



June 2015

Important Dates

Monthly club meeting:
Third Friday of each month, 7:30 pm.
Cypress Creek Christian Community
Ctr. 6823 Cypresswood Drive

Tuesday, June 30, 7:30 pm.
Board of Directors Meeting
Ponderosa Fire Station
17061 Rolling Creek Drive

VE License Exam:
No session at the Lone Star College
Tomball Library in June due to Field
Day activities!

Lunch Break—North

June 3, Pei Wei
June 10, Panera Bread
June 17, Jason's Deli
June 24, Baker Street Pub
July 1, Sweet Tomatoes
July 8, BJ's Brewery

Lunch Break—Medical Center

June 3, Jason's Deli
June 10, Buffalo Grille
June 17, Southwell's Hamburger Grill
June 24, Marco's Mexican Bar & Grille
July 1, Silver Palace Chinese Buffett
July 8, Pappa's BBQ

Tail Dragger's Lunch Bunch -
Mondays, 11 am.
Aviator's Grill, Hooks Aerodrome

Notice: NARS membership dues are
\$20 per year, renewable on anniver-
sary date.

**Breakfast
at Denny's
7720 Louetta Road
Saturdays 7 am.**

NARS NEWS

The Northwest Amateur Radio Society
an ARRL Special Services Club #2120



June 27-28

This months program on Friday, June 19th will involve finalizing our plans for Field Day. FD Coordinators Keith Dutson and Ron Horton will attempt to outline what is involved in the preparing, operating and the disassembly of an event this size. For new licensed Hams, here's your chance to be part of the excitement in being part of Field Day, ARRL's major exercise of the year. Lots of things for us to do to get ready for this event. Please join us for all the fun at Burroughs Park on the 27 & 28th.

More details in this issue of the NARS News.

146.660 Repeater News

NARS now has a backup repeater in operation. The frequency, 146.660, will remain the same as before, only the tone has been changed to 100.

Anyone wishing to help defray the cost of replacing the repeater, antenna, connectors, etc. can make a donation to the Repeater Fund by making checks payable to NARS and designate "Repeater Fund" in the Memo field.

NARS, P.O. Box 90387, Houston, TX 77290-0387

The cost of this equipment is considerable and will be done in stages as we go along. Some equipment, material, and technical assistance has already been donated, but we have a long way to go towards completion of this massive project.

It's June already and this month is ARRL Field Day. Always the 4th full weekend in June. This year it is the weekend of June 27th and 28th with setup on the 26th. I am amazed at the talent this club has in its membership. We have members who are at the top of the DX honor roll, participate in ARES and other emergency support situations, build their own antennas, are expert CW operators, operate digital modes, satellite communications and many other facets of this wonderful hobby.

Field Day gives us the opportunity to do many things. Operate under field conditions, meet friends, both old and new. We even have an opportunity to keep "Murphy" away by being prepared and having backups for our operation. We need operators and a schedule of who will be available to operate over the 24 hour period. This 2015 Field Day can be really fun. Come out to Burroughs Park, 9738 Hufsmith Rd, Tomball, TX 77375 and join with us for memorable fun-filled enjoyable weekend.

73, Brad Nelson WD5GNI

The FCC is eliminating the regulatory fee to apply for an Amateur Radio vanity call sign. The change will not go into effect, however, until required congressional notice has been given, which will take at least 90 days. As the Commission explains in a Notice of Proposed Rulemaking, Report and Order, (MD Docket 14-92 and others), released May 21, it's a matter of simple economics. The FCC says it spends more resources on processing the regulatory fees and issuing refunds than the amount of the regulatory fee payment. The Notice states, As our costs now exceed the regulatory fee, we are eliminating this regulatory fee category. □ The current vanity call sign regulatory fee is \$21.40, the highest in several years. The FCC reports there were 11,500 so-called payment units. □ in Fiscal Year 2014 and estimated that it would collect nearly \$246,100.

In its 2014 Notice of Proposed Rule Making (NPRM) regarding the assessment and collection of regulatory fees for FY 2014, the FCC had sought comment on eliminating several smaller regulatory fee categories, such as those for vanity call signs and GMRS. It included in the subsequent Report and Order (R&O) last summer, however, that it did not have adequate support to determine whether the cost of recovery and burden on small entities outweighed the collected revenue or whether eliminating the fee would adversely affect the licensing process.


The FCC says it has since had an opportunity to obtain and analyze support concerning the collection of the regulatory fees for Amateur Vanity and GMRS, which the FCC says comprise, on average, more than 20,000 licenses that are newly obtained or renewed, every 10 and 5 years, respectively.

