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FLASH-
TOMHZ NOW OPEN!

World Radio

Year 18, Issue 9

March 1989 • \$1



Jeff Parker, WA1WXL, contemplates his 85' self-supporting tower, TH6-DXX and collection of VHF, UHF and satellite arrays (photo courtesy of Tom Swanson, NAIZE).



This was a scene typical of the devastation wrought by the November tornado. Shown here, the Hampton Oaks subdivision, where even greater destruction struck (NAIZE photo).

Sometimes it happens when nobody expects it

Aid to USSR

AL VAVHINGER, W9ELR

On Dec. 14, 1988 the International Amateur Radio Network, an all-volunteer Amateur Radio organization, had asked for volunteers to go to Moscow to assist the Soviet Amateur Radio operators in setting up much-needed radio circuits between the earthquake-ravaged Armenia and the rest of the world.

Nearly \$10,000 worth of sophisticated radio communication equipment had been donated by various manufacturers and charitable organizations for this purpose.

Charles Sheffer, KJ4TY, of Apalachicola, FL and I hurriedly flew to Cleveland to meet with a handful of very dedicated Amateurs, headed by Dave Speltz, KB1PJ, to coordinate and finalize our plans for this humanitarian (please turn to page 8)

BRUCE EGGERS, WA9NEW

It's not like a hurricane or a forest fire. It's not like an airplane falling out of the sky or a lost child search. And it's not like Field Day or SET weekend.

It's more like a major earthquake in the middle of the night. It's not pretty. It's not easy. It tasks you in a way you hope and pray you'll never be tasked. But sometimes you are, and all you can hope for are miracles, a lot of luck, and a nucleus of experienced and knowledgeable leaders. We had all of this plus a cadre of willing volunteers.

The weekend had been warm and beautiful all across North Carolina. Sunday, Nov. 27, 1988, was one of those days which has us saying, "If God isn't from North Carolina, why did He paint the sky Tar Heel Blue?"

Long after the sun has gone down the temperature is still hovering around 70, the southerly breeze feels good coming through the house and bed looks great after a long day of raking leaves. Time to check the weather on

the late news and turn in.

Well, a cold front is coming and there's a chance of some showers and maybe a thunderstorm. Better shut the windows. Darn, that breeze sure feels good. "Good night Dear."

Very few have ever been awakened by the noise of a freight train passing through their bedroom. Of those who have survived all say they'll never forget that sound. In the early morning hours of Nov. 28, many thousands of North Carolina residents were awakened by "that sound." By some miracle no mortal can understand, only four didn't live to hear any other again.

A nine-year-old-girl, crushed in her bed by a falling chimney in the Hampton Oaks subdivision (pictured); a 12-year-old-boy, asleep in a second-story bedroom when the whole house was tossed across the street; a couple, in the wreckage of a mobile home, leaving two orphaned children. The supporting I beams were found 20 ft. up a (please turn to page 6)

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FLASH — 18MHz NOW OPEN!

ARRL Bulletin #7, January 30, 1989:
To all Radio Amateurs —

FCC is opening the 18MHz band for Amateur operation. Stations with General, Advanced and Extra Class operators may begin using the 18MHz band as of 0001 UTC 31 January '89, one minute after 7:00 p.m. Eastern Standard Time, Monday 30 January, 1989. A1A emissions may be used in the whole band from 18.068-18.168 MHz. Digital emissions F1B for direct printing, telemetry, telecommand and computer communications is permitted below 18.110MHz, and analog emissions such as FAX, SSTV and phone may be used from 18.110 up. The normal power limit of 1500 Watts output applies, but amateur operations must not cause harmful interference to U.S. Government and foreign fixed service operations. The authorization is contained in a report and order in PR Docket 88 467. Under its terms and those of WARC '79, the band becomes exclusively amateur on July 1, 1989.
AR

Holiday greetings

We on the staff of Worldradio would like to thank all those readers and clubs who extended good wishes and holiday greetings to us during the holiday season.

We hope that all our readers had a happy and healthy Christmas. We wish you a prosperous and happy New Year.

A true "service" man

The following is part of an article which appeared in the Long Beach (CA) Press-Telegram on May 30, 1988.

Sixty-year-old Leonard Victor, WA6RNA, is an Air Force veteran. He is also legally blind.

Since 1973, a few years after his eyesight deteriorated into fuzzy peripheral vision, Leonard has been a volunteer at the Veterans Administration Hospital in Long Beach, CA.

"I like to help people," he said. "When I know I am being of service to someone who needs it, I am happy."

Since he began as a volunteer at the VA, he has been the manager of the hospital's amateur radio station, WA6MYB. He has also been a teacher for patients interested in acquiring broadcasting licenses as part of the hospital's Vocational Rehabilitation Therapy.

In early May of last year, Leonard received the James H. Parke Achievement Award from the VA in recognition of 20,000 hours of volunteer service.

WA6RNA, a Westminster, CA resident, realized how beneficial the services he could offer would be during therapy at the hospital to deal with his encroaching blindness. One of these therapies was a radio class.

"I loved it," he said "and I wanted to expose others to it. That's why I began teaching.

"Not only does the radio help me stay in touch with other people, it

A smile is contagious

opens the door to contacting more people than ever before. From these radios we can talk to people all over the world, and we can perform a service."

Leonard said the California earthquake in October 1987 was a good example. "I was on the air a little after 8 a.m. and stayed on until 2 p.m., handling health and welfare traffic."

WA6RNA is always looking for more people who are interested in becoming Amateurs.

"But I'm kinda rough on my students," he said. "I promise to work with them on a one-to-one basis, but they have to work too. If they're not serious, if they don't study, I won't waste my time with them.

"I stress to my students what a privilege their licenses are and the responsibilities that go along with them. A true Amateur will drop almost anything when a request for help comes over the radio. It's a very special group of people. You have to feel a lot of camaraderie and you have to be a little crazy. And you have to care." —Submitted by Leo J. Benzini, KU6W. □

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participate.

Our goal is to be a valuable resource of
ideas and experiences beneficial to the
Amateur Radio Community. We publicize
and support the efforts of those who bring
the flame of vitality to this avocation.

You readers are participants — an all-
iance of active radio amateurs concerned
with reality, using radio as a communica-
tions tool to develop the skill, quality and
full potential of Amateur Radio.

We emphasize the positive aspects of
this great activity, and desire your contribu-
tions dealing with dramatic, personal and
humanitarian uses of Amateur Radio.

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PUBLISHER'S MICROPHONE

First off, a snappy salute to the
latest to join our Worldradio Super-
Boosters Club (Lifetime Subscribers):
Brice Wightman, VE3EDR, Ottawa,
Ont.; Douglas Fairbrother, K1FKW,
Newport, VT; Hyacinth Logan,
N4QWN, West Palm Beach, FL; Al-
bert Pezzenti, N8GHE, Youngstown,
OH; Dr. William Chapman, AA6JZ,
Bonita, CA; Vernon Tallman, N6SYR,
Santa Clara, CA and CDR Gerald
White, USN (Ret.), WB6IZE,
Oakland, CA, who took out a "Lifer"
back in 1975 and said, "I've received
my money's worth. So, here's \$120 for
another life membership." That's cool.

It was nice to hear from Ethel Smith
DeBardeleben, K4LMB, McLean, VA
who said, "Worldradio is a real asset
to the Amateur community."

I'd like to alert you to a most unfor-
tunate situation. The respected Herb
Johnson, W6QKI, has had a rather
cruel trick played on him, as well as
his customers.

An East Coast company, with no
authorization, picked up the name and
exact company logo of Herb's former
company, Atlas Radio, and under the

guise of being "the" Atlas Radio, is of-
fering to repair Atlas gear. There is ab-
solutely no connection.

Herb, even though presently in-
volved in another endeavor, will still
repair Atlas equipment, out of a sense
of obligation to his former customers,
despite the fact that the Atlas has not
been manufactured for the past 10
years. That's the kind of guy he is.

His address is 1556 Lower Lake,
Cardiff, CA. The 210 was, and still is,
a great piece of equipment.

This letter, from Guice Johnson,
WA4LHO, Punta Gorda, FL, may
prove inspirational and informative to
others:

"Our Amateur Radio Club, The
Charlotte County Radio Society, is a
small club, but we try to do what we
can to promote Amateur Radio. Since
Jan. 1, 1988 we have held several
Novice and upgrade classes. Between
Jan. 1 and June 28 we have graduated
18 Novices. Most of those have up-
graded at least to Technician. Several
of our graduates are teenagers.

"As an incentive or a graduation
present, we offer each graduate of our
classes, or any other Novice class, a

free first-year membership in our club.

"At the present time we are in the
process of outfitting an Amateur
Radio station at the Port Charlotte
Christian school in Port Charlotte, FL.
The people of the school have been
very kind to us by allowing us the
nighttime use of their classroom fa-
cilities for our radio classes. We feel
that by having the 'Ham Shack'
available for demonstrations we can
get the younger people interested. Not
only those from this school but from
others as well.

"Our club is very active in the com-
munity. We're involved with the
March of Dimes Walk America as well
as every parade, boat race or any way
in which we can help our community.

"Not only are our meeting notices in
all three newspapers that serve our
area, but I write articles in them that
shed some light on our activities.

"I hope this convinces you that all
radio clubs are not dead. We're still
trying."

Well, maybe that'll motivate some
who think the pinnacle of life is watch-
ing reruns of *Miami Vice*.

Leon Fletcher, N6HYK, President
of the Santa Cruz ARC, P.O. Box 238,
Santa Cruz, CA 95061, tells of their
club's program to help survivors han-
dle the gear of Silent Keys. This works
on making arrangements ahead of
time. A SASE sent to the club will
bring details.

BAD news: An Indiana radio club,
running a hamfest, would not award a
drawing prize (2M HT) to the XYL of
a Ham because she wasn't licensed.
The OM was there, in fact, the only
reason she was there was because he
was there! C'mon, lighten up.

Don't miss out on exciting 10M.
—Armond, N6WR

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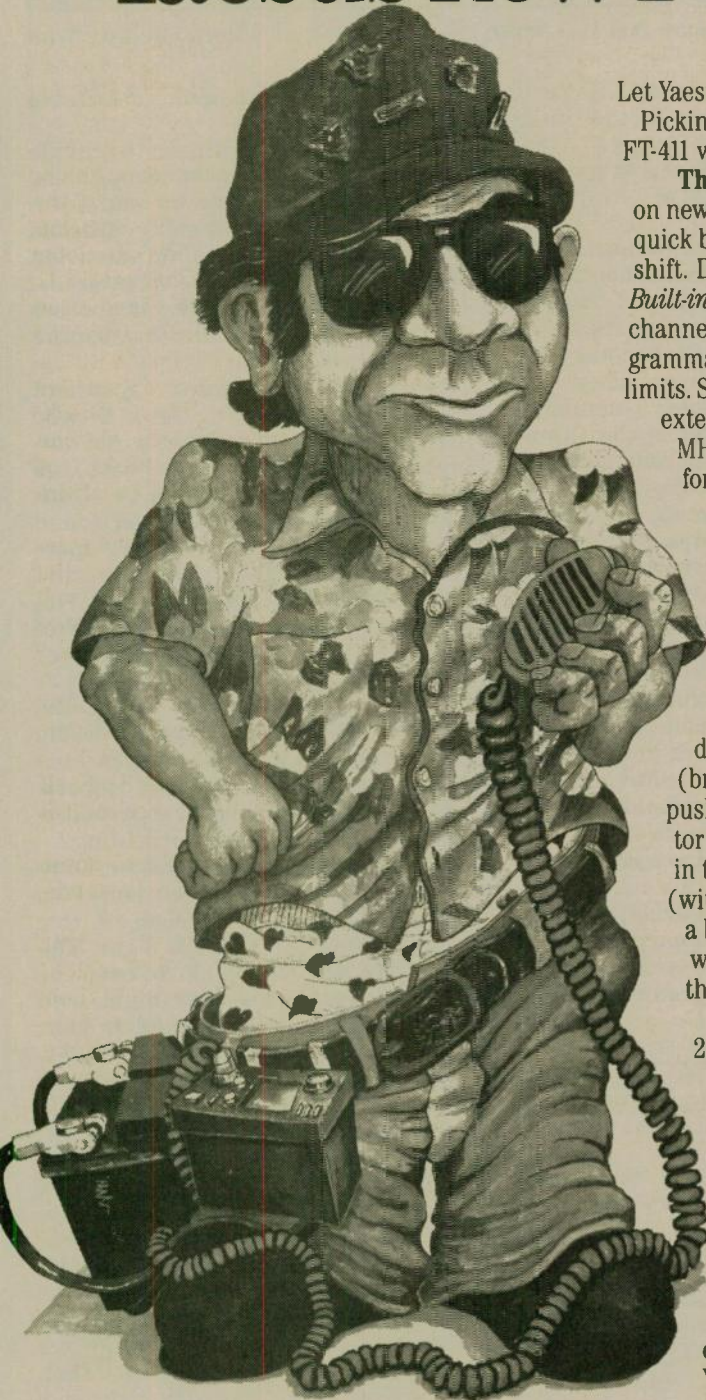
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a battery saver to conserve power while monitoring. And a (defeatable) automatic power-off feature that shuts down your radio if you forget to turn it off!

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Swap options with Yaesu's FT-23R Series. Our rugged best-seller's chargers, batteries, and microphones are fully compatible with the FT-411. The FT-23R is the perfect companion for the FT-411, and at a great price!

Try out an FT-411 today. Ask for it now at your local Yaesu dealer. Or call 1-800-999-2070 for a free brochure. And experience the legendary Yaesu HT performance!



YAESU

Tornado

(continued from page 1)
tree.

Could local Amateurs have helped reduce the loss of life and property? Could Sky Warn have helped?

Not when the National Severe Storms Forecast Center in Kansas City fails to note the potential. Not when the local NWS Forecast Office is hampered with a broken radar. Not when there is no public warning. Not when the storm appears to have developed directly overhead (but this writer, a 22 year veteran of the Air Force's Air Weather Service, would sure like to see the "bust analysis" on this one!).

The tornado touched down at 1:08 a.m. on the morning of Nov. 28, approximately seven miles northwest of the State Capitol, the center of Raleigh. It moved rapidly to the east northeast, totally destroying the Townridge Square shopping center, most of two large apartment complexes, 115 homes and 10 businesses, and damaging over 1,500 homes and businesses in five counties. Additional damage occurred later in four coastal counties, fortunately with only minor injuries and relatively limited damage.

Within minutes of the onset, Amateur Radio operators in and around the disaster area are on the telephone, on the air, generating a response. James Martin, KA5IEC, nearby, awake and able to hear the storm at its onset, is in his car surveying damage and assisting in establishing a preliminary emergency shelter at a nearby firehouse.

Sam Parkerson, Jr., WB4ROD, sees what's left of his neighbor's house and gets on the land-line. SM AB4W, ASM AB4S, DEC KI4ME and EC AA4YH are all roused from warm beds. Joseph Saah, Jr., WB5ZPZ, has been called by



The QTH of Bob Keys, NA4G, about 1/2 mile south of where the boy was killed (N4IZE photo).

his son, an EMT on duty with Raleigh Rescue, and is en route to the State Emergency Operations Center.

The K4ITL 146.28/88 repeater is the known primary emergency response frequency. It can be linked to eight other repeaters to provide statewide coverage. The State EOC has both HF and VHF Amateur equipment on site.

Joseph and Michael Clark, AA4YH, arrive there before the State Emergency Response Team has responded.

An on-site Wake County Command Post is being established at the Townridge Square shopping center. Reed Whitten, AB4W, is waiting for them.

It's dark, cold and raining. Hundreds of people are wandering aimlessly through the rubble, more are groping in the darkness for those injured and imprisoned. City, county and state officials are beginning to respond.

Some initial guidance is issued. An emergency shelter is to be established at a nearby school. But there's no power there and no one knows how soon power can be established.

A primary shelter is set up at another school. Daniel Garriss, W4SWA, is there as shelter volunteers and victims start to arrive.

Herbert Lacy, Jr., N4UE, puts the American Red Cross Chapter house on the air. Daylight brings reality, which is sometimes a great deal more than we want.

Emergency provisions start to flow into the devastated area. Hotels and motels offer emergency housing and cots and blankets are shipped in from surrounding areas.

Provisions for the elderly, the ill and all those with special needs are met. Clothes and food start to become

available through numerous charitable organizations.

Amateur Radio continues to provide communications support through the days and nights of Monday and Tuesday. By mid-day Wednesday, officials think that normal communication channels are adequate to meet needs. It's one more day before yet another need for Amateur Radio support becomes evident.

If you've ever heard of "Southern Hospitality," believe it. As a '9' who has been almost all over the world during an Air Force career, I'm here to tell you that the reason I live in North Carolina is because I've never found another place where folks are more generous and neighborly. Does that mean that all are above reproach? No! Might some come to the area to realize personal gain from other's misfortune? Yes!

Late Thursday, Dec. 1, brings the biggest challenge. Can Amateur Radio operators provide communications support to Raleigh Police, in cooperation with Community Watch volunteers, to detect and prevent looting?

It's at the end of a normal working day for most. They'd like to have two Amateurs assigned to each of five police officers through the night. The tasking grows. They'd like to have the same coverage for Friday night, and then the same level of support through the day Saturday, Saturday night, Sunday and Sunday night.

Edward Breeden, III, N4SSU, a Public Service Director for the Raleigh ARS, accepts the task of coordinating the effort. In addition to 10 Amateurs in the field, we need a Net Control Station and, as it evolves, another Amateur with the Watch Officer. That's 12 hams per shift.

Question: How many hours do you expect a ham to put in per shift? Four seems like a nice compromise. That means 36 slots for Thursday night and 180 slots to cover the time period from 7 p.m. Friday until 7 a.m. Monday. And it means we need one repeater near the disaster area for operations

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while continued scheduling and planning are conducted on a wide coverage area machine.

The RARS' 04/64 W4DW repeater, just north of the center of the disaster area, is dedicated to the operation while the K4ITL 28/88 repeater is used for coordination.

It's over now. The post-action critique, with representatives from virtually every organization served, was held the following Friday evening at the State EOC, and that's where the hard work starts.

Those who attend such after-action sessions are usually well-salaried middle managers from the various government agencies tasked to handle such disasters. How can you get these people to be critical of your operation when they know they couldn't have met their mission without your help? All they want to do is tell you what a fantastic job you've done. They may not understand that all you've done is tried to pay your dues for the use of the spectrum space allotted to Amateur Radio. They've never read Part 97.1(a). You have and you KNOW why it has top billing.

