Publication of the Northern California Contest Club **(no. 321) February 1999**

JUG

NEXT NCCC MEETING

DATE: Monday, February 8, 1999
at the
"Old Spaghetti Factory"
Jack London Square
Oakland
6:00 PM : Schmooze
7:00 PM : Forks Up
7:30 PM : Meeting
INFO & DIRECTIONS INSIDE
and you can *always* check:
http://www.nccc.cc/meetings.html
for a map and directions!

NCCC OFFICERS

n6tv@kkn.net
JUG Editor: George Daughters, K6GT
gdaught6@leland.stanford.edu

de K6AW

Our January club meeting was held at the South Beach Yacht Club in San Francisco. We had another fine turnout. *(All details were handled by Mary. W0YK was on a pleasure trip to Detroit[?]… ed)* The program was a presentation by Ken Silverman, K2KW, on the results of the 6Y2A team in the 1998 CQWW CW Contest. Most of the team members are NCCCers -- K2KW, N6BT, N6TV, N6BV, plus helpers AF7Y and K7CO. 6Y2A walked away with all the multi-multi marbles this time and set some new world records. Most interesting, they did it using verticals they carried down with them to Jamaica. If you missed this exciting presentation, plan to see it for sure in Fresno in April.

In January we had both the cw and ssb North American QSO Parties. There was very good NCCC participation in both modes. N6RO rounded up a first-rate team (N6RO, K5RC, ZF2NT [nee N6NT], K6BZ and N6EE) and set a new club record and narrowly missed beating the dreaded SCCC team. Congrats, guys!

The CQ 160 CW contest is upon us now; to be followed by the RTTY WPX Contest, then the ARRL DX CW and SSB contests. Soon it will be time for the CQ WPX SSB Contest, the other "major" contest for NCCC this season. It's not too early to begin planning your strategy for this one!

The February meeting will be held at the Old Spaghetti Factory at Jack London Square in Oakland. K2KW will present some novel ideas on how to do well in the ARRL DX Contests and have fun at the same time. See the meeting notice or www.nccc.cc for details.

In March it's time for our Awards Banquet. This year we are holding it at the Tied House in San Jose on Friday, March 19. NCCC member Ron Manabe, W6RN kindly arranges these Tied House meetings for us -- the food and handcrafted beer is wonderful!

Our April meeting will be held on Monday, April 19 at H-P Santa Clara. We moved it out a week to allow folks to recover from Fresno. This meeting will be a combined election of new officers plus a special program. N5KO will be presenting a show-and-tell on the new station being built at HC8N.

It promises to be a great winter for contesting. See you all on the radio! KB!

73, de Steve, K6AW

Contest Calendar

New Hampshire QSO Party 0000Z, Feb 6 - 2400Z, Feb 7
Vermont QSO Party 0000Z, Feb 6 - 2400Z, Feb 7
10-10 Int. Winter 'test, SSB 0001Z, Feb 6 - 2400Z, Feb 7
FYBO Winter QRP Field Day 1400Z, Feb 6 - 0200Z, Feb 7
YL-OM Contest, CW 1400Z, Feb 6 - 0200Z, Feb 8
Delaware QSO Party 1700Z, Feb 6 - 0500Z, Feb 7
and 1300Z, Feb 7 - 0100Z, Feb 8
Minnesota QSO Party 1800Z, Feb 6 - 0600Z, Feb 7
North American Sprint, Phone 0000Z - 0400Z, Feb 7
ARRL School Club Roundup 1300Z, Feb 8 - 0100Z, Feb 13
HAL WW RTTY WPX 'test 0000Z, Feb 13 - 2400Z, Feb 14
Dutch PACC Contest 1200Z, Feb 13 - 1200Z, Feb 14
Carnaval of Loule Contest 1200Z, Feb 13 - 1200Z, Feb 14
Asia-Pacific Sprint, CW 1230Z - 1430Z, Feb 13
YL-OM Contest, Phone 1400Z, Feb 13 - 0200Z, Feb 15
RSGB 1.8 MHz 'test, CW 2100Z, Feb 13 - 0100Z, Feb 14
North American Sprint, CW 0000Z - 0400Z, Feb 14
ARRL Inter. DX 'test, CW 0000Z, Feb 20 - 2400Z, Feb 21
CQ 160-Meter 'test, Phone 2200Z, Feb 26 - 1600Z, Feb 28
REF Contest, Phone 0600Z, Feb 27 - 1800Z, Feb 28
North Carolina QSO Party 1200Z - 2359Z, Feb 27
and 1200Z - 2359Z, Feb 28
UBA Contest, CW 1300Z, Feb 27 - 1300Z, Feb 28
RSGB 7 MHz DX 'test, CW 1500Z, Feb 27 - 0900Z, Feb 28
High Speed Club CW Contest 0900Z - 1100Z, Feb 28
and 1500Z - 1700Z, Feb 28
CQC Winter QRP QSO Party 2200Z, Feb 28 - 0359Z, Mar 1