The Commission states it often receives multiple applications for the same vanity call sign, but only one applicant can be issued that call sign. It goes on to say, in such cases, the Commission issues refunds for all the remaining applicants. In addition to staff and computer time to process payments and issue refunds, there is an additional expense to issue checks for the applicants who cannot be refunded electronically. The Commission says that after it provides the required congressional notification, Amateur Radio vanity program applicants will no longer be financially burdened with such payments, and the Commission will no longer incur these administrative costs that exceed the fee payments. The revenue that the Commission would otherwise collect from these regulatory fee categories will be proportionally assessed on other wireless fee categories. □ However, the FCC says it will not issue refunds to licensees who paid the regulatory fee prior to its official elimination.

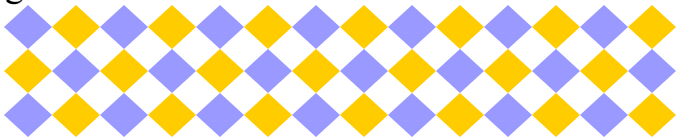


**4721 Watonga Blvd.
Houston, TX 77092
www.ofarc.org**

*V.E. Exams every 4th Saturday of the month at 9:30 a.m.
Contact: John Westerlage'
N5DWI@oafrc.org for further info.*



Coming attractions!
You won't want to miss the July 17th meeting. Our featured speaker will be Kenneth G Ransom N5VHO, Inter Space Station Radio Manager for NASA.



HOUSTON
AMATEUR RADIO SUPPLY, INC.

HAM | CB | COMMERCIAL | DIGITAL SCANNERS | ELECTRONICS
RETAIL | REPAIR | CONSIGNMENT | INSTALLATION

houstonamateurradiosupply.com
Dave McCombs, NA5CW
Owner

281-355-7373 contact@harsradio.com
2558 E. FM 1960 Rd.
Houston, TX 77073

NARS 2 meter net
Held every Wednesday night at 8 pm. We will now be using the NARS backup repeater. The frequency, 146.660, will remain the same as before, but the tone has been changed to 100.

NARS in rewind...

Field Day 2009



Field Day, 2009 saw the Brown family take charge of the GOTA Station. Peter Brown KE5IOV, father and mentor, stands by while Sarah and Chris try to make a few contacts prior the official start time. It wasn't too long after that Sarah and Chris joined the ranks with call signs KF5LFLK and KE5IOR.

Repeater fund continues its growth...

The repeater fund now totals \$405 towards the upgrading of the 146.66 repeater. The team headed up by Keith Dutton are making progress, and in fact have placed into operation a backup unit that is now operational. The backup unit utilizes the same 146.66 frequency but requires a *tone of 100*.

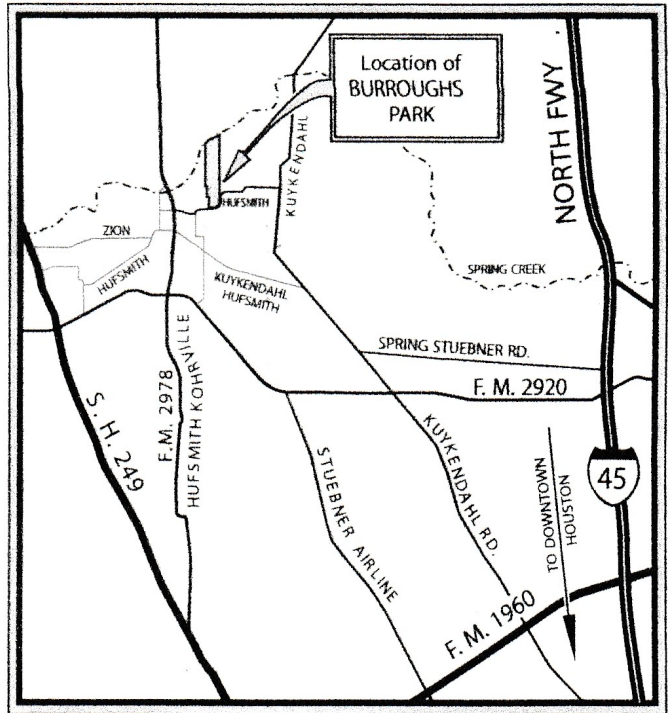
More information will be forth coming soon, so watch the reflector over the next few weeks.