The most beneficial critique is self-critique. What does it take to respond to such a disaster? What have we learned which can best serve you?

1. There's no substitute for experienced, known leadership. Responsible agencies MUST know whom to contact and they MUST know that the person with whom they are in contact can react knowledgeably and produce results.

Was it "good luck" that this disaster started in Raleigh? Perhaps (?). But it's also preparation. AB4W saw a need for local emergency communications support quite a few years ago. He's since served as EC, DEC, SEC, SGL and now as SM.

2. Can you be the "iron man?" No! You may not be there. But if you're the EC for Podunk County, it's YOUR responsibility to make sure that local officials KNOW what Amateur Radio can do for them. And it's YOUR responsibility to make sure that local officials know, have met and have confidence in any number of other Amateurs who can fill-in for you.

Have lunch once a month at "Maude's Cafe" with the Sheriff, the Mayor and the Town Manager. Just make sure to invite a different Amateur each month and have an emergency communications item from QST or Worldradio to talk about.

3. Can you ever afford to turn down the offer of help from a new Amateur you know nothing about? NO! Who have you got ready to do the job if you don't let the KC?/ "interim whatever" do it? If you think "somebody else"

will do it, call "somebody else" on the phone and ask them to monitor. And DON'T criticize on the air (K4YPI, Communications Officer for the State of Florida, had this Novice NCS'ing emergency nets during hurricanes 25 years ago, just because I was there and willing to help. And Norm was there. Good 'Elmers' do more than help you put up antennas).

Tar Heel Amateurs didn't do every-

Plastic insulators

E.R. BERG, KZ9Y

A simple test can provide reasonable assurance that a plastic material is suitable as an insulator at radio frequency. Some of the plastics are very lossy at RF.

To perform the test, expose a piece of the plastic to radiation inside a microwave oven for two or three minutes (protect the oven by including a cup of water inside as an RF load).

Remove the plastic sample. If it is warm, it is probably too lossy for use as insulation in RF work. The warmth is more apparent if you cool the sample in a freezer for a few minutes before the test. —Jayhawk ARS, Kansas City, KS

CW gets through

David Wiesen, K2VX

Bud Drake's letter in the Fall 1987 Issue (QCWA News) says that the odds of needing CW as an emergency communications mode is less than 1 in 500,000. I agree with his letter, but take issue with that statistic since I have seen CW save the day on two occasions in my own life.

In one case, I was the communications officer for a group on the Greenland ice cap and local conditions made our 75M AM communications unreliable. The men in my group had studied code in a communications school, but had never known more

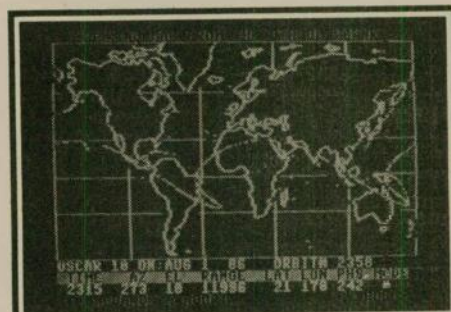
thing right, but they did a whole bunch of things very well. They learned. Government officials learned. Charitable organizations learned. And many Amateurs who hadn't been directly involved with previous emergencies learned and will be better prepared the next time. And yes, unfortunately, there will be a next time.

Remember, sometimes it happens when nobody expects it. □

than 5 wpm. I held code classes, eight hours a day for three days, and we switched to CW. Our reliability went from 50% to near 100%.

On another occasion the Air Force's Tropo scatter link from Thule, Greenland to Goose Bay, Labrador, was knocked out by conditions and the Air Force had to go sheepishly to the Danish radio operators who were using manual CW on about 3 MHz, and they succeeded in relaying the traffic down the west coast of Greenland and then across to Goose Bay. They couldn't handle the volume but the most essential stuff went, and went reliably.

It is not for nothing that all of the newest 3 to 30 MHz army SSB transceivers have provision for CW. —Escondido ARS, CA □



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Armenian earthquake assistance

(continued from page 1)
tarian effort.

The head of the International Amateur Radio Network, Glenn Baxter, K1MAN, of Belgrade Lakes, ME, had finally obtained permission from the Soviet Union for this person-to-person humanitarian assistance. This was a tremendous breakthrough of cooperation between two great powers.

On Dec. 17th, after a few frustrating delays, we finally left JFK Airport in New York. Aeroflot, the Russian airline, had agreed to fly us and all of our radio equipment, at no expense, to Moscow. The Aeroflot Airline personnel were extremely helpful and put all of the radio equipment aboard the plane as our personal baggage.

After eight hours of flying, we finally arrived in Moscow and were met at the airport by Soviet officials and representatives of the Soviet Union Amateur Radio community. The officials hurriedly helped us through customs and waived all the red tape normally required to enter the country. We were greeted very cordially and after the proper introductions all around, were taken to our hotel. During our stay

there, we had a car and driver at our disposal and an interpreter was assigned to us.

We were eagerly awaiting an appointment with the local Amateur Radio organization for the purpose of finalizing our plans to assist them in setting up the emergency communications links between Armenia, Moscow and the rest of the world.

On our third day there we were called into a meeting and were told that if we did not leave the Soviet Union the following day, that it might be October before we would be able to return to the United States.

It was explained to us that the Aeroflot Airline had passenger reservations booked in advance for nearly one year. They also explained the fact that there were so many foreign assistance personnel in the Armenian area that it was beginning to interfere with the total relief program. They said their own Amateurs could set up the communication links. Having met and talked with some of the local operators, we heartily agreed that they were extremely capable and could in fact set up

these needed radio links.

Needless to say, we agreed to leave for the States the following day.

Early the next morning the Soviet officials picked us up at our hotel and drove us to the airport. All of the radio equipment which we had brought was left in their country for these emergency networks.

They seemed extremely grateful for the radio equipment that we had brought and gave us a parting gift and thanked us time and time again for our efforts.

Many Amateur Radio operators world-wide had been rooting for us and assisting with communications in preparing for this trip. This was the first time that anything of this dimension had been attempted with the Soviet Union. As our efforts were purely humanitarian, we feel that a great stride forward has been made for closer and peaceful cooperation between two great countries.

Our Christmas present to the Soviet Union will prove, in a small way, that man on this planet can work together for a better and peaceful world. □

Glasnost via Amateur Radio

**GLENN A. BAXTER,
K1MAN, Manager, International
Amateur Radio Network**

IARN has been very active handling all sorts of official, medical, logistical and health and welfare traffic into and out of the Soviet Union for relay to earthquake ravaged Armenia. All business as usual for the battle experienced

and worldwide International Amateur Radio Network.

IARN arranged a special third party traffic arrangement between the United States and the USSR effective Sunday, 1741 UTC, Dec. 11, 1988 — a historic first in the history of ham radio. This came just 41 minutes after Victor Goncharsky, UB5WE, checked into the net on 14.275 MHz and informed us that he was officially assigned to the net and would take all our traffic and feed it into the Soviet Amateur operation. We had been beating

our heads against the wall since activating the IARN on Dec. 8, 1988, and had offered Amateur assistance to every agency we could think of and to the Soviets through the Embassy in London.

On Dec. 9, 1988, I personally met with Senate Majority Leader George Mitchell, and he offered to contact Soviet officials himself and urge the Soviets to accept help both from IARN and others. The Soviets agreed to some United States help, but not Amateur Radio... yet, at least.

Shortly after making contact with Victor, he put us in direct radio contact with the official government ham station, EO1, who is, in fact Andrey Fedorov, RW3AH in Moscow. Victor lives in Lvov, Ukraine, USSR.

To our surprise, EO1 asked us to supply radio equipment, particularly walkie talkie gear, both ham and CB. I agreed and offered to also send AMTOR equipment and a computer to establish an AMTOR link from the United States and the United Kingdom to Moscow.

They agreed after a few minutes. I then offered to send two United States Amateurs to assist them with hooking up the sophisticated AEA PK-232 and

ANTENNA ANALYSIS

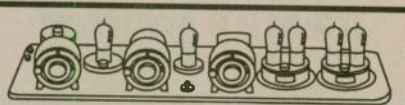
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IBM compatible PC equipment. EO1 went back to the Young Communist League headquarters with this offer and after 15 minutes we had permission, and thus an invitation.

The IARN rapid deployment jump team operation went into high gear. Many IARN members played a part. The team selected for the job was Al Vayhinger, W9ELR, from Connersville, IN and Chuck Sheffer, KJ4TY, from Apalachicola, FL. They were dispatched to KB1PJ in Cleveland, OH along with donated equipment. Much of the equipment was sent directly to Kennedy Airport in New York to link up with the team which left for Moscow on Dec. 17. We seemed to be scoring big with Glasnost.

Our computer got hung up in New York customs, but everything else made it to Moscow: two Kenwood HF transceivers, two Kenwood UHF transceivers, a number of hand-helds, two AEA PK-232's, a number of CB walkie talkies, six Mosley TA-33's, six Cushcraft 2M base antennas, 12 mag mount antennas and a wedding present for the DX editor at *Radio Moscow*. (IARN is planning to jointly produce a 15-minute per week Amateur Radio program to be heard over *Radio Moscow*).

Two steps forward, one step back

With our two Amateurs in Moscow getting the royal welcome and the net on 14.275 MHz operating very efficiently, we were all shocked at the news that the Amateurs had a high level meeting with the Soviet Ministry of Telecommunications on Dec. 19, and would be sent home the next day. The Soviet Amateurs were as disappointed as United States and other Amateurs were.

Tass, the Soviet news agency in New York, which had done a feature story on IARN, then did a follow-up story very critical of Soviet officials for cutting this wonderful mission of goodwill so short. It just didn't make sense to anyone.

The Soviet government officials in Moscow, no matter how many times our Amateurs explained, could not understand that IARN is simply a group of volunteers who want to, and indeed enjoy, helping out, particularly when Amateur Radio is involved. We are not sent by the CIA, Ronald Reagan, the State Department, ARRL, or any other political group.

UB5WE said it best in an exclusive telephone interview with IARN: *You simply cannot understand Amateur Radio unless you are a radio Amateur and feel like a radio Amateur.*

Another problem, I suspect, is that Moscow bureaucrats are about as slow as Washington bureaucrats when it

comes to understanding how fast IARN can move, and that radio Amateurs can out-perform government communications during many types of communications crisis. Yes, in many cases, we are far better than professionals... which makes bureaucrats feel less important, and they resist our efforts. That is why we didn't bother with the State Department in arranging this trip, a mission of international goodwill.

Why? Well first, red tape just slows us down and emergencies can't wait. Second, our ham license spells out that Amateurs are better at doing exactly what we did in arranging this historic trip.

Look at FCC Rule 97.1, Basis and Purpose, Section (E):

Continuation and extension of the Amateur's unique ability to enhance international goodwill...

We did use our unique ability and got our team and most of our equipment to Moscow.

IARN's second step

Having taken the first step, what was our second step? First, don't look back. Let's finish what we started and get that IBM compatible computer system to Moscow. This machine was far too powerful to be exported to the Soviet Union according to the US State Department.

Again, Senator Mitchell intervened and on Dec. 23 at 1800 UTC we were granted a special export license by the US Department of Commerce.

Earlier in the day, IARN received an urgent radiogram from Konstantin Khoachatorov, UW3AA, an Amateur Radio coordinator for the earthquake, requesting all of the above mentioned

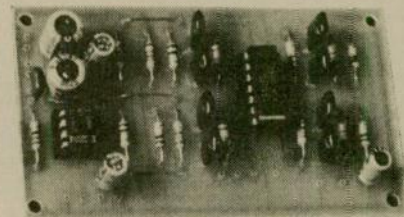
equipment, plus two portable repeaters, AC generators and radio operators from IARN. We offered two repeaters and two operators from Australia and one digital expert from the United States to go back to Moscow. All of this caused a lot of debate among high government officials in Moscow, and as this goes to press we are working out the details of step two.

The Soviet officials have apparently had a change of heart. I'm sure the coverage by *Tass* and other media worldwide, together with widespread disappointment expressed by radio Amateurs on both sides of the Iron Curtain, has demonstrated that this curtain is no longer needed or wanted by anyone.

Meanwhile, our net continues to help people of Armenia around the clock. It is unfortunate but true that sometimes it takes tragedy to bring people together. □

If you are involved in any emergency communications incident, send story and photos to *Worldradio*, 2021-28th St., Sacramento, CA 95818.

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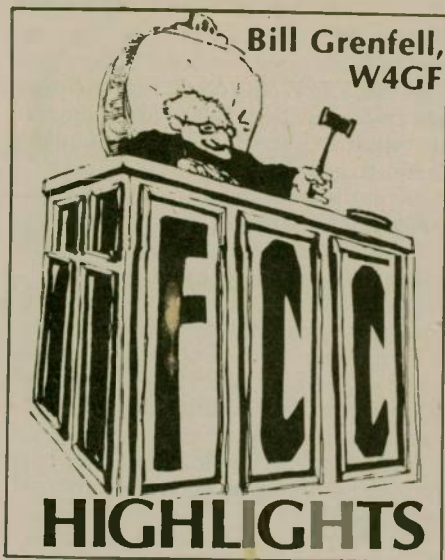


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The Comment date on PR Docket 88-139, Reorganization and Deregulation of Part 97 of the Rules Governing the Amateur Radio Service, closed on November 29, 1988. The two month period provided for reply comments lasted until January 31.

The ARRL's comments included an annex which was a complete rewrite of the rules developed by a committee of the ARRL Board of Directors.

"A common thread in [the early] comments was that the rules should allow for 'due process of law' rather than FCC administrative sanctions taken without judicial hearings ... The ARRL rewrite took these comments into account and strengthened 'due-process' provisions of the rules."

The ARRL commended the FCC on its work to reorganize, modernize and clarify Part 97 of the Commission's Rules. The FCC succeeded in reducing the length of the present rules from 30,073 words to 24,397. The League's rewrite further reduced the length to 17,045 words, without eliminating necessary substance by further editing, and retained the basic structure of the rules as proposed by FCC.

A 23-page comment on PR 88-139 was filed by a combine of the Radio-Television News Directors Association and the National Association of Broadcasters and "... also represented the views of CBS, Capital Cities/ABC, NBC, National Public Radio, Post-Newsweek Stations Inc., Reporters Committee for Freedom of



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"The media points out that the four-prong standard" [proposed rule section 97.219(f)(1)(2)(3)(4)] unnecessarily restricts Amateur operators who wish to volunteer to cooperate with professional print and electronic journalists in disseminating information about important news events when no other voice communications are available to the journalists. "... the proposed language is much too exacting and will inhibit Amateur operators from performing much needed roles in news dissemination during natural disasters and other emergencies," they argue.

The QCWA expressed concern about proposed Section 97.221, which would provide that, "The FCC may restrict operations as necessary to prevent harmful interference.

"It was QCWA's impression that meant restricted operation could be imposed without regard to whether the Amateur Radio operator is causing the interference or not."

QCWA found much objection to the rule and suggested that "... the Commission accept the responsibility for investigation, on a case basis, of all complaints ... that fact findings be made and published promptly, listing the cause of observed interference and that responsibility for corrective action be clearly defined. (ARRL News Release, 11/30/88; ARRL Letter, 12/02/88); W5YI Report, 12/15/88).

John Johnston, W3BE, Chief of the

FCC's Personal Radio Branch, advises of two petitions which have been accepted for comment: RM-6594, "... to authorize Technicians F1B emission (RTTY, AMTOR and packet radio) privileges in the 80, 40 and 15M bands ... (Section 97.61(2) specifically prohibits Novice and Technician operators from using these emissions.

RM-6594 "... to move the 80M band down by 25 kHz to escape the Canadian phone operation. "A rule-making number (RM-6595) has been assigned to the UPS petition that suggests a band plan for 220-222 MHz." (W5YI Report, 12/15/88).

In response to Congressmen who inquire about the Commission's action in the General Docket 87-14 Order concerning the 220-222 MHz reallocation, FCC Chairman, Dennis Patrick, has been writing nice things about the Amateur Radio Service and its importance to the community at large, and then explaining the allocation status of the 220-225 MHz band as follows: "Several Amateurs have stated that the 2 MHz in the 220-222 MHz band represents 15 percent of Amateur international primary frequency allocations between 30 MHz and 24,000 MHz.

"Apparently they are including the Amateur allocations at 50-54 MHz, 144-148 MHz and 220-225 MHz ... However, the 50-54 MHz and 144-148 MHz bands are the only bands allocated on an exclusive basis to the Amateur service in this portion of the (please turn to page 12)

Amateur Radio call signs

Amateur Radio operators often ask the FCC what call signs have been assigned lately. This list shows the last call sign in each group to be assigned for each district, as of January 1, 1989.

For more information about the call sign assignment in the Amateur Radio Service, see Section 97.51 of the FCC Rules, or write to the FCC, Consumer Assistance Branch, Gettysburg, PA 17326.

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	WQ0H	KF0AD	N0KAN	KB0DTE
1	NU1Z	KC1NA	N1GEO	KA1SZU
2	WM2X	KE2KT	N2IVX	KB2GVJ
3	NT3F	KD3KX	N3GSU	KA3TZF
4	AB4MH	KM4LX	N4UQF	KC4IGC
5	AA5JM	KG5QJ	N5NQV	KB5IDT
6	AA6MB	KJ6PM	N6TYB	KC6BKJ
7	WV7Z	KF7QI	N7MBB	KB7GLA
8	WN8K	KE8VX	N8KEP	KB8GCA
9	WE9X	KE9OC	N9IAG	KB9BWQ
North Mariana Is.	AH0H	AH0AE	KH0AM	WH0AAI
Guam	KH2K	AH2CD	KH2DN	WH2ALU
Johnston Is.	AH3B	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra, Jarvis Is.	AH5A			
Hawaii		AH6JM	NH6SH	WH6CBP
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AD	KH8AG	WH8AAH
Wake Wilkes Peale	AH9A	AH9AD	KH9AD	WH9AAH
Alaska		AL7KR	NL7PJ	WL7BTD
Virgin Is.	NP2E	KP2BN	NP2CT	WP2AGE
Puerto Rico		KP4PV	WP4SY	WP4IGP

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FCC Highlights

(continued from page 10)

spectrum . . . The 220-225 MHz band was allocated internationally to the fixed, mobile and Amateur services on a co-primary basis. This band was never intended for exclusive Amateur use.