1998 Club Awards

It's time again for our annual club awards which will be formally presented at the Awards Banquet in March at the Mountain View Tied House restaurant. Among the many awards the NCCC provides are CQP plaques, certificates, wine, T-shirts, (well, OK, you PAY $10 for the T-shirts!), ARRL Sweepstakes certificates, plaques, hats, letter openers, and special award plaques for: SS Big Gun, SS Little Gun, Contester-of-the-Year, Rookie-of-the-Year, Most Improved Contester, Founders Award, K6RU Memorial Award, etc.

In order for you to get your proper awards, our VP/CC (K7CO) must receive your scores. (*Don't send them to the JUG editor. Don't send them to the webmaster. Don't send them to the Secretary. Send them to the VP/CC!!… ed*) The NCCC website, http://www.nccc.cc/scores.html, now shows all contest results that have been submitted. Check it to be sure we have everything and that the information is correct. In particular, it is important that our data for the ARRL Sweepstakes is accurate. Please check the tables on line and let K7CO know immediately of any discrepancies. If you don't have internet access, make sure you've sent your SS scores to JT. And, if you also copy me on your correspondence with JT, it will speed things up in the awards fabrication department.

73, Ed - W0YK

K6ZM QSL REPORT

K6GT and his XYL, Pat, spent a fair part of their holiday season filling out QSL cards for K6ZM. When they were finished, 992 cards had been sent to the outgoing bureau, and exactly 750 of those were to Japanese stations. One thing we can't figure out is why, when a station makes duplicate contacts (sometimes only minutes apart) does the operator submit two separate cards, two separate requests for confirmation, of both contacts? This happened several times. The QSL team decided to send one card confirming both QSO's.

MONGOLIA

A LAND OF BLUE SKIES...DESTITUTE OF MONEY, BUT FREE!

(more on the trials and tribulations of overseas operations, and the perseverance and creativity of contesters the world over!… ed)

Martti asked me to forward the following JT1A CQWW CW post-contest report. Congratulations to the

winners of the Mongolian vodka--enjoy that extra 40 dB of gain!

73, Tim Totten

Today, Mongolia is free, democratic and energetically rediscovering its past. Only recently, the Mongolians paid a heavy price for their dependence on the USSR. The bubble burst in 1991, when subsidies from the Soviet Union ceased. The JT-land is now free but short on cash.

The current government, full of educated young men, is trying urgently to revive the economy, encourage foreign investment, and preserve its independence in the face of powerful neighbors, China and Russia. This nation of some 2.3 million people is ready to proceed.

Here, in one of the top-altitude countries in the world, with an average elevation of 1,580 meters, we found a jolly good group of serious hams ready for action. Here, we teamed up with the gang at JT1KAA and entered its abbreviated callsign - JT1A - in the multi-multi category, dedicating our hearts and souls to a good cause. The rare zone 23 was within everyone's reach! Those who worked us and would like a confirmation should QSL via SCSDXT, Jouko Hayrynen, OH1RX.

It was a time of some suffering in freezing temperatures, assembling beam antennas and struggling through a 48-hour run with three stations to provide you with 9,000 JT1A QSOs worth 12.7M points. We know that the Mongolian hero - the great Chingis Khan - would have been proud of this effort. It was no surprise that we, wearing his ubiquitous face, decided to draw for three bottles of Mongolian vodka from among those who made QSO's with us on six bands: A61AJ, AH2R, DF0HQ, DJ7UC, DK0EE, DL2NBU, DL7ON, DL7VEE, JA0DAI, JA1YXP, JA2BY, JA3YKC, JA4EKO, JA5BJC, JA6ZLI, JI3BFC, JJ1VRO, JK1ASO, JL1ARF, LY7A, OH2U, OH3YI, OH5PT, OH7M, ON5NT, RK9CWW, RK9CXM, RN3D, RW2F, RZ9OO, SL3ZV, SM3EVR

In the lucky-draw, the winners of the Mongolian vodka were JA3YKC, JJ1VRO and ON5NT.

