. Al Helfrick, K2BLA

DXER and has achieved ten-band DXCC over his 55 year ham radio career.

Dr. Helfrick is a recent past chair of the Electrical Engineering department at Embry-Riddle Aeronautical University in Daytona Beach, Florida. He is currently a full professor. He is in Richardson to present a week-long course on avionics; a course that is given throughout the country and world and sponsored by the University of Kansas.

**New Members Welcome** Please welcome John Foster, who is our newest member, (and recently retired)!

**Rockwell Collins Amateur Radio Club Information Net Tuesday 22 May 2012** The W5ROK NET meets each month. The particulars are:

- |               |  |
|---------------|--|
| <b>WHAT</b>   | Information Net - <b>RCARCIN</b>                             |
| <b>WHEN</b>   | Tuesday of the week of the regular club meeting at 19:00 CST |
| <b>WHERE</b>  | W5ROK Repeater 441.875+ PL 131.8Hz                           |
| <b>WHO</b>    | Everyone and anyone.   |
| <b>FORMAT</b> | (a) announcements<br>(b) Swap<br>(c) Check-in plus updates.  |

The format provides club and local announcements of interest to Amateur Radio, a swap net time as well as personal updates from net participants regarding their experiences in the hobby. All suggestions for content and format are welcomed. *(Written by Michael Ketchum K5MDK)*

### RCARC Supported MS-150 Is that Mike, WA9WCC?



## Local Club News

**Meeting Notice** You don't want to miss the May meeting of the Rockwell Collins Amateur Radio Club. We have a special speaker who is in town, all the way from Daytona Beach FL, teaching a course at Rockwell Collins and has volunteered to make a presentation to our club.

Dr. Helfrick's presentation will cover the method and equipment used to make QSOs by reflecting signals from the moon. A few equations will establish the possibility of success and the station used by the presenter will be shown. Some other EME stations will also be shown and described. An actual contact will be shown from recorded "wave" files.

Al Helfrick, K2BLA, has been licensed since 1957 and has been active in all phases of amateur radio. He has published numerous articles in amateur radio publications as well as 14 books including a major text on avionics. In addition to a home brewer K2BLA is an "on again-off again"

### RCARC OFFICERS

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461-290

### VE SESSIONS

**Dallas** tests are held 4<sup>th</sup> Sat of each month at 10:00. 13350 Floyd Rd. (Old Credit Union) Contact Bob West, WA8YCD 972.917.6362

**Irving** tests are held 3<sup>rd</sup> Sat. of each month at 09:00. 5<sup>th</sup> 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 14:30, ending no later than 16:45. **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, 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.

**Greenville** testing is on the Saturday after 3<sup>rd</sup> Thursday, 1000 hrs at site TBA, contact N5KA, 903.364.5306. Sponsor is Sabine Valley ARA. Repeater 146.780(-) with 118.8 tone.

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## President's Message

As the high time for Ham Radio slams into the calendar with a hard "thud", I notice a lot of activities are already underway. The W5ROK April Work Day (see article), MRC Full Scale PODs Exercise, Club Surplus Sorting Party, Richardson WildRide!, with many more events coming over the horizon, like the Club Surplus Sale, Ham-Com, Field Day, and other public service events during the Spring and early Summer. I hope many of you will find yourself giving back to the community and having fun playing with radios in the process.

At the last meeting, I made a call for someone to consider organizing a committee for Field Day for this year. So far, I've had nobody come forward. If you have any ideas, or want to work on the committee, please let me know.

Thanks to everyone who participated with the club this last month. I hope this message finds you well and on the air!

73,  
Michael Ketchum  
K5MDK  
RCARC President

## Secretary's Report

26 April 2012

The meeting was called to order by President Michael Ketchum at 5:33 with the Pledge of Allegiance.

The following were present at the meeting:

Larry Creech	KC5LOP
Mike Hollingsworth	W5QH
Michael Ketchum	K5MDK
Bob Kirby	K3NT
John McFadden	K5TIP
Mike Schmit	WA9WCC
James Skinner	WB0UNI
Richard Strnad	AA6DV
Joe Wolf	N5UIC

### General Business:

Michael Ketchum, K5MDK, gave the President's Report. Activities for May were summarized:

- Inventory separation/organization May 12 at 9 AM
- Surplus sale May 26 at 9AM.
- Fun Days May 15 & 16.
- Need coordinator for Field Day in June.
- Ham-Com set up June 7
- Ham-Com June 8 & 9.