"We believe the Commission's statement in its Order that the 2 MHz represents less than a two percent reduction in Amateur spectrums is fair and correct . . . In making this statement, the Commission included only Amateur bands that are capable of supporting operations similar to those in the 220 MHz region. These bands, which are listed above, provide 128.7 MHz of spectrum to the Amateur service, of which 2 MHz represents less than two percent. (W5YI Report, 12/01/88).

The controversy about whether the Amateur Radio Service should have a "No-Code" class of operator license seems to flourish unabated. For example see the *ARRL Letter*, 12/16/88, page 1; *W5YI Report* of 12/01/88, pages 7 through 10; 1/89 *QST*, pages 78 and 79, and *Westlink Report*, 12/09/88, pages 1 and 6.

"The FCC has again reaffirmed its intention not to certify any new Volunteer Examination Coordinators in the foreseeable future . . . There are already 18 VECs serving the continental United States and its possessions on a regional basis.

"The Commission would much rather see those 18 expand their current operations to take on additional regions . . . of the 18, only the ARRL, W5YI and DeVry offer examinations

in all 13 testing districts. (*Westlink Report*, 12/23/88).

According to an FCC News Release, Amateur licensee KA1SDR of Fairfield, CT was fined \$750 for "pirate radio activity." He transmitted popular music on 7.414 MHz with call letters CBØR.

Unlicensed operation may subject the operator to fines of up to \$10,000 and/or one year in prison. (*ARRL Letter*, 12/16/88; *W5YI Report*, 12/1/88).

An unlicensed Porter, TX man has been convicted of transmitting obscene, indecent and profane language in the 2M Amateur band. He was sentenced to three years of supervised probation and fined \$1,000. He was also restricted from purchasing or using any radio capable of operation on a frequency for which he does not have an FCC issued License. (*Westlink Report*, 12/09/88).

"The FCC has proposed, in Docket 88-527, to expand the 6M repeater subband by 1 MHz, to include 51-52 MHz. This is in response to petitions filed by two southern California repeater groups.

Both groups requested the expansion

in order to accommodate the growing number of repeaters in the band. ". . . where there may be no need for additional repeater operations, the spectrum could continue to be available for other types of operation."

The FCC noted it was concerned with the effect the expansion may have on the present users of that segment . . . and invited comments on the need for repeater expansion and its impact. Comments were due on Jan 27, with reply comments due Feb. 28.

"The FCC has notified all VECs that they will no longer be able to supply FCC Amateur license application Form 610 in quantities of more than five 'because we do not have sufficient resources.'

"Instructions for private printing of the forms at VEC expense were included in the Notice from FCC/Gettysburg." (*W5YI Report*, 12/01/88).

As usual every Christmas holiday season, the United States and the Republic of Korea shared a temporary third party agreement between December 18, 1988 and January 2. The agreement enabled US servicemen to send and receive holiday greetings via Amateur Radio. □

News on MIR

Reports are coming in from all over the world about Amateur contacts with U2MIR.

Frequencies of operation have been anywhere from 145.500 MHz to 145.600 MHz. Sometimes Musa, U2MIR, works SPLIT frequency, but most of the time he works SIMPLEX. So far nobody has reported having a long QSO with Musa, just short signal report exchanges.

It appears that the times of operation are between 07:00 UTC to 14:00 UTC on weekends. One AMSAT-NA member, WDØGML, mentioned that on a pass on Sunday, Nov. 20, at 06:15 UTC, Musa had a very strong signal

over St. Louis, MO, but that he sounded quite exhausted when he QSOed with WDØGML.

All due consideration should be given to the Cosmonauts in avoiding the hideous "pile-up" situations which are common experiences on HF. It must also be mentioned that those wishing to work U2MIR must use a current set of Keplerian elements for their tracking programs.

With the upcoming Soyuz TM-7 mission to the Mir Space Station complex, the Mir orbit will be changing enough to cause considerable error in the predicted AOS times.

To date, no "official" QSL information has been mentioned, but it is assumed that a card sent to U2MIR, P.O. Box 88, Moscow, will be a good bet to send for a QSL card. — Information submitted by John Champa, K8OCL □

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The MFJ-949C gives you more precise matches than any tuner that uses two tapped inductors. Why? Because you get two continuously variable capacitors that give you infinitely more positions than the limited number on switched coils.

This gives you the precise control you need to get your SWR down to a minimum from 1.8-30 MHz. After all, isn't that why you need a tuner?

You get MFJ's lighted 2-color Cross-Needle SWR/Wattmeter that shows you SWR, forward and reflected power - all at a single glance. Meter lamp uses 12 VDC or 110 VAC with MFJ-1312 \$9.95.



MFJ-949C
\$149.95

With MFJ's best 300 watt PEP tuner you get an MFJ tuner that has earned a reputation for being able to match just about anything - one that is highly perfected and has years of proven reliability. Order yours today!

You get a 4:1 balun for balanced lines and a 300 watt 50 ohm dummy load for tuning your exciter.

You get a 6 position antenna switch for selecting 2 coax lines (direct or through tuner), random wire, balanced line or dummy load.

You get a beautiful black all aluminum cabinet. Its compact (10x3x7 inches) size that fits right into your station.

2-knob Differential-T™ Tuner



MFJ-986
\$269.95 The new MFJ-986 Differential T™ 3 KW PEP 2 knob Tuner has a differential capacitor to make tuning foolproof and easier than ever. It ends constant retuning with broadband coverage and gives you minimum SWR at only one best setting. Covers 1.8-30 MHz.

The roller inductor lets you tune your SWR down to absolute minimum. A 3 digit turn counter lets you quickly return to your favorite frequency.

You get MFJ's new peak and average reading Cross-Needle SWR/Wattmeter with a new directional coupler for more accurate readings over a wider frequency range. It reads forward/reflected power in 200/50 and 2000/500 watt ranges. Meter lamp uses 12 VDC or 110 VAC with MFJ-1312, \$9.95.

A new current balun for balanced lines reduces feedline radiation and forces equal currents into antenna halves that are not perfectly balanced for a more concentrated, stronger signal. Add \$10 s/h

MFJ's Fastest Selling Tuner



MFJ-941D 300 watt PEP antenna tuner. Why?
\$109.95 Because it has more features than tuners costing much more and it

matches everything continuously from 1.8-30 MHz. It matches dipoles, vees, verticals, mobile whips, random wires, balanced and coax lines.

SWR/Wattmeter reads forward/reflected power in 30 and 300 watt ranges. Antenna switch selects 2 coax lines, direct or through tuner, random wire, balanced line or tuner bypass. Efficient airwound inductor gives lower losses and more watts out. Has 4:1 balun. 1000 V capacitors. 10x3x7 inches.

MFJ's Random Wire Tuner

MFJ-16010 **\$39.95**



You can operate all bands anywhere with any transceiver when you let the MFJ-16010 turn any random wire into a transmitting antenna. Great for apartment, motel, camping operation. Install a wire anywhere! Tunes 1.8-30 MHz. 200 watts PEP. Ultra small 2x3x4 in.

MFJ's Very Best Tuner



MFJ-989C
\$349.95 The MFJ-989C is not for everyone. However, if you do make the investment you get the finest 3 KW PEP tuner money can buy - one that will give you a lifetime of use and one that takes the fear out of high power operation with low SWR from 1.8-30 MHz.

The MFJ-989C is a compact 3 KW PEP roller inductor tuner with a new peak reading Cross-Needle SWR/Wattmeter with a new, more accurate directional coupler. Meter lamp uses 12 VDC or 110 VAC with MFJ-1312, \$9.95. With three continuously variable components you get precise control over SWR and the widest matching range possible.

You get a two core balun wound with teflon wire for balanced lines and a 6 position antenna switch. 10 1/4 x 4 1/2 x 15 inch cabinet fits in your station. Dummy load, tilt stand, turn counter. Add \$10 s/h.

MFJ's Mobile Tuner

MFJ-945C
\$89.95 Don't leave home without this mobile tuner! Have an uninterrupted trip as the MFJ-945C extends your antenna bandwidth and eliminates the need to stop, go out and adjust your mobile whip.

You can operate anywhere in a band and get low SWR. You'll get maximum power out of your solid state or tube rig and it'll run cooler and last longer.

Small 8x2x6 inches uses little room. SWR/Wattmeter and convenient placement of controls make tuning fast and easy while in motion. 300 watts PEP output, efficient airwound inductor, 1000 volt capacitors. Mobile mount, MFJ-20, \$3.00.

144/220 MHz VHF Tuners

MFJ-921 **\$69.95** MFJ's new VHF tuners cover both 2 Meters and the 220 MHz bands. They handle 300 watts PEP and match a wide range of impedances for coax fed antennas. SWR/Wattmeter. 8x2 1/2 x 3 in. MFJ-920, \$49.95. No meter. 4 1/2 x 2 1/2 x 3 inches.

MFJ

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MFJ's Artificial RF Ground

\$79.95 MFJ-931

You can create an artificial RF ground and eliminate RF "bites",

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Barefoot/1.5 KW Linear Tuner



MFJ-962C
\$229.95 For a few extra dollars, the MFJ-962C lets you use your barefoot rig now and have the capacity to add a 1.5 KW PEP linear amplifier later. Covers 1.8-30 MHz. You get two husky continuously variable capacitors for maximum power and minimum SWR. And lots of inductance gives you a wide matching range.

You get MFJ's new peak and average reading Cross-Needle SWR/Wattmeter with a new directional coupler for more accurate readings over a wider frequency range. It reads forward/reflected power in 200/50 and 2000/500 watt ranges. Meter lamp uses 12 VDC or 110 VAC with MFJ-1312, \$9.95.

Has 6 position antenna switch and a teflon wound balun with ceramic feedthru insulators for balanced lines. 10 3/4 x 4 1/2 x 14 7/8 inches. Add \$10.00 s/h.

MFJ's smallest Versa Tuner

MFJ-901B
\$59.95

The MFJ-901B is our smallest - 5x2x6 inches - (and most affordable) 200 watt PEP tuner - when both space and your budget is limited. Good for matching solid state rigs to linears.

It matches whips, dipoles, vees, random wires, verticals, beams, balanced and coax lines from 1.8-30 MHz. Efficient airwound inductor. 4:1 balun.

FOR YOUR NEAREST DEALER OR TO ORDER

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• 1 year unconditional guarantee • 30 day money back guarantee (less s/h) on orders from MFJ • Free catalog • Add \$5.00 s/h (except as noted)

VE exam schedules

As a service to our readers, Worldradio presents a feature listing those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is two months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us by mid July.

Worldradio, 2120 28th St., Sacramento, CA 95818.

Please mark the envelope "VE Exams."

List the location, and information examinees should have (advance registration, etc.) and the name and telephone number of a person to contact for further information.

p/r = pre-register

w/i = walk-in

Date	City	Contact	Notes	Date	City	Contact	Notes
Alabama				Indiana			
Mar 25	Montgomery	Leroy Bell Jr. (205) 269-4201	w/i	Mar 4	New Castle	Peggy Coulter (317) 288-0481	
Alaska				Mar 4	South Bend	NI9Y (219) 255-4455	w/i OK
Mar 1	Anchorage	KL7HFQ (907) 474-0842	w/i	Mar 11	Marion	KA9TBM (317) 664-5385	w/i
Mar 4	Fairbanks	AL7IF (907) 474-0842	w/i	Mar 12	Kokomo	Will Puranen (317) 453-6542	
Mar 15	Eagle River	KL7HFQ (907) 243-2221	w/i	Mar 18	Columbus	Richard Shelton (317) 763-6090	
Arizona				Mar 18	Michigan City	Robert Lyles (219) 874-3386	w/i
Mar 4	Tucson	K7OPX (602) 886-7217	w/i OK	Mar 18	Rushville	N6RS (317) 763-6090	w/i only
Arkansas				Mar 25	Lebanon	K9DFK (317) 249-2020; or NK9Q (317) 482-1866	
Mar 4	Conway	Jerry L. Hayre (501) 327-7215	w/i	Apr 2	Terre Haute	K9EBK (812) 466-2122; or KD9OK (812) 466-1865	p/r 30 days prior; w/i
California				Iowa			
Mar 2	Modesto	W6XK (209) 883-2968	w/i OK	Mar 12	Des Moines	Jim Snapp (515) 967-3890	w/i
Mar 4	Burbank	W6JEP (818) 848-9340	w/i OK	Kansas			
Mar 4	Burbank	Marie Welsh (805) 948-8493	w/i	Mar 25	Topeka	NQOS (913) 273-3328	w/i OK
Mar 4	Modesto	W6XK (209) 883-2968	w/i OK	Kentucky			
Mar 11	Apple Valley	WB3KMZ (619) 240-2025	w/i OK	Mar 4	Glasgow	Charles Rice (502) 651-8543	
Mar 11	Los Altos Hills	KG6XF (408) 255-9000	w/i	Mar 18	Louisville	Otis Herron (502) 969-7332	
Mar 11	Novato	Nels Lecklinkner (415) 897-8950	w/i	Maryland			
Mar 11	San Marcos	(619) 465-EXAM	p/r by 3/1	Mar 4	College Park	NF31 (301) 963-4008	w/i
Mar 11	San Pedro	N6DYZ (213) 325-2965	p/r; ltd w/i	Mar 5	Takoma Park	W3QF (301) 564-0178; or KZ3Z (301) 434-0934	p/r; ltd w/i
Mar 11	Santa Barbara	KB5AH (805) 682-2665	p/r pref; w/i OK	Massachusetts			
Mar 16	Fountain Valley	N6ISY (714) 775-6095	p/r	Mar 1	Agawam	Jeannette L. Platanitis (413) 786-1463	w/i
Mar 18	San Diego	(619) 465-EXAM	p/r by 3/8	Mar 4	Marshfield	Jeff Alves (617) 225-4279	w/i
Mar 19	Sunnyvale	W6NLG (408) 255-9000	w/i	Mar 7	Acton	Raymond Bintliff (508) 263-7435	no w/i
Mar 25	Chula Vista and Escondido	(619) 465-EXAM	p/r by 3/15	Mar 9	South Dartmouth	William Pierce (508) 263-7435	no w/i
Mar 25	Eagle Rock	KB6RXE (818) 791-1779; or AA6HE (213) 256-2904	w/i	Mar 12	Gloucester	Albert Hamilton (617) 922-3307	w/i
Mar 26	Santa Cruz	WD6EHL (408) 255-9000	w/i	Mar 18	Melrose	NC1V (617) 665-6061	w/i
Mar 30	Long Beach	KA6HOQ (714) 897-6331; or NF6X (213) 434-8279	w/i	Mar 22	Cambridge	Nick Altenbernd (617) 437-0320	2-day p/r
Apr 1	El Cajon	(619) 465-EXAM	p/r by 3/22	Michigan			
Apr 8	San Marcos	(619) 465-EXAM	p/r by 3/29	Mar 4	Saginaw	K8OT (517) 624-9094	
Colorado				Mar 4	Saginaw	KO8M (517) 793-9636	w/i OK
Mar 2	Denver	W0IJR (303) 366-9689	p/r pref	Mar 6	South Haven	WD8AGC/WD8MEU (616) 637-3905	w/i
Mar 4	Fort Collins	Dorothy Leising (303) 491-6847	w/i	Minnesota			
Mar 11	Lakewood	Glenn Schulz (303) 366-9689	w/i	Mar 11	Bloomington	Emery Mehl (612) 529-6638	
Mar 13	Boulder	(303) 530-1872	w/i	Missouri			
Connecticut				Mar 4	Hillsboro	WB0D (314) 892-0688	w/i
Mar 11	Portland	Joel Wilkes (203) 267-8071	no w/i	Mar 25	Independence	Delbert McMullen (816) 254-6355	
Mar 12	Farmington	Paul Lombardo (203) 529-3743	w/i	Montana			
Florida				Mar 14	Billings	Dave Williams (406) 656-5667	w/i
Mar 7	New Port Rchy.	AA4FG (813) 849-1224	w/i OK	Mar 26	Libby	WF7X (406) 293-5607	w/i
Mar 11	Miami	Jose Ramos (305) 264-4732	w/i	Nebraska			
Mar 18	Fort Myers	Jose Ramos (305) 264-4732	w/i	Mar 25	Kearney	Tim Anderson (308) 234-1994	w/i
Mar 18	Melbourne	Jim Larson (407) 729-2192	w/i	New Hampshire			
Mar 18	W. Palm Beach	W4SS (407) 967-1477;	w/i	Mar 11	Nashua	Judy Gauthier (603) 882-9065	w/i
Georgia				Mar 11	Newport	Conrad Ekstrom (603) 543-1389	w/i
Mar 26	Atlanta	Neil Foster (404) 449-3340	w/i	New Jersey			
Idaho				Mar 9	Cranford	N2XJ (201) 635-7686	w/i OK
Mar 9	Boise	W7JMH (208) 343-9153	w/i	Illinois			
Mar 11	Oak Forest	KA9HDN (312) 247-0650	w/i	Alabama			
Mar 12	Morrison	Jim Buikema (815) 772-3793	w/i	Alaska			
Mar 14	Macomb	Joe Rossmiller (309) 837-4277		Arizona			
Mar 18	Bolingbrook	NW9K (815) 886-5135	w/i only	Arkansas			
Mar 18	Godfrey	KF9F (618) 466-2306	w/i	California			
Mar 19	Danville	Betty Collins (317) 793-3573	w/i	Colorado			
Mar 23	Lombard	(312) 495-0498		Connecticut			
Mar 25	Quincy	Ron Rose (217) 224-9238		Florida			