We are grateful to the Mongolian Radio Sport Federation and their President, Dr S. Ganbaatar, and to JT1AS, JT1BV, JT1CD, JT1CM, JT1CJ, JT1CF, JT4LM, JT5AB for putting us up at JT1KAA. We gratefully acknowledge Yaesu Musen Co. Ltd, Nokia Corp. and RF-Electronics of Finland who assisted us with equipment and other necessities which served the purpose extremely well at that remote DX outpost.

Equipment:

Yaesu FT1000MP (2) and Yaesu FT847
Alpha 91B (3)
3-L beam antennas 10/15/20M
Sloping dipoles 40/80/160M

73 from JT1A

Joint Finnish-Mongolian DXpedition 1999;
ULANBAATAR, MONGOLIA, Grid Loc ON37KV

Operators: S. Surenjav, JT1BH; T. Naranbaatar, JT1BV; N. Khosbayar, JT1CD; J. Hayrynen, OH1RX; M. Laine, OH2BH; J. Keskiaho, OH8PF

IMPORTANT NOTICE!!

E-mail addresses of all members will be added to the abbreviated roster at the NCCC website, which will include nick name, last name, callsign and E-mail Address UNLESS individual members contact me and request not to be listed.

The advantage of this website Roster is that it is updated monthly and can be consulted for the latest e-mail addresses at anytime needed. The printed paper Roster with complete mailing addresses and phone numbers is published annually and the 1999 edition is included in this JUG.

73, Al

DIRECTIONS TO THE FEBRUARY MEETING

From the North and East Bay : Take I-880 southbound, and exit at Jackson Street. Go right on Jackson, right at 4th Street, and left on Webster Street. The restaurant is located two blocks ahead at the intersection of Webster and Embarcadero.

From the South : Take I-880 northbound and exit at Oak Street. Turn left on Oak Street, then right on Embarcadero. The restaurant is 4 blocks ahead on the left side of the street.

Double – Barreled Program : (i) "How to set up a Multi-Single station for the ARRL DX contest and have fun!" presented by Kenny, K2KW; (ii) "Update on the Phonex/TCI 80 meter saga" by Al, AD6E.

Parking : On a Monday night, parking on the street is not usually a problem. There is a pay parking lot right next to the restaurant. The first hour is free if you get your parking stub validated by the restaurant.

Menu : The meal prices are $13 for chicken marsala or for spaghetti and meat balls. Each meal includes salad, soda or coffee, and spumoni for dessert. Dinner reservations MUST be received by AD6E@aol.com (or 408 725-3534) no later than Thrusday, Feb 4 indicating

your choice of chicken or spaghetti. We hope to see you there! By the way…

Would you like a well paid, highly visible job within NCCC?

(*Well, one out of two isn't bad!… ed*)

I'm looking for someone to take over the administration of the NCCC 5 Million Point Award. This job requires email and web access. You need not have made your (first) 5 mega-points to apply. (an EOE!) Understanding QuickBasic would be useful, but not mandatory. I will support and train you as needed. This job involves working with the NCCC VP/CC to obtain all contest scores from NCCC members and keep track of them, and work with the NCCC webmaster to keep the 5 meg web page up to date. When a member first passes the magic number, then work with the NCCC awards chairman to get the award made and presented.

Here is a chance to do your part to help out the club without having to commit to extra meetings, etc. If you are interested, please give me a call or email.

73, Al AD6E
(408) 725-3534 days

DEADLINES TO BE ENFORCED

We are starting to enforce these deadlines at ARRL for several reasons. From early November through today, January 4, we have had 5 major contests and 2 smaller contests: Phone and CW Sweepstakes, 160 Meters, 10 Meters and RTTY Roundup, as well as EME and Straight Key Night. This accounts for around 6,000 entries to be managed in a short time by only two people in the Contest Branch, a very heavy task when you include in the day-to-day things necessary for running the branch (answering member inquiries, preparing the write-ups for various QST articles, re-scoring logs from other contests, and such.) In addition, we have started implementing plans to more seriously and thoroughly check contest logs. The logs for CW Sweepstakes were entered into the data base and zipped to the log checkers on December 16. The log checkers (volunteers) have prepared the software and have started running the logs through the process.