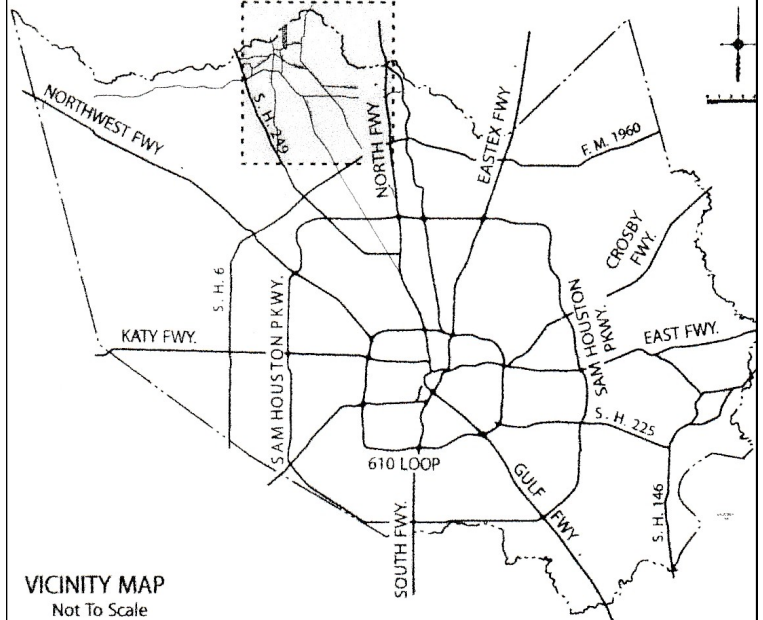
Never bother Grandma when she's checked into the Senior XYL Net. I learned that lesson the hard way!

2015 Field Day location:

Harris County Pct 4 Burroughs Park, 9738 Hufsmith Road.
Upon entering park, continue North to the Observation Deck on the West side of the lake.



INSERT MAP
Not To Scale



VICINITY MAP
Not To Scale

Saturday, May 23 VE Test Session Results at Lone Star College Tomball Library

We had 8 candidates taking 11 tests.

Element 2 tests given: 5; passed 3

Element 3 tests given: 6; passed 3

Element 4 tests given: 0; passed 0

Congratulations to:

John Pace III KG5FUR - upgrade to General

Debby Littlefield - new Technician

Jerry Littlefield - new Technician

Stewart Cooper - new Technician

James McLendon KA5FDE - upgrade to General

Ramey Smith KF5GXE - upgrade to General

Thanks to the VE's in attendance:

Ken Mitchell KD2KR (acting session mgr)

Martin Rogoff N5GPS

Ron Horton KF5LFL

Sheree Horton KF5LMJ

Robert Ferguson K5LLR

Mike Bragassa K5UO

Marvin Wilken KT4W (visiting VE)

The next monthly session will be held Saturday, July 25 at 10:15AM at Lone Star College Tomball Library, located at the southern entrance to the College. Official address is 30555 State Highway 249. Let me know if you would like to serve at this session. Parking is in the lot to the right of the entrance.

***** There will be NO SESSION IN JUNE because of Field Day *****

Anyone who wants to observe and/or participate in a session is always

welcome. Just let me know if you want to learn more about becoming a volunteer examiner.

73, Keith Dutson NM5G

NARS VE Session Manager

Texas historical moments....

28 February 2000 - Houston Chronicle

DARWIN Award: Gun Safety Training

A Houston man earned a succinct lesson in gun safety when he played Russian roulette with a .45 caliber semiautomatic pistol. Rashad, nineteen, was visiting friends when he announced his intention to play the deadly game. He apparently did not realize that the semiautomatic pistol, unlike a revolver automatically inserts a cartridge into the firing chamber when the gun is cocked. His chances of winning a round of Russian roulette was zero, as he quickly discovered.

Chip Credit Cards Are Coming to the USA: Here's What You Need to Know

After years of use in other countries around the world, chip-enabled credit cards are coming to the USA. Credit cards with only magnetic strips are being phased out ahead of an October 1, 2015 deadline. If you have a credit card, you'll probably get a replacement with a chip at some point soon. The entire country won't switch to chip cards by October 1, but retailers and banks that don't will assume more financial liability.

How to Use a Chip Card

To use a chip-enabled credit card, you insert it in the bottom of a pay-



ment terminal and leave it there for the duration of the transaction. Importantly, the card needs to remain in the reader until the transaction finishes, not swiped like a magnetic strip. While you'll encounter payment terminals with support for both the magnetic strip and chip

on modern credit cards, you can't necessarily just use the magnetic strip. Try to swipe a chip-enabled card on such terminals and you'll probably be asked to insert the card and pay via the chip method.

