

DXer

Northern California DX Club



Prez Sez

by Bill Fontes, W6TEX

1992 has arrived, as have Club activities for the new year, including the Visalia Convention.

It's time to start thinking who you would like to

nominate for *DXer of the Year*. *DXer of the Year* Committee chairperson this year is Kip Edwards, W6SZN. Please send your ideas directly to Kip.

And finally, I'd like to wish every Club member Happy DX Hunting in 1992.

W6KNH Silent Key

Clyde J. Shoenfeld, W6KNH, passed away in mid-December. In NCDXC for about 25 years, Clyde received an Electrical Engineering degree from the University of California at Berkeley. He found employment at Bay Area broadcast stations. Later he worked for his father in the jewelry business.

During the 50's and 60's, Clyde was active putting some very rare DX stations on the air. For HV1SJ he furnished the equipment, built the power amplifier and assembled the station.

He was also a QSL manager for many years, handling cards for ten to fifteen DX stations.

Clyde met his life's goal in DXing—he worked them all.

Always a gentleman, he will be sorely missed by his many friends in the club and throughout the world.

"God speed, Clyde, and 73" —de Rubin, WA6AHF

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Mission to Kurdistan

or, What You Didn't See on CNN

Gerry Griffin, W8MEP, will show-and-tell his experiences in the aftermath of the big military operation against Saddam Hussein, Operation Desert Storm. Also, AA6G will present 9BDXCC awards at the meeting.

It all will happen at the Farmhouse Restaurant at 386 Convention Way in Redwood City. The restaurant is near the west side of Highway 101 and its phone number is 415/369-3337.

Dinner costs \$14 per person, paid at the door, —for prime rib, "broasted" chicken or fish-of-the-day. Mellowing begins at 6, the meeting at 7:30.



Club Info

Who Does What

NCDXC Officers:

- President:Bill Fontes, W6TEX
- Vice President:Bob Artigo, KN6J
- Secretary:Stan Kuhl, K6MA
- Treasurer:Bob Wilson, NQ6X
- Director:Ron Rasmussen, NG6X
- Director:Eric Edberg, W6DU
- Director:George Allan, WA6O

DXer Editor:Dave Barton, AF6S
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 San Jose, CA 95124
 (or via DX Packet Spotting Network)

DX Ladder:Larry Bloom, KD6XY
 2520 Heather Lane
 San Bruno, CA 94066
 (or via DXPSN)

DXer Production:Ron Panton, W6VG
DXer Mailing:Ron Panton, W6VG
Member Data Base: .John Cronin Jr., K6LLK

NCDXC Repeater, W6TI/R, (147.36+)
 Trustee:Bob Vallio, W6RGG
 Rptr. Comm. Chrmn: .Ralph Hunt, AG6Q
 Club simplex:147.54 (suggested)
 Thursday Net time: 8:00 PM local time.
 Net Manager:Ralph Hunt, AG6Q
 DX News:Dave Pugatch, KI6WF
 Propagation:Al Lotze, W6RQ
 Contest News:Rich Hudgins, WX6M
 Westlink:Craig Smith, N6ITW
 Swap Shop:Ben Deovlet, W6FDU
 933 Robin Lane
 Campbell, CA, 95008
 408/374-0372

QSL Information:Mac McHenry, W6BSY

W6TI DX 20- and 40-meter Bulletins:
 Trustee Bob Vallio, W6RGG, transmits DX information at 02:00z every Monday (Sunday evening local time) on both 7.016 and 14.002 MHz.

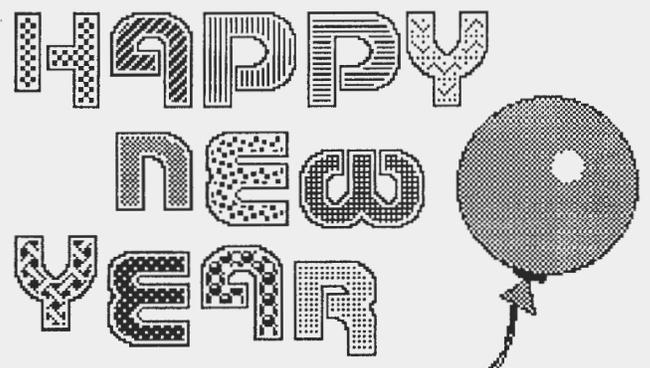
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Club address: Box 608, Menlo Park, CA

December General Meeting

A total of 37 members and guests attended the December 17 dinner meeting at Francesco's in Oakland. President Bill, W6TEX, presided.