Yet today in my email were entries sent over 3 weeks after the deadline for CW Sweepstakes. In addition today there were entries for the Phone portion of Sweepstakes, over 10 days past the deadline. The deadline of 30 days is fairly universal in the contest community. To enable the staff at ARRL Headquarters to do their jobs, and to best utilize the volunteer resources who are giving of their time and talent to help the contesters, we are going to have to start sticking to the rules of our contests, be they the rules involving submission deadlines for entries, or for the required format for electronically generated entries for our contests.

The goal of the Contest Branch is to provide a good, fair, and honest working environment within which the Contest Community can enjoy their hobby. We have enhanced log checking capabilities, updated data processing software, and I believe have a new sense of commitment in my office. My goal is to provide accurate and prompt results as well as respond to our constituency. A turn-around has started at the ARRL Contest Branch. With your help and cooperation, it will continue.

73, Dan Henderson, N1ND
Contest Branch Manager, ARRL

CW STRESS THERAPY

Just a tip for you overstressed Chiefs, or even Indians, at work... (I'm an Indian, with aspirations for chief, or at least a top warrior.)

I brought a keyer to work recently to show a colleague who was curious about keyers, keys, and Morse code. It's still at my desk. I experience an incredible release/relaxation response occasionally sliding out the paddles and sending a CQ or a sentence or two, and imagining a weak, fluttery, polar-path European signal coming back. It's VERY relaxing, taking the edge off work pressures. I highly recommend it to all who enjoy CW.

73, DX, de Pat, AA6EG/N6IJ;

MAJOR CONTRIBUTION TO AMATEUR RADIO BY NCCC!

Your JUGhead, K6GT, sent an e-mail to Ed Hare, W1RFI, ARRL Lab Supervisor, at ARRL headquarters to ask permission to break this story. The pertinent part of my letter follows:

Hi Ed,

Brad, K6WR, has forwarded your report about the "phonex/tci matter" to the NCCC reflector. Because you intend to publish it in the March QST "Happenings" column, I would like to obtain your

permission to publish it in the NCCC newsletter, the JUG, for the February 1999 issue. I will edit the format and content ever-so-slightly, just to make it fit within our page layout.

I am pleased with our club members, our club, and our ARRL for the timely "identification, diagnosis, and treatment" of this potentially harmful disease! Many thanks to you and Brad (and all of the others) who played key roles in this!

vy 73, K6GT

Excerpts from his response follow.

You can use the ARRL Letter piece verbatim (formatting changes are fine), so long as you credit the ARRL and the ARRL Letter.

You could also reprint the information on our Web page, http://www.arrl.org/tis/info/rfiteljx.html. We put that up so fast I didn't get to add the usual "ok to reprint" header. Normally, we ask that it be reprinted in its entirety, but in this case, it is quite large, so this e-mail will be permission enough for you to pick and choose; simply give credit to the ARRL Letter and ARRL Web as the source.

I will personally add that I am very appreciative of the reports from the NCCC members and for the help that they provided on an ongoing basis as this unfolded. A lot of factors came together to result in a surprisingly fast resolution, but every single one of those factors ***had*** to be there, and they were! In my opinion, this is the true strength of ARRL; it is why we band together in these critical areas, in spite of our differences in others, to do what must be done for Amateur Radio.

Not all the good things about the ARRL are in Newington, CT. The Directors and officers, who set policy, are volunteers representing all areas of the country. ARRL members the world over contribute, each in their own way, ranging from providing technical expertise when that expertise is needed (one NCCC member did some excellent field work in this one), being willing to report a problem to ARRL instead "letting George do it," to supporting ARRL and this kind of work with membership. I see League diamonds on the badges everywhere I go; a lot of people from ARRL helped make this happen. I was a coordinator, pulling together the reports and measurements, adding work of my own, and presenting that to the manufacturers and the FCC, relying on professional contacts developed over the years to open the right doors and make things happen.

I, too, am proud to be part of the process we call ARRL. Feel free to quote me. :-)

73, Ed Hare, W1RFI

Brad's e-mail to the NCCC reflector follows.

Here is the report from W1RFI dealing with the 3525 kHz wireless phone jack and wireless modem jack problem. The report is based on Ed's work with Phonex and TCI and input from several NCCC members. I believe that this report provides the short-term and long-term resolution we have been seeking.

Many thanks to the NCCC members who first brought this problem to my attention less than two weeks ago and then worked with Ed in various phases of the resolution.

We should also thank Phonex and TCI for reacting to the problem quickly and decisively once they became aware of the problem.

