DXer

NORTHERN CALIFORNIA DX CLUB

Inside This Issue

Improvements Planned for DX Packet Spotting Net

by Jon Casamajor, NØDJJ

The DXPSN Technical Committee, N6IXX (Chairman), W6GO, and K6LLK, have put a plan on paper to improve the system backbone for the Northern California and Nevada DX Spotting network.

A major project, it involves new UHF frequencies, site selection and acquisition, and installation of new radios and antennas. The plan gives us something solid to show the UG when appealing for their help.

Meanwhile, I have been trying to develop an organizational structure that will make the SYSOPS group more effective. So far, we have operated informally, but now we need some ground rules, a way to vote on issues, and a way to solve problems and plan for growth. I don't want us to lose the informality any more than is required to make sure we're all "rowing in the same direction."

The Southern California and Pacific Northwest groups have asked for link-ups with us. Some of you have noticed the N7NG node (Jackson Hole, Wyoming) and another node in Montana connected to our cluster. Those connections were made possible by Rich, KI3V, in Reno.

Improvements in speed, equipment, software, and user access are all on my wish list. We have many talented people in the DXPSN, but I would like to get more users involved in helping solve our problems.

I really appreciate the help we've gotten from Smitty, W6JZU, and Tom, NW6P, in the DXPSN-UG.

As the sunspots decline, DXPSN will likely become more social, and I hope it will help hold "the deserving" together. When there's no DX to work, at least we'll be able to talk to each other about DX! And your comments and suggestions will always be welcome via DXPSN.

Meeting at Harry's

We'll meet Sept. 11 at Harry's Hoffbrau in Palo Alto and view N6HR's slides of his recent trip to Finland and Estonia. Attitude adjustment begins at 6, the meeting at 7.

Christmas in September?

by Bob, T32RS, and Bob, T32RA

Yes Indeed! As T32RA (Bob Artigo, KN6J) and T32RS (Bob Summers, N6OXR) head up a first-class multi-multi operation from Christmas Island for CQWW-RTTY—the last weekend in September. Look for T32 activity on nine bands and all modes, after the entire crew, which includes W6OTC (T32GV), WU6A (T32WS), NI6T (T32CW), KE6FV (T32SS) and KE6GG (T32GG) arrives on the island September 22.

We'll focus on DX and world-class Bonefishing as we set up antennas by Cushcraft, radios by Icom, and TNCs by AEA. Antennas include mono-banders for the high bands and wire for the low, and we'll run enough power to let us be heard.

With around-the-clock operation planned, you can't miss T32 this time. Be sure to work T32RA on RTTY Saturday or Sunday.

QSL via each operator. Listen for announcements of special certificate awards.

Coming Soon:

- Livermore Swap Meet: 1st Sunday of month, 7 A.M. to noon. Contact N7TVE.
- Foothill Swap Meet: 2nd Saturday of month through September. Starts 7 A.M.
- Amateur Radio Awareness Day (page 3).
- California QSO Party: Oct. 3–4. N6TV.
- Sierra Hamfest and Computer Faire: Oct. 10 at Minden, Nevada. Contact W6FFT.
- Pacificon '92, the ARRL Pacific Division Convention: Oct. 16–18 at the Concord Hilton, Concord. Contact N6QGN.

N O R T H E R N
C A L I F O R N I A
D X C L U B

Club Officers:
President: Bob Artigo, KN6J
Vice President: George Allan, WA6O
Secretary: Garry Shapiro, NI6T
Treasurer: Melissa Thomas, AA6TD
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Club Repeater, W6TI/R, (147.36+)
Trustee: Bob Vallio, W6RGG
Comm. Chairman: Ralph Hunt, AG6Q
Club simplex: 147.54 (suggested)
Thurs. Net QTR: 8 p.m. 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 Bulletins:
W6TI Station Trustee Bob Vallio, W6RGG, transmits DX information at 2:00 zulu every Monday (Sunday evening local time) on both 7.016 and 14.002 MHz.

Club address: Box 608
Menlo Park, CA
94026-0608

The DXer is published Monthly by the Northern California DX Club and sent to all club members.

Board of Directors Meeting

The meeting was called to order President Bob Artigo, KN6J. Others attending were NI6T, AA6TD, KG6AM, and N6ITW.

- 159 members have not yet paid their dues, necessitating mailing notices at a cost of more than $50. Those who haven't paid by Sept. 1 will be dropped from membership (para. 2-101 of the procedures manual) and will have to apply for reinstatement.
- Melissa, AA6TD, observed that members are likely to overlook their dues unless prompted. She proposed formal annual billing, commencing next year.
- Craig, N6ITW, Christmas party committee chairman, said the Bold Knight in Sunnyvale offers the best deal, but requires a per-person deposit before the event. The BOD voted to proceed, approving initial funding for planning.
- The BOD received a preliminary report from the DXer-of-the-Year Award Committee. This will be studied by all board members and discussed at the next meeting.
- The Board gratefully acknowledged the generous gift to NCDXC of $400 by Roger Melen, WB6JXU.

General Meeting

The meeting was held Aug.t 14 at Harry's Hoffbrau in Palo Alto. Bob, KN6J, presided.

- Smitty, W6JZU, introduced the program speaker, Rod Deakin, NR7E, a former NCDXC member. Rod spoke on coastal station KFS, where he recently became an operator (see story, page 4).
- Phil, KJ6NN, Krishnan, N6ZPX, and Skip, N6OND received first readings.
- Walt, AJ6T, John, KG6I, and Lisa, KD6BLK all became members in second readings.
- Jim, W6CF, reported DXAC doings, covering:
  (1) The YU situation.
  (2) A proposal that would require portable DXers in a pileup to respond with those from their home call area only, when the DX station specifies call areas. Members: boo, hiss.
  (3) Jim reported preliminary discussion of new awards for top Honor Rollers.
  (4) Jim took a straw vote on proposed changes to Rule 8, which requires DX operations to be on land, rather than anchored offshore. Result: *against.* (Packet responses, taken earlier, were more balanced.)
  (5) Jim fielded questions about the HF packet forwarding controversy now raging. An ARRL proposal curtailing forwarding of HF packets via unattended stations, has unleashed a firestorm of negative reaction.
- Correction to the July minutes: The DXer of the Year Committee members are W6FAH (Chair), N6AN, KG6GF, WG6P and W6SZN.

Roster Changes

New Members:

Walter E. ("Walt") Miller, AJ6T (Extra)
15201 Sobey Road
Saratoga, CA 95070
H: 408/354-5828
W: 415/604-6487

John W. Farber, KG6I (Extra)
18490 Main Blvd.,
Los Gatos, CA 95030-8540
H: 408/353-4777

Lisa Smith, KD6BLK (General)
335 Alicia Way
Los Altos, CA 94022
H: 415/941-5689

Address Change:

Sanford Hutson K5YY -H-
4350 McKnight Road
Texarkana, Tx 75501

DX Packet Network Funding

A June 29 flyer from the DX Packet Spotting Network User's Group (DXPSN-UG) indicates that of the almost 1000 users, only 250 had made any contribution to help defray the costs—ever!

And many of the honorable and generous 250 have contributed more than once, some in amounts far exceeding the suggested $35 support level. One such commented, "Here is my annual contribution to the UG. It's little enough for helping make a truly great system possible."

Donated funds are used only to purchase equipment and software to provide the services you use—unlike anything else you ever contributed to (charity, government). And DXPSN-UG isn't affiliated with NCDXC, so your dues don't support it.

Surely the network is worth $35 to you. What else so cheap could affect your sucess at DXing so much? If you have used DXPSN for any length of time, you'd be lost without it, wouldn't you?

So, if the shoe fits ... write your check to DXPSN-UG and mail it to Box 1077, Los Altos, CA 94023-1077.

