
SIGNALS

Rockwell
Collins **Amateur Radio Club**

Monthly Newsletter of the

Volume 35 Issue 07

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

April 2014

RCARC
Membership Meeting

Tuesday 22 April 2014
1700 Social 1730 Meeting
1800 Program

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

Subject:
Collins Radio Dallas—The Way to Today
By Bill Swan K5MWC

electrical engineering and graduated from the University of Missouri, later receiving Professional Engineer certification.

Wayne served in the U.S. Army during the Korean War. After his military service, he was offered a position in engineering at Texas Instruments in Dallas, Texas. It was there he met and married Marian Shumaker, a 19-year-old in his singles group at Zion Lutheran Church. They married and together had four sons: Marty, Paul, Walt and Don, and one daughter Nancy. Wayne worked as an electronic design engineer and eventually retired from Rockwell Collins. *(Continued on Page 3)*

Mike Schmit WA9WCC passes CAF 2014 B-24 Ground School!

CONGRATULATIONS to Mike Schmit on passing the CAF 2014 B-24 ground school. Bob Kirby K3NT said "Looking forward to having you as a tour member and working on your 'B-24 Flight Crew' goal."

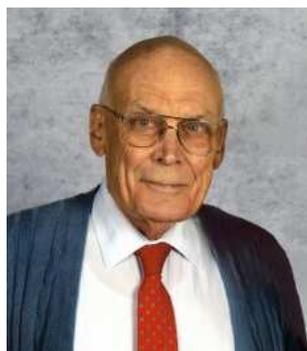
Mike's course included both the theory / lecture, hands on / demonstration and also helping a new CAF squadron member with her requirements.

Local Club News

Meeting Notice

You don't want to miss the program this month! This is an opportunity to learn facts about Collins Radio that you never knew. You will see pictures that few have seen. The program will be informal and you will have the opportunity to add your own personal experiences to the presentation.

Wayne L. Nickel, W5WO, SK



Wayne L. Nickel was born June 17, 1928, to Walter John and Leola Marie (Wiechert) Nickel, in Independence, Kansas. He had two brothers: Wallace and Robert, and two sisters: Millie and Marge. In high school he became interested in electronics and worked at a local radio station as an assistant to the engineer. He went on to study

Cooper Lake State Park, TX April 5, 2014



Many operators who were looking (Continued on page 4)

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VE SESSIONS

Dallas tests are held 4th Sat of each month at 1000 hrs. 13350 Floyd Rd. (Old Credit Union) Contact Bob West, WA8YCD 972.917.6362

Irving tests are held 3rd Sat 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 17th St. East Plano. Check Repeater 147.180+ for announcements.

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

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 church building. For further information contact Dave Russell W2DMR, at 972.690.9894 or E-mail warhog4@tx.rr.com.

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President's Message

I am sorry to hear about Wayne Nickel passing away on April 4, 2014. Wayne was a very good CW operator and used to come out to Field Day and operate for the Club.

W1AW continues to be on the air in different states (2 each week). W1AW is going to continue to operate in different states throughout the year.

6 Meters has been open to South America. This sunspot cycle so far has not been as good as previous cycles. Tuning around 50.100 to 50.125 MHz is the DX window on 6 Meters.

That is about all I have for this month. See you at the meeting.

73,
Dennis Cobb
WA8ZBT
RCARC President

Secretary's Report

25 March 2014

The meeting was called to order by President Dennis Cobb WA8ZBT at 1735.

The following members and guests were present at the meeting:

Ken Bateman	W5ISE
Dennis Cobb	WA8ZBT
Chris Havenridge	KF5GUN
Daniel Havenridge	Future Ham
Paul Newman	KA5TYW
Steve Phillips	K6JT
Mike Schmit	WA9WCC
Jim Skinner	WB0UNI
Joe Wolf	N5UIC

Officers and Committee Reports:

President's Report: There was no formal President's Report.

Vice-President's Report: There was no formal Vice President's Report.

Secretary's Report: The Secretary's Report is in this newsletter.

Treasurer's Report: In the absence of the Treasurer, President Dennis Cobb reported the balance in the RCARC treasury.

Website Manager's Report: There was no Website Manager's Report.

Station Trustee's Report: There was no Station Trustee's Report.

Database Manager's Report: There was no Database Manager's Report.