- Bip, W6BIP, won the door prize, an MFJ World Clock
- As the main event, Alex, KI6IZ, and W6OXR showed slides of Netherland Antilles and Sint Maarten, including shots of the antenna farm erected by the Finns of PJ7W ("So many towers, so little time").
- Steve, W6MKM, awarded raffle prizes as follows: W6ISQ won a WARC-band yagi, KB6BXH and Anna, WM6B (KI6WF's wife) won sets of callbooks, W6ZKM won an ARRL Handbook, N6AN won a Heil headset with microphone and K6ILM won a 2 m/70 cm antenna.
- There were no first readings for membership.
- In second readings for W6QKN and KJ6PJ, both were voted into membership.
- A short discussion was held on the proposed PA system, but the matter requires board of directors' approval—planned for their January meeting.



Roster Changes

New Members

John J. Haruff, W6QKN
Box 123
San Carlos, CA 94070
home: 415/591-9900
work: 415/594-4085

Larry A. Springer, KJ6PJ
20308 Northglen
Cupertino, CA 95014
home: 408/446-5773
work: 415/354-5793

Change

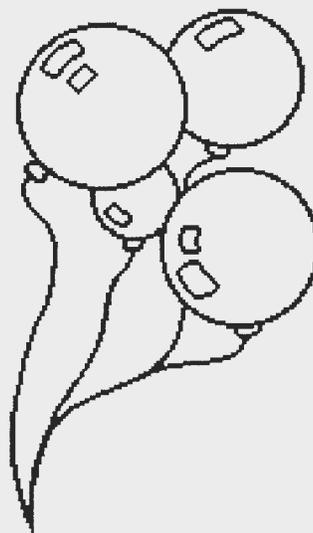
Wm. (Bill) Snider, K6KM
Box 3280
Paradise, CA 95967-3280
delete phone numbers,
no new number yet

Correction

Dave Meacham, W6EMD
home: 415/369-2633
delete work phone

Changed Address or Phone Number?

If your address or phone number changes, please notify the club secretary. If your mailing label has errors, but you're okay in the roster, please notify W6VG. Do either via the club address (page 2). There's no need to notify your editor, since address changes are forwarded by the club secretary.



BIG

Balearic Booty Buoys Bayside Brass Bug Bapper

Operating all-band, single operator class from the Balearic Islands, NCDXC member Tom Gallagher, N6RA, made 3629 Q's, worked 129 Z's and 393 C's for a grand score of 3.87 Million in this year's CWCQWW contest. Tom's busy callsign was EA6/N6RA.

Ideas

"Ideas are precious and rare. They should be immortal. Most ideas are lost, most discoveries ignored, most interrelationships unremarked upon, because we have no effective way to store and then find them. Xanadu is intended to fix this, and we believe that in time it will become as universal a product for people who think as television is for people who don't."

From a 1988 speech by John Walker, former CEO and Chairman of Autodesk, Inc. Xanadu is a kind of multi-media network data-base, called hypertext, that associates stored information by conceptual links. Apple's Hypercard uses some hypertext concepts.

Pearl Harbor '91

by Rich Lawton, N6GG

It was pouring rain at dawn, Saturday morning, December 7, 1991 as I strolled into the shack for some DXing.

Surprise! A water puddle was creeping over the operating desk and under the Kenwood TS-930S. I checked but the ceiling was dry. As I watched, a droplet hit the desk from the shelf above the '930. Oh-oh! My impeccable Daiwa rotator control box has a puddle under it too, I observed to myself. It's a bit weird for a Japanese product to leak water on December 7th—exactly fifty years after the attack on Pearl Harbor. The rotator was pointing at Japan, too.