Date	City	Contact	Notes	Date	City	Contact	Notes
Mar 11	Cranford	Carl Felt Jr. (201) 635-7686	w/i	Mar 4	Erie	W3CG (814) 665-9124	w/i OK
Mar 11	Pennington	Don Wright (609) 737-1723	phone p/r pref; w/i	Mar 11	McKeesport	Philip Slaugh (412) 466-5204	no w/i
Mar 11	Trenton	AA2F (609) 737-1723	phone p/r pref; w/i	Mar 18	Beaver Falls	Thomas Peluso (412) 843-6560	no w/i
Mar 16	Bellmawr	WA2VQG (609) 546-7710	w/i OK	Mar 20	Perkasie	Stewart Silverstein (215) 584-0775	w/i
Mar 31	Mays Landing	Steve Lucas (609) 625-7111	w/i	Mar 25	Montoursville	Steve Phillips (717) 322-5557	w/i
New Mexico				South Carolina			
Mar 4	Almogordo	Donald Brown (505) 434-6213	w/i	Mar 18	Charleston	AA4IX (803) 873-9465	w/i
New York				Mar 18	North Charleston	Vernon Wells (803) 743-4916	w/i
Mar 5	Valhalla	Steven L. Weinstein (914) 693-6606	w/i	Tennessee			
Mar 8	Bethpage	W2QUV (516) 354-6861	w/i OK	Mar 4	Memphis	Maxine Balentine (901) 386-4375	p/r by 3/2
Mar 11	Greenvale	W2NL (516) 541-2450	w/i OK	Mar 11	Nashville	Murray G. Jones (615) 824-7216	w/i
Mar 11	Selden	George Sintchek (516) 751-0894	w/i OK	Texas			
Mar 12	North Babylon	Walter Wenzel (516) 957-0218	w/i	Mar 5	Princeton	NW5W (214) 736-2397	w/i
Mar 15	Lancaster	Matt Gorski (716) 683-1720	p/r	Mar 11	Farmers Brnch	Donald Gwynne Jr. (214) 339-7714	w/i
Mar 16	White Plains	S. Fried (914) 285-3029	w/i	Mar 11	Midland	KT5G (915) 694-9450	w/i
Mar 18	Kingston	Frank Stainsbury (914) 382-2103	w/i	Mar 11	San Antonio	NS5I (512) 681-0702	w/i
Ohio				Mar 14	Houston	Stu Lamkin (713) 777-3345	p/r
Mar. 11	Maumee	Maurice E. Oliver (419) 825-3425	p/r	Virginia			
Mar 11	Ravenna	Joanne Solak (216) 274-8240	w/i	Mar 4	Roanoke	Gordon Garrett (703) 345-5403	w/i
Mar 11	Westerville	William Tabor (614) 223-1739	w/i	Mar 11	Harrisonburg	Wayne T. Miller (703) 434-4424	w/i
Mar 12	Conneaut	Norma Vanderhoff (814) 665-9124	w/i	Mar 11	Harrisonburg	KB4WOM (703) 867-5428	w/i
Mar 14	Tiffin	Robert Kemerley (419) 396-6496	w/i	Washington			
Mar 21	Canfield	Ronald Palermo (216) 740-7029	w/i	Mar 11	Tukwila	Mary Lewis (206) 523-9117	w/i
Oklahoma				Mar 18	Bremerton	David B. Brooks (206) 876-3120	w/i
Mar 16	Tulsa	Wilbert Hunsicker (918) 599-2514	w/i	Mar 25	Tacoma	W7BUN (206) 845-7652	w/i OK
Oregon				Mar 11	Wenatchee	Ernest Bennett (509) 662-1210	w/i
Mar 4	Portland	Randy (503) 649-5066	w/i only	West Virginia			
Mar 8	Roseburg	Donald Bovee (503) 825-3691	w/i	Mar 4	Charleston	James Ligan (304) 343-7251	
Pennsylvania				Wisconsin			
Mar 3	Nazareth	Donald C. Holmes (215) 252-5696	w/i	Mar 4	Racine	NW9P (414) 658-8390	w/i
				Mar 26	Tomahawk	Gorgory Garner (715) 453-7096	w/i

Laws of physics vs. hype

Peter Onnigian, W6QEU

We read magazine ads out of curiosity, hopefully to learn things about products and services in which we may be interested. There is one ad, among several, in an amateur magazine that has caught our eye for several months now, and we'd like to share it with you.

A guy in Alabama would have us believe that a groundplane antenna has a gain of 4.75dB, and worse yet, an elliptically polarized antenna consisting of one groundplane — gamma-fed with a radial also gamma fed — to have a horizontal plane gain of 5.25dB, plus a vertical gain of 4.75dB! We wonder why everybody is not knocking at his front door.

This kind of miracle is not around these days in antennas, folks! If you know of any groundplanes with a gain over a dipole, you should run — not walk — to your nearest patent attorney.

Now this ad has us further confused. It says the antenna has a multiplication factor of 12 times for the 4.75dB antenna. When I went to Yale, the prof showed me on a slip stick that 4.75dB was a ratio of three times in power gain, or 1.73 times in voltage. Haven't the foggiest where this guy got 12 times!

He also claims that the dual-fed

horizontal/vertical groundplane requires two separate coaxial cables to hook up, and it has a gain of 15 times for the vertical. The ad does not clearly state what is meant by horizontal or
(turn to next page)

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Special Events...

Ice festival in Alaska

In celebration of Ice Festival, a 10-day event celebrating the coming of spring, members of the Arctic ARC and the Borealis ARC will participate in the 5th annual Ice Festival QSO party from March 10 to March 19.

Members of both clubs can be found on most ham bands from 10 to 80M, phone and CW.

To receive a special QSL card, please send your QSL card and a SASE to the station contacted.

BE ALERT AND IMAGINATIVE. Before you or the XYL toss out an item after its useful household life, look it over. Does it have rubber or plastic feet, knobs, or useful metal parts like brackets, nuts, bolts, washers or screws? Why throw these away and then go to the hardware store at a later date and buy them? —*Bob Lasater, KA9SEO; Sterling-Rock Falls ARS, IL*

Radio classes

Chelsea Civil Defense (Massachusetts), in cooperation with QRA Radio Club, will sponsor Amateur Radio Communications classes evenings at Chelsea High School. They begin March 7 for those interested in obtaining a Novice (basic level) Ham License or a Technician/General License. The number of registrations received will determine the specific classes to be held. A minimal fee will be charged to cover cost of materials only.

The classes will be open to everyone in the local area who have a sincere interest in becoming a Ham.

For more information write Frank Masucci, 136 Grove St., Chelsea, MA. 02150 and please enclose your telephone number.

On March 30, a Tech and General Class course offered by the Community Education Section of Cabrillo College (Aptos, CA) starts and runs for eight Thursdays. The instructor is Arthur Lee, WF6P.

The non-credit classes will be held in room 429-C at the school.

For registration and fee information call 408/479-6331.

Amateur Radio classes sponsored by the Riverside County ARA will be given at Riverside General Hospital in Riverside, CA beginning this month.

Class	Instructor	Dates	Day	Location
Novice	Lee Brown, N6HGT, (714) 684-6720	Mar 7 - May 23 7 p.m. - 9 p.m.	Tuesday	Building D (Solarium)
Tech/Gen	Arlo Myers, WA6UDR, (714) 686-7473	Mar 6 - May 8 7 p.m. - 9 p.m.	Monday	Building D (Solarium)
Extra	Joe Storto, WV6L, (714) 780-1149	Mar 23 - May 25 7 p.m. - 9 p.m.	Thursday	Building D (Solarium)
Code 5 wpm	Jerry Ver Duft, AD0A, (714) 351-8824	Mar 24 - May 26 7 p.m. - 8 p.m.	Wednesday	Building D (Solarium) <input type="checkbox"/>

Physics

(continued from page 15)

vertical. We wonder if he is talking about the horizontal polarization in the vertical plane. In any event, we'll take a dozen of those miracles that have a gain of 15 times. Shucks, that's 11.75dB!

There's a fool born every minute, someone once said. Recently in California, the land of fruits and nuts, two brothers and the district attorney

brought fraud charges against an ex-con who had bilked two brothers out of \$240,000. The con worked a perpetual motion motor, which rotated, delivered a fractional horsepower, and didn't use batteries, AC or any other observable source of power. Turns out there were hidden batteries in the gadget!

Some magazines are hungry for a dollar and do accept fraudulent advertising, but not this one. We don't carry that kind of stuff. So when reading those other magazines, keep your eyes open and your hands on your pocketbook — as we do!

Pass it on . . . **WORLD RADIO**



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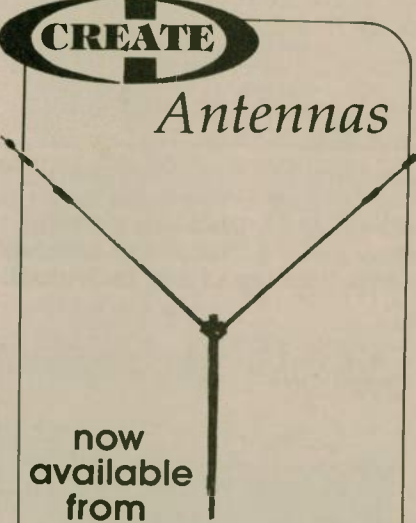
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DAYTON Hamvention

April 28, 29, 30, 1989

Early Reservation Information

• General Chairman, Bill McNabb, WD8SAY

• Asst. General Chairman, Ed Hillman, N8ALN

- Giant 3 day flea market • Exhibits
- License exams • Free bus service
- CW proficiency test • Door prizes

Flea market tickets and grand banquet tickets are limited. Place your reservations early, please.

Flea Market Tickets

A maximum of 3 spaces per person (non-transferable). Tickets (valid all 3 days) will be sold IN ADVANCE ONLY. No spaces sold at gate. Vendors MUST order registration ticket when ordering flea market spaces.

Special Awards

Nominations are requested for 'Radio Amateur of the Year,' 'Special Achievement' and 'Technical Achievement' awards. Contact: Hamvention Awards Chairman, Box 964, Dayton, OH 45401.

License Exams

Novice thru Extra exams scheduled Saturday and Sunday by appointment only. Send FCC form 610 (Aug. 1985 or later) - with requested elements shown at top of form, copy of present license and check for prevailing ARRL rates (payable to ARRL/VEC) to: Exam Registration, 8830 Windbluff Point, Dayton, OH 45458

1989 Deadlines

- Award Nominations: March 15
- Lodging: April 7
- License Exams: March 26
- Advance Registration and banquet:
 - USA - April 4
 - Canada - March 31

Flea Market Space:

Spaces will be allocated by the Hamvention committee from all orders recieved prior to February 1. Express Mail NOT be necessary! Notification of space assignment will be mailed by March 15, 1989.

Information

General Information: (513) 433-7720
 or, Box 2205, Dayton, OH 45401
 Lodging Information: (513) 223-2612
 (No Reservations By Phone)

Lodging

Please write to Lodging, Dayton Hamvention, Chamber Plaza, 5th & Main Streets, Dayton, OH 45402 or refer to our 1988 Hamvention program for lodging information which includes a listing of hotel/motels located in the surrounding areas of Dayton. Reservations for the surrounding area will then become the responsibility of the individual.

HAMVENTION is sponsored by the Dayton Amateur Radio Association Inc.

Advance Registration Form

Dayton Hamvention 1989
 Reservation Deadline - USA-April 4, Canada-March 31
 Flea Market Reservation Deadline: February 1

Enclose check or money order for amount indicated and send a self addressed stamped envelope.

Please Type or Print your Name and Address clearly.

How Many

Admission	_____	@ \$10.00*	\$ _____
(valid all 3 days)			
Grand Banquet	_____	@ \$20.00**	\$ _____
Women's Luncheon			
(Saturday)	_____	@ \$7.00	\$ _____
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AWARDS

'First Day Club'

To celebrate the commencement of AO-13 operations on July 22, AMSAT-NA sponsored an AO-13 "First Day Club" open to ALL satellite communicators and ALL listeners. Once the initial chaos and surge of would-be AO-13 users subsided, AMSAT-NA's "First Day Club" Special Event stations were able to log hundreds of stations. These stations then became eligible for their "First Day Club" awards.

"First Day Club" Special Event stations were operated from various locales by AMSAT veterans such as K8OCL, WA3WBU, K9NO, K7RIE, W8GQW, KL7GRF and VE7XQ. Together they logged several hundred stations throughout the Western Hemisphere.

Awards were made in three classes of membership to the AO-13 "First Day Club":

GOLD CLASS: Required successful two-way QSO with Official AMSAT "First Day Club" station, plus CURRENT AMSAT membership. Gold

Class "First Day Club" members received a historic, handsome AO-13 QSL card with special "First Day Club" endorsements, plus a beautiful AMSAT AO-13 "First Day Club" certificate.

SILVER CLASS: Required successful two-way QSO with Official AMSAT "First Day Club" station, but not current AMSAT member. Silver Class "First Day Club" members receive the AO-13 QSL card with "First Day Club" endorsements only.

BRONZE CLASS: Required successful monitoring of Official "First Day Club" station, but not current AMSAT member. Bronze Class club members receive an AO-13 QSL card.

"First Day Club" operations on AO-13 ran from 23:30 through 06:19

UTC and operated on 145.957 MHz for the Official station and between 145.935 and 145.955 MHz for participants.

Planning for the "First Day Club" special event was hobbled by the uncertainty in the exact "turn-on" day. AMSAT officials said they would have liked to have had more leadtime in planning the event, but added the uncertainties experienced are fairly common in the transition of a system from engineering phase to operations phase.

When it appeared the turn-on date coincided with the onset of a weekend and would be viewable in the target area, it was decided to go ahead even with the short lead-time.

—Amateur Satellite Report □

TARS presents achievement award

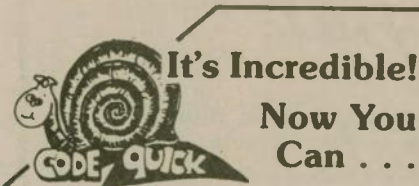
The Tri-State ARS announced that this year's John E. McCutchan Award was presented to Martin L. Hensley, KA9PCT.

Martin received the achievement award the evening of Dec. 2, at the club's annual Christmas Dinner.

For the past two years, KA9PCT has been employed at WIKY AM-FM-LPTV in Evansville, IN, where he maintains the repeaters and other radio equipment used by area Amateurs during emergency weather

situations and public service events. He is also treasurer of the local organization.

The McCutchan award acknowledges that "The strength and progress of Amateur Radio is vested in the hearts and minds of dedicated Amateur Radio operators who voluntarily give of their time and knowledge." John McCutchan, a dedicated Amateur, was a leader in this respect and is honored by his friend, Ellis Carson, who promotes and sponsors this award. □



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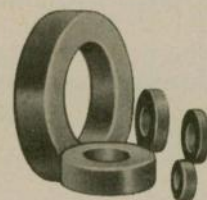
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Prices scaring off would-be Novices

Gary Myers, K9CZB

Nellie, KA9DVY, and I were recently discussing why so many people drop out of Novice classes, and why so many new hams never get on the air. She has been involved in several Novice classes, and her opinion was that the reason is the expense of getting a ham station on the air. Later, while brainstorming our new license class, some of the club members present expressed concern over the same thing.

With the exception of QRP, which isn't suitable for most Novices, and CW-only, which has limited appeal, the total minimum cost of putting a modest ham station on the air is about \$400-500. This is true whether you buy a used SSB HF rig, or a new base/mobile VHF FM rig. This as-

sumes reasonable output power, and starting from scratch on everything — antenna, feedline, filters, key, etc.

What I don't understand is, why is this so scary? Many people spend that kind of money on a stereo system, or a new camera and attachments, without guilt pangs. I know more than one person who has spent more than that on a better pickup truck, just because he always wanted one.

Most home computer systems cost more than \$500 by the time you buy a printer and some software. A good bicycle and the needed paraphernalia

is that, and more. Same goes for a canoe.

We won't even talk about motorcycles or snowmobiles! Have you priced scuba gear? And how much did you spend on Junior's saxophone (which he hasn't touched in years)? The list could go on and on, but I hope I've made the point.

I don't think it's fair that Amateur Radio gets singled out as an expensive endeavor. It's a fact of life that most things that are worthwhile are expensive. Amateur Radio is just one of many. —Argonne RC, Hinsdale, IL □

Have you heard?

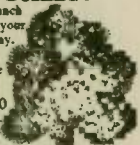
Certain primitive tribes around the world have the strange custom of beating the ground with clubs while making bloodcurdling screams. Anthropologists call this "human expression." In the United States we call it GOLF.

Which brings up the next topic of "discussion." Sometimes Amateurs become so involved in their professions and their hobbies that they leave little time for themselves and their health. In a recent study (actually done over a 12 to 16-year period) of Harvard alumni aged 35-74, it was determined that, indeed, a constant, adequate level of physical activity does decrease the risk of death in all age groups from all causes. This is independent of all other differences, such as whether the men smoked (all 16,936 subjects were men), had high blood pressure or were underweight or overweight. Individuals who walked more than 9 miles a week had a 21 percent lower risk of death than those who walked less than 3 miles a week. —Pioneer ARC, Fremont, NE □

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Where's the Beam?

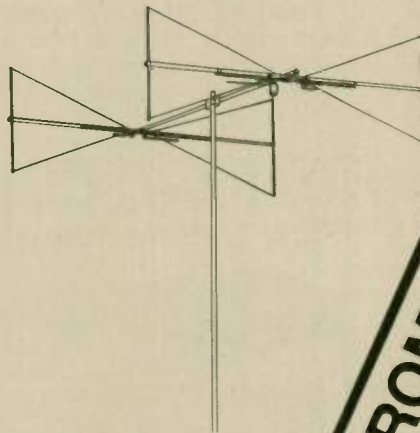
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PUBLIC SERVICE

Ham club aids CDF

Jim Cox, KE6OZ

The Calaveras Amateur Radio Society assisted the California Department of Forestry with emergency communications during the summer 1988 fires in Calaveras County, California.

Within an hour of being called out, communications were established between the Taylor Base (fire camp) at Railroad Flat and the CDF Headquarters in San Andreas, using 2M repeater WB6MFV/R. This operation was continued for nearly 48 hours when conventional communications were firmly established and the emergency had downgraded to routine.

Under the leadership of Ben Autrey, K6LHR, the liaison officer between the amateurs of Tuolumne and Calaveras Counties and the CDF, approximately 15 amateurs assisted the CDF during this emergency. □

Texas bike ride

The town of Sanger, Texas, decided to host a bicycle ride to help promote the area, which includes a new man-made lake. It was decided to have a Lake Ray Roberts Ride, sponsored by

the Sanger Chamber of Commerce. The longest part of the ride would be 100 miles.

Jim Simpson, WA0UJJ, was the Ride Chairman. For communications assistance, he called on the North Texas High Frequency Association. Among those who assisted were: Fred McClain, N5DRZ; Maureen McClain, N5FFB; Patsy Tiffin, KA5GPM; Don Tiffin, WA5FQV; Rocky, N5MTX; Gay Leake, KB5CWS; Ray, KB5GBN; Glen Brazzel, NQ5X, and XYL Cindy, N5MUJ.

The Sanger Radio Shack store extended the use of a table in the front window of their store, and allowed the hams to install antennas on their roof.

The best illustration of the amateurs' outstanding job was the worried mother who came to the park picnic inquiring about her overdue son. She was sent into the Radio Shack store to ask Maureen, who was running the net control station. The incredulous look on her face when she was immediately told he was on the east frontage road of I-35 at mile marker 482 tired, resting and OK really said it all. She was amazed that we knew exactly where he was.

