

# NARS NEWS

The Northwest Amateur Radio Society

Houston, Texas

April 1997

## April Meeting – Satellite Insight

At the April 1997 NARS meeting Andy MacAllister WA5ZIB will present an introductory talk on amateur-radio satellite operation. The information will provide newcomers with insight on how to get active on the "easy-sats," primarily AMRAD-OSCAR-27 and the RS-series. Hamsat chasing doesn't have to be expensive or difficult. You may already have all the gear necessary to get active on the highest repeaters around. Andy has made contacts via satellite from mobile and portable setups in addition to over 5000 satellite contacts using his home station. He recently used a dual-band HT to make FM contacts while on board a cruise ship in the Caribbean. You can do it too.

Andy has been an active AMSAT (Radio

Amateur Satellite Corporation) supporter since the days of AMSAT-OSCAR-7. He is currently a member of the Board of Directors of AMSAT and the Texas VHF-FM Society. He also serves as the Vice President of User Services of AMSAT and is active in the South Texas Balloon Launch Team and the Houston Amateur Television Society. Other volunteer activities include the position of Payload manager for SAREX, the Shuttle Amateur Radio Experiment, and Technical Representative for the American Radio Relay League to the Johnson Space Center. He has written over 100 articles and columns about amateur satellite topics and holds an Amateur Extra Class ticket.

*Don't miss the April meeting. Mark K5GQ*

## Important Dates

**Friday, April 18, 7:30 pm** – NARS monthly General Membership meeting, Spring Cypress Presbyterian Church – Eyeball QSO's, 7:00 pm

**Tuesday, April 22, 7:30 pm** – NARS Board of Directors meeting, Terra Nova Club House, 5200 Woodville.

**Saturday, April 26, 8:30 am** – VE License Exam Session – Tomball Community Center, S. Cherry & Market streets (just South of Main)

**Saturday, May 17, 11am to 4pm** – NARS Annual Picnic, Keith Dutson's house, 24415 Deep Meadow, Tomball

### CONTESTS:

**April 24-26** – DX-YL International HF SSB

**April 26** – QRP to the Field

**May 3-4** – Texas QSO Party

**May 17** – Armed Forces Day

### NOTICE:

NARS membership dues is \$20 per year, renewable on anniversary of last year's full payment.

NARS News deadline for articles to appear in May issue is Wednesday, April 30.

## GEORGE CARLSON: A Talented and Happy NARS Member

George Carlson KC5RCC is a NARS member and one of the nicest people you could ever meet. He's also exceptionally talented in his electrical engineering field. He approaches his work and play with the same attitude – have fun doing it. I rarely see George without a smile on his face. The following are interesting snapshots on parts of his life.

George was born in 1951 in the Chicago area, Illinois. His technical education began with working on electronic devices as a kid in Cub Scouts. Later he studied cryptography in the Air Force. After the service he worked at Texas Instruments where he started as an engineering aide and finished up as a member of the electronic technical staff. While at TI George studied for three years at Texas Tech University majoring in electrical engineering with emphasis on design. George designed production test equipment at TI for their line of calculators through TI-59. He received a sole patent (among others) at one point for CROM: Software for Customer Read Only Memory. For this he received a certificate and a one dollar bill which he has framed in his office.

Geotek, George's own business, was started up in 1982. His basic business is designing geophysical instruments. At the same time George worked for Starfix Corp., Houston for 9 years as Engineering Manager. The company produced off-shore geophysical positioning equipment.

At Geotek he works on differential GPS to transmit differential data in the 6 GHZ range. He is currently also working on plastic I.D. tags for a security products company. The circuitry in the tag is powered by a small, flat, 3 volt lithium battery rated at 40 milliamps and is .0281 inch thick. Expected life of the battery is about 6 years when used in the I.D. tags.

It is obvious that George enjoys his work with an almost effortless approach to the daily design problems he tackles. On the hobby side he is currently helping daughter Amy with a miniature video camera circuit she visualized. He showed her how to make the little circuit board and she made it and wired up the components. The miniature video camera can focus for ultra close-ups or at a distance, and she should really wow them at school with her project. I saw it operating on the bench; it's a fine piece of work.

Many of us remember a homebrew night when George demonstrated his device for showing various forms of paper clip antennas and their radiation patterns. He placed first that evening.

I'm sure the club will be calling on George's expertise from time to time to advise and coach along the younger tech members. Meantime, keep smiling George.