EMV Card Basics

Credit cards with chips use the EMV standard, which stands for "Europay, Mastercard, and Visa." EMV is a global standard allowing chip cards to interoperate at point-of-sale systems and automated banking machines. (Despite the name, American Express and Discover are also participating.) Know that the old magnetic strip isn't going anywhere anytime soon. A chip-enabled credit card has an EMV chip as well as a magnetic strip. If you ever find yourself somewhere that only accepts magnetic strips — either in the USA or elsewhere in the world — you'll still be able to use your card.

The magnetic strip can easily be cloned by swiping it, and that magnetic strip data can be copied to another card and used to make fraudulent purchases. A chip card works differently — it has a small computer chip in it. When the chip card is inserted into a payment terminal, it creates a one-time transaction code that can only be used once. In other words, chips can't be duplicated as easily as magnetic strips. Any payment details would be stored with the one-time code. If the USA had transitioned to chip cards earlier, the disastrous Target breach could have been averted. All those leaked credit card payment details wouldn't have been so useful to criminals.

The October 1 Liability Shift

US banks have been issuing chip cards over the past year ahead of an October 1, 2015 deadline. After this date, a "liability shift" will take place. Any retailers that choose to accept payments made via a chip card's magnetic strip can continue doing so, but they'll accept liability for any fraudulent purchases. Any credit card issuers (this means banks issuing credit cards by Visa and Mastercard, for example) that don't issue EMV credit cards will be on the hook for any fraudulent purchases, too. In effect, Visa and Mastercard are telling banks and retailers that they can continue using the old system at their own financial risk.

continued, page 5

Not everyone will be transitioned over by October 1, but everyone who hasn't will assume additional liability — that will encourage them to migrate as soon as possible. This doesn't affect your own personal liability — if your bank doesn't issue you a credit card with a PIN before October 1, they're assuming liability. That's their problem, not yours. These details are all between retailers, banks, Visa, and Mastercard. But they explain why chip cards are getting rolled out so quickly.

Chip and PIN vs Chip and Signature

Many other countries switched from magnetic strip transactions to a "chip-and-PIN" system. You insert the chip card in the bottom of a payment terminal and enter a numerical PIN code on the terminal to authenticate yourself. It's a bit like paying with a debit card and PIN — no signature is necessary. **The USA, however, will largely be switching to a "chip and signature" system.** You'll now be inserting the chip card into the bottom of a payment terminal, and you'll then have to sign your signature — just like you do with a standard credit card today.

As we all know, credit card signatures are not secure at all — few people ever check to make sure a signature matches the one that appears on the back of a card. If someone gets a hold of your chip-and-signature card, they can still use it to make a purchase at a chip-enabled terminal. Annoyingly, these chip-and-signature cards won't necessarily be compatible with the EMV systems in other countries where chip-and-PIN cards are expected. The chip-and-PIN system would require customers remember a PIN for each of their credit cards. The initial switch to chip cards in the USA won't require a new verification method — just a new way of using the card at payment terminals and the same old signature.

While retailers would probably prefer chip-and-PIN, banks don't want to use chip-and-PIN. When you insert the card into an ATM to withdraw money, you need to enter the PIN. If this is the same PIN you're constantly entering when using your card, it's easier to eavesdrop on and capture. If the PIN is something you only enter at ATMs because you use a signature when making most payments, that protects banks from fraudulent ATM transactions.

Chip cards don't eliminate the problem of fraud. In particular, these cards still have numbers, expiry dates, and three-digit codes on their backs. Someone could copy this information and use it to make purchases online. A chip-and-signature card could be used at a point-of-sale terminal along with a forged signature. The magnetic strip can still be used in the old way at many terminals around the world. But, although chip cards won't eliminate all fraud, they will make fraud more difficult. This will also help prevent future breaches of payment systems — like the one that happened at Target — from being so damaging.

Tunable Liquid-Metal Antennas

or, "You ain't seen nothin' yet!"

Engineers at North Carolina State University have devised a new form of tiny, liquid-metal antenna that's capable of tuning into a wide range of radio frequencies, offering a timely solution to a looming and potentially damning problem in networked electronics—namely, the limits of the radio spectrum itself.

If this whole Internet of Things project is going to work, we'll need better and, crucially, *more* ways to communicate with it. Simply, the IoT means a whole lot of new devices and sensors begging for bandwidth that's already in increasingly short supply with smart-phones alone communicating via wi-fi, GPS, bluetooth, and 4G, each one of those requiring antennas of different shapes and wavelengths. This situation will only get worse.

Making it all work will require antennas that can serve multiple purposes, e.g. adaptive radio communication enabled by reconfigurable radiofrequency (RF) electronics. Reconfiguring is difficult, however, and requires a bunch of added complexity in the forms of more switches and more components, with the result being a radio device that's reconfigurable, but only within a limited range.