Amateur Radio Awareness Day

September 19 is the day to set up exhibits at parks and shopping malls—to gain favorable "mind share" for Amateur Radio.

Here's a chance to do something, rather than just talk about how few people even know hams exist, much less what we do for the general public.

Although NCDXC isn't participating, your local club may be. If so, they could probably use more hands. Why not give 'em a call and offer a bit of your time.

Ham Public Service Rules Relaxed?

The FCC has issued a Notice of Proposed Rulemaking, in Docket 92-136, to amend rules on permissible Amateur communication at public events like parades, races, and fairs.

The FCC's comment and reply deadlines are October 1 and December 1, 1992. Both the August and September '92 issues of QST have details.

Procrastinators Only:

Dues were Due July 1

for the year July 1, '92 thru June 30, '93

Our new treasurer, Melissa, AA6TD, reports that 40 percent of you still hadn't paid your dues by August 15. That's why she resorted to direct mail notices—which cost your club $50 and her a lot of extra effort.

Club By-Laws require those whose dues are not received by September 1 to be put on inactive status. To reactivate membership, you must submit a Reinstatement Application and subsequently be voted back in by the general membership.

Following all that, there's more extra work for your secretary, treasurer, and newsletter editor.

These people all serve you voluntarily because they feel it's worthwhile. But everyone has limits. How do you suppose they feel good about the make-work caused when you couldn't be bothered to pay your dues on time? 'Nuf said?

Annual Dues schedule:

Regular Member	$24
Family Member	Add $15
Absentee Member (Outside of NCDXC Area)	$16

Please send your check to:

NCDXC Treasurer
Box 608
Menlo Park, CA 94026-0608

Treasurer's Report

by Melissa Thomas, AA6TD

For period July 1 through July 31, 1992

Checking Account Activity:

June 30 EOM Balance	$4710
Receipts	2801
Subtotal	7511
Expenditures	<1897>
July 31 EOM Balance	$5613

Savings Account Activity

Life Membership Fund, Eureka Bank 7/31/92	$10,150
Certificate of Deposit, Eureka Bank 7/31/92	$14,998

Repeater Fund

As of 6/30/92	$ 1,270

Ham Astronauts

Compiled by Jim Heil, KB5AWM

Owen Garriott	W5LFL
Anthony England	WØORE
Ron Parise	WA4SIR
Ken Cameron	KB5AWP
Linda Godwin	N5RAX
Jay Apt	N5QWL
Jerry Ross	N5SCW
Steve Nagel	N5RAW
Brian Duffy	N5WQW
David Leetsma	N5WQC
Kathy Sullivan	N5YYV

Coming EVents

For any members interested in the emerging electric vehicle technology and racing.

- New Energy Technology Expo at Laguna Seca, Oct. 3–4. Call Billy Hinds—408/646-1490.
- Inaugural Pikes Peak Solar/Electric Challenge, Oct. 6–8. Call 719/635-8803.

Commercial CW at KFS

August meeting presentation by Rod Deakin, NR7E

recorded by Susan, KA6SEH, and edited by Dave, AF6S

For the last two years, I have worked part-time for KFS, a coastal telegraph station. I had long held a commercial license but hadn't ever had an opportunity to use it. Then I saw an ad in QST, called, and a week later I was working at KFS.

It's been educational, and I've enjoyed it. A month ago, the West Valley club asked me to put together a program about commercial CW which, contrary to what I read on bulletin boards, still lives.

There are 50,000 registered vessels out there. 15,000 use satellite as their primary form of communication. The rest use SITOR or CW. Foreign ships' officers are not paid as well as US officers, so stay with CW to avoid the capital expenditures of satellite.

Commercial CW is full duplex. If you don't know how the bands are organized, you won't be able to hear both sides of a conversation.

Station KFS has changed hands many times. Started around 1910 in San Francisco at the foot of Noriega and 48th Avenue near the Great Highway, the Navy took it over in 1917 and it was referred to as the Beach Station—one of several parts of the Naval Station of San Francisco.

In 1921, a new KFS transmitting antenna field was built here in the Palo Alto Baylands. I don't know where the receivers and controllers where then. In the early thirties, they moved the receivers to Half Moon Bay, the current site, 7 miles south of Highway 92 along Highway 1.

KFS next fell into the hands of Cress Wireless. Globe Wireless was involved in some way too. Later ITT owned it, then Western Union. Now it's privately owned, having been purchased primarily for the property in Half Moon Bay, but allowed to stay on the air because it still makes money.

The original transmitter was spark, of course, but there have been many changes in all the years since then. The current receivers are Watkins Johnson 718's that tune 5 KiloHertz to 30 MegaHertz continuously. There are ten transmitters on HF—doubles on 22, 16, 12, and 8 MHz and single transmitters on 4 and 6.

KFS is one of three commercial stations still operating on the West Cost. KPH in Marin County and KOB in Arlington Washington used to be sister stations to KFS. KOB was bought by one of its operators who set up in his backyard and is doing quite well (must be some back yard—*ed.*).

How Traffic Gets Passed

There are several different message types: position reports, request for supplies, etc. There are messages to the Coast Guard that are like filing a flight plan. We send weather reports to ships, handle medical emergency messages, and general traffic.

We use three modes: satellite for telex and fax, SITOR, which is similar to AMTOR, and CW.

Commercial stations alway use separate receiver and transmitter sites to allow full duplex operation.

Calling and Working Bands

Initial contacts are always made in the calling bands, which are channelized in half KiloHertz steps. Typically KFS has five receivers up. One is a scanner—a Kenwood R5000. After contact is established, we use the working bands. A ship tells a shore station where to listen when he QSYs.

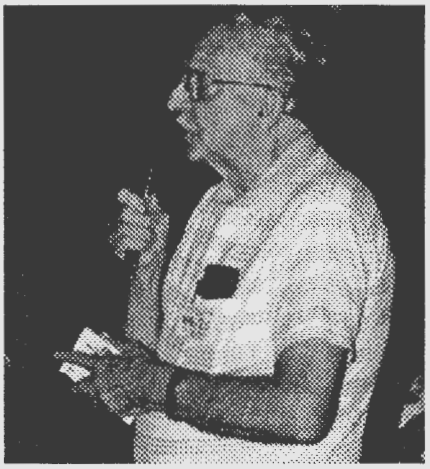
A switching system allows any operating position to use any available antenna.

Continuous CQ "wheel"

The shore station CQs continuously—today using a computer. When an operator hears a ship calling, he touches his key to stop the CQ and call the ship. The "wheel" also runs announcements of traffic lists, weather broadcasts, etc.

Modernization

KFS has been dragged kicking and screaming into the 20th century. Now, using FoxPro on a PC, you can type messages, enter billing info, send info via any method or mode (per the customer's instructions),

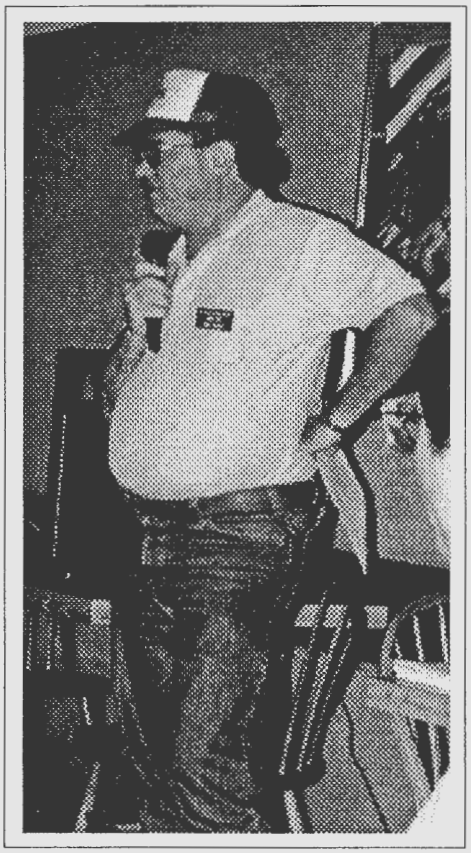


Smitty's Intro

When he introduced Rod, Smitty, W6JZU, said, "The last time I heard Rod was this morning at one A.M. I use a pillow speaker to monitor the 75-meter roundtable, where Rod puts me to sleep almost every night."