Technical comments and questions should be directed to:

Ed Hare, W1RFI, ARRL Lab
225 Main St
Newington, CT 06111

Ed's phone is: 860-594-0318, and his e-mail address is w1rfi@arrl.org

The report below may be downloaded in its entirety from the ARRL web site at

http://www.arrl.org/tis/info/rfiteljx.html

73, and best Season's Greetings,

Brad Wyatt K6WR

****

Wireless Telephone and Modem Jacks

Compiled by: Ed Hare, W1RFI, ARRL Lab Supervisor

Date: December 24, 1998

Overview:

The ARRL has received reports of local interference from noisy and somewhat "drifty" carriers near 3.520 MHz. Most of the initial reports were initiated on the Northern California Contest Club reflector and forwarded to ARRL HQ by Brad Wyatt, K6WR, the ARRL Pacific Division Director. Harmonics of these signals have also been reported as high as 20 meters. An informal investigation in the Greater Hartford, Connecticut, area revealed several local, nonamateur signals, including some carrying FM voice transmissions that appeared to be telephone conversations. One signal heard in a residential neighborhood literally pinned the S meter at 60 dB over S9. These reports include interference ranging from S7 to 60 dB over S9. By any standard, the S7+ carriers monitored on popular ham frequencies constitute harmful interference. These tests and reports from the field demonstrate that the devices pose a serious problem for reception on the lower part of the 80-meter amateur band and possibly on other bands because of

harmonics. Likewise, the devices also are susceptible to interference from HF signals.

To date, the ARRL Lab has received about a dozen reports of interference from these devices.

The interference is being caused by wireless modem jacks, sometimes installed with the digital cable converter for digital cable television. They are installed to make a convenient connection from the cable box to the telephone line to transmit billing information. These devices are also being sold in some computer retail stores. They are first cousins to the "wireless telephone jacks," also being marketed in retail stores.

At this time, wireless jacks are being manufactured by the Phonex Corporation, 6952 High Tech Drive, Midvale, Utah 84047, (801) 566-0100, http://www.phonex.com/.

About Wireless Jacks:

Wireless jacks are "carrier-current" devices, meaning that they conduct their RF signals over the power lines. They are full- duplex transceivers that use the AC electrical system to connect a remote telephone to the phone system, using FM signals conducted by the electrical wiring.

There are two types of jacks, very similar in design and function that are being made by Phonex and marketed under several brand names - wireless modem jacks and wireless telephone jacks. The wireless modem jacks use 3.52 and 8.27 MHz for their full-duplex operation.

These are the ones causing the interference problems on some HF amateur bands. They are also very susceptible to interference from HF transmitters, especially those on the 80-meter amateur band.

The wireless telephone jacks, marketed under GE, RCA/Thompson and Radio Shack brand names, operate on 3.025 and 6.436 MHz. They are not likely to cause any interference problems, although they are also susceptible to interference.

In the wireless modem jacks, the 3.52 MHz carrier is on all of the time, even when the phone lines are not in use. The 8.27 MHz signal appears only when the modem is in actual use. The 3.52 MHz signal is generally modulated only when the modem is in use. Analog phone signals from other phones in the house usually do not appear on the transmitter carrier, although the ARRL has received reports of telephone conversations near 3.52 MHz.

The modulation is narrow-band FM (NBFM) with a maximum deviation of +10KHZ and -25KHz (not symmetrical for very loud audio). The transmitter output impedance is approximately 15 ohms. The open circuit voltage is approximately 2.4 Volts RMS across the line and the short circuit current is approximately 0.15 amps. This would result in a maximum power of approximately 100 milliwatts into a matched load.

Under some circumstances, the unit gets into a mode where it produces a broad band interference that falls off at about 10 dB every 5KHz on either side of the signal. This is different than "normal" where it produces a T8 or T7 note.

They are permitted, within certain limits, by FCC Part 15 rules on most frequencies, even on the ham bands. However, the rules state the operators of Part 15 devices must ensure that they do not cause interference to other radio services.

Identifying Units by FCC ID Numbers:

There is an "FCC ID" number on wireless jacks. This is a Part 68 registration number, indicating the unit meets the appropriate standards to be used on a telephone system.

The 3.52-MHz units carry a registration number similar to HMTCHN- 24794-KX-E and are sold under various model numbers under several brand names. They are also used by TCI cable in conjunction with their digital cable systems.

The 3.025-MHz units carry and ID number similar to AAOIND-25424- RJ-N and are sold under various model numbers under several brand names, including RCA/Thompson, GE and Radio Shack.