73 Harry Gage NSWIZ

## BREAKFAST

### at Victors

4710 W FM 1960

### Saturdays

8:00 AM

## President's Corner

April 1997

On behalf of the members of the Northwest Amateur Radio Society, I send our sincere condolences to the family and friends of Rich Keller, K5WA.

Our April meeting speaker is Andy MacAllister, WA5ZIB. Andy writes the "Hamsats" feature article about satellites each month for 73 Amateur Radio Today magazine. He also "practices what he preaches" as I have heard him admit to having logged more than five thousand satellite contacts. I'm sure there will be, among the interesting facts in his talk, at least one story about working a satellite with a dual band HT from a parking lot or some similar experience. You don't want to miss his talk, particularly if you hold a Technician license.

James Wells KC5SIZ, a Junior at Cy Fair High School and a member of NARS, is working hard to get a ham radio club started at the school. James came to breakfast at Victors recently to shake hands and enlist help in the project from NARS members. He is starting from scratch but appears to be willing to do what it takes to get the job done. You may have received an email from him asking for help. Give his request some serious consideration. James said he will keep us informed of his progress as he works through some of the gritty details. Let's not fail to help him.

Please note some recent accomplishments of one of our own, K1OJ, who is achieving celebrity status in the world of CW QRP. He won the Arizona Scorpion's FYBO QRP field day event held on February 22. And lately the K1OJ QRP "steamroller" has flattened competition by logging the most contacts in some Spartan Sprints. I personally have chosen not to inquire whether he is using one of K5ZTY's custom, pileup bustin' QRP(!) watt meters. Way to go O.J.

Progress is being made on the DX cluster and the relocation of the NARS node equipment. Figuring out the best way to tie in with the networks and how best to serve NARS members and the greater ham community is fairly complicated. We have a group of smart guys working out the details.

Keep May 17 open on your calendar so you can enjoy the NARS picnic at the WD5DXL ranchero. It'll be a blast.

Jim Kirk KJ5X

## VE Session Results - March

The March 22 examination session was a busy one, with 25 candidates. Eight VEs tested them on a total of forty elements, with twenty-five elements being passed. Nine individuals won new Technician Class licenses, three earned Technician Plus, and one became an Advanced Class operator. Participating VEs included K5ZTY, K5WH, W5SB, KJ5X, KK5LU, WA5SAJ, KK5YU and K5GQ. This was one of the busiest sessions that have been held in Tomball -- the parking lot was full before the last individuals arrived.

K8CSG

## NARS Board of Directors Meeting 3/25/97

**Programs** - April: Andy MacAllister, Satellites; May: Steve Baum, The Internet.

**Treasurer's Report** - 2/28/97 Checkbook balance, \$4432.44; 3/25/97 DX Cluster Fund, \$934.00.

**Node Relocation** - Requesting permission to use EMS facility on Five Forks Road; Map prepared showing proximity of site to users; Committee reviewing additional equipment requirements.

**DX Cluster** - More study required to determine best way to connect with local networks.

**Club Equipment Update** - Harry Gage preparing summary list of all club equipment and where it is stored; Advise Harry if you now have NARS equipment.

**Public Information Officer** - Harry Gage: Sun newspaper March 26 included article about NARS.

**Annual Picnic** - Date: Sat, May 17; Coordinator: Walter Hock KK5LO; Location: 24415 Deep Meadow, Tomball.

**Field Day '97** - Date: Sat-Sun, June 28-29; Coordinator: Walter Hock KK5LO; Novice Station coordinators identified.

**Web Page** - Walter Hock to be reimbursed for use of his personal ISP account; NARS web page to be set up as a separate account with the ISP.

**KC5SIZ School Club Request** - James Wells requests donations of 2 meter equipment for start-up of Amateur Radio Club at Cy Fair High School.

Bob Argo KC5JZO Secretary

## Photos & Slides & 8mm Film Transferred to VHS video tape with sound

No more setting up screen & projector!