Old Business:

Dennis Cobb WA8ZBT reminded that the club had voted last month to order a weather station display, but the company does not want much on the walls anymore after the current repainting. Dennis will check with Facilities to see if the club will be allowed to mount the display.

Mike Schmit WA9WCC asked if the power amp for the K3 had been bought. Dennis replied that it had be bought and received, and that Bob Kirby K3NT was in the process of assembling it and the tuner.

New Business:

The updated retirees list is now at the north guard station.

Dennis reported that, despite rumors to the contrary, that the company will provide a \$1000 stipend this year. However, the club must first make purchases and be reimbursed up to the stipend amount.

Paul Newman KA5TYW, representing Doug Kilgore KD5OUG, reminded the club that Doug is still looking for volunteers to support the Wild Ride. This year there will be no runners, just bicycles participating. See the announcement in this newsletter for details.

Paul also reported that there will be a Packet Radio conference in Austin in September: The **2014 Digital Communications Conference**, 5-7 September 2014. Details are available at <http://www.tapr.org/conferences.html>.

There were also tales by several members of how hot 10 meters has been recently.

There was a round of introductions and talks about what each person has been doing lately. This culminated in very interesting and informing discussions about what each person enjoys about our hobby and public service participations. This included Joe Wolf presenting an impromptu "show-n-tell" about his D-STAR radio and the ICOM IC-7100 radio.

Adjournment:

The meeting adjourned at approximately 1848 hours.

RCARC Community Service Activities

Siren Testing. Dennis Cobb WA8ZBT, John McFadden K5TIP and Jim Skinner WB0UNI were prepared to participate in the Richardson emergency siren testing on 2 April 2014. The testing was cancelled by the City of Richardson shortly before it was scheduled to be performed, apparently due to cloudy weather. The siren testing is performed 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.

Wayne L. Nickel, W5WO, SK

(Continued from page 1) One of Wayne's favorite hobbies was ham radio, in which he used Morse code to communicate with operators all over the world from his radio room in the garage. He enjoyed building his own equipment and climbing atop the roof to keep his antennas adjusted. He especially liked the competitions where hams all over the world would try to make contact with as many different operators as far away as possible using a single watt of power. He looked forward to field days, local meetings and monthly radio club meetings in Arlington. Wayne always spoke fondly of the get-togethers with his radio club friends and enjoyed their shared interests and camaraderie.

Wayne was a brilliant man and at one point decided to join Mensa "just to prove to himself that he could," he said. He was an avid jogger for more than 20 years and ran several Dallas White Rock and Fort Worth marathons. He enjoyed backyard gardening and would start a new row of baby tomato plants on his windowsill each Spring. The only problem was, he was also so frugal that he wouldn't use

enough water to keep them moist, so after he transplanted them to the ground, they would all eventually die!

In his later years when physical activity was limited, Wayne faithfully visited Marian's sister Gloria, who has Alzheimer's and lives in a local nursing home. Once there was a resident there who had lost his ability to communicate verbally or by writing; however, this man was also a former ham radio operator! Wayne was able to communicate with him when no one else could by tapping out messages with him in Morse code using a table knife!

Wayne suffered a massive heart attack and died on April 4, 2014, surrounded by his family. He was a dedicated and genuinely humble man. He trusted Jesus Christ for his salvation, and we, his surviving family, have complete confidence that he is with the Lord. Thank you to those of you who knew him and enriched his life with your friendship.

Wayne was the last living member among his siblings and is survived by his wife of 57 years, Marian; sons Martin Nickel, Paul Nickel (and his wife Gina), Walt Nickel (and his wife Kathy), Don Nickel (and his wife Norma), and daughter Nancy Kelso; grandchildren: Lana Kelso, Nathan Nickel (and his wife Shannon), Autumn Klongland (and her husband Kyle), Lindsay Kelso, David Nickel, Valerie Nance (and her husband Sean), Meagan Kelso, James Nickel (who went to be with the Lord in June 2013), Emily Nickel, Jonathan Nickel, Bethany Nickel, Zachary Nickel, Joshua Nickel and Aaron Nickel; and great-granddaughter, Callie Klongland.

Cooper Lake State Park, TX April 5, 2014

(Continued from page 4) for a cooler version of Field Day found an enjoyable time working the Texas State Parks on the Air contest this month. Michael Ketchum – K5MDK operated section CDC (Cooper Lake State Park – Doctor's Creek Unit) for this year's contest. Texas State Parks on the Air (TSPOTA) has entered its second year of providing public awareness of Ham Radio and the wonderful state parks we have here in Texas, along with the many historical sites and natural areas operated by the Texas State Parks system. In organizing this event, the Northwest Amateur Radio Society of Houston area has promoted camaraderie within the ranks of Texas Amateur Radio operators.