### Old Business:

*Surplus Materials:* May 12 surplus material work detail followed by surplus sale for members May 26 in the parking lot.

*(Commemorative Air Force (CAF) Project:* Bob Kirby, K3NT, reported Fifi has returned from Florida tour. B24 nose art "Diamond Girl" was unveiled. Both aircraft will go to Oshkosh Wisconsin with a possible stop in Cedar Rapids for radio dedication.

**Pictures from the last meeting of the RCARC**



Bob Kirby also mentioned the possibility of a special event station at Addison Airport. Bob indicated this would be a good multi club activity.

Also there is a possibility of installing an ART 13 into Diamond Girl B24. Command sets still need to be installed into Fifi. Le-tourneau University students participated in an event with N0CXX.

Bob said the HSMM service is available at the east tower. Cedar will make some 900 MHz radios available.

*Fun Days:* Michael Ketchum asked for volunteers to organize Fun Days activity. A weather balloon antenna was considered but no action was taken.

**New Business:**

*Upcoming Service Opportunities:* Mike Schmit, WA9WCC, announced several service opportunities in May.

- May 5 Collin County Emergency Exercise.
- May 5 & 6 MS 150 needs operators.
- May 19 Richardson Wild Ride.

*Severe Weather Warning:* RCARC participated in the weather warning activity on April 3 at the Rockwell Collins campus. Information supplied by club members monitoring SKYWARN activity was instrumental in management calling a take cover warning due to tornado activity in east Dallas / Mesquite area headed northeast.

*Adjournment:* The meeting closed at 6:01.

The program was by Mike Hollingsworth, W5QH: "Advanced EMI Troubleshooting Methods & TILE Overview."



**HAM-COM 2012** Ham-Com is almost here. This year's event occurs on Friday and Saturday, 8 & 9 June 2012 at the Plano Centre. And we will have a table this time. We will be setting up on 7 June. More information is available at the Ham-Com website, <http://hamcom.org/>.

**Winlink 2K HF Access on the Cheap**

For some time I have been using the VHF servers in Collin County to access the Winlink 2000 (WL2K) system for passing traffic. It is sponsored by the Collin County ARES. Many of you are familiar with it already, as I know Michael, K5MDK, has used it in some events.

While it works quite well, I have always been a little worried about what would happen if the local infrastructure were compromised by a major event, e.g., loss of the Internet. The local RMS stations need that to relay to and from the WL2K servers.

Upon reading an article in QST about RMS Express, I decided to give it a try. Since current WL2K HF access points use PACTOR modems (which are very expensive – on the order of \$700 to \$1000 for PACTOR 3 capability), the idea of a new protocol (named WINMOR) that uses the computer and sound card without the need for an external modem intrigued me.

You may recall that I have all Macintosh computers, and all the WL2K software runs only under Windows. Since I bought a new iMac computer, my old laptop was not being used for much, so I decided to turn it into a (mostly) Windows machine in order to use the available ham software. Unfortunately, the

Windows partition was too small to accommodate all the new programs so I was forced to delete it and create a new larger one. That meant re-installing Windows XP (I have SP2 that I was running in virtual mode with the Parallels program under the Mac OS). Well, an entire day later, and over 400 Microsoft updates to my SP2 version, I was almost ready to install the RMS Express program.

But wait – my Mac sound card will only emulate a Windows one. So I first purchased a Signalink USB interface, which interfaces the computer to the radio and contains a high-quality sound card itself. It came with a cable for my Omni VII and I had no trouble hooking it up. The hardest part was futzing with the Windows sound settings. Note that RigBlaster also makes similar interfaces, but they cost nearly double the approximate \$100 of the Signalink (although they have more capabilities that I don't need anyway).

I quickly got RMS Express working with the Signalink and am now able to access a growing number of WINMOR server stations via HF. Combined with battery operation of the computer and radio, I am all set to handle health and welfare traffic via the digital NTS should the worst happen and our local infrastructure be compromised.

It works well, although the speed is lower than the VHF servers. It can use 8 tone 8PSK for the best throughput and even has a 16QAM mode under good signal conditions. WINMOR uses all the Forward Error Correction (FEC) techniques that I have used in military satellite communication applications over the last 20 years, so it is quite robust. That includes Convolutional Encoding / Viterbi lattice decoding and Reed-Solomon outer coding. There are some great technical articles describing these available from the RMS Express / Winlink2K web site.