Smitty went on to say Rod had been a member of NCDXC for 20 years, had been active on the Repeater Committee, and was largely responsible for installing the repeater at its present site.

First licensed in 1958, Rod studied at Foothill and San Jose State. He has worked for Measurex and Diasonics as Lab Manager, Engineer, and in other positions. He's now a consultant and works as KFS radio station. He lives in Cupertino, is active on CW, and has 314 countries confirmed. Rod plans to move to Oregon or Washington when he retires.



Rod, NR7E, at the August meeting

and much more. A typical message takes about 10 seconds to enter, and it gets sent immediately. In the old days, a message would come in on teletype, a runner would take it to an operator, then the operator would send it by hand—or punch a paper tape for sending later.

Message Formats, Charges

We charge by the 10-character word. This causes users to give us bludgeoned text—difficult to read. They do that to minimize word count. The format looks very much like formal ham traffic—preamble, address, text, and signature.

Shipboard Operators

Ship operators were the shock of my life. Some of their fists are so bad we've had three operators copy the message, compare notes, then ask the ship for confirmation. To a ship's RO, CW is work, not fun.

You can always tell who's a ham and who's not. Many true "RO" types use hand keys, even today. When a ship is rolling, it's hard to use a bug. A lot of side-swipers are still in use. Speeds range from 5 WPM up, with probably no more than a half percent going 30 WPM.

The trick is to copy a huge variation in sending styles and do it for 8 hours without going nuts. 100 messages makes a heavy shift; you normally run about half that. Messages vary from 5 to 600 words (the longest *I* have ever copied).

Sea Bells

Sea Bells, ELC7, hauls logs from Longview Washington to China, and its operator had a reputation of being uncopyable. I had worked him several times over a period of months. Finding myself in Longview on a trip, I decided to see what ships were in, and there was the Sea Bells! So I went aboard and met her radio operator.

continued on page 11

Newcomers, Lids, and Old Cranks

by Pete Buehner, KC8ER

The current confused state of the bands won't improve without a hand from seasoned hams. As more new "Tech Lites" show up on VHF, the confusion will just grow worse unless the newcomers are given plenty of on-the-air instruction, help, and—most important of all—example.

Never in the history of Amateur Radio has there been such an influx of new blood. And in the past, most newcomers arrived with the help of an Elmer or a local club. With a slower influx, the peer pressure for conformance to traditions was greater, so most new hams tended to "blend in" rapidly.

But today the influx is greater than seasoned operators can accommodate—at least, without a conscious effort. Yet we have no alternative but to try very hard. If these new hams are not given early encouragement and direction in appropriate operating techniques, they will develop bad habits that will persist over their lifetimes.

Worse, their bad operating habits will be propagated as *those newcomers begin "Elmering" other newcomers!*

The new hams may also become a constituency pressuring the FCC and Congress for changes even more radical and permissive, such as no-code licensees on HF and automatic tickets for other family members. If that happens, our hobby will be forever altered.

What to do? First, let's consider what *not* to do. Some seasoned hams say their policy is to cut short any QSO the minute they discover the other guy has a no-code license.

That's not just rude and inconsiderate, it's asinine. It's also shortsighted. Such an attitude sure won't help keep Amateur Radio a worthwhile hobby—quite the opposite. Those who refuse to associate with new hams—some even insult them—are prying open the crack separating conventional hams from no-code ones.

The new hams *can become good operators* if those who work them give them a hand. And the only way to start is by making sure they feel wanted. If you can foster a feeling of belonging, a person will accept your help.

The "refusenik" path leads to the loss of everything you treasure about our hobby. So, in your own enlightened self-interest, don't be tempted to take that path.

We can't afford to "just wait and see." It won't work. Once a preponderance of "lids" becomes established on the bands, our fate will be sealed.

So the handwriting is on the wall. The greatest change to Amateur Radio since the demise of the spark-gap is happening right now. It could be the best thing that ever happened to us—or the worst.

And the efforts of current hams, or the lack thereof, will shape the course of that change. You can help. Invite a new ham to a club meeting or just over to your shack. Make a real effort to be his or her friend. Be open rather than disdainful.

Start the very next time you meet a no-code ham—on the air or in person. You'll probably enjoy making a new friend, and you'll feel good knowing you did the right thing.

from the July '92 USAF MARS-Kentucky 'Newsletter'—David White, AFA2OQ Editor

The Glorioso DXpedition of 1992

by Baldur Drobnica, DJ6SI
(edited version—AF6S)

A glance at the "most wanted list" planted the seed that resulted in my DXpediton to the Glorioso Islands. I had the advantage of having been there before, in April and September 1980. At that time, I needed a "guest license"; my call was FRØDZ.

Arrangements

Current regulations no longer require a guest license—a major simplification. But the travel distance still presents problems. Finding a boat in the Camoros is difficult, but I renewed some friendships on Mayotte and was given the opportunity to charter a catamaran at Moroni.

I arranged for an arrival date after the April ending of the cyclone season and when the moon would be full—allowing me to carry out such tasks as fueling the generator at night without a flashlight.

Another problem: who to take along as crew? Most with money don't have the time and most with time lack the money. The few with both may dread the pileups or fear tropical diseases. Approaching several candidates, I got an okay from Willy Nietmann, DJ8CR, who would handle the SSB side. In addition, I wanted an RTTY person who could also offer Oscar and 50 MHz. I called Bernd Ritter, DJ3OS, who accepted after some consideration and agreed to bring his son Frank, DG4FCD, an Oscar enthusiast.

There is no telephone connection to Moroni, so we turned to the postal authorities for help. Using manually switched connections, DJ3OS eventually succeeded in getting faxes through and our needs for two generators, 150 liters of fuels, some chairs and a folding table were met.

We booked discount flights via Paris and departed Frankfurt loaded down with luggage on May 10. Lynn, who owned the catamaran, welcomed us at Moroni's Hahaya airport. She had taken the precaution of having a clearance certificate issued by the PTT for all our equipment, so we sailed through customs without a hitch.

Outward Bound

Lynn drove us to the Hotel Galawa Beach in her bus. We had time for a shower, a cold drink, and a quick lunch before captain Marco, his wife, and Sulaiman, a Madagascan, came and took us to the catamaran, the Ocean Qua Qua, where we moved into our quarters. After the captain explained the boat's facilities and safety equipment, we weighed anchor.

We curved around the north tip of Moroni and set a course for Glorioso in a calm sea, but the waves became rougher, and our faces paler, as we entered the open sea. Shades of yellowish green soon appeared on most faces, and a father and son fed the fishes.

Whales accompanied us through a mass of driftwood.

I mounted my Fritzel GPA30 to the taffrail and got on the air, signing EL2SI/MM. The news quickly circled the globe by key and mike just as we began to encounter a stiff headwind, reducing our speed to 4 knots.

Time crawled. Whales accompanied us through a mass of driftwood—where did all those bamboo poles come from anyway? The sea calmed. In our daily skeds with Germany, we learned of the rising impatience among the world's DXers.