Jim said, "I bit my lip to keep from saying, 'Lady, we know where every

rider is on the whole route!'" As it happened, Maureen had been in contact with Glen and Cindy seconds before the lady walked in and were discussing the young boy. Timely communication!

The Chamber of Commerce has already asked the club to do the communication for them for next year. And why not? We all had fun, gained experience, and — most importantly — provided a public service. — Fred McClain, N5DRZ □

RADOPS

Ralph "Woody" Wood, K5DGZ, and Christy Turner

The RADOPS organization of Sabbar Shrine Temple in Tucson, Arizona, is now able to communicate with Shrine Crippled Children's Hospitals and patients throughout the West as a result of the completion of their studio on the upper floor of the Mosque.

A group of Sabbar Shriners experienced in Amateur Radio operations began performing communications for the Shrine Circus.

In 1982 the radio group became a chartered group known as Sabbar Temple RADOPS, which stands for radio operators. Woody, K5DGZ, was the first president. RADOPS' services have been expanded since then.

With various Shrine hospitals now possessing Amateur Radio stations, RADOPS is able to communicate widely. With the new antennas on the roof of Sabbar, the unit now has HF, VHF and UHF frequencies available for sending and receiving. □

Crash victims turn to Amateur Radio

Flying skill and Amateur Radio have saved the lives of two ham operators.

On July 18, Milt Bonham, KY0E, and Bruce Bevers, KA0CPI, were piloting a single-engine plane west of Denver when it crashed into a mountain. On impact, the craft flipped onto its back, destroying the aircraft antenna and avionics, but by some miracle — and a bit of flying skill — neither occupant was injured.

Unfortunately, the ELT (Emergency Locator Transmitter) failed to activate on impact.

They had with them a 2M hand-held and used it to break into a QSO in the W0FVV repeater. Doug Lomax, KA0YAU, was in contact and took the downed aircraft report and phoned it

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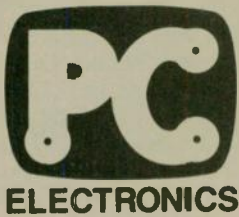
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The 1 watt p.e.p. transmitter comes cristaled on 1289.25 MHz (other freq. special order - see ARRL bandplan). Attractive shielded cabinet is 7x7x2.5". Jacks are provided for a low impedance dynamic mic which mixes with the camera or VCR audio. Either manual switch or mic or remote PTL (push to look - same as push to talk) switching are used to change from receive to transmit.



TX23-1 rear view shows jacks for composite video input, line level audio from camera mics and VCRs. Also a jack is provided for video output to a monitor to enable seeing your own rf detected video in transmit or direct from the camera in receive. A type N connector is used for the 23cm antenna. The rf T/R antenna relay is built in. For receiving on 23cm connect the antenna input from our TVC-12G downconverter to the BNC connector. The output goes to your TV receiver tuned to channel 7 or 8.

Transmitting equipment is sold only for legal purposes to licensed amateurs verified in the latest Callbook. If recently licensed or upgraded send a copy with the order.

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to the Civil Air Patrol (CAP).

As a result, a rescue net was formed and a schedule of QSO's was set up with the hams in the downed plane to conserve battery power. The CAP used the repeater to confirm the area of search until a local TV news helicopter made a sighting.

While search and rescue teams were dispatched from Denver, Bob Ragain, WB4ETT; Greg Burnett, K0ELM; and Warren Gertz, N0FVG, pressed their direction-finding skills into service.

By now, the ELT had turned on, but the three ham DFers were 30 minutes

ahead of the CAP in locating the exact position of the downed plane. Less than six hours from the time their plane crashed, KY0E and KA0CPI were en route to Denver. Tnx Colorado Repeater Association.

—Westlink Report

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Kenwood deadline extended

Due to popular demand, the Kenwood gift certificates contained in the Gordon West Radio School Series of FCC license preparation packages are valid for an additional year. The expiration date is now December 31, 1989.

Even though the gift certificates are printed with the 1988 expiration date, the coupons will be honored throughout 1989.

All Authorized Kenwood Amateur Radio Dealers have been notified of this change. Please remember that these coupons are not rebate certificates for cash, but \$25 coupons.

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Receivers		
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FT-212RH New 2m, 45w mobile	459.95	Call \$
FT-290R All Mode Portable	599.95	Call \$
FT-23 R/TT Mini HT	344.95	Call \$
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Interesting facts department

ROBERT BEASLEY, K6BJH

Didju know that:

Television channel 2 engulfed in its entirety the old 5M Amateur band (56-60 MHz), plus an extra 2 MHz? In its place we were given the 6M band, which at the time was located between television channels 1 and 2. Yes, the FCC had once allocated a Channel 1 (44-50 MHz), which they apparently later felt impinged too much on the lower end of the spectrum, and so released it for use by emergency services, law enforcement and other public services (your cordless phone, for instance, uses the upper end of that band. □

There's nothing more annoying than a parachute that won't open. —Arrowhead RAC, Duluth, MN

Amateur "Hi"

Ever had a funny or strange experience with Amateur Radio, either on or off the air? If so, type it up (or print neatly) and send it to us for consideration in our monthly AMATEUR "HI" contest. You could win a free year's subscription to Worldradio!

This month's winner, "relatively" speaking, is Dale E. Soper, NW8P, of Cooks, MI.

While living near Soldotna, AK, I was on the air 9/06/85, 0320 UTC. I heard station KA7FTJ finish a QSO with another station and I decided to give him a call. My call at that time was WL7BFT.

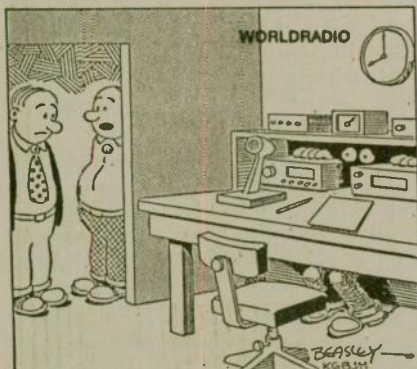
He answered, gave QTH (Grants Pass, OR) and handle (Roger Soper).

I said, "Roger Soper, that's the name of my son in Detroit!" Then I said, "I have another son in Ocala, FL

who is a Radio Amateur (Ronald Soper)."

He said, "You do?" Then said, "Now listen to this: I have a brother in Winter Haven, FL, Ronald Soper!"

Two brothers with the same names as my two sons! Since then I have personally visited both of these men and as far as we know, we are no relation to each other! □



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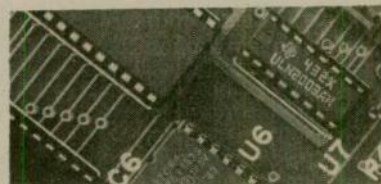
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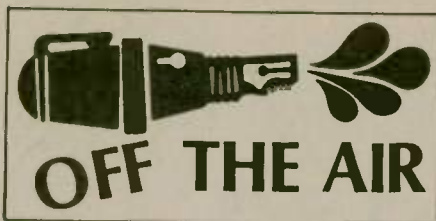
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'Your room is waiting ...'

About four years ago, I worked my way (as a dock hand) to Brisbane, Australia and back on a German RO-RO (Roll on-Roll off) ship.

I took my 2M hand-held (ICOM 2AT) with me. While the ship was docking, I got hold of someone on shore via 2M and asked them if they could contact one of the hams I had contacted from the States, who said they had a room for me.

He returned a few minutes later with the message that "my room was waiting for me." I stayed at the homes of four different radio amateurs within a 500-mile radius, while there for a total of 21 days. I then caught the same ship on its return trip.

We stopped for about eight hours at Noumea, New Caledonia, and again for eight hours at Suva, Fiji. Then on the way to Tacoma, Washington, we passed through the lower Hawaiian Islands. I again got on deck with my

hand-held and contacted a ham at the Honolulu Airport who was leaving in one hour for San Diego.

He took a message from me and when he arrived in San Diego, he called my wife collect in North Bend, Oregon and told her of my ETA in Tacoma. This beats telephoning any time!!

BUDDY HINCKE, WA6LFJ
North Bend, Oregon

Should we go metric?

The metric system is used worldwide with the exception of the United States. In the United States, it is rare among radio amateurs when length (other than wavelength) is expressed in meters. We are far behind the times in converting.

Probably the toughest part of converting is learning to think in metric terms. Instead of telling another station that your 3-element Yagi is 75 feet high, tell him it is about 23 meters high. Do not give your QTH as 50 miles south of Chicago; give it as 80 km south of Chicago.

Along these same lines, most other countries measure temperature only in degrees centigrade. We should also consider using centigrade ourselves, so that a DX station will have a better

idea of what we are talking about when we discuss the weather.

If we all keep a conversation table handy at our operating position and use it faithfully, we will soon find ourselves referring to it less and less.

Amateur Radio publications could and should help in this effort. How? By changing to the metric system in all amateur publications on a gradual basis — say, over a 10-year period.

To begin with, give the English dimension first, followed by the metric equivalent, in parentheses. After a reasonable period of time — say three years, reverse this procedure. Then gradually leave the English measure out completely.

Oh, it won't be easy, and some readers will actively resist such a change. But we might find subscribers increasing because a lot of foreign radio amateurs will begin to understand what our publications are talking about.

Some years ago we made a feeble effort to change over to the metric system on a national basis. This plan fizzled out due to lack of leadership and resistance to change. On a national basis, there is a huge amount of inertia to overcome. Resistance to change is a natural human characteristic. Our Amateur Radio fraternity should show some leadership and effort to get the metric ball rolling again.

In the late '50s, many old-timers were very sure that single sideband had no future and resisted the change from AM. How many of them are still using AM now, except as a novelty?

Even the country where the English system originated is in the process of converting to metric. It would seem that the natural course for us would be to follow.

ROBERT STRACK, K6CNC
Covina, California

Lansing to Liberia

Several winters ago, an incident occurred that has always struck me as being unique.

In the early part of January of that particular year, I received a phone call from Grace, wife of a fellow ham, Mark. Mark was (and is) a physician in Zor Zor, Liberia. Grace had come home to Lansing, Michigan in order to have her baby in the local Lansing hospital. Grace asked me if I would phone patch her to Mark in Liberia.

As I had spent two years in Liberia, I was familiar with the almost complete isolation of Zor Zor, where radio is about the only means of outside con-

(please turn to page 26)

BASE STATIONS



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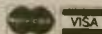


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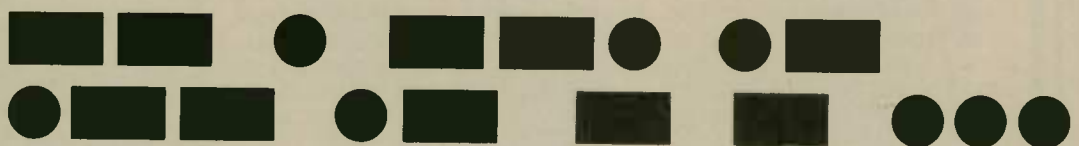
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
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Off the Air

(continued from page 24)

tact. Mark had sent operating times and schedules and, as propagation was good, contact was easily made on 20M.

We continued making contacts all during the rest of January — I made 18 phone patches, and Harold Mahlke, W8QG, made five. Contacts were generally good, with the usual QRM on 15 and 20M. And all seemed well with Grace, who expected her baby to be born sometime toward the end of February.

Early one morning, about 5 a.m. I was awakened by a phone call from Mark's brother, John, in New Jersey, informing me that he had received word that Grace was in the hospital a few weeks earlier than anticipated. John, a ham, had an early morning contact with Mark. I was phone patched to Mark and we set up scheds for the immediate future in order to keep him posted on what was happening to Grace.

At 8:50 a.m. that same morning, I made a 10M contact with Mark in Zor Zor. Propagation was excellent. Upon establishing contact I called the

hospital and told them who I was, what information I wanted, and for whom it was wanted. There was a request to hold the line. After a few moments I was informed that the call was being transferred to the Labor and Delivery room!

A nurse came on the line and said that she was one of the persons who attended to the delivery of Grace's baby. I explained that I had Mark in Liberia on the other end of my radio. I informed Mark that I was connecting the phone patch and he could speak to the nurse. Instead they handed Grace the phone and she proceeded to inform Mark that he had a new son weighing in at 7 lbs. 13 oz., named Luther, and looking exactly like him.

The official time of delivery of Luther was given as 8:31 a.m. Mark in isolated Zor Zor, Liberia heard the news from his wife Grace, who was still in the Labor and Delivery room, just 30 minutes after it occurred.

What more can Amateur Radio do?
MARV SOLOMON, KI4EA
 Asheville, North Carolina

When you're through changing, you're through. —*Arrowhead RAC, Duluth, MN*

Removing IC's from circuit boards

Dick Little, K9EEH

Have you ever tried to unsolder an IC chip from a printed circuit board and wound up tearing some of the foil connected to the chip?

Here is a method I use, and so far I have had very good luck with it.

First you cut the pins loose from around the top of the chip. Then take a small soldering iron (25 to 30W) and heat each pin, pulling the pins out of the board.

After all the pins are taken out, take some sharp, pointed toothpicks and, while heating the bottom of each hole, poke the toothpick through. This will clean out the holes. When you have all the holes cleaned out, check for any solder bridges on top. I would put in a socket so the next time you have to replace the chip, it would be a breeze.

If you want to clean the rosin left on the board by the solder, use some cotton and denatured alcohol.

—*Sterling Rock Falls ARS, IL*

PMs and FM's

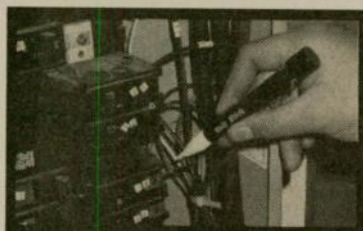
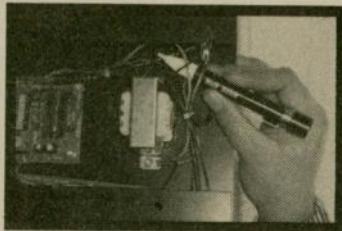
Here's a question that's hard to answer without filling two chalkboards with funny drawings, lines and arrows: "What's the real difference between phase modulation (PM) and frequency modulation (FM)?"

Boiled down into simpler terms, FM will swing a carrier to a constant value with a DC voltage; PM will swing the carrier but will not sustain a constant frequency swing with a DC voltage.

Contrary to what most people believe, they are really using PM, not FM, de Kermit Carlson, W9XA.

—*Fox River Radio League, Aurora, IL*

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TRAFFIC

Gerri Sweeney, N4GHI

We here on the editorial staff would like to welcome Gerri Sweeney, N4GHI, as the new "Traffic" columnist. We look forward to working with her. Below, Gerri introduces herself.

First, I should give you a little background on my traffic experience. I am a CW net manager of the Virginia Net and the manager of the Atlantic Region Net (SSB). I am on the Eastern Area Staff for the National Traffic System and am active in community events, as well as in my local radio club. I have used AMTOR for sending and receiving traffic and participated in a Congressional awareness campaign of the 220 MHz band giveaway by receiving over 1000 messages via packet for delivery to members of the Senate and the House. My usage of the word traffic will refer to third party and not Amateur to Amateur messages. Following are my feelings on the art of passing traffic.

The Traffic Handler

S/he is a special breed with special traits and talents. S/he likes the exactness of meeting schedules, working within the discipline of known procedures to move traffic from one location to another while getting to know people on the phone, radio and at hamfests.

Neither rain, snow nor dinner keeps the faithful traffic handler from a designated schedule. One soon becomes addicted to the point where the first thing done when returning from a vacation is to turn on the radio, make sure it still works and get tuned for the next net.

The traffic handler needs traffic! His/her biggest disappointment on any net is lack of traffic. The traffic system thoughtfully becomes a giant black hole which will swallow any amount of time the traffic handler cares to give. The traffic handler gets lured into the system by checking into one net a day. Soon, s/he volunteers to take traffic on to the next net when the designated rep is missing. The hook is set.

Finally, NCS (Net Control), beckons, and then it's just a matter of how many nets a day you can get to before your

family threatens to leave you (see the ARRL's publication *Net Directory*). Happily, the NTS (National Traffic System, sponsored by the ARRL) offers activity on most modes and on many bands. There are also many independent traffic nets, and many clubs have 2M traffic nets which link into HF nets.

The basis of all this organized fun is to have a system in place, ready to operate when needed by the community in times of disaster. The traffic handler is a community and national asset.

International Assistance and Traffic Net

All states and provinces in the United States and Canada have various traffic nets. The NTS not only covers all the states/provinces, but has an outlet for international traffic with any country having a third party traffic agreement with the United States.

Any international traffic is routed to the Eastern area, where it is picked up for delivery to the IATN (International Assistance and Traffic Net).

The IATN meets daily at 1130Z on 14303 kHz. Since it's not convenient for some countries to check into the IATN (due to time differences, propagation, etc.), any traffic with no outlet is picked up by one of the IATN net members to find outlets later in the day with one-on-one schedules, or on other world nets. We currently have regular participation by: VK6RQ and VK6AP in Australia, 4Z4OX in Israel, XE1L in Mexico, HK1/HC4AUA in Colombia, OA4CIT in Peru, HP1XXS in Panama, J6LIH in St. Lucia, J73BB in Dominica and 9Y4IBN in Trinidad/Tobago.


In addition, we have frequent contacts with many other countries. There is always a liaison station for the United States and Canada to receive any incoming traffic. While phone patches are nice, they take a great deal of time waiting for the right station and propagation to come along. The exactness of knowing you can leave a message (replies can be requested) and get on with your day is great. The IATN is a gateway to the world. The only information a foreign station needs to bring is to whom the message is going, complete address and a mes-

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Modes for traffic handlers

All modes are currently being used by traffic handlers. No longer is a boat anchor required. One TNC makes it possible to use FAX, RTTY, AMTOR and packet. While nets are on SSB and CW, packet, RTTY and AMTOR are being used by many to forward traffic.

When packet entered the picture as a viable mode, little thought was given as to how it would interface philosophically with the system. It quickly established a presence which some felt threatened to overpower and vanquish SSB and CW and become THE NTS. Each time NTS people sat down and talked about how this mode would fit into the NTS, it concerned how traffic should be routed and other technical questions.