In preparing for the event, Michael insured his station equipment was in top working order. This included installing the latest version of N1MM logger, FLDigi and all of the supporting files provided by the contest organizers as well as the configuration files that allow his rig to be controlled by that software. The contest organizers provided a call history file that identified all of the activated state parks and their operators. Included was also a user defined contest file for N1MM, as well as the section file. These files had to be imported or configured in the N1MM software before it was used.

After testing everything a few times, it was time to pack everything up. The Ketchum family had not camped outdoors in a couple of years, so it was necessary to also go over all of the camping equipment to insure a comfortable and safe experience. Michael also made contact and had a good conversation with the State Park manager, Mindy Hicks, regarding the event, the radio equipment that will be used and the site selected. Mindy was very helpful and provided wonderful support to insure the shelter unit chosen would be available for the event.



The day before the event, the Ketchum family packed the truck and headed to Cooper Lake. The camp is only a half hour drive from home. The weather outlook was favorable with a slight chance of rain on

Saturday night into Sunday morning. The family packed tarps to insure equipment would not get wet in the transition. The shelter required very little cleaning. It wasn't long before camp was setup and the radio equipment was addressed. Amy, Michael's YL, found it enjoyable to help install the G5RV dipole antenna across the tops of tall trees on the site. The antenna was hoisted up to about 20-30' in height. A table was brought to operate from. After everything was setup and tested, a quick QSO to WO2F in New York proved a good copy with 59s back and fourth. We were ready to go live.

That night was very cold, as a cold front turned things a bit colder than the Ketchums had expected. Good thing they brought extra blankets! Throughout the night, another family in the next camp site had a little



bit of a problem with the cold as well, as they kept running their vehicles, opening and closing doors and, at one point, tripped their car alarm to make sure everyone in the park was wide awake. Things finally started settling down around 4am. This made for a late start for Michael to get on the air, as he was trying to finish breakfast about the time the contest start time arrived.

Michael's approach to the contest was more for enjoyment than quantity of QSOs. He took his time and had a good conversation with everyone, whether they were with the contest or not. Many folks had never heard of the TSPOTA event and were given some information on how to find out more on the web site: www.tsporta.com How-

ever, there were some contesters who were looking for me, and were pleased to make the QSO and the acquaintance. The contest ran from April 5th 9am till 9pm CDT. Other than the cold weather and rain all day on Sunday, the Ketchums had a great time at Cooper Lake. Michael is planning to operate at a different state park next year. The results of K5MDK are as follows:

QTH	QSOs
Cooper Lake Sulfur Unit	1
Fort Leaton Historical Site	1
Canada, Ontario	1
Mexico	1
Poland	1
Arizona	6
California	6
Florida	5
Illinois	1
Michigan	1
Montana	1
North Carolina	2
Nevada	1
New York	3
Ohio	1
Oregon	3
Pennsylvania	5
Utah	1
Virginia	1
Vermont	1
Washington	1
TOTAL	22

More photos can be viewed at <http://ketchums.info/tspota2014/index.html> 73 de K5MDK

(Contributed by Michael Ketchum K5MDK)

WildRide Bike Rally

The WildRide Against Cancer Bike Rally will be held on Saturday, May 17, 2014. This rally benefits the Richardson Methodist Hospital's Cancer Center.

Please mark this date on your calendar and plan to volunteer for communications again this year. More information will come later as plans are finalized.

The planning committee is looking for corporate sponsors for this year's rally. There are several levels of sponsorship. The sponsorship can be money or in-kind donations.

If you know of a company that would help sponsor the rally, please email me with the name of a contact person. kilgore1317@sbcglobal.net

(By Doug Kilgore KD5OUG, WildRide Communications Coordinator)

(Submitted by Bob Kirby K3NT)

FCC to Reinstate Morse Code Test

"It was a big mistake eliminating the Morse Code test," admits FCC official

By Dan Romanchik, KB6NU

Washington, D.C. – April 1, 2014 - Today, the Federal Communications Commission (Commission or FCC) approved Report and Order 14-987af which reinstates the Morse Code test for General Class and Amateur Extra Class licensees. "It was a big mistake eliminating the Morse Code test," admits Dotty Dasher, the FCC's director of examinations. "We now realize that being able to send and receive Morse Code is an essential skill for radio amateurs. As they say, it really does get through when other modes can't."