Let us take your old PHOTOS and/or SLIDES and/or 8mm FILM  
and make a personal video of:

**YOUR WEDDING, YOUR ANNIVERSARIES, YOUR BABY,  
YOUR FAMILY, YOUR VACATION, ETC.**

**K5UCW**

**TRIPLE CCC ENTERPRISES**

Member Pearland/Hobby Area Chamber

**Pager (713) 834-7481 Office (713) 649-7622**

# DX News

*I knew a man who used to say, Not once but twenty times a day, CQ DX, CQ DX...*

March began on a Saturday with less than the greatest of propagation numbers. The SFI was 74 and the A index was 35, indicating fairly high absorption within the ionosphere. This notwithstanding, the ARRL DX Contest was still fun. As noted last Fall, there is nothing like a good contest to bring out activity defying propagation indicators. As mid-month approached, the SFI reached 75 with A and K indices of zero. Band conditions reflected this with good conditions enabling a nice opening into Europe and the republics south of Russia. March ended with the SFI down around 71, with band conditions fairly poor.

**DX Worked:** ZD8DEZ (Ascension Island); DU9RG (Philippine Islands); ZD7DP (St. Helena); TZ6VV (Mali); S79MAD (Seychelles); IS0IGV (Sardinia); CX7BY (Uruguay); ZP5MAL (Paraguay); GW8GT (Wales); JA1YXP (Japan); EA8KK (Canary Islands); FP5AC (St. Pierre & Miquelon Is.); ZS5NK (South Africa); SM7CRW (Sweden); OH6WW (Finland); 4LSA (Georgia); A92GD (Bahrain); UN5G (Kazakhstan); ZP5CC (Paraguay); XT2DP (Burkina Faso); S52OT (Slovenia); Z32XX (Macedonia); ON5CD and ON7GB (Belgium); 9L1IS (Sierra Leone); RN3QN (Russia); US1I (Ukraine); S92AT (Sao Tome); V63KU (Micronesia); TF3GC (Iceland).

**DX Heard:** UA3CT (Russia); 4B1AC (Mexico); LT1F (Argentina); ZY2R (Brazil); AP2JZB (Pakistan); ZS8IR (Marion Isl.); VU2WAP (India); ZP5MAL (Paraguay).

**ARRL DX Contest (SSB):** Two days before the start of the contest, my Kenwood TS940 developed a chronic problem which required that it be sent to California for repair -- just before the start of the ARRL DX Contest. After shipping the radio, I slid my backup transceiver (TS830) into place and cabled it up. Imagine my surprise when I found that I could receive just fine but could not transmit -- no power output. On Friday I spent a good bit of time opening up the radio and looking for the problem which turned out to be a very bad 6146 with white material deposited all over the inside of the envelope. Apparently air got inside and depleted both of the getters. After replacing the 6146's, the rig performed okay and I worked the contest on the weekend: 100 QSOs and 59 different countries. Not much exotic showed up, although the bands showed surprising life. One always wonders at all of the one-by-twos and two-by-ones calling CQ-contest while working

relatively few QSOs. Why does their audio always sound so bad???

I worked YI1US (Iraq) on Feb. 23. The QSL arrived eleven days later on March 6, courtesy of Mary Ann Crider WA3HUP, the QSL Manager. It certainly helps when the manager is on frequency when the QSO is made. It helps even more when the manager is someone you know!

**QSL Routes:** YI1US via WA3HUP; 5W1FR via K5TR; VQ9IE via WY8Q; V47KP via K2SB; V63KU via JA6NL; XT2DP via WB2YQH; XU2FB via N4JR; ZL9/K8VIR via K8VIR; 9J2BO via W6ORD.

**NEXT DXPEDITION!** The next big DXpedition is less than a year away. A group headed by some U.S. hams will visit Bouvet Island in February, 1998. They plan to begin on Feb. 5 and operate for twelve days. Coupled with the big operation there in 1990, this should take a lot of the pressure off of this DXCC Country. Plan now to be at home and to have time for your radio. (W5VHN and KK5LO, take note!)

Mike K5NZ showed up on the repeater one morning touting his success in working XU6WV, a new country for him. And, he says there is a stateside manager, too. Nice going, Mike. Mike also worked V63KU (Micronesia) on 20 meters.

The absence of sunspots during the past twelve months means there has been little DX to be worked. Right? Not so, according to our own NARS News. In the year I have been writing this column for NARS, I have noted in it well over 100 DXCC countries that I have worked during the sunspot low. In fact, the total is 124 according to my count -- and that is just those that I reported in the column. The message here is that one can work DX just about all of the time, if one is patient and takes the time to tune and listen. Remember, it only takes 99 DX countries plus one contact within the USA to make DXCC. The record in NARS News indicates it can be done with a relatively casual effort on the part of one member. Something to think about the next time the bands sound dead.