Guilt! Scores of JA QSL cards had piled up unanswered in the corner. Was I getting a bizarre reminder from Japan? I refuse to believe in mysticism, but I swung the beam to Europe—just in case. The droplets continued falling, to my great relief.

I applied Towels and washcloths. Lifting the Daiwa control box, to mop underneath, I saw a droplet fall from the terminal strip on the back. Closer inspection revealed water exiting the vinyl jackets of the two parallel rotor cables.

Things began to make sense. The two 200-foot long cables come unbroken down my 100-foot tower to ground level, go 70 feet underground through a PVC pipe, then into the basement crawl space, up through the floor, and finally end at the control box.

I remembered my high school science teacher's demonstration of a column of water generating pressure. And this insight suggested a fix. I went to the base of the tower and used a nail to poke a hole in each cable's outer jacket. Little geysers instantly squirted forth, confirming the theory. The drain holes at the low points relieved the water pressure and would prevent it building again. As expected, the flow inside the shack stopped entirely.

Well, that solved the problem—but wait; why did it first appear on December 7? Could there be a secret timer in the JA-made rotator—a timer that opened a hole on December 7? Na-a-a-w, that's ridiculous. But, to stay on the safe side, I'm answering all those JA cards right away!

Defenders of Democracy

by B. Stepanov, UV3AX

(from Soviet Ham Press Digest, Oct. 1991 issue)

During the tragic events in August 19-21 the full-time participants of the All-Union Contest "HF Ham Stars" were in Leningrad. Torn off from Moscow—where the main events took place—by the information blockade, while waiting for their trains and planes, hams, referees, and organizers of the contest gave their eager ears to scarce information on the local radio and television.

Suddenly the rumor spread throughout the hotel where the competitors were staying: "R3A is working from the 'White House' in Moscow on 7.040 MHz."

The hams rushed to unpack their transceivers (they had been listening to the Voice of Free Russia while they awaited their departure).

There were three Amateur Radio stations working from the Moscow White House: R3A and R3B on HF and R3C on VHF. Using Amateur Radio channels, their operators provided the communications with the local lawful authorities and the mass media. They informed them of the decrees of the Russian President and reported on the situation in Moscow and in the Parliament of Russia. The voices of the People's Deputies and of the professional journalists of the "Radio of Russia," "The 5th Wheel," and "Point of View" got on the air (in those hours when their work was blocked by putschists).

Through these stations a direct connection was also established with ham stations in the parliaments of Lithuania and Moldavia.

There was one MF AM radio station working from the White House that used a transceiver of the UW3DI design. The hams promptly readjusted it from the range of 18 MHz to the MF and introduced amplitude modulation.

And when the putsch was over, those who spent several days and nights at R3A, R3B and R3C addressed the following special appeal to fellow hobbyists:

Defenders of Democracy (continued from p4)

To:

Hams of Russia, Soviet Union, the World

Dear friends and colleagues:

We are happy that at the trial moment in our lives our community found its place in the ranks of defenders of freedom and democracy.

When the night turned from August 18 to August 19, 1991, a coup d'etat was perpetrated in this country. The stooges of junta interrupted the broadcasts of free radio and television. Then hams came to the help of their people.

All of us—those in the besieged Parliament of Russia and those who supplied the latter with the information on the disposition and movement of military equipment, received and relayed our messages—were united in their desire to help the Motherland.

The radio stations of the Parliament of Russia, hundreds of radio stations operating on the Amateur ranges, did their best to bring to the citizens of Russia the truth about the situation in the country, about decrees and orders of the lawful power.

There were moments when Amateur Radio was one of the few threads that connected the President and Government of Russia with the people who elected them.

Our small-power transmitters managed to break a noisy wall created by the professionals from the special services. People who struggled for their freedom worked the ham stations. It's impossible to win a victory over such people, either at the barricades or on the air.

All the time we felt the support of friends from all over the world. Thanks, everybody; we held out together.