As a side bonus, the Signalink came with a small CD that had several freeware programs on it including MMTTY and DigiPan. I have installed and used both of those with success. I was on RTTY some 25 years ago (and still have a model 28 KSR in the garage), so it was fun using RTTY again, although without all the hardware – just the computer, sound-card interface, and radio. I worked many 7-land stations a couple weeks ago during the 7 QSO Party using 20 meter RTTY, even with my low power and very poor stealth antenna setup.

PSK31 is drop-dead easy using the Signalink and DigiPan software. I've had several QSOs using it, and it seems to be pretty robust, requiring only 30 to 50 watts for excellent copy on 20 meters. I've heard many French stations on there in the evenings of late. 14.070 is the place to go. It is amazing to me to see all the PSK31 signals in the waterfall display, packed into a very small amount of bandwidth. I can see why it is becoming popular.

If you haven't read the QST Article about WINMOR and RMS Express, I highly recommend it. Digital operation is not as satisfying for me, in comparison to CW, for traffic handling, but it can be a lot of fun for just casual operation and serves a very valuable function as a backup communication mode should that be needed. 73, Steve K6JT

## Rockwell Collins Museum

Robert J. Kirby  
K3NT

**May 1st, 1943** The first issue of *Collins Column*, an internal company publication, was delivered to the employees.

**May 13th, 1937** The Collins Radio Company, already incorporated in Delaware, reorganized as an Iowa corporation.

The Rockwell Collins Museum and the Museum Club members have been chartered to preserve the history and legacy of the Collins Radio Company and Rockwell Collins, Inc. The Museum is near the East wall of Building 120. Rockwell Collins employees enter Building 120 from the South entrance - at the guard station. You will need your badge!



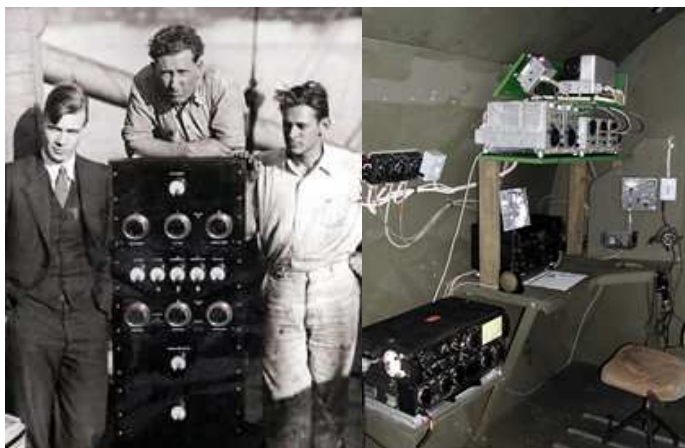
*KWM-5000 Prototype*

In an experiment, the company is opening the museum to limited public tours. The tours will be offered from 11:30 a.m. to 1 p.m. on Wednesdays, and will leave promptly from the south entrance of building 120. Arrangements can be made by calling Rockwell Collins Museum Curator Lawrence Robinson at 319-295-1698. Due to security requirements a passport or driver's license is needed to provide identification.



*Collins Early GPS\_Horn*

The Rockwell Collins Museum is always looking for interesting artifacts to add to its collection. Is your basement presently harboring a mysterious piece of electronics, perhaps an engineering model of an early product? Did a family member ask you to store a black box saying, "Keep this - someday it may be of interest to a Museum"? If so, contact our Museum Curator, Lawrence Robinson with a description of your treasure. Send an email here: [curator@rockwellcollinsmuseum.org](mailto:curator@rockwellcollinsmuseum.org)  
Subject: Possible Museum Artifact



Collins 150B Transmitter      ART-13 in B-29 Mockup

Museum Club member, Rod Blocksome is spearheading a project to catalog all of the people's names mentioned in every one of the first 45 issues of *Collins Column*. The task is to transcribe every name and page number from an assigned issue into an Excel Spreadsheet that he has prepared.

When completed, a viewer will be able to search for any name mentioned in the collection. If you are interested in joining Rod with this project, send him an email. [rod@rockwellcollinsmuseum.org](mailto:rod@rockwellcollinsmuseum.org) subject: Indexing Collins Column

Here is the link to the Rockwell Collins Museum web site <http://rockwellcollinsmuseum.org/index.php>.