Not only will new applicants have to take the test, but General Class licensees who have never passed a code test will have one year to pass a 5-wpm code test. Similarly, Amateur Extra class licensees that never passed a code test will have one year to pass a 13-wpm test. Those amateurs that fail to pass the test will face revocation of their operating privileges. Materials for administering the examinations will be distributed to Volunteer Examiner Coordinators by the end of April, so that they can begin the testing on May 1, 2014.

"This isn't going to be one of those silly multiple-choice type tests," noted Dasher. "We're going to be sending five-character random code groups, just like we did in the old days. And, applicants will have to prove that they can send, too, using a poorly adjusted straight key."

Technician Class licensees will not be required to take a Morse Code test, nor will a test be required for new applicants. "We discussed it," said Dasher, "but decided that since most Techs can't even figure out how to program their HTs, requiring them to learn Morse Code seemed like cruel and unusual punishment."

When asked what other actions we might see from the FCC, Dasher hinted that in the future applicants taking the written exam may be required to draw circuit diagrams, such as Colpitts oscillators and diode ring mixers, once again. "We're beginning to think that if an applicant passes an amateur radio license exam it should mean that he or she actually knows something," she said.

For further information, contact James X. Shorts, Assistant Liaison to the Deputy Chief of Public Relations for the FCC at (202) 555-1212 or jim.shorts@fcc.gov. For more news and information about the FCC, please visit www.fcc.gov.

(Reprinted with permission of Dan Romanchik, KB6NU)

NTS Digital Operations, Document NTS-002

Steve Phillips, K6JT, Chair of the NTS Central Area Staff, has published another white paper, entitled NTS Digital Operations, document NTS-002.

A direct link to the document may be found here: <http://dl.dropboxusercontent.com/u/73013707/NTS%20Digital%20Operations.pdf>.

Steve explains the white paper in this manner:

I have published another white paper, entitled NTS Digital Operations, document NTS-002. It is intended to help newcomers understand what NTSD is, what Winlink 2K is, and how they can work together. There is also a section on how to configure and use the Airmail and RMS Express software. It contains material from the digital coordinators of all 3 areas and has been approved by them for release. You can also access it via the link on <http://www.k6jt.com/>.

(Contributed by Steve Phillips K6JT)

Upcoming Events

APRIL	
20	Rookie Roundup-Phone. Details at http://www.arrl.org/rookie-roundup .
MAY	
17	WildRide Against Cancer Bike Rally. See article in this newsletter. Details at http://www.methodisthealthsystem.org/WildRide .
JUNE	
13-14	Ham-Com at Plano Centre, Plano TX, Friday and Saturday. Details at website, http://www.hamcom.org/ .
REGULAR ACTIVITIES	
Daily	DFW Early Traffic Net (NTS) at 6:30pm 146.88 – PL 110.9Hz
Daily	DFW Late Traffic Net (NTS) at 8:30pm 146.72 – PL 110.9Hz
Daily	DFW CW Traffic Net (NTS) at 7:00pm and at 10pm on 3541 KHz www.k6jt.com
1st Wednesday	Richardson Emergency Siren Test. At noon using the Richardson Wireless Klub (RWK) repeater at 147.120 MHz.
2nd Wednesday	ARES North Texas HF Net Every month—3860 KHz at 830 pm—930pm
Thursday	Sabine Valley Amateur Radio Association Net Every Thursday night at 7:00pm on the K5GVL/R 146.780 MHz (+) PL 114.8Hz

W5VXI SK Equipment for Sale

David Binns, W5VXI became a SK a few weeks ago. David was a long time friend and a ham for nearly 70 years. David was a retired Broadcast Engineer and his business fabricated control panels for radio communications users like Motorola.

David's equipment is listed below and is in excellent condition. His Grand Son, David Brown is handling the liquidation and he is not a ham but has Jeff, N5TMC that lives near by and K5BMR to help him with any questions.