I would be negligent if I did not report on our 1996 President / newest DXer / KK5LO. Walter now has his crank-up tower and TH7DX beam up and in operation. His first conquest was SP8ARY in Poland. Subsequent QSOs include SP1PEA, TU2ZR (Ivory Coast), VP5/WD5FLK (Turks & Caicos Is.); LY3AA (Lithuania); JA7XBG (Japan); a VK via longpath, and various others.

Anyone need the Auckland and Campbell Islands? Yep, a bunch of you, I'd bet. Your opportunity is coming up. Ed, K8VIR, will spend about a week on the Auckland Islands in early April. These islands are relatively difficult to work and opportunities do not come often.

Jack, WA8GHZ, reports he worked 3DA0CA on 30 meters recently. While Swaziland is not really a rare country, it falls somewhere between there and the "easy to work" category. When Jack asked how he could send a card for confirmation, I was happy to tell him the bureau system is as good a way as any -- and certainly the most economical. K5ZTY worked 9J2SZ in Zambia on 40 meters QRP.

Ron Wright, ZL1AMO, says he will be active from Banaba (T33) sometime in April. Banaba is one of the places you can work only when someone goes there -- which is not too often. Ron does not like bureau QSLs and is rather blunt in saying so. If you send your QSL to him via the bureau, you will probably get your own card back. On the back of the card he will stamp a message which says (in essence) that "Bureau QSLs do not provide support for DXpeditions." His rubber stamp will serve to confirm your contact, however, even though it may not be as attractive as one of the DXpedition QSLs.

**701 TRIVIA:** Zorro JH1AJT and Franz DJ9ZB operated from Aden, Yemen for a week just before Christmas last. Contacts with them have not been accepted for credit by the DXCC desk at ARRL. Here is why. In 1990 the two countries of North and South Yemen merged into one, with Sana'a (the northern capital) becoming the national capital of the new Yemen. The fellows who operated 701A in 1996 obtained a permit from the communications subsidiary in Aden from where the operation took place. The Ministry of Communications (MoC) in Sana'a was not made aware of the intentions or the actual operation, and they did not issue a license for it. Authority for such licensing resides in Sana'a with the MoC, which says that necessary regulatory documents have not been completed for the issuance of amateur radio licenses in Yemen. The 701AA and 708AA operations in 1990 occurred immediately after the merger of the North and the South when there were still two licensing bodies functioning. As has been said so many times in DXing, "timing is everything." These are the kinds of snafus which often lead to frustration among DXers.

73, Bill K8CSG

# LA Hamfest

Well, nobody promised it would be as good as Dayton, but what the heck? It's a lot closer, and I didn't have anything I absolutely could not live without. Several NARSinians made the three hour drive east to the Holiday Inn Central for the 1997 rendition of the Lafayette show: in attendance were Rudy KB5ZXO, Stella KC5UTN, Keith WD5DXL and Beth, Gerald W5BA, Madison W5MJ, and Bob N5ET.

The weather cooperated for the trip, and was actually good enough to have an outside flea market. Too bad there wasn't one, though.

had purchased elsewhere and were trying to palm off as slightly used but serviceable, and were greeted with the usual skepticism by us possible buyers. Usually there are a few folks with money burning a hole in their pockets, and lots of folks who want to just squeeze the tomatoes (so to speak) and keep our cash. We were not disappointed. I did find one fellow who had about 20 Radio Shack DSPs for sale for \$35, which he touted as a wonderful bargain because, by clipping a single wire, the unit would perform identically with the 59+ DSP. Since I declined to purchase, the secret remains intact!

symposia and testing. One young man who traveled there with us, Jesse Dietz obtained his Technician license, and now appears on the 146.66 as KC5ZME. He will take his code test soon - he made the promise to me, at least, in order to not have to walk home.

All in all, it was a pleasant diversion, and although I did not buy anything noteworthy, it's always fun to buy the little things I need for the various projects which are always on my horizon. We visited some restaurants in the vicinity, but my comments on them will last until another time.