Enter liquid metal-based antennas, which allow for communication across wider sections of the radio spectrum thanks to their ability to change length—physically morphing to acquire different signals. But, as the North Carolina researchers explain in [a paper](#) published this week in the *Journal of Applied Physics*, this presents its own set of problems in the form of still more complexity, e.g. more moving parts.



"In these applications, the liquid conductors are pneumatically actuated via pumps or contact pressure to change RF current paths," the NC State group, led by electrical engineering professor Jacob Adams, write. "While the enhanced control over the conductor length and location provided by a liquid conductor greatly enhances the tuning range of the devices, the introduction of pumps and microfluidic elements adds to system complexity and requires a closed fluid path, limiting the device topology."

Adams and co. solve this by manipulating the liquid metal antenna via electrical potential. It was discovered by another engineer at NC State, Michael Dickey, that by changing the voltage across a liquid metal confined to a tiny tube in the presence of an electrolyte, it's possible to make the material expand and contract and move up and down within the tube (think of an old thermometer). The reason for this is that a positive voltage causes the

formation of a layer of metal oxide on top of the liquid metal, which has the effect of changing its surface tension and, thus, how well it can flow up and down the antenna tube.

So: no complicated devices, just electricity and the liquid metal itself—an alloy of gallium and indium. As Adams [tells IEEE Spectrum](#), the technology could potentially scale *way* up to the point of supporting large defense communication systems and radar arrays, which cover wavelength bands ranging from a few megahertz to many gigahertz. "While a single tunable element will probably never be able to cover this entire range, they could potentially cut down on the 'antenna farms' found on large defense platforms, such as on ships and planes."

Welcome, Congratulations and Condolences

Welcome new members,
Paul Buck KG5CJR, Joseph Adair, Fred Orsack,, L Randall Hack, Joanne Purkis,
G Patrick McGunagle, Carlos Lopez, Loyd Gilliland KF5VVG.
We note with regret the passing of NARS member & past President, Tom King WK5DX/SK

NARS Resource list

General help:

Allen Majeski WA5REJ
281 528-0673 wa5rej@yahoo.com

Deral Kent K5WNO
281 548-7476 k5wno@juno.com

Digital modes:

Marty Fitzgerald W5MF
281 251-4301 fitz6@swball.net

VHF/UHF:

Brian Derx N5BA
281 251-4301

PC Programming & Ops:

Keith Dutson NM5G
281 516-1466 keith1@dutson.net

Building Electronics & kits:

Mark Tyler K5GQ
281 587-0256 k5gq@juno.com

Interference (Basic advice):

Terry Myers KQ5U
281 443-6042 tmyers1031@sbcglobal.net

Card checking for awards:

Bob Walworth N5ET—DXCC
281 292-2221 rwalworth@charter.net

Brian Derx N5BA—WAS, VUCC
281 894-5942

Bob Walworth N5ET—WAZ
281 292-2221 rwalworth@charter.net

NARS Public Info. Officer

Joe Sokolowski KD5KR
281 353-2196 kd5kr@arrl.net

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Vice President

To be announced

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Houston, TX 77290-0387

Nets

2 meter Wed. 8 pm. 147.36/96, tone 100
(Courtesy of Texas DX Society)
Coordinator: Jerry Whiting KB5VGD
g_whiting@sbcglobal.net

Web site

URL: <http://www.w5nc.net>
Web Master: Bill Buoy N5BIA
281 370-3510 n5bia@arrl.net

NARS Reflector

NARS@mailman.qth.net
Coordinator: Keith Dutson NM5G
281 516-1466 keith1@dutson.net

Texas QSO Party

Co-coordinator: Chuck Sanders NO5W
832 657-4832
no5w.chuck@gmail.com

Co-coordinator: Keith Dutson NM5G
281 516-1466 keith1@dutson.net

VE Session (ARRL) Manager

Keith Dutson NM5G
281 516-1466 keith1@dutson.net

Meetings

Monthly General Membership 3rd. Friday
each month (except January) at 7:30 pm.
Cypress Creek Christian Community Ctr.
6823 Cypresswood Drive

Saturday Breakfast

Denny's 7720 Louetta Rd. 7 am.

Wednesday Lunch-11 am.

Various places. Info on front page.

NARS News is published monthly by the Northwest Amateur Radio Society. Send all articles and materials for the newsletter to:
Editor, Joe Sokolowski KD5KR, 281 353-2196 kd5kr@arrl.net Deadline for articles to appear in the next newsletter is the last day of
each month.

Northwest Amateur Radio Society is a Special Services Club affiliated with the American Radio Relay League, ARRL Club No. 2120.