According to the FCC registration number, the device is manufactured overseas by PT LINTAS ELEKTRONIKA DINAMIKA INDAH. It was registered with the FCC on 4/14/98.

How they are Being Sold and Distributed:

The wireless modems all operate on 3.52 MHz and 8.27 MHz and are being sold to TCI cable and are being marketed to several computer-stores and other distributors under several brand names. According to Phonex, there have been relatively few digital modems marketed in retail stores. The wireless telephone jacks operate on 3.025 and 6.4 MHz and are being marketed under RCA, GE and Radio Shack brand names.

ARRL Testing:

The ARRL Lab has obtained a Radio Shack unit, a TCI unit and one of the retail wireless modem jacks. As expected from information we received from Phonex, these units all operate on 3.52 MHz. (Again, the wireless telephone jacks operate on non-amateur frequencies.) The Lab verified the extent of the problem; these devices result in serious interference to the lower part of the 80-meter amateur band. From tests done in the ARRL Lab, we've determined that these devices also are very susceptible to interference from 80-meter signals (and perhaps other bands).

Ed Hare installed one at W1INF, the ARRL HQ operators club station. It is located on the ground floor, appropriately right near the Lab. The antenna is on the

HQ-building roof, about 3 stories up. In this configuration, he found an S9 + 10dB signal, about 50 Db higher than the digital noise from all the HQ staff computers and local-area networks. When W1INF was placed on the air with 1500 watts, or W1AW bulletins came on, the devices suffered total blanking. At 100 watts, the interference consisted of very strong and objectionable key clicks.

Dave Sumner, K1ZZ, ARRL's Executive Vice President purchased one of the wireless modem jacks at a local computer store. It operated on 3.038 MHz and gave an S9+20 signal on receive antennas located about 100 feet from Dave's house. It was also easily susceptible to about 50 W on the low end of 80 meters.

ARRL HQ also did some informal "field testing" as well. ARRL staffer Rick Lindquist, N1RL, checked out the situation in several neighboring towns served by TCI Cable with his HF mobile station tuned to the low end of 80. In those towns, Rick reports that every several blocks he heard a carrier--sometimes multiple carriers--in the vicinity of 3.52 or 3.53 MHz. At one location, he reported a signal that pinned his S meter at S9 + 60 dB! ARRL Lab Supervisor Ed Hare, W1RFI, reports that using a 15-foot wire antenna at his QTH, he heard a signal at about S9 +10 dB. One evening, he heard telephone conversations on this frequency.

Reports from the Field:

These devices would be problem enough if they met FCC Part 15. A "legal" signal at 30 uV/m 30 meters from the source would result in a S9+15 dB signal under some circumstances. (Amateur Radio would still be protected by the "non-interference" provisions of Part 15.)

However, the ARRL Lab has received a report done of tests done in the field by a Professional Engineer that indicate that some of these devices are producing some very strong signals.

Over the past few days, since this first appeared on the Northern California Contest Club email mailing list, the ARRL has received about a dozen reports of interference (either directly or indirectly.) Brad Wyatt, K6WR, Pacific Division Director, has directed a number of these to our attention.

These field reports include interference ranging from S7 to 60 dB over S9.

How ARRL Contacted the Involved Parties:

To gather more information about these products, the ARRL Lab has been in communication with a number of its professional contacts. Ed Hare first contacted one of his contacts on the Board of Directors of the Society of Cable Television Engineers. He introduced Ed to Tony Werner, the Senior Engineer of TCI cable. Ed also called Phonex and discussed the problem with Scott Bullock, KK7LC.

Manufacturer and Cable Company Responses:

Both companies were extremely cooperative in resolving the problem. Ed Hare summed it all up pretty nicely. "When I started receiving the reports that indicated that this is a widespread problem, I knew ARRL had to act quickly," he said. "Fortunately, this one is quickly working toward a happy ending."

Part 15 requires that these devices be tested by the manufacturer (Verified) before they are marketed. According to a spokesman from Phonex, "All Phonex wireless products are tested to meet applicable FCC Part 15 regulations. Verification of compliance is performed by an independent test facility certified by the FCC to perform Class B certification testing. Site test performed for verification to FCC Part 15 Sec. 209 are performed in adherence to ANSI standards under the direction of the Phonex Corporation Engineering Department. Although the Phonex Company has complied with required FCC regulations, the ARRL has identified a potential interference problem on the low end of the 80-meter band," said Phonex Senior Engineer Scott Bullock, KK7LC. "We have several hams in our organization, and we do not want to cause any interference to any amateur band."