The inside vendors had the usual stuff which they

There were the usual additional attractions, such as

Madison W5MJ



## Special Interest Group (SIG) List

K5ZTY, Bill Stietenroth  
893-3901, General Help

W5SB, Bill Denton  
281-469-8331, General Help, Antennas

K1OJ, O J Quarles  
281-955-1555, HF, General Help

WA5REJ, Allen Majeski  
281-353-8652, General Help

WA5SAJ, Larry McCain  
281-469-6709, General Help

W5MJ, Madison Jones  
281-350-4330, General Help, CW

K8CSG, Bill Gary  
281-537-9240, General Help, DX

KC5EZQ, Bill Rister  
281-537-8596, ATV, General Help

K5WNO, Deral Kent  
281-548-7476, RS12/13, Satellite

KC5RCC, George Carlson  
281-376-8307, Electrical Design,  
Troubleshooting

KA3BKU, Don Bedell  
281-370-6576, Packet

N5BA, Brian Derx  
894-5942, VHF, VUCC Card Checking

KC5JZO, Bob Argo  
281-288-7430, Computer Operating,  
Win'95

WD5DXL, Keith Dutson  
281-351-7683, Computer Programming

W5NKZ, Jerry Smith  
444-4491, HF, Advanced OSCAR, Antenna

KB5DTB, Joy Smith  
444-4491, HF, Advanced OSCAR, Antenna

N5WIZ, Harry Gage  
281-370-7488, Basic Advice - RFI

W5VHN, Dick Rooney  
281-288-8424, Satellite

K5GQ, Mark Tyler  
281-587-0256, Interference

N5ET, Bob Walworth  
281-363-0209, DXCC Card Checking

# Contest Connection

## K10J Team Wins National FYBO Contest

In the recent Freeze Your B... Off contest (FYBO) where bonus points are awarded for operating in the field and with decreasing temperatures, the K10J team ran away from the pack and took national 1st place. The team won overall score, as well as most Q's to members of the host club, Arizona ScQRPions:

- Highest Score:

MultiOp: K10J, 129,600 pts.

Single Op: N0TU, 67,200 pts.

N/T+: N3XRV/T, 2,400 pts.

- Worked Most ScQRPions: K10J, 14

NARS was well represented with 3 stations and about a half-dozen members 'pounding brass' in the 12-hour field event:

| Callsign    | Location | Q's | SPC | Temp | Pwr |
|-------------|----------|-----|-----|------|-----|
| K10J (Mult) | Field    | 150 | 36  | 48 F | 5w  |
| WA8GHZ      | Field    | 34  | 19  | 48 F | 5w  |
| K5ZTY       | Home     | 25  | 16  | 75 F | 5w  |

Congratulations OJ and team.

Jack Dougherty WA8GHZ

## Bill Stietenroth K5ZTY Scores Well In QRP Foxhunt

Foxhunt 1996/1997 Results

| Call      | Contacts | State | Total Points |
|-----------|----------|-------|--------------|
| W5TFB     | 77+71    | TX    | 148          |
| KU7Y      | 57+72    | NV    | 129          |
| K2NF      | 59+47    | FL    | 106          |
| W5FN      | 50+56    | TX    | 106          |
| W1HUE     | 55+47    | ID    | 102          |
| AE4IC     | 53+48    | NC    | 101          |
| NQ7K      | 37+49    | AZ    | 86           |
| W8RU      | 47+37    | MI    | 84           |
| K5OI      | 37+46    | NM    | 83           |
| N6GA      | 56+23    | CA    | 79           |
| 15 others |          |       |              |

Note: X.5 means X regular foxes and .5 means one Novice(5 pts) so that score is X+5. Only one Novice per non-Novice stn. So 3.5 means 3 regular and 1 novice for total of 4 contacts, but 8 points total. Only one Novice contact allowed for for the five points for the season for stations other than Novice/T+.

Hunters Scores (and it's a close race)

|             |             |            |             |             |
|-------------|-------------|------------|-------------|-------------|
| W5FN(40.5)  | KK5RO(35.5) | N5ET(19.5) | AB5UA(34.5) | W5TFB(24.5) |
| K5OI(28.5)  | K5WO(11.5)  | K5UP(18.5) | K5ZTY(20.5) | KK5MC/5     |
| WA5WHN(2.5) |             |            |             |             |

excerpt from email article by Chuck Adams K5FO CP-60 adams@sgi.com  
submitted by Mark Tyler K5GQ

## Texas QSO Party Coming May 3rd

As some of you know the weekend of May 3-4 is the date of this years TQP. I hope to have a major effort to win it three years in a row from my shack: also to win two years in a row for NARS. I hope to have several mobiles out covering the counties and several members working from their home stations. OJ is going to do a CW only mobile. Let me know if you want to get in some action. Any amount of time will be appreciated. More later.

The rules are on the TDXS web page. You can get there by typing texas dx society in the search box, or go directly to <http://wb5fnd.tech.uh.edu/~tdxs/>.