The Glorioso archipelago includes the islands of Great Glorioso, South Rocher, Rocher Epave, the Roches Vertes, and the Ile du Lys. Lys offered the fewest obstructions to the Oscar and Global Positioning antennas we planned to set up. As night closed in again, the skipper said he thought we would make landfall about 2100 local time. His predictions were realized as the end of our voyage was suddenly signaled by three small dots that appeared on the radar screen—representing Glorioso, Roche Vertes, and Ile du Lys.

Land Ho!

Gradually, Glorioso's outline materialized to starboard as we moved cautiously forward—our captain showing concern about the ring of reefs. To port, in the bright moonlight, Lys became visible, but captain Marco wanted to avoid further risk, so he dropped anchor.

At dawn we crept forward, finally anchoring in 1.5 meters of water. Then began our most difficult task: landing the equipment on Lys. We covered the final distance by wading and pulling the rubber dingy behind us. Little by little, the equipment was brought ashore and set up. We were so absorbed in the work that no one noticed our complexions were growing very red under the intense sunlight.

Fire-Up

Finally the big moment arrived—time to start running QSOs. We had a pileup in thirty seconds as thick as any I've experienced, and log sheets began to fill. Bernd was happy as 50 MHz opened to Japan. He used an HB9CV antenna on 6 meters and an R5 for RTTY on HF. Bernd and his son Frank shared an IC735 transceiver.

My antennas were the GPA30, an R5, and a G5RV configured as an inverted vee on a 7-meter pole.

The Island

We explored the island when all the bands were closed—between 0800 and 1200 local time. The eastern part has a breeding colony of sea swallows. Pairs sat cozily together, brooding single eggs, as newly hatched birds ran excitedly back and forth.

Someone once tried to settle on Lys; we found an old foundation in the thick brush and some ruins of an cistern with a corrugated steel roof. We also located our 1980 campsite, marked by a pile of stones under a small tree, where we had laid a surfboard to serve as an operating table.

The middle of Isle du Lys has sand frosted with bird droppings. High tides sometimes form a lagoon. Two palm trees edging that lagoon provided the coconuts Sulaiman prepared for us. Near these we could see the half-rotted stumps of their predecessors—killed by storms.

Coral cliffs dominate the western shore—cliffs with fairytale figures carved by eons of wave action. Another bird species brooded

its young here. We found the collapsed steel frame of a radio beacon at the highest point above the cliffs. Battery cells that had once been soldered together littered the ground. A bit further on, we had fun at a geyser formed as Indian Ocean waves pounded the cliffs. A beer can thrown into the funnel was hurled high in the air.

Lys has huge crabs we called T34s because their movements resemble Soviet battle tanks. The crabs were feeding on baby sea turtles, so we carried a few of the tiny creatures to the sea, no doubt frustrating the lurking T34s.

During one bright moonlit night, we discovered a giant turtle making her way down the beach after laying eggs. Her tracks in the sand also reminded us of tanks.

Supplies brought from the boat by its crew took excellent care of our needs. We occupied two camps—father and son in one and Willy and I in the other, about 100 meters away. We slept in tents, to avoid the crabs, and the sea provided for hygiene by the use of seawater soaps.

Murphy Strikes

One night our generator refused to restart. The spare was still on the boat. Bringing it ashore at night would be too dangerous, so we just went to bed—a bit angry and disappointed.

The spare generator was more powerful, as its increased fuel consumption confirmed. That brought the planned duration of our operation into doubt, so we began to shut down every time conditions seemed poor.

The next day my PS35 power supply emitted tiny smoke rings and died. Bernd lent me his spare, but it soon conked out too.

The next day my PS35 power supply emitted tiny smoke rings and died.

We concluded the problem must be my FT474 and agreed I would share Bernd's IC735. Next, the RTTY computer died.

Shut-Down

We planned our departure for 0800 local time, when the tide would be in. So, on May 20 at 0600 local, we ceased operations and began dismantling. Frank and Bernd had logged 2,000 Q's on RTTY, 6 meters, and Oscar. Willy had 5,000 on SSB and I had 7,000 on CW. All this was accomplished in six days less one night.

Pirates!

At exactly 0800 Marco weighed anchor. We decided to detour to Great Glorioso and started in that direction when a large open motorboat appeared suddenly and began shooting in our direction. The boat flew no colors and we couldn't raise it on VHF marine radio. Marco spun the catamaran around and headed out to sea at full power.

The motorboat came to our new course. It could only be pirates! I watched in a telescope as they drew ever closer, like some beast in a nightmare. We had no guns with which to defend ourselves. All we could do

The motorboat came to our new course. It could only be pirates!

was run out to sea and hope for swell big enough to endanger their small boat.

Then suddenly they stopped, their motor dead. We quickly started retrieving the dingy. Towing it was slowing us down.

Just as the dingy came aboard, the pirates' engine restarted and the chase began anew. We were faster now, but still the distance between the two boats closed inexorably. The skipper hoisted our sails, to increase our speed even more, but it wasn't enough.

It was the sea that finally saved us saved us; just as we had hoped, wind and wave became too much and they bore off. Marco continued on the same course under full power and sail for half an hour, just for safety. Needless to say, we were relieved and in high spirits that evening. We emptied more than a few bottles of wine in toasts to Great Neptune and lesser dieties.

Back on Moroni

The Hotel had offered to retrieve us at sea, by having a large motorboat meet us, but we declined. A fine following wind helped carry us along at 8.5 knots, and we met the local pilot off Moroni the following evening. He guided us past the dangerous shoals to our mooring place.

It was great to lay in a fresh bed that wasn't rolling with the sea and immersed in the incessant throb of marine engines.

The next day we picked up our D6 licenses. Each of us got a call with our initials—D68BD, D68BR, D68FR, and D68WN. So we again set up our antennas and fired up. Bernd and Frank had a fantastic opening on 6 meters, but our hearts weren't in it; we really just wanted to relax. Even so, each of us put a thousand Q's in the log.

On our last day on Moroni, Suretée paid us a visit. The officer examined our antennas and made copies of our licenses. He seemed satisified and soon left, but I'll bet he's still working on his report.

We arrived safe and sound back in Frankfurt on May 26—except for one of DJ8CR's suitcases. The total cost of the DXpedition was DM 35,000 (about $24,000—*ed.*)

based on an article in the EUDXF bulletin submitted by Josephine Clark, WB6ZUC

California Alps Tour

by Dorothy Uebele, N7MXA

2,500 bicycle riders participated in this year's California Tour of the Alps, better known as 'The Death Ride,' on July 11. And a miserable day it was, with many riders suffering hypothermia.

Fewer than 300 made it to the top of Carson Pass, the fifth and final pass that had to be climbed. About 900 made it last year, when heat exhaustion was the main problem.

The riders suffered cold, pouring rain so heavy that at 4 P.M. the California Highway Patrol closed both Luther and Carson passes due to dangerous weather conditions. Some of those who made it to the top of Carson Pass before the closure were shaking so badly with cold they had to be helped off their bicycles. But some seemed entirely unaffected by the cold and rain.

The radio operators did their usual fine job of providing communications for the event. Their assistance was especially valuable in this year's run because of the threat of hypothermia. The Tahoe Amateur Radio Club did a great job organizing the hams for the event.

continued on page 10

Why Farnsworth?

by Tony Smith, G4FAI

The Farnsworth Method is a popular way of learning Morse code in which characters are sent at a constant 'target' speed while spaces between characters are lengthened to produce lower speeds. The extra spacing provides 'thinking time' for the learner. Spacing is gradually reduced as the student learns, until the target speed is reached.

The idea is to prevent the student from counting dits and force the rhythm to be learned instead. The method is so widely known and used that one might assume it to be defined by standards. Yet when the ARRL set about converting all its Morse materials to a Farnsworth 18 WPM character rate (for transmission on W1AW and for code tapes), no such specifications could be found. The League had to devise its own Morse Transmission Timing Standard.