David Brown
214-364-7805
dbbrown71@gmail.com

Items for sale

Yaesu FT-950 HF/50 MHz Transceiver: \$1,000+shipping or can pickup locally in Dallas,TX area

Ameritron ALS-600+ALS-600PS (Amp & Power Supply): \$1,000+shipping or can pickup locally in Dallas,TX area

LDG Electronics AT-1000Pro Autotuner: \$350+shipping

Yaesu SP-2000 External Speaker: \$150+shipping or can pickup locally in Dallas,TX area

Yaesu MD-100A8X Desktop Mic: \$110+shipping or can pickup locally in Dallas,TX area

Yaesu VX-7R Handheld Quad Band Transceiver (includes mic & software CD): \$215+shipping or can pickup locally in Dallas,TX area

Kenwood TM-271A VHF FM Transceiver (includes mic & bracket): \$125+shipping or can pickup locally in Dallas,TX area

Kenwood TM-D710A Dual Band Mobile: \$375+shipping or can pickup locally in Dallas,TX area

Ameritron RCS-8V (remote coax switch): \$100+shipping or can pickup locally in Dallas,TX area

(Contributed by George Bobo K5BMR and forwarded by Steve Phillips K6JT)

NIST Launches a New U.S. Time Standard: NIST-F2 Atomic Clock

For Immediate Release: April 3, 2014

Contact: Laura Ost at 303-497-4880

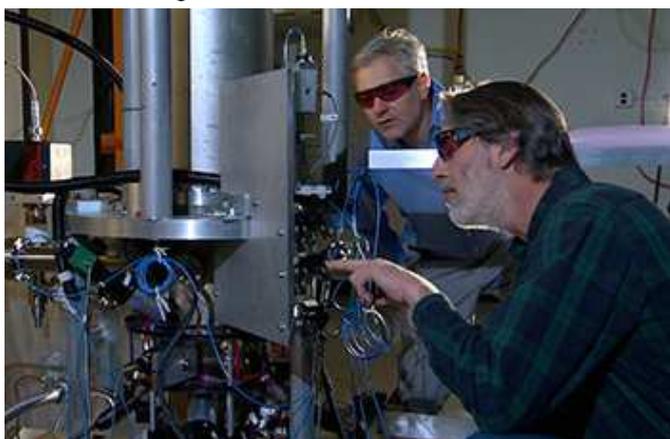
BOULDER, Colo. -- The U.S. Department of Commerce's National Institute of Standards and Technology (NIST) has officially launched a new atomic clock, called NIST-F2, to serve as a new U.S. civilian time and frequency standard, along with the current NIST-F1 standard.

NIST-F2 would neither gain nor lose one second in about 300 million years, making it about three times as accurate as NIST-F1, which has served as the standard since 1999. Both clocks use a "fountain" of cesium atoms to determine the exact length of a second.

NIST scientists recently reported the first official performance data for NIST-F2,* which has been under development for a decade, to the International Bureau of Weights and Measures (BIPM), located near Paris, France. That agency collates data from atomic clocks around the world to produce Coordinated Universal Time (UTC), the international standard of time. According to BIPM data, NIST-F2 is now the world's most accurate time standard.**

NIST-F2 is the latest in a series of cesium-based atomic clocks developed by NIST since the 1950s. In its role as the U.S. measurement authority, NIST strives to advance atomic timekeeping, which is part of the basic infrastructure of modern society. Many everyday technologies, such as cellular telephones, Global Positioning System (GPS) satellite receivers, and the electric power grid, rely on the high accuracy of atomic clocks. Historically, improved timekeeping has consistently led to technology improvements and innovation.

"If we've learned anything in the last 60 years of building atomic clocks, we've learned that every time we build a better clock, somebody comes up with a use for it that you couldn't have foreseen," says NIST physicist Steven Jefferts, lead designer of NIST-F2.



NIST physicists Steve Jefferts (foreground) and Tom Heavner with the NIST-F2 "cesium fountain" atomic clock, a new civilian time standard for the United States.

For now, NIST plans to simultaneously operate both NIST-F1 and NIST-F2. Long-term comparisons of the two clocks will help NIST scientists continue to improve both clocks as they serve as U.S. standards for civilian time. The U.S. Naval Observatory maintains military time standards.

Both NIST-F1 and NIST-F2 measure the frequency of a particular transition in the cesium atom—which is 9,192,631,770 vibrations per second, and is used to define the second, the international (SI) unit of time. The key operational difference is that F1 operates near room temperature (about 27 °C or 80 °F) whereas the atoms in F2 are shielded within a much colder environment (at minus 193 °C, or minus 316 °F). This cooling dramatically lowers the background radiation and thus reduces some of the very small measurement errors that must be corrected in NIST-F1.