The good news from all this is that Phonex has responded appropriately and very quickly. Within days of receiving the first reports from hams, Phonex has moved the frequency of their units being manufactured from 3.5 MHz to 3.3 MHz and has made engineering changes to prevent the units from transmitting a dead carrier when the unit is not in actual use. They also said that if one of its units causes interference, Phonex will retune or replace it. Hams can contact Phonex Customer Service at 800-437- 0101. They have been working with TCI to implement this and have sent letters to their distributors, explaining the problem and Phonex's solution.

TCI Senior Engineer Tony Werner says his company is a responsible corporate citizen and intends to comply with FCC rules. He said TCI plans to eliminate the 3.52 MHz wireless jacks it's installed "as expediently as possible" by replacing them with 3.3 MHz units or by running a hardwired telephone connection. Werner said TCI also will use nothing but 3.3-MHz units in the future. In the meantime, hams experiencing harmful interference they believe is related to these devices should contact their local TCI office. Werner said he expected it would be several weeks before service information is available at local TCI offices. He says the 3.3- MHz replacement units will be available over the next few weeks. They will also routinely replace 3.52 MHz units as part of their customer-service programs.

Teamwork:

Ed Hare credits teamwork with resolving the wireless modem problem. Many hams were also involved, notably several member of the Northern California Contest Club, the hams of Phonex, ARRL Pacific Division Director Brad Wyatt, K6WR; ARRL's cable industry contact Ron Hranac, N0IVN; ARRL Vice President Hugh Turnbull, W3ABC; and Roanoke Division Vice Director Dennis Bodson, W4PWF.

Turnbull and Bodson, both members of the ARRL RFI Task Group, helped with the policy decisions to determine how ARRL should proceed.

"Both companies have been refreshingly cooperative," said Hare, who--as his W1RFI call sign reflects--is the League's point man for interference issues. "If every RFI problem that involves Amateur Radio could be fixed so quickly, I would probably be out of a job. To me, this cooperation and teamwork is the real strength of ARRL--acting as a coordinator for the best of our best as we collectively solve the problems of Amateur Radio," Hare concluded.

How to Obtain Information and Help:

For more general information about wireless phone jacks, go the following Web sites:

http://www.phonex.com
http://www.orbitsat.com/cyberstore/DSS/RCA_D916.asp
http://www.imall.com/stores/comtrad/phonejack.html
http://www.tvoffer.com/ctd2094.htm

An article on the subject appeared in the December 24, 1998 issue of the ARRL Letter. An article is expected to appear in the March, 1999 QST "Happenings" column.

Amateurs with questions about this topic or those who encounter any problems getting their problems resolved with TCI or the manufacturer can contact Ed Hare, W1RFI, the ARRL Laboratory Supervisor, 225 Main St., Newington, CT 06111, tel: (860) 594- 0318, email: w1rfi@arrl.org.

Phonex Corporation Customer Service can be contacted at 1-800- 409-5111.

TCI can be contacted through their local customer-service centers.

Part 15 of the Applicable FCC Regulations:

Wireless jacks are unlicensed devices that are permitted, with certain limitations, under Part 15 of the FCC rules, which defines them as "unintentional radiators." But because they use the AC wiring to conduct their signals, they must comply with the general limits for "intentional radiators" under Part 15. These limits permit unlicensed, radiated signals on HF of up to 30 uV/meter--even on the ham bands. But, these devices also are required by Part 15 not to interfere with licensed users of the spectrum.

They are carrier-current devices, meaning that they conduct RF over the power lines. As such, they are classified as "unintentional radiators and are subject to various Part 15 limits on conducted and radiated emissions. Under Part 15, such devices are "Verified," meaning that the manufacturer is required to test the units for compliance with all provisions of Part 15. The manufacturers are not required to submit their test results to the FCC, but must keep them on file. Once they have been tested and passed, they may be marketed.

Carrier-current devices have the specific requirement that they be tested in three "typical" installations.

The following definitions in Part 15 lay the groundwork for the ensuing discussions:

Section 15.3 Definitions

(f) Carrier current system. A system, or part of a system, that transmits radio frequency energy by conduction over the electric power lines. A carrier current system can be designed such that the signals are received by conduction directly from connection to the electric power lines (unintentional radiator) or the signals are received over-the-air due to radiation of the radio frequency signals from the electric power lines (intentional radiator).