Who Was Farnsworth?

Apart from the mystery of the missing specification, there is also mystery about the association of Farnsworth's name with the method. Research by Bill Fisher, W2OC, reveals that Donald Russell Farnsworth was blind. He was first licensed as W9SUV in the mid-30's, and later held the calls W6TTB and WØJYC.

In the late 50's, 'Russ' Farnsworth asked Bart Bartlett, W6OWP, to help him prepare some tapes for a code-learning course he had developed.

Bart had a Kleinschmidt tape perforator, with which he produced the perfectly timed punched tapes that Russ then used to make final audio tapes for his Epsilon Records code course. But Farnsworth never did use the increased spacing method that now bears his name.

Instead, he maintained the code speed constant at 13 WPM (characters and spacing) throughout the course. Starting with simple text, he gradually increased the complexity of the material.

But if Farnsworth didn't invent the Farnsworth system, who did? And why is it named for him?

Earlier Uses of the Method

I cannot suggest why Farnsworth's name has become synonymous with the method, but I can demonstrate that the method goes back long before him. I have found several references to the idea in old publications.

For instance, a *Wireless World* booklet, first published in 1939, suggests the learner get the assistance of a competent operator to send practice signals to him. It advocates that, except in the earliest stage, symbols for individual letters be sent at a relatively high speed corresponding to 12 to 18 WPM.

The article says, "Though the spacing between the elements of individual letters should be in correct ratio, spacing between letters and words should at first be greatly exaggerated in order that the learner may have time to think about what he has just heard ... As the learner gains confidence, spacing between letters and words should be gradually reduced until it reaches the correct ratio."

Gamage's Records

An earlier reference can be found in Gamage's catalog of 1922. It suggests, "Speed up your Morse by purchasing a set of Gamage's Morse Buzzer Gramophone Records. The eight records are graduated from beginner's rate to regulation speed, and in all cases each letter is sent at top speed but the 'spacing' varies, which governs the rate of transmission."

A punched tape system marketed by Frederick J. Drake & Company of Chicago was produced even earlier. Theo A. Edison described it in 1902, as follows:

"It is not the speed at which the letter is sounded that perplexes the learner, but the rapid succession in which they follow each other. The principal feature of the Audible Alphabets is the graduation in the intervals between the letters.

"By beginning with a record in which the characters are widely separated and changing to others with less and less separation, the student gradually reaches the one having normal telegraph spacing."

No Conclusion Possible

So why Farnsworth? And if he didn't invent the system, who did? It's satisfying to find a similar method in use as early as 1902. But I wouldn't be surprised to learn that a similar method was recommended almost from the beginning of professional Morse telegraphy some 55 years earlier.

from the Summer '92 issue or 'Morsum Magnificat,' published by G.C. Arnold, G3GSR, 9 Wetherby Close, Broadstone, Dorset BH18 8JB, England. Annual U.S. Subscriptions are $18 (cash only).

Transmission Lines Explained

by Pat Barthelow, AA6EG

If you think you can improve the match to your antenna by changing the length of its transmission line, if you think antenna tuners are always a compromise solution, if you don't know the significance of a shortened antenna's low radiation resistance, if you think a 9:1 SWR makes an 80-meter antenna useless, if you don't know the difference between characteristic impedance and terminal impedance, if you don't understand the difference between transformer and choke baluns, if you trust your Bird wattmeter absolutely, or if you just want to understand transmission lines a little better, I recommend you get a copy of W2DU's book, *Reflections—Transmission Lines and Antennas.*

Published by ARRL, the book is worth its price of $20 many times over. Walter Maxwell, W2DU, a retired antenna engineer who worked for RCA Laboratories, has published many fine articles on transmission line-related subjects over the years, many of which have appeared in QST. The book collects those articles and adds even more information. It belongs on your bookshelf.

from the August '92 Naval Postgraduate School ARC (Monterey, Calif.) 'Scuttlebutt'—KC6LKV and KC6TUV Co-Editors

Book Review: *Long-Path Propagation*

Author: Bob Brown, NM7M

Review by Henry Elwell, N4UH

To collect data for this book, Bob Brown spent more than 1000 operating hours over a period of one year working 1700 long-path contacts on 20-meter CW from his home QTH on Guemes Island, Washington.

An Emeritus Professor from the University of California at Berkeley, Bob's specialty is propagation research. His book of sixty-seven 8-1/2 by 11 pages contains much information useful to the Amateur long-path operator.

Bob details how he rose every morning between 4 and 6 A.M.—depending on the season—and worked long-path for three hours or so. By long-path (LP), he means any path covering more than half the earth's circumference.

His operations included all the good and bad magnetic activity periods from April '91 to March '92. He describes the relationships between geomagnetic activity, represented by the WWV A-index, and LP propagation over three types of paths: sub-auroral, auroral, and polar.

Bob shows that LP contacts are still possible even when the A-index is above 60. Because the data covers daily operation over a one-year timebase, the report gives a good picture of how long-path propagation varies by season.

Bob presents a clear discussion on ionospheric properties and their effects on propagation. He discusses "ionospheric tilt," the "equatorial anomaly," "chordal hop," and the "winter anomaly," and shows that these effects must be taken into account to explain or predict long-path signal strengths.

He shows that signal strengths would frequently be too low to be usable if all propagation were by the conventional earth-reflection-ionosphere "reflection" mode described in most references.

Bob discusses the gray-line method of LP DXing and presents data showing other paths that exist and may be used, including the so-called "crooked-path mode" many DXers have noted ("skew-path"—*ed.*).

The report is well-written and informative. Readers of Bob's *World Radio Propagation* column will find the layout familiar. The section *Statistical Aspects of LP and Magnetic Activity* is thorough but maybe a bit heavy technically.

But the little book covers everything you need to know about LP DXing, and it's mostly easy reading. It will surely be recognized as the seminal work in LP DXing. Every serious DXer and contester should get a copy and read it.

Bob is his own publisher and distributor. His address: 504 Channel View Dr., Anacortes, WA 98221. The price is $10 per copy, postpaid.

from the July '92 North Jersey DX Association 'Newsletter'—Ron Levy, K2AIO Editor

Obey the Rules!

by "Ex Sparks"

As a Boy Scout I already knew the code and even had my own oscillator and key but, when World War II started, neither the Navy nor the RAF wanted me; I was too young.

Seeing an advertisement for merchant marine radio operators, I inquired, studied the *Official Handbook*, then went for my test for the Special Certificate.

I scraped through the Morse test—just. The examiner showed me how to set up the transmitter. Then *I* did it. I had learned much from my habit of reading everything I could get my hands on about wireless.

After I went to sea, I used my spare time aboard ship to study the *Admiralty Handbook*—one of the best-written books anywhere. On leave, I sat for the First Class ticket. Next leave I learned I had passed.

Neutral Jamming

Just days before the U.S. entered the war, my ship was inside American territorial waters when I heard a distress call from a British ship being shelled by a German raider. The call was immediately jammed by a "neutral" ship sending a weather report on a spark transmitter.

I managed to copy the distress message and passed it on to a British HF station. I logged my transmission, of course—mistake number one.

Going back to 500 KHz, I called the "neutral" and gave him some advice that doesn't appear in the Q-code—my second mistake. But both of us in the radio room felt better for it, as did our ship's master.

Next day, as we tied up at in an American harbor to load, the radio was sealed, as was the practice for British vessels when in neutral ports.

Presently Federal Communications Commission men arrived, complete with sheriff and star! They asked the other operator and me no questions, but they did study the log quite a while. They also lectured us that ships of countries at war must not use their radios within U.S. waters.

A few months later, having survived a rather unpleasant voyage that included a spell in a lifeboat, I returned home. Two letters from the post office awaited me.