Parliament of Russia
Moscow
August 22, 1991

Club Member Granted Antenna Patent

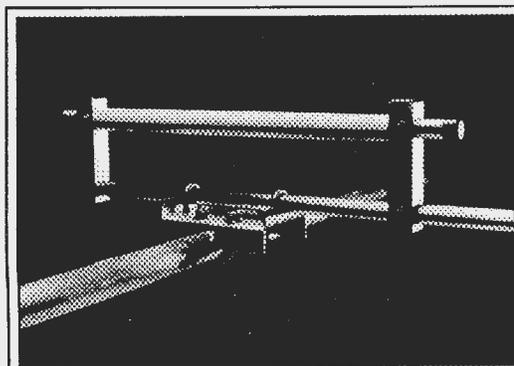
Three years ago, NCDXC member Peter Ommigian, W6QEU, and his son Philip, KC6UPL, developed a new way to feed a dipole or yagi driven element. They applied for a patent and were rewarded when patent #5,068,672, titled Balanced Double Gamma Antenna Feed System, was issued.

The accompanying sketch shows how their feed system works. The coaxial feedline enters via a hole in the center of the driven element and goes through the inside of one of two symmetrically opposed gamma-match assemblies. The coax shield terminates at the inside end of one gamma but the center conductor connects to the inside conductor of a coaxial capacitor inside the other gamma assembly.

One benefit is the all-metal construction the feed system allows. No insulators are required in any structural part of the antenna. Another benefit is the completely symmetrical nature of the feed, as "seen" by the external world. Thus no balun is needed to eliminate unbalance that can cause a yagi's front-to-back ratio to degrade. The inventor claims SWR bandwidth superior to a conventional gamma-match and superior TVI rejection, as well.

Incidentally, the original gamma arm with capacitor was first published in 1938. Club member Katashi Nose, KH6IJ, published a refinement in QST in 1947.

All Ham-Pro brand monoband antennas feature the new feed. For product line information, you may contact Peter by calling 1-800/879-7569 or write: Ham-Pro Antennas, 6199 Warehouse Way, Sacramento, CA 95826.



double gamma feed on Ham-Pro VHF yagi

QRX OM

I Gotta Take a Break

by Dave Barton, AF6S

How many of you have put off getting treatment for a non-life-threatening disorder. Your editor did, and it took a financial ultimatum of sorts to finally spur him to get with the program.

A minor hernia worsened during a recent antenna-raising and long troubled knee "went critical" last summer. But he continued to procrastinate, saying, "maybe the knee will get better" and "I don't need to lift heavy things anyway." You get the idea.

His wife Susan, KA6SEH, had provided health insurance through Personal Training Systems. Even though she sold part of the company in August, as an employee, insurance coverage continued. By mid-November, it became clear she must leave PTS. She and the new owner agreed December 12 would be her last day. The group medical coverage would stop January 12.

The new insurance provider she found would not cover already-diagnosed problems—which explains the rush to go "under the knife."

The new diagnostic equipment is truly marvelous. To do an MRI (formerly *Nuclear Magnetic Resonance Imaging*), the part of you to be scrutinized goes in a tunnel with really big electromagnets that move in its walls. They hammer like a tree full of woodpeckers, but the patient feels nothing. This patient chose from the technician's collection of CDs and blissfully MRI'ed to Mozart, Tchaikovski, and Mahler for about two hours.

The hernia was fixed on December 4 and the knee on Dec. 11.

The boredom of confinement to bed was irritating but it did provide time to read several novels that might have remained forever on the "some day" list.

The recovery periods for the two operations overlapped, reducing the total for both. The knee required physical therapy, "because you favored the good leg, causing the sore one to atrophy," the good doctor said.

Susan set up a Mac SE/30 on a rented "overbed table," so work could be done and boredom relieved.

Any procrastinators out in Dxer land with annoying, treatable medical problems might consider rising off those backsides and going for it. Operations are safer than in days of yore and your life will be much more pleasant without that nagging ache.

The DARK Computer

The Motorola Lunch Bunch proudly announces their latest development

With apologies to Motorola ... the Motorola Lunch Bunch Dark Computer announces a technological breakthrough destined to eclipse the recently announced "Light Computer." The MLB Dark Computer is the result of years of research and development in the dark. It's faster than the Light Computer because dark travels faster than light (proof: before light gets anywhere, dark is already there).