Primary standards such as NIST-F1 and NIST-F2 are operated for periods of a few weeks several times each year to calibrate NIST timescales, collections of stable commercial clocks such as hydrogen masers used to keep time and establish the official time of day. NIST clocks also contribute to UTC. Technically, both F1 and F2 are frequency standards, meaning they are used to measure the size of the SI second and calibrate the "ticks" of other clocks. (Time and frequency are inversely related.)

NIST provides a broad range of timing and synchronization measurement services to meet a wide variety of customer needs. NIST official time is used to time-stamp hundreds of billions of dollars in U.S. financial transactions each working day, for example. NIST time is also disseminated to industry and the public through the Internet Time Service, which as of early 2014 received about 8 billion automated requests per day to synchronize clocks in computers and network devices; and NIST radio broadcasts, which update an estimated 50 million watches and other clocks daily.

At the request of the Italian standards organization, NIST fabricated many duplicate components for a second version of NIST-F2, known as IT-CsF2 to be operated by Istituto Nazionale di Ricerca Metrologica (INRIM), NIST's counterpart in Turin, Italy. Two co-authors from Italy contributed to the new report on NIST-F2.

The cesium clock era officially dates back to 1967, when the second was defined based on vibrations of the cesium atom. Cesium clocks have improved substantially since that time and are likely to improve a bit more. But clocks that operate at microwave frequencies such as those based on cesium or other atoms are likely approaching their ultimate performance limits because of the relatively low frequencies of microwaves. In the future, better performance will likely be achieved with clocks based on atoms that switch energy levels at much higher frequencies in or near the visible part of the electromagnetic spectrum. These optical atomic clocks divide time into smaller units and could lead to time standards more than 100 times more accurate than today's cesium standards. Higher frequency is one of a variety of factors that enables improved precision and accuracy.

*T.P. Heavner, E.A. Donley, F. Levi, G. Costanzo, T.E. Parker, J.H. Shirley, N. Ashby, S.E. Barlow and S.R. Jefferts. First Accuracy Evaluation of NIST-F2. *Metrologia*. Forthcoming. See <http://iopscience.iop.org/0026-1394/page/Forthcoming%20articles>.

**These data are reported monthly in BIPM's Circular T, available online at <http://www.bipm.org/jsp/en/TimeFtp.jsp?TypePub=publication#nohref>. NIST-F2 is scheduled to be listed for the first time in the March 2014 edition. The value of interest is Type B (systematic) uncertainty.

(Adapted from NIST website at <http://www.nist.gov/pml/div688/nist-f2-atomic-clock-040314.cfm>)

(Contributed by Bob Kirby K3NT)

Rockwell-Collins

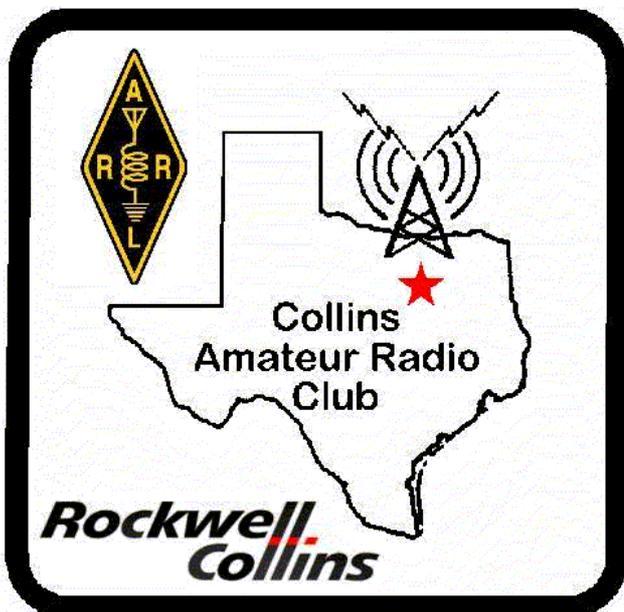
Amateur Radio Club

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

145.05 MHz

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

Tuesday 22 April 2014

1700 Social

1730 Meeting

Methodist Richardson Medical Ctr
At Bush/Renner/Shiloh Intersection

Second Floor Conference Room 200

NEXT SIGNALS INPUTS DEADLINE:

→→→ 16 May 2014 ←←←