Packet people were also busy dealing with the technical side and programming new software. It seemed to be assumed that all that was needed to make packet and traffic into a wondrous new system was to list traffic as NTS and use the NTS format. Many traffic handlers were also technically inclined and enjoyed using and/or starting packet bulletin boards (PBBS). As a result, almost any scenario utilizing packet and all other modes currently takes place. It all depends on the traffic handlers who happen to be on the scene.

From the traffic handler's viewpoint, one of packet's biggest flaws is the lack of responsibility for a message. In the Camelot world in which traffic handlers live, each message has a timely execution. It is handed off to another handler, delivered or serviced back to the sender as undeliverable. When it

enters the world of packet, it can sit on a PBBS until doomsday, or until the PBBS sysop deletes old traffic, where-in it dies.

This is not the sysop's fault. Not all PBBS sysops are traffic handlers, and not everyone knows how to correctly enter a message into the system so it will be induced to automatically progress to the next PBBS.

When traffic handlers begin on SSB and/or CW, they are trained by their peers. It is hands-on group sessions where everyone is encouraged to listen to each other. When someone begins on packet, it's an individual effort with no feedback.

The artistry of CW

While I understand the need to have a computer linked to a high speed digital mode which can be printed out automatically on the other end and which could be used in times of high volume traffic when an emergency strikes, I don't get the same pleasure from typing my traffic into a computer and pushing "send" as I do meeting people on nets and sending traffic on CW. While it seems that most people in our society can talk and type before they are introduced into Amateur Radio, CW makes it different and becomes a new challenge. So, there is my prejudice — I love CW.

I do have and work the other modes as well. I would even like to set up a satellite station (maybe when cycle 22 dies), to ensure that traffic from the IATN can be delivered. But I'm having too much fun with CW right now.

Who killed Granddad?

CW ops have a battle at hand. The difficulty is that we're not sure where

the battlefield is. Creeping into current Amateur Radio literature (Novice test) is the definition of digital communications:

"Amateur communications that are designed to be received and printed automatically."

Where does that leave CW? Is the CW that I use on the Virginia Nets and/or passing traffic around the world printed automatically by anyone? The *ARRL HANDBOOK* (62nd edition) includes CW as the granddaddy of all digital communications. Has the FCC killed granddad?

Learning to group objects in categories begins at a child's earliest development in thinking. If you draw the circle which includes digital communications in it, will CW be there? Not with the current FCC definition.

Is it too late to make a stand and adjust the global definition of "digital communication" to include CW, or must continuous wave float in a state of nonbeing? Does anyone know which way to fire the cannon to get the attention of the digital definition committee?

I invite any questions, comments or information regarding traffic to be sent to Geri Sweeney, N4GHI, 4728 Neptune Dr., Alexandria, VA 22309. □

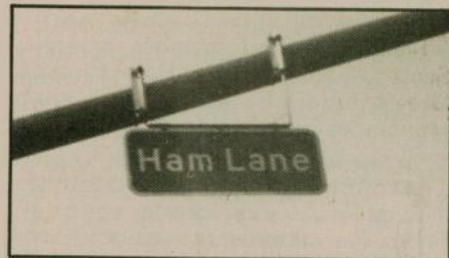
Attention hams

The Air Forces Flyers Club is looking for members who qualify as: 1. FCC Licensed Amateur Radio Operators, 2. served honorably in the Army Air Corps and Army Air Force, 3. pilots, crew members or support personnel.

There are no dues and no Net check-in obligations. If you are not on the air right now, that's alright.

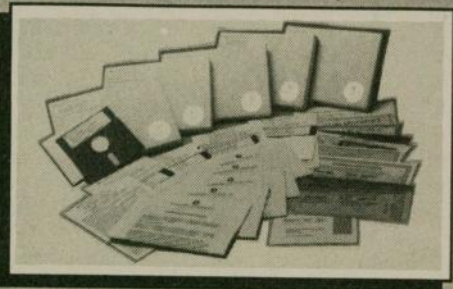
Currently there are 40 members, two operating Nets (15 and 20M) and a quarterly newsletter.

For further information write to: Lt. Col. Harry R. Balfe, USAF (Ret), W5VXM, 6231 Little Fawn Drive, San Antonio, TX 78238. □



Russ Smith, W6ONK, sent us a picture of one of the street signs he saw while visiting Lodi, California in mid-October.

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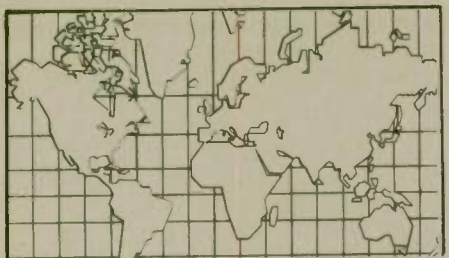
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DX WORLD

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Activities Calendar

- 18-19 Feb. RSGB 7.0 MHz Contest (CW)
- 18-19 Feb. ARRL International DX Contest (CW)
- 24-26 Feb. CQ Worldwide 160M Contest (SSB)
- 25-26 Feb. UBA/REF French Contest (SSB)
- 04-05 Mar. ARRL International DX Contest (SSB)
- 25-26 Mar. CQ Worldwide WPX Contest (SSB)
- 01-02 Apr. PZK SP DX Contest (CW)

W-100-N

There were no applications received for Worldradio's Worked 100 Nations Award this month. Details for this award are available for SASE to Worldradio headquarters, 2120 28th Street, Sacramento, CA 95818, or from N6JM direct at the address given above.

Dayton

Those DXers planning to attend the Dayton Hamvention might wish to include the annual DX dinner, sponsored by the SouthWest Ohio DX Association.

The site will be the Stouffer's Dayton Plaza Hotel. The SWODXA reports that the keynote speaker will be Dave Heil, recently J52US, with Frank Schwab, W8OK, the Master of Ceremonies.

The dinner will be Friday, April 28, with a cash bar at 6:30 p.m. and dinner at 7 p.m. The cost of the banquet is \$22 per person.

The SWODXA requests that you make your reservations as early as possible, as the hotel must know in advance how many meals to prepare.

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Iceland (TF)

A check with the DX reports indicates at least five different stations reported recently. Pick your favorite band from the following:

TF3CW	14.030 MHz	2230 UTC
TF3CW	14.236 MHz	0300 UTC
TF3EJ	28.086 MHz	1445 UTC
TF3SV	7.007 MHz	1145 UTC
TF3WW	28.028 MHz	1430 UTC
TF6ZZ	3.502 MHz	2115 UTC

The call TF3EF was an RTTY report. The call TF3WW was a special call used by TF3CW during the November CQ Worldwide DX Contest.

Belize (V31)

Most of the activity from this one comes during the contests, often multi-operator affairs. During the CW portion of the annual ARRL International DX Contest, Art Phillips, NN7A, will make a solo attempt, operating 80 to 10M.

Art will be operating from Dangriga in the Stann Creek District. Look for him on CW between Feb. 17 and 25, signing V31JZ.

Brunei (V85)

This little country is on the island of

Borneo, next door to Sarawak (East Malaysia). About a half dozen calls were reported recently from this one:

V85AG	14.086 MHz	0845 UTC
V85AH	14.074 MHz	0800 UTC
V85BA	14.195 MHz	1630 UTC
V85GA	14.226 MHz	1645 UTC
V85HG	21.285 MHz	2330 UTC
V85IR	28.585 MHz	0115 UTC

Until recently the prefix for this one was VS5.

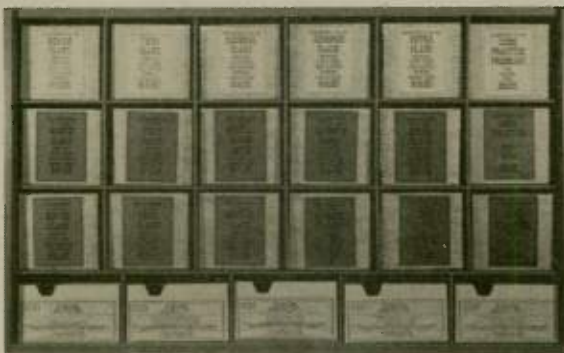
Rotuma (3D2X)

On Dec. 29, 1988, the ARRL Awards Committee unanimously accepted the ARRL DX Advisory Committee's recommendation that Rotuma be added to the DXCC Countries List.

DXCC credit will be given for contacts made on or after Nov. 15, 1945. Both the recent 3D2XX and the 1982 3D2XR operations will be accepted. Please do not submit QSL cards for Rotuma credit until June 1st. Cards submitted before that date will be returned without action taken.

DXCC members who have been given credit for Fiji, based on a 3D2XR or another Rotuma contact, may resubmit this card for proper Rotuma credit, along with a Fiji card for Fiji credit. Again, please do not submit prior to June 1st.

Your DX editor checked his files for



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3D2XR and sure enough I had one. The card clearly indicates Rotuma Island. If you were busy working in the CQ Worldwide DX Contest in October 1982, you may have worked 3D2XR. Go check your logs. The operator was Holly, with Bob as

3D2XN. The card states that they were the first Amateur Radio operation from the island.

India (VU2)

Probably most DXers have already worked India. We checked the DX reports and found many different calls reported and enough for a listing by band.

VU2AJ	7.004 MHz	1700 UTC
VU2CWP	7.057 MHz	0045 UTC
VU2DVP	7.053 MHz	0030 UTC
VU2NIS	7.010 MHz	1230 UTC
VU2PCD	7.005 MHz	1330 UTC
VU2ROI	7.003 MHz	1330 UTC
VU2SU	7.001 MHz	2345 UTC
VU2TEC	7.005 MHz	0115 UTC
VU2VWN	7.008 MHz	1300 UTC
VU2AU	14.202 MHz	0130 UTC
VU2BEJ	14.288 MHz	1500 UTC
VU2CK	14.212 MHz	0230 UTC
VU2DVK	14.202 MHz	0130 UTC
VU2DVP	14.165 MHz	1245 UTC
VU2IOC	14.006 MHz	1300 UTC
VU2LE	14.029 MHz	1300 UTC
VU2NAJ	14.186 MHz	1230 UTC
VU2PCD	14.017 MHz	1245 UTC
VU2RBI	14.208 MHz	0200 UTC
VU2ROI	14.192 MHz	1145 UTC
VU2SMN	14.160 MHz	0300 UTC
VU2SU	14.010 MHz	0130 UTC
VU2BK	28.036 MHz	1300 UTC
VU2GUY	28.594 MHz	1315 UTC
VU2IN	28.023 MHz	1515 UTC
VU2NTA	28.019 MHz	1430 UTC
VU2NTR	28.519 MHz	1400 UTC

may have been in the area but had no connection with the DXpedition.

The DXpedition was sponsored in part by the West Siberia DX Club and INDEXA (the International DX Association). All QSL cards for contacts made with the DXpedition should be sent via INDEXA, P.O. Box 5127, Suffolk, VA 23435, except for DXers in the Soviet Union. U/R types must send their requests to UL7PAE. Please include the usual SASE (or SAE with IRCs). Donations are also accepted and should be made out to INDEXA.

Togo (5V7)

At least three stations were reported during December, with two of them quite active. On both 20 and 15M SSB, 5V7TM was very active the first half of the month. Look for this one near 14.183 or 21.263 MHz from 2200 UTC.

Also on two bands was 5V7WD, who was busy on 75M on 3.799 MHz around 0500 UTC, and then on 10M near 28.537 MHz at 1330 UTC. This station was also reported on 40M SSB on 7.070 MHz at 0600 UTC working Europeans.

The third station reported was 5V7SA, who was worked on 14.243 MHz at 0745 UTC. This was the only report for this station.

Kuwait (9K2)

A considerable amount of activity from this one was reported during the month of December, with two stations very active, 9K2DR was reported several times on 10M SSB on 28.383, 28.459, 28.558 and 28.570 MHz. Look for this one from 1300 UTC. An appearance was also made on 12M near 24.951 MHz at 1400 UTC - Diamond Jubilee Award hunters take note!

Also very active was 9K2RA, splitting his activity between 20 CW and 75 SSB. On 75M he was worked often near 3.795 MHz between 2245 and 0330 UTC. CW types might check

DX Prediction

Maximum Usable Frequency from West Coast, Central U.S., and East Coast (courtesy of Engineering Systems Incorporated, Box 939, Vienna, VA 22180).

The numbers listed in each section are the average Maximum Usable Frequencies (MUF) in MHz for contacting five major areas of the world centered on Africa-Kenya/Nairobi, Asia-Japan/Tokyo, Oceania-Australia/Melbourne, Europe-Germany/Frankfurt, and South America-Brazil/Rio De Janeiro. Chance of contact as determined by path loss is indicated as bold MUF for good, plain MUF for fair, and in parentheses for poor. UTC in hours.

MARCH 1989 WEST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
10	(15)	17	25	(13)	22
12	(15)	16	22	(12)	(18)
14	(27)	19	18	23	34
16	33	17	25	26	41
18	35	16	22	23	44
20	35	27	27	16	45
22	29	34	37	(14)	44
24	25	37	43	(13)	43
2	22	33	44	12	35
4	20	25	39	12	30
6	(18)	22	35	15	25
8	(16)	19	29	13	23

CENTRAL USA

UTC	AFRI	ASIA	OCEA	EURO	SO AM
8	20	13	24	(13)	22
10	(19)	12	22	(12)	21
12	33	17	18	23	27
14	41	18	28	27	37
16	44	(17)	25	26	41
18	43	(16)	22	23	43
20	35	28	28	16	44
22	29	29	38	14	44
24	25	26	43	13	42
2	22	(19)	36	12	35
4	22	(16)	33	12	29
6	22	(14)	28	13	25

EAST COAST

UTC	AFRI	ASIA	OCEA	EURO	SO AM
7	20	(13)	24	13	22
9	(20)	12	21	16	22
11	38	16	18	26	26
13	44	(15)	30	29	37
15	44	(13)	26	28	41
17	47	(13)	23	27	43
19	39	(16)	(20)	23	44
21	32	26	34	16	44
23	27	26	41	14	43
1	24	(19)	35	13	35
3	21	(15)	32	12	29
5	22	(14)	27	12	25

Vietnam (3W8)

The only official operators on the USSR DXpedition to Vietnam in the latter part of January were to be Alex, UL7PCZ; Yuri, RL8PY; Alex, UL7PAE and Victor, UL7CAR. According to INDEXA other Amateurs

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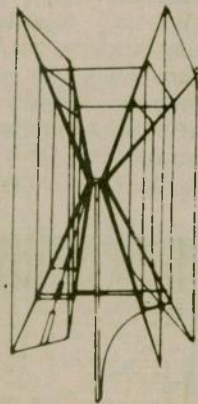
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14.020 MHz after 1400 UTC.

Other calls reported during this period include:

9K2DB	28.569 MHz	1315 UTC
9K2DZ	14.072 MHz	0400 UTC
9K2EC	7.024 MHz	2315 UTC
9K2FR	14.249 MHz	2130 UTC
9K2FS	28.412 MHz	1315 UTC
9K2KS	28.412 MHz	1330 UTC
9K2KW	14.251 MHz	0730 UTC

East Malaysia (9M8)

Of the two DXCC Malaysia's, East Malaysia is the rarest. We have a report of 75M activity by 9M8PV, who was worked from the east coast the day after Christmas on 3.788 MHz at 2215 UTC. 9M8PV has also been active on 40M SSB, working Europeans around the same time on 7.040 MHz.

On 15M 9M8AU was reported on 21.039 MHz at 0130 UTC, with 9M6HF active on weekends from 0030 UTC near 21.080 MHz. 40M CW is handled by 9M8CUA, found on 7.006 MHz at 1315 UTC.

Rwanda (9X5)

The *Long Island DX Bulletin* reports that 9X5AA is on daily, with a strong signal at 2230 UTC on 14.160 MHz. This is the usual frequency for the ET Net. This station has also been reported on CW and has been found on 14.010 MHz at 2000 UTC, 21.044 MHz at 2100 UTC and 28.015 MHz at 2030 UTC.

Also reported on the ET Net is 9X5SP after 2200 UTC.

Clubs

The SouthWest Ohio DX Association reports that "after due consideration and some trepidation," their fearless leaders for 1989 will be:

President: Jay Slough, K4ZLE
Vice President: Randy Farmer, W8FN

Secretary: Frank Schwab, W8OK
Treasurer: Scott Lehman, N9AG

Be sure to meet these new leaders if you attend the SWODXA banquet at Dayton this April.

Miscellaneous

WIAPU reports that RA4PC is busy working at 5BWAS, and often sends QSL requests via Airmail. If you work RA4PC and you are from one of the rarer states, you might help him out and QSL direct to P.O. Box 41, 423 270 Leninogorsk, USSR.



This young lady is a new operator at BY5HZ. Li Hong recently graduated from Hangzhou University and now works on the station. She reports that BY5HZ was built two years ago and is at the corner of Pagoda of Six Harmonies — a famous scenery spot of Hangzhou. Look for Li Hong on Tuesdays, Thursdays and Sundays on 15M near 21.246 MHz. A

The DX Magazine

In addition to his weekly DX newsletter, *The DX Bulletin*, Chod Harris, VP2ML, has added a monthly publication, *The DX Magazine*. This new publication more or less replaces the *Special Reports* supplements that have been included as part of the subscription of *TDXB*.

The premier issue had a most informative article by Baldur Drobnic, DJ6SI, entitled: "Disaster at Spratly." This concerned the 1983 DXpedition to the Spratly Islands that ended in tragedy. Several other articles are included, including one by Pete Hoover, W6ZH.

Also included is QSL information and routing, much of it from the W6GO/K6HHD (or is it K6HHD/W6GO) lists. Information regarding subscriptions was given in last month's column.

Beamheadings

In the past few years we have received from some enterprising DXers various charts they have generated on



good time would be after 0300 UTC. (Photo courtesy of BY5HZ).

their computers for the DXer. The latest one was from Jack Hurray, W8JBU.

This particular printout is rather simple, as it gives only the bearing and distance for a particular location, including the prefix. The chart was tailored for my Carmichael station.

An example of a more elaborate listing was one I received seven years ago. In addition to Jack's printout, this chart included the longpath bearings and distances, the particular continent, and the CQ and ITU zones. My exact latitude and longitude was also included.

Anyone interested in the chart generated by Jack may contact him at (please turn to page 34)

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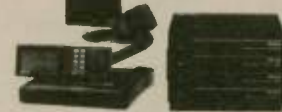
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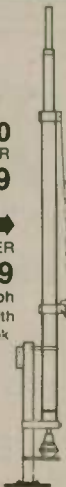
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DX World

(continued from page 31)

P.O. Box 397, Hinckley, OH 44233.
No price was given.