### Work Party – April Fun

Richardson, Texas – April 21, 2012

Members of the Rockwell Collins Amateur Radio Club in Richardson, Texas, participated in a general work day that turned out to be more like fun than work. Work is something you have to do and fun is something you want to do. It all started at 10:30am, when Bob Kirby – K3NT, received a call on the W5ROK repeater that Bob Diepenbrock – KC4UAI and his son, Nathan, were on their way to help with the HSMM project. The club had received an 'all clear' to remount W5ROK-N2 HSMM node on top of the east walk up tower. At 11:00am, both Bob's commenced a site survey, finding the W5ROK-N2 mesh node and the two flat panel antennas inside of the tower house. A decision was made to relocate both patch antennas to one mast to be mounted on top of the North East side of the tower. The power connections had to be lengthened in order to make the installation possible. Power

tests verified that 12 VDC was still being provided from our UPS system and W5ROK-N2 passed initial remote reception and connection tests. After the power situation was sized up and a plan drawn, Nathan and Bob Kirby gathered material from RCARC spare stock and went to work on the power cables up in the tower house, while Bob Diepenbrock began work on the PC for the K3 rig. The computer for the K3 rig recently lost the ability to perform Microsoft updates. A Trojan or virus was strongly suspected.

Meanwhile, up on the tower, it became apparent that more soldering heat was required to rework the power cables, than could be provided from the small pencil iron. A quick call on the W5ROK repeater caught Michael Ketchum – K5MDK to bring in the big guns, soldering gun that is. When Michael arrived, Dennis Cobb – WA8ZBT, Nathan and Bob<sup>2</sup> met him at the North Guard Shack to receive the Iron. A short reunion ensued and then it was back to work.

Back at the tower house, Nathan was given a short course on how to use the Volt Ohm Meter, by Bob Kirby. Nathan performed voltage and resistance measurements as the lengthened power cable was under construction. Nathan was also given a short course on soldering, as the 140 watt Weller soldering gun made short work of the new DC power cable. Nathan also learned how to apply heat shrink tubing to insulate the new connections and then re-tested the cable once more for final inspection. The new cables were then routed and connected. This new power cable did a fine job replacing the old power cable, which appeared to be a bit weathered. While 12VDC was measured at the coaxial power plug, the HSMM node did not communicate when connected. Measured voltage at the PC board was 1.2 VDC, the coaxial power plug had corroded internally. The plug was replaced and W5ROK-N2 was up and running.



While Bob Kirby was finishing up the HSMM installation work, a loud "I'm Hungry" was heard over the W5ROK repeater. It was Nathan Diepenbrock, who was wondering when the lunch break starts, as it was getting close to the 1400 hour mark. As those pleas for food were going out, Nathan also took a moment to enjoy the view from atop the North Tower. A reply, "Wow, you can really see a bunch of stuff from the top of this tower!" was made. The conversations over the repeater between Nathan and his dad continued to cover topics of animals on the tower, laptop computers for sale on E-Bay, along with a story from Nathan on his close encounter with an 110 VAC socket and a pair of meter leads, which gave him a jolt and a loud noise too. "Are we done yet, I'm hungry, Are you hungry?"

Written by Michael Ketchum – K5MDK and Bob Kirby – K3NT

# Rockwell-Collins

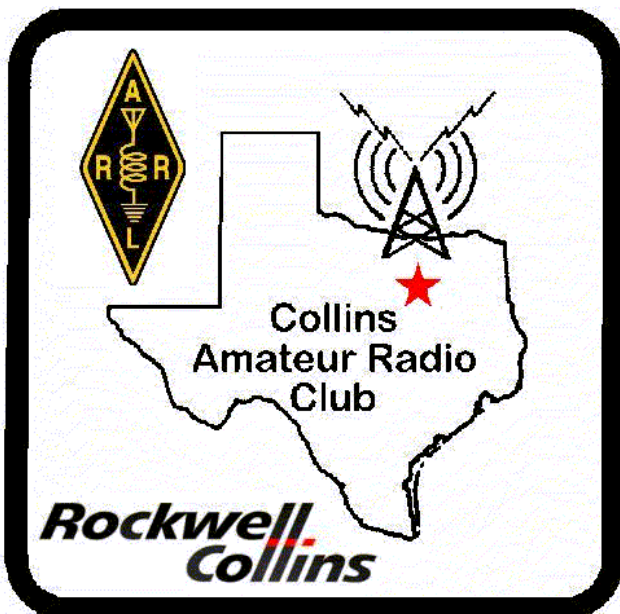
Amateur Radio Club

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

145.01 MHz

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

Thursday, 24 May 2012

1700 Social

1730 Meeting

Methodist Richardson Medical Ctr  
At Bush/Renner/Shiloh Intersection

*Second Floor Conference Room 200*

**NEXT SIGNALS INPUTS DEADLINE:**

**→→→ 17 June 2012 ←←←**