The Dark Computer exploits a property of the newly discovered subatomic particle, the *dark quark*: when two dark quarks combine, they form the basic particle of darkness, the *offon*.

Also, three dark quarks can combine to form the elementary particle of management, the *moron*, but this reaction is avoided for obvious reasons.

The Dark Computer's very small power requirements are supplied by a lunar cell (similar to a solar cell, but efficient in high dark conditions).

A complete software package, developed at the Arizona School of Mimes Night School, comes with each Dark Computer. The software includes DOS (Dark Operating System, what else?), LUNAR-C (a twilight zone "C" compiler), Duskbase-V (an irrational database), and Nada (an objection-oriented programming language).

Some of the Dark Computer's special hardware features:

- Multiple registers for right shift, left shift, and night shift.
- A one bigabyte memory composed of shadow RAM with fully dissociative outta-cache.
- A music synthesizer with built-in demonstration tunes: *Moonlight Sonata*, *Dark Eyes*, and *In the Still of the Night* (no, that's not a hillbilly drinking song).
- Surreal-time clock with granularity of 28 days—*one lunar tick*.
- A one million DED display (dark emitting diodes—similar to light emitting diodes in the way holes are similar to electrons).

continued on page 8

Units and Prefixes

by AF6S

As a ham, you're familiar with the system of units and prefixes used by all the physical sciences. But while reading technical articles, you may become aware that treatment of units and prefixes varies, both when spelled out and when abbreviated. If you are uncertain what is good form, don't be embarrassed; errors and inconsistency are common even in respected scientific and engineering journals. Yet simple, easily remembered rules can help you use prefixes and units in good form.

Prefixes:

A prefix designates the power of ten that multiplies the unit after it. Most common prefixes jump powers of ten by threes. The following list probably includes all you will ever need.

Multiplier	Prefix	Symbol
10^{12}	tera-	T
10^9	giga-	G
10^6	mega-	M
10^3	kilo-	k (K)
10^{-1}	deci-	d
10^{-2}	centi-	c
10^{-3}	milli-	m
10^{-6}	micro-	μ
10^{-9}	nano-	n
10^{-12}	pico-	p
10^{-15}	femto-	f
10^{-18}	atto-	a

The usual capitalization rule for prefixes is: *make the positive-power prefix upper-case if any confusion could result—as between milli and mega.* But that rule isn't even followed by the standard list itself. Excepting k for kilo-, all abbreviations for *positive powers of ten are upper-case* and those for *negative powers are lower-case.* Abbreviating Kilo- with a capital K eliminates the exception, making the system more intuitive and easier to remember.

Many authors do it this way—for clarity and simplicity—and no one will fault you for it.

Some writers and editors even capitalize the prefixes for positive-power prefixes when they are spelled out—Mega-Hertz for example. It costs nothing and improves clarity. Some also delete the hyphen, spelling the it MegaHertz.

Before the adoption of the latest set of prefixes—in the late fifties—multiple prefixes were used for very large and small numbers, and capitalization wasn't standardized at all. As a result, the letter "M" could mean micro-, milli- or Mega-. Perhaps you have an old mica capacitor with "47 MMFD" printed on it, and perhaps you remember microwave frequencies given in "kilo-megacycles."

Units:

Why is Hertz upper-case but meter lower-case? The rule for units is: *if a unit is named for a person, use upper-case; otherwise don't.* Thus, Volt, Amp(ere), Watt, Farad, Henry, Ohm, Hertz, Siemens and Curie are always capitalized; but second, hour, meter, foot, and inch are lower-case. The system lets you commemorate a pioneer of science every time you use a unit named for one—a thoughtful touch. Follow this rule and you'll be in trouble only occasionally—decibel, for example.

Some units share first letters, a potential source of confusion when you abbreviate them. That's why Henry and Hertz are abbreviated H and Hz, respectively.

For one prefix, micro-, and one unit, Ohm, the standard abbreviations are Greek letters (lower-case mu, μ , and upper-case omega, Ω). It's common to substitute u for μ but no one ever abbreviates Ohm except with Ω .