Antique QSL department

John Leary, W9WHM, sends us this card from Swaziland, which he worked back in 1965. Compared with some of the cards we have shown here it is not very old. Perhaps some of our DXers who have been DXing for the past 20 years are familiar with this one.

John worked ZD5R on 20M SSB back on Jan. 14, 1965. The operator's

name was Victor V. Parkhouse in Mbabane. The salutation is given as "Archie," but we don't know if this was the operator or the QSL manager if he used one.

In the 1974 edition of the *QSL Manager's Director*, published by Gary Stilwell, KI6T (ex-W6NJU), the route for ZD5R was given as VE4OX. This directory is no longer in print. Swaziland now uses the prefix 3DAO.

QSL information

Don't forget the price change for sending your QSL cards through the ARRL Outgoing QSL Bureau. It will now cost \$2 per pound, and \$1 for 8

SWAZILAND AFRICA

Z D 5 R

DATE	GMT	STATION	RST	MC	MODE
14/16 5 1965		W9WHM	59	14	SSB
Confirming two way communication QSL TKS 75 "ARCHIE" Victor V. Parkhouse P.O. Box 99 Mbabane					

ounces or less. And, of course, this service is available to ARRL members only.

There are other QSL services available. Dick Moen, N7RO, forwards QSL cards to QSL managers, direct to DX stations, or via the bureaus. For further details contact Dick at 2935 Plymouth Ave., Bellingham, WA 98225. Dick is also a QSL manager for several DX stations.

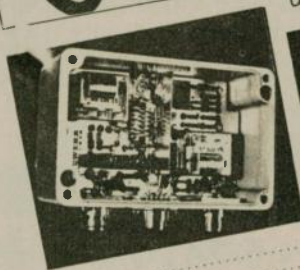
It has been reported that copies of the logs for the J52US operation during the October and November CQ Worldwide DX Contests were lost in the mails. QSL manager WA8JOC will process these cards as soon as he has received a duplicate set of logs. Please do not send additional QSL requests.

QSL routes

CW8B	-N7RO	V31JZ	-NN7A
D68MG	-W3DJZ	V29A	-W4FRU
E8A8AGD	-0H6DK	VK6SR	-KR8V
HI60UD	-HI8LC	VK9NQ	-JH1LKH
HL9EP	-KOVZR	VK9ZM	-NM2L
IB8A	-IK8DOI	VK9ZW	-VE3CPU
J7/F2JD	-F6AJA	VU2BMS	-DL2GAC
J8DX	-W5PWG	VU2INK	-DF5UG
JT1KAA	-JT1BJ	VU2LE	-K6JG
K4SXT/DU3	-WB4KZW	VU2NFG	-DJ9RB
KH8/		XE1PCP	-WQ6Y
IK2GNW	-IK2GNW	XF4C	-XE1BEF
KX6TY	-KX6BU	XT9T	-RA9YD
ON6BC/ST4	-ON6BC	YQ4A	-Y04KCA
P40AU	-WA6AUE	ZD8JP	-G3ATK
P40G	-NB6G	ZF2DR	-K5RQ
P40I	-K7RIE	ZF2KN	-W0DW
P40I	-K7RIE	ZF2NC/ZF8	-KD7SO
PY1DFF/CE0	-PY1ROB	ZF2NF	-WB8GEX
S01MZ	-EA2JG	ZF2NH	-WY2G
SN70POZ	-SP3KKU	ZL4ZLB	-ZL4DE
SN70SUL	-SP5ZCC	ZS3Z	-ZS6BCR
S07TN	-OK1TN	3DA0/	
TE1L	-K1AR	ZS6ANL	-ZS6ANL
TF3WW	-OH4NRC	4K1DV	-UA1DV
	(See Note 1)	4N1K	-YU1XA
TG9GI	-I0WDX	5U7CW	-DJ6SI
TI2LTA	-K1AR	5U7DX	-DK9KX
TU40C	-TU2KC	5U7XX	-DJ6JC
UA1OT	-UB5KW	7J1AAO	-N7EKK
UA1OIL	-UA9MA	9P9EM	-G3VBL
UA0BEZ/		8Q7BX	-14ALU
UA1O	-RA3YA	9H3JM	-YASME
UA0BDU/		9M6HF	-WE2K
UA1O	-UA4HCU	9Q5DX	-KQ3S
UA6HPR/			
UG6B	-JG1OUT		
	(See Note 2)		

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 IC8SDL -P.O. Box 37, Capri Isle, 80073, ITALY
 LY2WW -P.O. Box 1573, Vilanaus 232 040,
 Lithuania, USSR
 LY2ZZ -P.O. Box 71, Siauliai 235 400, Lithuania,
 USSR
 RA3YJ/
 RD0D -Mike E. Sochinski, P.O. Box 5, Bryansk
 241 000, USSR
 SZ2COT -P.O. Box 11437, Thessalonika 55110,
 GREECE
 TA1AT -P.O. Box 787, Istanbul, TURKEY
 TA5/WA6LKS -P.O. Box 1548, APO New York, NY
 09289
 TU2QQ -P.O. Box 3023, Azerbaijan, IVORY
 COAST
 TZ6MG -P.O. Box 2095, NL-8203 AB Lelystad,
 NETHERLANDS
 UI8QZ -P.O. Box 140, Navi 706 800, USSR
 XQ3VA -P.O. Box 16625, Santiago 9, CHILE
 ZD8BOB -P.O. Box 2, Ascension Island
 3DA0AH -F. Maxwell, P.O. Box 2726, Mbabane,
 SWAZILAND
 4D9RG -P.O. Box 125, Cotabato City 9600,
 PHILIPPINES
 5N0SKO -P.O. Box 1832, Lagos, NIGERIA

Notes:
 1. The Callbook Address is incorrect. Use: Erkki Korhonen, SF-58830 ParkumAki, Finland.
 2. This route is not valid for contacts made during contests.

Our appreciation goes to the following contributors for this month's column: KR8V, NN7A, W9WHM,

W9LNQ, W1APU, W8JBU, VK9NS, RA3YG, BY5HZ, BY9GA, ARRL, SouthWest Ohio DX Association (K4ZLE), Salt City DX Association (KB2G), Western Washington DX Club (K7ZR), Redwood Empire DX Association (VP2ML), Southern California DX Club, International DX Association (W4WMQ), *DX News Sheet* (G4DYO), *The Long Island DX Bulletin* (W2IYX), *Inside DX* (N2AU), *QRZ DX* (W5KNE) and *The DX*

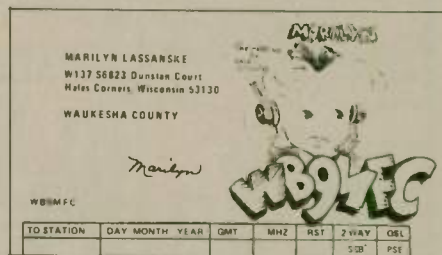
Bulletin (VP2ML).

February and March should be promising for DX, with the ARRL's International DX Contests and CQ's WPX bash. Remember the days when the ARRL tests took up two weekends for each mode? The contests are a good source to pickup some of those missing countries. Remember, however, that contest QSOs are not valid for the DXathon. GL DX de John N6JM. □

QSL help

Marilyn F. Lassanske, WB9MFC, has informed *Worldradio* that she offers her services as a QSL manager. She will also print cards if necessary.

For information write Marilyn at W137 S6823 Dunstan Court, Muskego, WI 53150-3209. □



If a foreign amateur visits your area, do a picture story for *WORLD RADIO*.

ANNOUNCING! The 1989 Worldradio DXathon

ELIGIBILITY — All licensed Amateur Radio operators, worldwide.

DATES — Start: 0000 1 January, 1989. End: 2359 31 December, 1989.

Exceptions: No contacts made during the time frame of any DX Contest will be valid. This is to be a prestigious award program, made so by its difficulty.

BANDS — 80, 40, 20, 15, 10 meter bands, plus satellite/moonbounce frequencies.

MODES — Phone, CW, Digital (includes RTTY, AMTOR, packet), Visual (SSTV), and Satellite (includes moonbounce).

Five Bands/Five Modes equals DXathon.

CATEGORIES — There is only one category — Single Operator.

OBJECTIVE — Contact as many NATIONS on as many modes as possible. A NATION is defined as an entity with enough sovereignty to issue its own postage stamps.

VALID CONTACTS — A NATION may be worked but once, on each mode, regardless of the frequency band. This is not a five-band per mode contest.

SCORING — Final score will be the total number of NATIONS contacted on the various modes. Contact with your own NATION does not count. The highest possible score would be about 900.

SUBMISSIONS — Entries must be received by 1 February, 1990. No QSL cards need be submitted or received by the entrants. Send signed log extracts to:

WORLD RADIO

2120 · 28th Street

Sacramento, CA 95818 USA

Award winning logs will be published in *Worldradio*. Decisions of the DXathon committee will be final. The committee has the right to disqualify entries for violation of the letter or the spirit of the rules. By submitting an entry, the participant agrees to abide by the decision of the DXathon Committee.

AWARDS

World Champion — The World Champion will receive a trophy significant enough to honor the effort.

Gold, Silver and Bronze Medals will be awarded for the highest scores on each continent.

Certificates will be awarded for:
 A.—The highest score in each NATION.

B.—The highest score in each USA call area.

C.—The top single-band score in A. and B. above.

D.—Technician/Novice scores as warranted.

E.—High scoring 4 mode, 3 mode, 2 mode participants.

Nations with the highest participation (weighted vs. Radio Amateur population) will be honored.

In case of ties, duplicate awards will be made.

A certificate of participation will be awarded each "radio athlete."

It would be appreciated if monthly scores were sent in for publication.

RULE CHANGES —

Rules may be modified over the years to reflect feedback from the participants. Please send copies of this page to your DX friends.



THE QSL BOOK!

Continuing a 68 year tradition, we bring you three new Callbooks for 1989, bigger and better than ever! The North American Callbook, the International Callbook, and the new Callbook Supplement bring you accurate up-to-date QSL information on over 1,000,000 amateurs throughout the world.

The North American Callbook lists the calls, names, and address information for over 495,000 licensed radio amateurs in all countries of North America from Canada to Panama, including Greenland, Bermuda, and the Caribbean islands plus Hawaii and the U.S. possessions.

The International Callbook lists over 500,000 licensed radio amateurs in countries outside North America. Its coverage includes South America, Europe, Africa, Asia, and the Pacific area (exclusive of Hawaii and the U.S. possessions).

The 1989 Callbook Supplement is a new idea in Callbook updates, listing the activity in both the North American and International Callbooks. Published June 1, 1989, this combined Supplement will include thousands of new licenses, address changes, and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! The 1989 Callbooks will be published December 1, 1988. Order early to avoid disappointment (last year's Callbooks sold out). See your dealer now or order directly from the publisher.

- Over 1,000,000 current amateur listings in all countries of the world
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- Then & Now call changes
- Silent Keys
- Census of Amateur Licenses in all countries
- Standard Time Charts
- International Postal Information
- World-wide QSL Bureaus
- Table of Amateur Prefix Allocations
- Prefixes of the World
- Plus many other features.

Publication: Callbooks - December 1, 1988
Supplement - June 1, 1989

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<input type="checkbox"/> Single 1989 Callbook Supplement	13.00	13.65	14.00
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Visit Your Local RADIO CLUB

For information on how to get your club listed in "Visit Your Radio Club," plus receive many other benefits, write to Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

ALABAMA

Montgomery Amateur Radio Club (W4AP). Alabama State Trooper Dist. Office. Intersection of Coliseum Blvd. & Federal Dr. Randy Smith, N4LZK, (205) 832-4598. Meets 3rd Monday/monthly, 7:00 p.m.

ALASKA

Arctic Amateur Radio Club. Geophysical Institute West Ridge U of A, P.O. Box 81389, College, AK 99708. 1st Friday/monthly, 7:30 p.m.

ARIZONA

Arizona Amateur Radio Club. Meets: 2nd Thursday/monthly, 7:30 p.m., 1510 E. Flower St., Phoenix, AZ. Club info on W7WGW/R 147.88/147.28 Rptr.

Old Pueblo Radio Club. Meets: 2nd Wednesday/monthly, 7:30 p.m. Location: Franklin Bldg., University of Arizona. N.E. corner of 5th St. & Park.

Tucson Repeater Assoc. P.O. Box 40371, Tucson, AZ 85717-0371. 2nd Sat./monthly, 7:30 p.m., Pima Co. Communication Bldg., 2545 E. Ajo. Net Thurs. 7:30 p.m. 146.28/88 (146.22/82, 147.68/08, 147.70/10-PKT).

CALIFORNIA

Amador County Amateur Radio Club. P.O. Box 1094, Pine Grove, CA 95665. Senior Citizens Center, Jackson, CA. Meets: 1st Thursday/monthly, 7:30 p.m. WA6WY Rptr., 146.835, 146.235. Net Tues. 7:30 p.m.

Associated Radio Amateurs of Long Beach, W6RO. P.O. Box 7493, Long Beach, CA 90807. Meets: 1st Friday/monthly, 7:30 p.m. Signal Hill Recreation Hall, 1708 E. Hill St., Signal Hill, CA.

Butte Amateur Radio Club. Meets: 3rd Thursday/monthly, 8 p.m., Chico Community Hosp. Conf. Center on Rio Lindo off Cohasset Rd. Net: 28.330 Wednesdays, 8:30 p.m. For info: 893-5208, KE6EP or KB6COH.

Caltrans RACES Club. Meets at Carrows Restaurant, 1825 10th St., Sacramento, CA, last Friday/monthly, 11:00 a.m. Contact: J.J. West, N6AAD.

Citrus Belt Amateur Radio Club. 777 East Rialto Ave., San Bernardino, CA. P.O. Box 3788, Zip - 92413-3788. Meets: 1st Friday/monthly, 7:00 p.m.

Contra Costa Communications Club WD6EZR/R. P.O. Box 661, San Pablo, CA 94806. Meets 2nd Sunday at 9:00 a.m. Hickory Post Restaurant/Lucky Lanes. For info call Don K6DPQ, (415) 222-2449.

East Bay Amateur Radio Club. P.O. Box 1393, El Cerrito, CA 94530. Meets: 2nd Fri./monthly 8 p.m., Salvation Army, 4600 Applan Way, El Sobrante. Nets: Slow CW, Wed., 8 p.m. & SSB Net, Wed., 9 p.m., 21.395. Info, Bob Fields, KC6AOH, 415/237-3761.

Gabilan Amateur Radio Club GARC. P.O. Box 2178, Gilroy, CA 95020-2178. Meets: South Valley Jr High School, 385 I.O.O.F. Ave., Gilroy. 2nd Thurs/monthly. 7:30 p.m. Talk-in 145.47/144.87.

Golden Empire Amateur Radio Society (VEC). P.O. Box 508, Chico, CA 95927. Club call W6RHC, Repeater 146.25/85. Meets: 3rd Friday/monthly, 8 p.m. at 1528 Esplanade, Room 110B, Chico.

Hilltop Amateur Mastertie System (HAMS). Informal mtgs. weekly/Mon. 5 p.m. at Shakey's Pizza, 12924 Washington Blvd., Mar Vista, CA. Meets 3rd Mon./monthly at Bicycle Shop Cafe, 12217 W. Wilshire Blvd., W. LA. Info, N6FD 213/823-0767.

Kern River Valley Amateur Radio Club. P.O. Box 2611, Lake Isabella, CA 93240. Meets 4th Sat./monthly at 4 p.m. (Pot Luck). Veteran's Hall, Lake Isabella WA6UYW Rptrs. 146.085/146.685 224.22/Down 1.6 WB6ODZ Rptr.-224.58 Down 1.6 Low-Level.

Lee DeForest Radio Club of Hemet. 1930 Local each Third Thursday at 625 Pico, San Jacinto, CA.

Livermore Amateur Radio Klub (LARK). First Presbyterian Church, 5th & L St. Bill Richards, WD6J, (415) 829-5229. Net Mondays 1900 on 147.12+. Meets 3rd Saturdays/monthly, 9:30 a.m.

Marin Amateur Radio Club (MARC) W6SG. Box 1231, San Rafael, CA 94901. Meets 1st Fri./8 p.m.; MARC Clubhouse Bldg. 549, HAFB, Novato, CA (415) 883-9789 (Summer exceptions; contact Pete N6IYU, 924-1578). Sunday AM Club at Red Cross, San Rafael.

Moreno Valley Amateur Radio Assoc. P.O. Box 1304, Moreno Valley, CA 92337. Meets: 4th Monday/monthly, 7 p.m., Moreno Valley Unified Sch. Dist. offices, 13911 Perris Blvd., Moreno Valley. Net Tuesdays, 8 p.m. 146.655/055

Mount Diablo Amateur Radio Club. P.O. Box 23222, Pleasant Hill, CA 94523. Meets: 3rd Fri./monthly, 8 p.m., Grace Presbyterian Church, 2100 Tice Valley Blvd., Walnut Creek, CA. Net Thurs., 7:30 p.m. 147.06+. Info, Vicki, (415) 458-4527.

North Hills Radio Club. P.O. Box 41635, Sacramento, CA 95841. 3rd Tuesday/monthly, 7:30 p.m., Carmichael Elks Lodge, 5631 Cypress Ave., Carmichael, CA. Net 145.19 Thur. at 8:00 p.m.

North Shores ARC. (619-275-1495) So. Clairemont Recreation Center, 3605 Clairemont Dr., San Diego, CA. 1st Tuesday/monthly, 7:30 p.m. Club net each Monday, 7:00 p.m. 28.485 MHz.

River City A.R.C.S. Meets: 1st Tuesday/monthly, 7 p.m. SMUD Bldg., Room B & C, Elkhorn & Don Julio, Sacramento, CA. For info: (916) 483-3293.

Sacramento Amateur Radio Club. Contact: Gary Bryant, KB6KZZ, (916) 646-1171. Meets Sacramento Blood Bank, 32nd St. & Stockton Blvd., Sacramento, CA, 2nd Wednesday/monthly, 7 p.m.

Sacramento "Old Timers" Ham Radio Brkfst Club. Meets 2nd Wednesday/monthly, 8 a.m., Carrows Restaurant near Watt Ave. and Hwy 80 exit. For info contact Paul Wolf, W6RLP (916) 331-1830.

San Fernando Valley Amateur Radio Club. P.O. Box 3151, Van Nuys, CA 91407. Meets: 3rd Fri./monthly, 7:30 p.m. at Sepulveda Air National Guard Station, 15900 Victory Blvd., Van Nuys, CA 91407.