First You See It

One contained my First Class ticket. The other detailed my crimes, cancelled the first class ticket, and enclosed a second class ticket to replace it.

Early in the war, tickets were easy to come by because the need for continuous watch in our vessels meant two or even three radio operators per ship. But the International Rules *had* to be obeyed, even then. I have often wondered whether, if my indiscretion had occured just one month later—*after Pearl Harbor*—any action would have been taken against me

from the Easter '92 issue or 'Morsum Magnificat,' published by G.C. Arnold, G3GSR, 9 Wetherby Close, Broadstone, Dorset BH18 8JB, England. Annual U.S. Subscriptions are $18 (cash only).

MFJ-9020 A new 20-meter QRP Rig

by George Franklin, WØAV

Fellow QRP-ers, the eagerly awaited day finally arrived. On May 18 my buddy at the local ham emporium called to say the MFJ Model 9020 was in stock. I lost no time picking up this new toy and heading home to put it on the air.

And there's good news to tell; it works like a champ—even better than I expected. At my test bench, I measured its transmitter output as 3 Watts at 12 Volts and over 4 Watts at 13.8, just as advertised. The little gem is spectrally clean, mechanically solid, and its VFO is rock-stable and drift-free.

Moving to the shack, I connected my Cushcraft R-7 vertical and "fired up." Band conditions were lousy, but I easily checked into the Mobile CW County Hunters' Net on 14056.5 and worked several mobile stations—getting good reports.

Later I broke a small pile-up to work FS4PL/PJ7, receiving 569.

The keying, monitored on my TS-940S, is clean and chirp-free, and the receiver performed beautifully. The crystal filter is sharp enough for comfortable operation, even on a crowded band. The AGC works perfectly too—no blasted eardrums in *this* rig on strong signals.

Break-in operation (semi-QSK) and the sidetone operate without clicks or thumps; you hear just a nice, pure signal from the small built-in speaker. Headphone operation is a pleasure too.

Even though delighted with the 9020, I had to open it up and tweak it a bit to get the last ounce of performance out of its RX and TX. I do that to every rig I buy.

I added a "polarity diode" across the power connector and an external fuse in the power cord—cheap insurance in case I ever accidentally reverse the power source.

As with any product, no matter how good, there's always something to criticize. I found five things I don't like:

1. MFJ didn't include a power cord or even the mating connector (The manual suggests Radio Shack's RS-274-1569).
2. Dial calibration didn't track well; it was right on both ends, but off quite a bit at 14.050. I tweaked the VFO to correct it reasonably well over the whole range from 14.000 to 14.075.
3. From the schematic, it's clear that turning the internal QSK delay potentiometer all the way to zero would destroy a diode that's between the pot and the power supply (or burn out the pot—*ed.*). Suggestion: use the factory setting (better add a resistor in series with the diode—maybe 1/4 the value of the pot—*ed.*).
4. The schematic and parts-placement drawings, otherwise excellent, don't show component reference numbers. The numbers *are* screened on the PC board, though, a nice touch.
5. The manual includes no parts list. Otherwise it's fine (and that's unusual).

The 9020 looks great and it's small—just 6 x 6.5 x 2.5 inches. Yet ample space inside allows installation of the optional Curtis keyer module, with controls, and an optional narrow-band audio filter. Both units just plug into the main PC board.

I intend to operate the 9020 mobile, mounting it atop the dashboard with Velcro. I'll put a hash filter, a Radio Shack RS-270-051 ($13.95) in the hot power lead to the lighter socket.

To sum up, the rig is a winner right out of the box. I can envision all sorts of home-brew add-ons—an S-meter, a built-in SWR-bridge, a toggle switch to expand frequency range above 14.075, a band-edge marker, and (perish the thought) an outboard amplifier to boost power output to 20 Watts or more for when the going gets rough.

I predict the pages of ham magazines will soon come alive with such "enhancements" for the 9020. Why not get one yourself and join the fun?

from the July '92 PHD ARA (Kansas City, Kansas) 'PHD News'—Peggy Gnegy, KAØKSI Editor

Letters

(received by WA6AHF 22 July)

Dear OM:

[I'm] now sending my application for the California Award—[just] received last QSLs [needed]. For it, I worked [since] 1965. I was QRV then with only 30W and simple VS1AA antenna.

[I had] only some stations [confirmed] from California from old times. Later I built 2-el. quad and 150W PA. After [I had no problem making] QSOs with W6 stations. But had another problem: [California stations are very bad QSLers].

... In my log are more than 450 different calls from California, only today [I] have 50% confirmation (20 June). From 1965 my call was UP2BZ, then LY2BZ and, during IV Sport Games of Lithuania, was special call LY91BZ.

... in my log are not-confirmed QSOs from [these] members of NCDXC:

W6BJH, K6BR, NY6C, WB6CUA, N6DJM, K6DR, K3EST, NA6F, W6FGD, KG6GF, W6GO, KN6J, N6JV, K6LRN, W6MSF, W6MTJ, W6MZ, W6NKR, NV6O, K6OZL, W6QHS, N6RA, W6REC, W6RJ, N6RO, AK6T, W6TEX, N6VV, K6XT, W1YL, WZ6Z.

73 de Vaidas, LY2BZ

That's quite a list! It includes some leading NCDXC members. Sure cards get lost in the mail and in the bureau system, but all those? And what Vaidas doesn't mention is that he has QSLed many of these reluctant W6s not just once, but repeatedly. It's the club's award, so how about a little support, guys?—ed.)

Alps Tour continued from page 5

Also, the Markleville Chamber of Commerce deserves a word of praise for organizing what must be a logistical nightmare. Besides the 2,500 riders who were accommodated, an almost equal number had to be turned away.

from the Sierra Intermountain Emergency RA's August '92 'SIERA'—N7MXA Editor

KFS

from page 5

He's a super-nice guy, and what he showed me in his shack explained why his fist was so bad. He had a side-swiper made with a pair of micro-switches and a crazy mechanical mechanism built to keep him from touching the 100 Volts on the keying line. Its "feel" was like a lead brick sliding over a concrete slab.

At my suggestion, the management of KFS bought him a keyer, and I sent up to him. His fist improved a great deal, and management got their money's worth many times over in operator time saved at KFS.

Alaska Disaster

A heavily loaded container ship in the Gulf of Alaska broke in half during a storm about eighteen months ago. All the ship's communications systems were out, but a crew member had a battery-powered 50-Watt CW rig which he managed to get on the air to call for help. Instances like this are why CW in the maritime service will never die, though it may cease to be the primary means of communication. The U.S. Coast Guard clearly agrees.

Questions & Answers

Q: When you go on shift, what happens?

A: You just start a log sheet, and get on the air. eight hours later you get off—no breaks.

Q: Would it be more costly to use teletype rather than SITOR?

A: Data integrity isn't there. SITOR is double-checked: for the number of zeros and ones in each character and in groups of three characters—at 100 baud. Under adverse conditions, it gets hits and retries so much, a good CW operator can outrun it.

Q: How do you know what traffic needs to be sent?

A: The "carousel" has all the hard copy outbound messages—with call signs, and different paper colors for each day. After 7 days without success, you send the message back to its originator. We transmit a traffic list each hour. When a ship checks in, you're obligated to send his traffic first. Soon they will do away with the carousel and just use a window on a PC. You'll be able to pull a message up on screen and send—by hand if you wish, or automatically.

Q: Why not always machine-send the messages?

A: That takes all the fun out of it. Work a lot of packet?

Q: Did KFS ever run more than 500 KiloWatts?

A: Oh yeah.

Q: What is propagation like?

A: It's different from working DX on the Amateur bands. You never know the location of a ship. So you just try different antennas and use the one that works best.