A few units that don't conform to the new system are still in use. If your computer or typewriter can't make a degree-symbol, $^\circ$, you can abbreviate it "deg." Also, the standard system would abbreviate one thousandth of an inch as m-in. or m-inch, but if you don't use *mil* few readers will know what you mean.

continued on page 8

Units and Prefixes

continued from page 7

While multiple prefixes are no longer *de rigueur*, the use of multiple units is accepted practice whenever a unit for the combined quantities doesn't exist. Common examples are Watt-hour and Kilometers/second.

But when a unit exists for a combination of others, multiple units might look silly and be confusing. For instance, you wouldn't normally use Coulomb/second for Amp, Volt/Amp for Ohm or Watt-second for Joule.

Quiz:

If you can find the errors and interpret the following items in less than a milli-fortnight, you won't have any problems with units and prefixes:

- | | |
|----------|---------------------|
| (1) mHz, | (2) Db, |
| (3) gHz, | (4) μm , |
| (5) nH, | (6) fF, |
| (7) MW, | (8) KMc/s, |
| (9) KWH, | (10) ms. |

See page 11 for the answers.

Dark Computer *(continued from page 9)*

- An optional interface is the MLB Holstein (we're really milking this). With a Digital Holstein, the processing rate increases to 250 Complex Orthogonal Floating Operations Per Second (COWFLOPS).

The MLB Dark Computer is especially useful for applications in black hole research, dark-side-of-the-force studies, blindfold tests, vampire tracking, and mushroom management.

Military applications abound in SDI, Stealth Technology and RFP generation. The Dark Computer can handle computations modelling matter, anti-matter and doesn't matter.

DON'T BE LEFT IN THE LIGHT! Get a Dark Computer for your company and keep all your employees **IN THE DARK.**

This article appeared in the December, 1991 Amateur Radio News Service Bulletin.

The Spirit Mind¹

by Forrest Carter

Granma and Little Tree are Cherokees living in the mountains of West Virginia. Little Tree explains

Granma said everybody has two minds. One of the minds has to do with the necessities for body living. You had to use it to figure how to get shelter and eating and such like for the body. She said you had to use it to mate and have young'uns and such. She said we had to have that mind so as we could carry on. But she said we had another mind that had nothing at all to do with such. She said is was the spirit mind.

Granma said if you used the body-living mind to think greedy or mean; if you was always cuttin' at folks with it and figuring how to material profit off'n them ... then you would shrink up your spirit mind to a size no bigger'n a hickor'nut.

Granma said that when your body died, the body-living mind died with it, and that if that's the way you had thought all your life there you was, stuck with a hickor'nut spirit, as the spirit mind was all that lived when everything else died. Then, Granma said, when you was born back—as you was bound to be—then, there you was, born with a hickor'nut spirit mind that had practical no understanding of anything.

Then it might shrink up to the sized of a pea and could disappear, if the body-living mind took over total. In such case, you lost your spirit complete.

That's how you become dead people. Granma said you could easy spot dead people. She said dead people when they looked at a woman saw nothing but dirty; when they looked at other people they saw nothing but bad; when they looked at a tree they saw nothing but lumber and profit; never beauty. Granma said they was dead people walking around.

Granma said that the spirit mind was like any other muscle. If you used it it got bigger and stronger. She said the only way it could get that way was using it to understand, but you couldn't open the door to it until you quit being greedy and such with your body mind. Then understanding com-

continued on page 10

Max Writes Mom

(c/o Jack Troster's granddaughter)

Dear Mom

I guess you wonder where I went and whether I'm okay. Well, remember those two "tall ones" who came in early December and handled all your children? Well, they took me--in a large, noisy thing that runs fast on smooth ground--to a different place.

Here there are three persons of the fur and claws type--like you and me. Old Mizzen is mellow, except at the food bowl. She sleeps a lot and likes her ears rubbed. She's not very friendly, but at least she never attacks or threatens me.

Two-tone is about four years old, with shiny black and white fur, and aloof. I know she'd like to play, but she's too proud. She scratched me once, when I whacked her tail, and it hurt me, but she's not aggressive. I would stay out of her way entirely if her tail didn't switch so enticingly. It's hard not to attack. Sometimes I get a great urge to bite her on the tail; I feint an attack, stopping just short as she hisses or growls.