(m) Harmful interference. Any emission, radiation or induction that endangers the functioning of a radio navigation service or of other safety services or seriously degrades, obstructs or repeatedly interrupts a radiocommunications service operating in accordance with this Chapter.

(o) Intentional radiator. A device that intentionally generates and emits radio frequency energy by radiation or induction.

(z) Unintentional radiator. A device that intentionally generates radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

Part 15 is a morass of complex, interwoven regulations. Carrier- current devices are unintentional radiators. However, carrier- current devices that operate below 30 MHz are generally subject only to the requirements for radiated emissions. However, there are no specific limits for radiated emissions for unintentional radiators for frequencies below 30 MHz, so Part 15 stipulates that carrier-current devices that operate below 30 MHz are subject to the radiated emission limits for intentional radiators.

The permitted radiated levels are described in Part 15:

Section 15.109 Radiated emission limits.

(a) Except for Class A digital devices, the field strength of radiated emissions from unintentional

radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission Emission (MHz)	Field Strength (microvolts/meter)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

(e) Carrier current systems used as unintentional radiators or other unintentional radiators that are designed to conduct their radio frequency emissions via connecting wires or cables and that operate in the frequency range of 9 kHz to 30 MHz, including devices that deliver the radio frequency energy to transducers, such as ultrasonic devices not covered under Part 18 of this Chapter, shall comply with the radiated emission limits for intentional radiators provided in Section 15.209 for the frequency range of 9 kHz to 30 MHz. As an alternative, carrier current systems used as unintentional radiators and operating in the frequency range of 525 kHz to 1705 kHz may comply with the radiated emission limits provided in Section 15.221(a).

At frequencies above 30 MHz, the limits in paragraph (a), (b) or (g) of this Section, as appropriate, continue to apply.

and

Section 15.209 Radiated emission limits, general requirements.

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

and:

Section 15.31 Measurement standards.

(d) Field strength measurements shall be made, to the extent possible, on an open field site. Test sites other than open field sites may be employed if they are properly calibrated so that the measurement results correspond to what would be obtained from an open field site. In the case of equipment for which measurements can be performed only at the installation site, such as perimeter protection systems, carrier current systems, and systems employing a "leaky" coaxial cable as an antenna, measurements for verification or for obtaining a grant of equipment authorization shall be performed at a minimum of three installations that can be demonstrated to be representative of typical installation sites.

Intentional Radiator Limits:

The radiated limits for Part 15 devices that can be operated legally on any frequency, including Amateur Radio frequencies, are actually fairly high. Assuming far field conditions, an isotropic antenna should pick up about -58 dBm from a 30 uV/m field, or about 15 dB over S9, assuming S9 to be 50 microvolts into 50 ohms (-73 dBm at the receiver input terminal).

In addition to these absolute maximum requirements, Part 15 also requires that devices operated under Part 15 must not cause interference to authorized radio services. If such interference does occur, Part 15 requires the operator of the Part 15 device to take whatever steps are necessary to reduce or eliminate the interference.

Section 15.5 General conditions of operation.

[b] Operation of an intentional, unintentional, or incidental radiator is subject to the conditions that no harmful interference is caused and that interference must be accepted that may be caused by the operation of an authorized radio station, by another intentional or unintentional radiator, by industrial, scientific and medical (ISM) equipment, or by an incidental radiator.

[c]The operator of a radio frequency device shall be required to cease operating the device upon notification by a Commission representative that the device is causing harmful interference. Operation shall not resume until the condition causing the harmful interference has been corrected.

1999 NCCC Roster Errata Sheet

NA6T email: na6t@mcn.org
N6BV telephone : 415 831-6780
W2SQ email: phil_johnson@alumni.Stanford.org
telephone (work):408 447-2781
T94EC email: Enes.Ceric@Wilcom.com

	telephone (work): 650 358-4800
N6XI	email: rtavan@alum.mit.edu
W6NL	email: leeson@earthlink.net
K6BL	email: leeson@earthlink.net
K6III	email: k6iii@juno.com
AJ6V	email: ERadlo@fenwick.com
KE6FV	email: sastark@ix.netcom.com
W6ISO	email: W6ISO1@juno.com
NC7M	address: 1665 SW 1st Court Gresham, OR 97080-7919

NCCC
44 Toyon Terrace
Danville, CA 94526

check us at:
http://www.cqp.org
http://www.nccc.cc
repeaters:
W6RGG/R 147.24 +
and 444.2 (PL107.2)

FIRST CLASS

FIRST CLASS