Q: Where is the Coast Guard station that's so good?

A: NMC is adjacent to KPH's site in Bolinas. Both stations' receivers are at Point Reyes, but the Coast Guard can also receive remotely from stations near Astoria, Oregon and San Diego.

Q: Why do you work stations worldwide?

A: Ships call us and we do whatever they want. Cost is a factor. Sending a telex directly to Seattle from China costs more than sending it via KFS.

Q: If new ship calls up, what happens?

A: We set him up as a new customer.

Q: You trust him to pay?

A: No, but four letters at end of his preamble tells us where to send the bill.

Q: How can he find out what the charges will be?

A: By sending QSJ?—how much is this message going to cost me? It's $2.43 per minute on SITOR.

Q: Do ships specify what mode to use?

A: Yes. It's the ship's choice.

Q: Do you work Cuban ships?

A: Yes. But you sometimes don't get paid

Q: Are there tours of KFS facilities?

A: No. The transmit site has only one guy on duty and he's really busy. The receive site also gets hectic.

Q: What license do you need?

A: At least a 3rd class commercial radiotelegraph license.

Q: Do you bring your own bug to the job?

A: Yes, I do.

Q: Can you describe emergencies?

A: The second week I was there, I copied message about an officer who had just killed someone in a fight. The dead guy was in a refrigeration compartment. They wanted to know whether they should bury him at sea, head for shore, or keep the body in refrigeration for the rest of trip.

I once got a message about a guy who had become upset and tried to sabotage his ship, which was carrying naptha. He had wrecked one of the main generators. They put him off the ship in Miami and later repatriated him to Manila.

I've copied messages at least six times with people lost overboard.

One message was from the captain of a Greek Ship waiting at a lock on the Panama Canal. The message was to a young man's wife, telling her he was dead—probably murdered (His body had been found floating in a river).

Q: Is there much demand for shipboard operators today?

A: Yes.

Q: Why?

A: The unions said satellites would mean the end of radio operators, so many operators retired early or found other work. The career is questionable; no one knows how long the need for CW operators will last. Also, responsibilities have expanded. A radio operator today must maintain the ship's computers, and other electronics. The military has stopped Morse training so that source has dried up.

Law of Averages

You should be quite comfortable with one foot on a block of ice and the other in boiling water—on the average, anyway.

from the July '92 Detroit (Michigan) ARA 'Bulletin'—W8AP Editor

NCDXC DX-LADDER

	HONOR ROLL			DX TOTALS				DX BAND TOTALS						WARBANDS			
CALL	MIX	PH.	CW.	MIX	PH.	CW.	RTY	10m	15m	20m	40m	80m	[illegible]	06m	12m	17m	30m
AA6AD				271	181	252		109	176	258	54						
W6AED					325				100	100							
N3AHA				268	243	154	1	129	160	194	58	20	3			14	1
WA6AHF		323			342		231	100	100	100	10[illegible]	10					
KG6AM				309	297	214		187	237	267	51	[illegible]					
N6AN	318			339	288	287		281	281	307	177	1[illegible]			68	100	41
K6ANP				316	199	211		133	144	199	110	105					
KA6BIM				196	190	59		108	131	141	33	8					
W6BJH	323			349	192	313		120	117	187	117	100					
WA6BSS				290	304	3		134	167	249	58	26					
W6BSY	323	323		366	360												
K6BWX				225	1	224											
W6CF	326			355	294	185		204	239	306	178	138					
WA6CTA				283		200		130	131	187	54	8					
W6CTL				330	3	266		190	182	327	93	11					
WB6CUA	323			334	325	311		100	100	100	100	96					
WW6D				248	121	225		84	134	188	93	40					
K6DC	315			359													
NODJJ				279	148	249		118	135	151	22	2					
W6DPD	318	318		323	323												
K6DR				248													
K6DT	312	307		340	320	293		229	251	328	153	121					
W6DU	322			342	302	325		225	254	319	159	109					
AD6E				223	2	217		113	128	166	105	26	3				
N6EK				240	173	217		144	184	194	121	43	9				
WD6EKR					311			199	262	305	106	88					
WD6EKR/M					255			86	206	158	4	3					
W6ERS	323			353				100	100	100	100	100			100	100	100
KC6ESL				175	175			175									
W6ETR						237											
WB6EXW				303				100	100	100	50	11					
W6FAH	321			321	316	272		221	245	301	161	143					
K6FD				296	271												
W6FGD				330	275	289											
K6FO				277	185	239		134	164	235	125	102					
KB6G				253		229											
KD6GC				225													
KG6GF	314			319				70	120	210	293	170					
WB6GFJ				314	300	70		203	225	285	125	62					
N6GG				301													
W6GO	320	320	314	334	334	322		270	300	324	264	220	60				
K5GOE	317			330	324			200	100	100	100	91					
WA6HAT	312			320		243											
K6HHD	312			316	311	23		209	176	223	43	40					
K6HNZ					290			209	242	254	125	107					
N6HR	316			337				100	100	100	100	100					56
W6HXW		323			323												
KG6I				266	250	191											
WC6I				305				173	181	236	175	74					
W6IEG					315			17	33	290	3	3					
KA6ING				249	247			249						52			
W6ISQ	315	312		355	331	207		285	150	250	315	256					
KN6J				309	301	287	245	218	210	200	152	165	108				
W6JD				325	233	302		109			191						
N6JM				310	299	256		212	232	277	135	87	17		2	1	5
N6JV	324		322	334	316	326		262	252	302	255	208	75		145	172	148
W6JZU	312			328				75	115	255	22	12					
W6KG	314			352	290	108		161	193	210	169	105					
W6KH	323			364													
WB6KJE				297													
K6KLY				315	315	15		218	198	212	127	107		71			
W6KOE		322			341												
K6KQN				265	260												
AI6L				317													
NB6L	323			326	256	222		125	157	233	109	105					
AA6LF					186			93	79	149	10	1					
WA8LLY				293	279	257		229	241	249	110	20		56	116	64	1
K6LM	316	312	307	321	316	309		100	100	100	100	100					
K6LQA	320			338													
W6LQC	323	323		341	341	89		100	100	100	62	93					