Rascal is part Siamese, mostly white and very beautiful. He's my friend; he plays with me for hours at a time. He lets me bite and whack and jump all over him. He whacks back and bites, too, but eases off if I yell. When we are both sleepy, he lets me curl up next to him.

I hope you won't mind my telling you that Rascal helps me forget how much I miss you, Mom. Sometimes, when I'm drowsy, I even forget he's not you. But there's no milk in *his* belly.

My tall ones can't purr, though they sometimes try (they mean well, but should stick to their own noises, which are loud and varied). I feared them at first. They always seemed to be trying to catch me, and when they did, something unpleasant usually happened--like a trip to a place with dogs, where other tall ones stuck sharp things into me and forced me to swallow little hard things.

But I've learned my tall ones won't hurt me. Lately, when they sit down, I jump on them and they stroke me and rub my ears. Sometimes they play with me, too; I'm trying to teach them better games, but they don't learn very fast.

At night, I now sleep in their nest

place on the soft things beneath their heads and purr in their ears. They seem to like it and I'm happy there, but if Mizzen is there when I jump up, she leaves. Rascal sometimes sleeps on their hind paws.

I haven't been outside, but I can see out a clear wall and I'm afraid of some strange things out there. One--a tall, shiny tree with bare, straight and shiny branches only on top--creaks in the wind. No furry ones climb it or hide in it and I don't see any bird nests on it. I don't think you could even sharpen your claws on it.

But tall ones who come here go out and look up at it and make excited noises to each other. What's so special about this kind of tree, anyway?

A smaller house in back has shiny, intricate-looking things inside. Some spots on them are warm--good for napping. This place has something to do with "radio." Later, if I figure out what that means, I'll tell you.

Meanwhile, don't eat any "cat tuna." Hold out for "people tuna"--it has a nice, firm, meaty feel in the mouth and tastes much better. Rascal says all you have to do to get it is refuse to eat the other stuff. After a week or so, "people tuna" will appear--as if by magic.

Meow, Mom,



Pileup Power

by AF6S

DXers, in pileups, may turn up the gas.

Is it legal--In strict compliance?

Well, QRO gets you in and out fast;

It's minimum power reliance.

While QRPs chirp in a widening bunch,

Calling forever, in hopeless clutter,

QROs work 'em, long before lunch--

It's FCC law to the letter.

Answers to Prefixes and Units Quiz

(on page 8)

1. correct for milli-Hertz
2. wrong; should be dB, for decibel
(by the rules: deci-Bel)
3. wrong; should be GHz, for Giga-Hertz
4. correct for micro-meter
5. correct for nano-Henry
6. correct for femto-Farad
7. correct for Mega-Watt
8. obsolete for GHz
9. wrong; should be KWh, for Kilo-Watt-hour
10. correct for milli-second



Standing Orders:

Ideas for future club programs: provide topic, contact name and telephone number to any club officer. —de K6LLK

Articles for the DXer: please see the October issue, page 6, for details. —de AF6S

The Spirit Mind *continued from page 8*

menced to take up, and the more you tried to understand, the bigger it got.

Natural, she said, understanding and love was the same thing; except folks went at it back'ards too many times, trying to pretend they loved things when they didn't understand them. Which can't be done.

¹excerpted from *The Education of Little Tree*, by Forrest Carter, University of New Mexico Press, 1976.

NPSARC Winterfest

The Naval Postgraduate School Amateur Radio Club will sponsor its 3rd annual Winterfest on January 18 at 7 a.m.

Along with demos of ham communication modes, there will be commercial equipment vendors, an indoor fleamarket and an outdoor tailgate market.

Take the Aguajito exit from Highway 1, turn left on Fremont Street and left again on Iris Canyon Road. The Armory is on the Monterey Peninsula College Campus on your left.

For more information, you can call Chairperson is Doug McKinney, KC3RL, at 408/663-6117.

Solar Cycle 22 Compared to Previous Cycles