Bill Denton W5SB



by Keith Dutson

S  
O  
A  
P  
  
B  
O  
X

Well, I could not be more excited! Everyone is invited to come over to my house for the 1997 NARS Annual Picnic. My wife, Beth, is also excited, and has prepared a list of honey do's for preparation. So, ya'll come on over and give us a visit May 17th.

I am involved with the newly formed Cy-Fair ARC. James Wells KC5SIZ has done all the organization and is looking forward to a lively bunch at the school operating on 2 meters and down. There is much more work to be done and James will need *Now You're Talking* manuals. NARS has accepted a sponsorship role and already has some cash donations. Please give what you can.

# Make Your Plans To Attend The Annual Nars Picnic

Well it is that time of the year again, after a long hard winter, and we are now approaching the dry and cool part of the year. The NARS annual picnic will be held on May 17, 1997. So gather up your lawn chairs, swap items, cool drinks, and your great Ham spirit. Get ready to have some Eyeball QSO's with the greatest Ham radio people in the world.

We have changed the status quo for the picnic. This year your NARS board of officers decided it would be nice to have a swap meet at the annual picnic (When the picnic was held at a county park this was against the park rules.). Keith Dutson offered to have the picnic at his house, a few acres near Tomball. Look for a map in the next newsletter.

**When:** MAY 17, 1997 11:00 a.m. to 4:00 p.m.

**Where:** Keith Dutson's Antenna Farm  
24415 Deep Meadow  
Tomball

*Good Food* – Barbecue, naturally. Bring a dessert, if you wish, for all to share. YUM YUM.

*Good Games* – Horse Shoes, Washer Toss, Radio Operation (QRO & QRP), Horse Rides for the Kiddies.

*Good Friends* – All the NARS bunch.

*Good Times* – To be had by all those who come.

*Club Swap Meet* – This year we will present the opportunity for all club members to bring items for sale or trade.

I will be passing around a list at the meetings and breakfasts to get an idea of how much food we will need. We will have tables, but we need you to bring your own chairs.

Walter KK5LO

## NARS BOARD OF DIRECTORS

**PRESIDENT & BOARD CHAIRMAN**  
Jim Kirk, KJ5X 376-0718

**VICE PRESIDENT**  
Harry Gage, N5WIZ 370-7488

**SECRETARY**  
Bob Argo, KC5JZO 288-7430

**TREASURER**  
Keith Dutson, WD5DXL 351-7683

**DIRECTORS**  
Walter Hock, KK5LO 350-6633  
Rudy Novotny, KB5ZXQ 251-4546  
Mark Condit, KM5AO 550-5659  
Bill Gary, K8CSG 537-9240

## MEMBERSHIP CHANGES

Please send address, phone, email and other changes to Marian Denton at NARS, P.O. Box 690342, Houston, TX 77269-0342.

## FOR NARS INFORMATION CALL

Marian Denton, 469-8331, for General Information and Bill Gary, 537-9240, for VE Exam Information or send E-Mail to novotny@tenet.edu

**NARS BREAKFAST** every Saturday  
8 AM at Victors, located at 4710 W FM 1960. Informal ragchew.

**NARS LUNCH BUNCH** every  
Wednesday – location decided Tuesdays  
on the informal morning 2 meter net.

## NARS NETS

**NARS RAGCHEW** – MONDAY 8:00 PM  
28.444 MHz  
Net Coordinator Jim, KJ5X

**NARS INFO** – WEDNESDAY 8:00 PM  
146.06 /.66 MHz  
Net Coordinator Bill, K8CSG

\*All telephone #'s are 281 Area Code

## NARS REPEATERS

2 M – 146.060 / 146.660 MHz  
Digipeter – 145.71 MHz  
Call (W5NC) Alias (NARS)

## NARS Web Page

<http://www.flash.net/~nars/>  
Coordinator HO, WA5MLT  
Trustee Walter, KK5LO

NARS NEWS is published monthly by  
Northwest Amateur Radio Society

Editor: Keith Dutson, WD5DXL  
Send all Articles and Materials for the  
Newsletter to: 24415 Deep Meadow,  
Tomball, TX 77375, (281) 351-7683,  
EMail kdutson@wt.net

Northwest Amateur Radio Society is a  
Special Service Club affiliated with the  
American Radio Relay League.

ARRL Club No. 2120

NARS Mailing Address: P.O. Box 690342,  
Houston, TX 77269-0342