NCDXC DX-LADDER

	HONOR ROLL			DX TOTALS				DX BAND TOTALS						OTHER BANDS			
CALL	MIX	PH.	CW.	MIX	PH.	CW.	RTY	10m	15m	20m	40m	80m	160m	06m	12m	17m	30m
K6LRN				303	233	236											
N6LTN					213												
WX6M	323	323		328	328	148		169	169	208	130	111	17				
K6MA	323	320	317	354	338	320		255	265	290	205	131			165	190	115
W8MEP	315			318		141		100	100	100	41	27					
W6MUR	323			361													
AA6MV				291	285	239		166	180	250	105	23					
W6NA						271		140	190	251	192	109					
W6NKR				289													
W6NLG	321	319		326	324	100		100	100	100	26	6					
K6NM				311	220	226		129	149	274	165	36					
W6NPY	317			330	200	265		200	200	200	178	139					
WA6O				235				89	52	144	3	19					
W6OAT				349	326	332		269	304	333	270	199					
N6OC				303	300												
WA6OEY				227				71	60	170	20	8					
N6OJ				329	275	105											
K6OJO	312	311		328	327			187	250	309	17	12					
W6OSP	323			328													
WB6OTB				307													
K6OZL	323			343				100	100	100	100	100					
NW6P				316													
WG6P	317	317		321	321	316	156	184	210	303	207	118	12		3	6	1
K6PBT																	
W6PHF	318			350	336												
K6PKO				308	301			270	175	185	97	112					
K6PU	323	323	313	353	343	319		200	200	300	200	100					
AG6Q	315			321	309	220		173	222	296	167	143					
KB6Q				294													
W6QL	315			337	263	69		114	161	201	111	103					
WN6R	318	317		318	317	200		215	300	317	155	150					
WR6R				317	293												
N6RC				281	129	161	3	25	49	193	24	3					
W4RIM				341	341												
W6RJ	323			348				100	100	100	100	100					
K6RK	323			337	329	315		100	100	100	100	100	95				
W6ROY						208											
K6RQ	323			362				120	197	310	130	90	5				
N6RR				289				116	210	176	129	88					
K6RUW				270	242	120		100	100	100							
DJ6RX	315			336				215	271	303	227	185					
AF6S				319		311		270	288	303	220	142			109	134	78
K6SIK				286	282	140		183	186	262	128	120					
WA6SLO		322			324			290	306	323	222	217	6	18	168	129	
N6ST	323	302	260	330	304	244		200	228	297	144	74	2		1		2
W6SYL						245											
NI6T				304	291	286	48	244	267	286	248	167	6		189	216	181
W6TC	322		319	338		326		243	228	272	257	174			80	55	52
AA6TD				178	95	125		90	55	101	39	3	1				
W6TER				269													
W6TEX				317		294	121	100	100	100	100	100					
K6TMB				308	304	248		215	245	292	140	116					
WA6TOO				251				58	84	167	6	6					
W6TSQ				355				280	300	300	309	255					
W6TUI				306	305	1		109	125	187	125	116					
K6UD	308			318	306	207		240	244	244	176	147					
N6ULU				289		256											
WB6UOM					300												
K4UVT				313	249	175		65	112	293	88	24	2			8	
AJ6V	320			327	234	267		152	173	261	135	62	6				
N6VAW					152	77											
K6WD	316			330		277		100	100	100	100	65					
KI6WF				314	314	81		251	284	308	155	93	3		25	37	2
WB6WKM				315	100	100		100	100	100	100	63					
KE6WL				274	248	233		210	233	248	147	54	8				
K6WR	322	322		354	354			100	100	100	100	100					
KK6X				281	227	255											
NG6X				250													
NQ6X				312	309			100	100	100	94	96					
W7XA				325				277	298	309	174	137					

NCDXC DX-LADDER

	HONOR ROLL			DX TOTALS				DX BAND TOTALS					OTHER BANDS			
CALL	MIX	PH.	CW.	MIX	PH.	CW.	RTY	10m	15m	20m	40m	80m	160m	06m	12m	17m	30m
K6XJ	323	323		338	338												
K6XM				267	209	222		163	179	246	144	68					
W6XP	323	323		341	341												
K6XT	312			327		160		100	100	100	100	99					
KD6XY				306	289	54		124	137	226	8	3					
KR7Y				317	301	285		169	209	285	150	121					
W0YK				322	321	318		290	270	310	230	150	50				
W6YK				367													
AA6YQ				283	242	210		144	148	221	66	25					
W6YVK					251			160	198	173	56	42					
W6YWH					306			130	150	175	160	100					
AA6Z				317													
WZ6Z				314	299	265		218	238	297	228	138	14				
W6ZKM	320	320		344	344			207	100	100	107	126					
W6ZM	322	322		357	352			130	142	317	52	111					
WB6ZUC			313	329	1	319		188	255	315	168	110					
K6ZUR				294	85	290		139	189	265	176	79					
K6ZX	316		307	328		312											

de Larry, KD6XY (09-92)

NCDXC WAZ-LADDER

	WAZ			5 BAND WAZ					OTHER ZONES				PREFIXES		
CALL	MIX	PH.	CW.	10m	15m	20m	40m	80m	160m	12m	17m	30m	06m	MIXED	PHONE	CW.
AA6AD	40															
N3AHA	40	39	22	25	33	37	19	8								
WA6AHF		40														
KG6AM	40															
N6AN	40	40	40													
K6ANP			40													
KA6BIM	39															
W6BJH	40			40	40	40	39	32								
WA6BSS		40														
W6BSY	40	40														
W6CF	40	40												893		
W6CTL	40															
WB6CUA	40	40	40	40	40	40	32	24								
WW6D	33															
N0DJJ	40	39	40	33	38	37	15	2								
W6DPD	40	40														
K6DT	40	40												1416		
AD6E	40			29	35	37	33	11	2							
WD6EKR/M		40														
W6ERS	40															
W6ETR			40													
W6FAH		40	40	37	40	40	32	32								
K6FO			40													
KG6GF	40			40	40	40	40	39								
WB6GFJ	40	40												837		
N6GG	40															
W6GO	40	40		40	40	40	40	40								
K5GOE	40	40												1258	1173	
WA6HAT	40															
K6HHD	40															
K6HNZ	40															
N6HR	40			39	36	40	37	35						1488		
WC6I	40			38	40	40	39	31								
KA6ING	40	40		40									21			
W6ISQ	40	40												869		
W6JD	40															
N6JM	40			35	39	39	28	20						1910		
N6JV	40			40	40	40	39	36								3159
W6JZU	40	40														
W6KG	40	40												911		
K6KLY	40	40	5	36	37	35	26	27					20			
W6KNH	40	40														
W6KOE	40	40														

NCDXC WAZ-LADDER

	WAZ			5 BAND WAZ						OTHER ZONES				PREFIXES		
CALL	MIX	PH.	CW.	10m	15m	20m	40m	80m	160m	12m	17m	30m	06m	MIXED	PHONE	CW.
K6KQN	40	40														
AI6L	40															
NB6L	40															
K6LQA	40															
W6LQC		40													939	
WX6M	40	40														
K6MA	40	40	40	40	39	40	37	22								
W8MEP		40														
W6NKR	40															
W6NLG	40	40												450	450	
K6NM	40			24	25	37	33	15								
W6NPY	40															
WA6O	40															
W6OAT	40	40	40	40	40	40	40	39								
N6OC	40															
WA6OEY	40															
N6OJ	40															
K6OJO	40	40														
WG6P	40	40	40	35	36	40	37	31	4	2	6	1				
K6PBT	40															
K6PKO	40	40				40									850	
W6QL	40	40														
WN6R	40	40	29	29	40	40										
W4RIM	40	40														
W6RJ	40	40														
K6RK	40	40														
W6ROY			39													
K6RQ	40	40	40													
N6RR	40															
DJ6RX	40			40	40	40	40	40								
AF6S	39															
K6SIK	40	40	40	40	40	40	40	40								
WA6SLO		40		40	40	40	35	39	7	37	35		13		1283	
N6ST	40	40														
NI6T	40	40	40	39	40	39	39	36	6	38	39	35				
W6TC	40		40	40	40	40	40	38		22	24	18				
W6TEX	40															
K6TMB	40	40	38	40	40	40	32	28								
WA6TOO	20															
W6TSQ	40			40	40	40	40	40								
W6TUI		40		30	33	40	29	26								
K6UD	40															
WB6UOM	40															
AJ6V	40															
K6WD	40															
KI6WF	40	40	26	39	40	40	29	26	3	14	17	2				
WB6WKM	40	40														
KE6WL	40	39	40	39	40	39	35	21								
K6WR	40	40														
K6XM	40															
K6XT	40															
KD6XY	40	40	24	28	34	37	6	2								
KR7Y	40	39	23	34	36	40	34	28								
W6YVK	40													659		
AA6Z	40															
WZ6Z	40	40		39	39	40	39	33								
W6ZKM		40		39	40	40	28	34								
W6ZM	40	40														
K6ZUR			40			40										
K6ZX	40															

de Larry, KD6XY (09-92)

DX LADDER NOTES:

Congratulations to K5GOE, who reports he finally made the Honor Roll. Keep up the good work, Woody.
There were 31 total updates this time, of which 6 were from new members.

September 1992

FIRST CLASS

DXer
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