San Gabriel Valley ARC. Bowling Green Clubhouse, 405 S. Santa Anita Ave., Arcadia, CA 91006. Meets: 1st Tuesday/monthly, 7:30 p.m., except Dec. W6QFK, Repeater 147.165/765.

San Mateo Radio Club. Beresford Park Recreation Center, 28th Ave. and Alameda de las Pulgas, San Mateo, CA 94403. 3rd Friday/monthly, 7:30 p.m.

Santa Clara County Amateur Radio Assoc. (SCCARA) W6UW. P.O. Box 6, San Jose, CA 95103. (408) 249-6909. Meets: 2nd Mondays/monthly, 7:30 p.m. Net other Mondays, 7:30 p.m. W6UU 146.385 + /425.425 +.

Santa Clara Valley Rptr. Society (SCVRS). P.O. Box 3085, Sunnyvale, CA 95087. (408) 247-2877. 146.76(-600 kHz), 224.26(-1.6 MHz), 444.60(+5 MHz), 2 meter/220 net Mon. 9 p.m. Mtgs.-3rd Fridays.

Shasta Cascade Amateur Radio Society (SCARS) P.O. Box 664, Anderson, CA 96007. Meets: 3rd Wed./monthly, 7 p.m. at the C.D.F. Conf. Rm., Grape St., near Parkview Ave., Redding, CA. Net 146.64 Wed., 8 p.m.

Sierra Foothills Amateur Radio Club. P.O. Box 3262, Auburn, CA 95604. Meets: 2nd Friday/monthly at Auburn Fire Station, 226 Sacramento St., Auburn, CA. Nets 7:30 p.m. Tues. 28.443 MHz, Thurs. 145.43 MHz link with 223.86 MHz.

Simi Settlers Amateur Radio Club. P.O. Box 3035, Simi Valley, CA 93063. Meets: 2nd Thurs./monthly, 7:30 p.m., at Seventh-Day Adventist Church, 1636 Sinaloa, Simi Valley. Rptr. 147.93/33

Solano County Amateur Radio Society. P.O. Box 457, Fairfield, CA 94533. Meets: 3rd Wed. 7 p.m., Vanden High School. 441.150 + 5 (Remote 145.69 simplex) PL 77Hz, (707) 448-1461.

Southern California Six Meter Club. P.O. Box 448, Cypress, CA 90630. USB Net Tues., 8 p.m., 50.150 and 8:30 p.m., 28.400. FM Rpt. Net Wed., 7 p.m., 52.18/98 and Thurs., 8 p.m., 52.28/88. FM Smpix call freq. 50.300.

Stanislaus Amateur Radio Assoc. (SARA). P.O. Box 4601, Modesto, CA 95352. Stanislaus Co. Administration Bldg., 12th & H Streets, 3rd Tues./monthly, 7:30 p.m. 145.39 MHz WD6EJF, 223.68 MHz.

Tri-County Amateur Radio Assoc. P.O. Box 142, Pomona, CA 91769. Meets: 2nd Monday/monthly, 7:30 p.m. Pomona First Federal S&L (basement), 399 N. Garey, Pomona, CA.

United Radio Amateur Club K6AA. L.A. Maritime Museum, Berth 84. Foot of 6th St., San Pedro, CA 90731. Meets: 3rd Friday/monthly except Dec., 8:00 p.m. Talk-in 145.655 Simplex.

Victor Valley Amateur Radio Club. P.O. Box 869, Victorville, CA 92392. Meets: Victor School Board Room, 6th & "A". 2nd Tuesday/monthly, 7:30 p.m. WA6EFW Rptr. 146.34/146.94.

West Coast Amateur Radio Club. Fountain Valley School. Talbert/Bushard. Fountain Valley, CA. Meets 3rd Thursday/monthly. 145.44-4Z.

Western Amateur Radio Assoc. Cerritos Park East, 166th St. and Carmenita Ave., Cerritos, CA. Meets: 1st Tuesday/monthly, 7 p.m. Rptr., N6ME 145.40/224.18 MHz.

West Valley Amateur Radio Assoc. 18011 Saratoga — Los Gatos Road, Los Gatos, CA 95030. Meets: 3rd Wednesday/monthly, 7:30 p.m. W6PIY/R. Net Tuesday, 8:30 p.m., 147.39 +, 223.96.

Yolo Amateur Radio Society. Meets: 1st Thursday/monthly, 7:30 p.m. 1207 Sycamore Lane, Davis, CA 95616.

Yucaipa Valley Amateur Radio Club (YVARC). Gibraltar Saving's Community Room, 34880 Yucaipa Blvd., Yucaipa, CA 92399. Pres: Jack Prather W6KJP (714) 797-1276. Meets: 3rd Monday/monthly, 7:30 p.m.

CONNECTICUT

Tri-City ARC. Groton Public Library, Route 117, P.O. Box 686, Groton, CT 06340. Meets: 2nd Tuesdays/monthly, 7:30 p.m.

FLORIDA

Indian River ARC, Inc. (IRARC). 597 Capri Rd., Cocoa Beach, FL 32931. Martin Andersen Senior Center, 1025 S. Florida Ave., Rockledge, FL. Meets: 1st Thurs./monthly, 7:30 p.m.

Platinum Coast Amateur Radio Society, Inc. (PCARS). P.O. Box 1004, Melbourne, FL 32902. Meets: American Red Cross Bldg., 1150 S. Hickory St., 2nd Monday/monthly, 7:30 p.m. Talk-in on 146.850 rptr.

Sarasota Amateur Radio Ass'n, Inc.
Meets: 3rd Tues./monthly, 8 p.m. on the 6th floor (board rm.) of the County Admin. Bldg., corner of 301 & Ringling Blvd. Club Rptr. W4IE, freq. 146.91/31, open to all. Phone patch *Up #Down. Welcome.

South Brevard Amateur Radio Club.
P.O. Box 2205, Melbourne, FL 32902.
Meets 1st Tuesday/monthly, 7 p.m., Melbourne Library, 2275 S. Babcock St., Melbourne, FL.

West Palm Beach Amateur Radio Club, Inc. P.O. Box 6834, Southboro Station, W. Palm Beach, FL 33405. Meets: 2nd Tues./monthly, 7:30 p.m., Palm Beach Emergency Op. Cntr., 3723 Beveledere Rd., W. Palm Beach. Info: H. Felton, 655-4632 or H. Logan, 848-0513.

HAWAII

Big Island Amateur Radio Club. P.O. Box 1938, Hilo, HI 96721-1938. Meets: 2nd Tuesday/monthly, 7:00 p.m., Helco Auditorium, 1200 Kilauea, Hilo. Talk-in on 146.76(-).

ILLINOIS

Bolingbrook Amateur Radio Society.
Meets: 3rd Mon./monthly, 7:30 p.m., Annerino Rec. Cntr., Recreation Dr., Bolingbrook, IL. Info net Thursdays, 8 p.m., WA9DIP/R 224.54/222.94 and WD9AKO/R 147.33/147.93.

Chicago Suburban Radio Assoc. (CSRA). P.O. Box 88, Lyons, IL 60534. Meets 2nd Wed./monthly, 8 p.m. Community Rm. Clyde Federal Savings & Loan Assoc., 7222 W. Cermak Rd., North Riverside, IL.

Dupage Amateur Radio Club W9DUP.
Mid-America Savings & Loan, 55th & Holmes (55th St. near RT 83), Clarendon Hill, IL. 4th Monday/monthly, 7:30 p.m. Club rptr. 145.250 — 600 kHz.

Elgin Amateur Radio Society. P.O. Box 1351, Elgin, IL 60120. Meets in EOC Rm. of Elgin Municipal Bldg. 2nd Friday/monthly, 8:00 p.m.

Fox River Radio League. Valley National Bank, Lower Level, Northgate Shopping Ctr. & RT. 31, Aurora, IL (312) 584-4925 for more info. Meets: 2nd Tuesday/monthly, 7:30 p.m.

North Shore Radio Club. Meets: 2nd Monday/monthly. Net 8 p.m. Tues. Karger Center, 1850 Green Bay, Highland Pk, IL. WB9FRM Rptr. 147.345 + 600 (PL 1B). Info: NSRC, P.O. Box 1066, Highland Pk., IL 60035.

Northwest ARC/W9LM. Meets: 2nd and 4th Tuesday/monthly, 7:00 p.m., Oehler Funeral Home downstairs community room, Lee & Perry Street, Des Plaines, Illinois.

Schaumburg ARC (SARC). Meets: Schaumburg Park District Community Rec. Cntr. at Bode and Springinguth Roads, Schaumburg, Illinois. Third Thursday/monthly, 7:30 p.m. Net 28.350 8:00 p.m. Thursdays.

Six Meter Club of Chicago K9ONA.
Bank of Lyons, Lower Level, 8601 West Ogden Ave., Lyons, IL. 2nd Friday/monthly, 7:30 p.m. Club Rptrs: 146.37/97, 448.30/444.30.

York Radio Club. Meets: 3rd Fridays/monthly, 8 p.m., Elmhurst College (Science Bldg.), Elmhurst, IL. Net Mondays, 8 p.m. W9PCS/147.42 simplex.

KANSAS

Kansas City Heart of America Radio Club. Red Cross Building, 211 West Armour Blvd. Meets: 3rd Tuesdays/monthly, 7:30 p.m.

MARYLAND

The Peninsula Radio Operators Society (PROS). Family oriented activities, training and exams held throughout the year. PROS Rptrs. 146.925 and 146.625. PROS, P.O. Box 2315, Salisbury, MD 21801.

MASSACHUSETTS

Mohawk Amateur Radio Club. Meets: 4 Wed./monthly, 7:30 p.m., American Legion Hall, 325 Pequoig Ave., Athol, MA. (One block north of downtown traffic lights, past the bridge)

MICHIGAN

Hazel Park Amateur Radio Club.
Hoover Elementary School-Hazel Park, P.O. Box 368, Hazel Park, MI 48030. 2nd Wed./monthly, 7:30 p.m. Sept. thru May. 147.51 Simplex Call-in.

Oak Park Amateur Radio Club. Oak Park Community Center, 14300 Oak Park Blvd. (same as 9 1/2 Mile Rd., west of Coolidge). Oak Park, MI 48237. 2nd Monday/monthly, 7:45 p.m. Talk-in on our 224.86 Mhz or 146.64 Mhz.

South Eastern Michigan A.R.C. Meets: 1st Friday/monthly, 7:30 p.m. Grosse Pointe North High School, Bldg. C, Cafeteria Commons. For info contact: AK8I (313) 372-1252. W8FWC Rptr. 146.740/146.140.

MISSOURI

PHD Amateur Radio Assn. Inc. P.O. Box 11, Liberty, MO 64068. Meets last Tuesday/monthly, 7 p.m. Red Cross Bldg. (816) 781-7313, Volunteer Examiner Coordinator.

NEBRASKA

Pioneer Amateur Radio Club (PARC).
P.O. Box 445, Fremont, NE 68025. Meets: 4th Friday/monthly, 7:30 p.m. at Keene Memorial Library, 1030 North Broad. Wed. ARES net 146.67 19:30 CDT/19:00 CST.

NEVADA

Frontier Amateur Radio Society (FARS).
Meets: 3rd Monday/monthly, 7 p.m., Denny's Restaurant across from Nevada Palace, 5318 Boulder Hwy. Net Mondays 7:30 p.m., 145.39 rptr. on Black Mountain. Club info, Jim Frye, NW7O, 456-5396.

Las Vegas Radio Amateur Club (LVRAC). Meets: 2nd Tuesday/monthly at 7 p.m., Nevada Power Building, Wengert Rm., 6226 W. Sahara Ave. (Near Jones). Net Tuesdays 8:00 p.m. on 146.94 MHz. Info: Call Lyle at 456-9510.

Nevada Amateur Radio Assoc. (NARA)
2333 Rodney Cir., Reno, NV 89509.
Meets: 3rd Tuesday/monthly, 7:00 p.m. at First Federal Savings & Loan Bldg., 2330 So. Virginia St., Reno, NV.

Sierra Intermountain Emergency Radio Assoc. (SIERA). P.O. Box 2348, Minden, NV 89423. (702) 782-8266. Meets: 2nd Tuesdays/monthly, 7:30 p.m., Douglas County Lib., Minden, NV. Talk-in: 147.270 +.

NEW HAMPSHIRE

Great Bay Radio Assn., WB1CAG. P.O. Box 911, Dover NH 03820. (603) 742-0130/755-2600. 2nd Sunday/monthly, 7:00 p.m. Dover Dist. Court. Talk-in 147.57.

NEW JERSEY

Bayonne Emergency Mgt. ARC (BEMARC).
16th St. & Ave. A Firehouse, Bayonne, New Jersey 07002. Rptrs: 145.430 & 224-280. Meets: 2nd Tuesday/monthly, 7:30 p.m.

Delaware Valley Radio Assoc. (DVRA). Our Lady of Good Counsel Church, 137 W. Upper Ferry Rd., West Trenton, NJ 08628. Meets: 2nd Wednesday/monthly, 8:00 p.m.

Gloucester County Amateur Radio Club (GCARC). Woodbury V.F.W. 1st Wednesday/monthly, 8:00 p.m., Woodbury, NJ. Talk-in 147.18/78. For info call K2JF (609) 589-2318.

South Jersey Radio Assoc. (SJRA).
Pennsauken Sr. Hi Sch. at Hylton Rd. & Remington Ave., Pennsauken, NJ 08109. Jan.-Oct. 4th Wed./monthly, 7:30 p.m. Nov.-Dec. 3rd Wed. due to Thanksgiving and Christmas. Talk-in 145.290 rptr. Club call K2AA.

NEW YORK

Communications Club of New Rochelle, NY. Harrison Street Firehouse. Bill McCarren, K2LV, (914) 738-0768. Meets: 1st Monday/monthly, 8 p.m.

Genesee Radio Amateurs (GRAM).
N.Y.S. Civil Defense Center, State St., Batavia, NY 14020. Meets: 3rd Friday/monthly, 7:30 p.m. 147.285 + W2RCX.

Hall of Science Amateur Radio Club.
P.O. Box 131, Jamaica, NY 11415.
HOSARC, 2nd Tuesday/monthly, Hall of Science Bldg., 47-01 111 St., Flushing Meadow Park at 7:30 p.m. The tristates' only 3-band linked rptr. system 144.300 S/223.600 - /445.225 -.

Orleans Amateur Radio Club (WA2DQL). Meets: Office of Disaster Preparedness (CD), West County House Rd., Albion, NY 14411, 4th Wednesday/monthly, 7:30 p.m., 147.527-WA2DQL.

The Radio Club of J.H.S. 22, N.Y.C., Inc.
WB2JKJ, P.O. Box 1052, New York, NY 10002. 24-hr. hotline, (516) 674-4072. Non-profit org. uses Amateur Radio to enhance education of young people, nationwide. Join us — "Classroom Net", 7.238 MHz, 7 a.m. E.S.T. PSE QSL!

Westchester Amateur Radio Assoc. (WARA). Scarsdale Village Hall, Scarsdale, New York. Meets: 1st Wednesday/monthly, 8:00 p.m. For info call B. Dubbs, Pres. (WA2FSR). (914) 725-1191.

NORTH CAROLINA

Raleigh Amateur Radio Society, Inc. P.O. Box 17124, Raleigh, NC 27619. Club net nightly, 8 p.m., W4DW, 04/64. Meets: 1st Wednesdays/monthly, 7:30 p.m., YMCA. 18th Annual Hamfest, April 16, 1989.

OHIO

Amateur Radio Fellowship (ARF).
N8HUN, Linda Delugach, Sec. P.O. Box 2486, Streetsboro, OH 44241. Meets: 1st Sat./monthly at Kent Wally Waffle. N8HPI rptr. 147.675/075.

Ashtabula County ARC. Ken Stenback, A18S (964-7316). County Justice Center, Jefferson, OH. 3rd Tuesday/monthly, 7:30 p.m. County Rptr., 146.715.

Clyde Amature Radio Society (C.A.R.S.).
Meets: 2nd Tuesday/monthly, 7:30 p.m., Municipal Bldg., Clyde, OH 44811. NFBE Repeater 144.75/145.35. Net Sunday 9 p.m.

Dayton Amateur Radio Assoc. P.O. Box 44, Dayton, OH 45401. Meets 1st & 3rd Fri./monthly (Sept. thru June) 8 p.m., Career Academy on River Corridor Dr. Info on W8BI 146.34/94 & 222.34/223.94.

PENNSYLVANIA

Butler County Amateur Radio Assoc.
Meets: 1st Tuesday/monthly, 7:30 p.m. at Red Cross Bldg., 312 Mercer St., Butler, PA 16001. Call-in 147.96/36

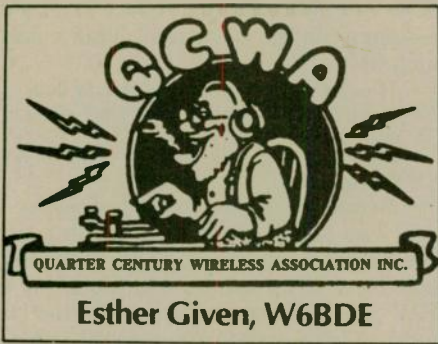
Mercer County Amateur Radio Club W3LIF. P.O. Box 996, Sharon, PA 16146. Meets: 4th Tuesday/monthly at 7:30 p.m. at Shenango Valley Medical Center, Farrell, PA. Net, Thursdays 8:45 p.m. on 147.75/15 W3LIF/R.

Warminster Amateur Radio Club. Meets: 1st Wednesday/monthly 8 p.m., St. John's Lutheran Church, York Rd., Hatboro, PA. Nets: WA3DFU/R info. Net Wed. 8:30, 147.09/147.69.

VIRGINIA

Southern Peninsula Amateur Radio Klub (SPARK). Meets: 1st and 3rd Tuesdays, Salvation Army Community Bldg., Hampton, VA. Operates 148/13 146.13 /73 Rptr., VEC Information (804) 851-5573.

Virginia Beach Amateur Radio Club (VBARC). Open Door Chapel, 3177 Virginia Beach Blvd., Va. Beach, VA. Meets First Thursday/monthly, 7:30 p.m. For info (804) 497-1235.



tunity to hobnob with their peers over the air.

The CW Party took place from Feb. 11 to Feb. 12. The Phone Party, held a month later to the second, opens at 0001 UTC March 11, closing at 2400 UTC March 12. Any authorized amateur frequencies are acceptable, but no net, crossband or repeater QSOs are permitted.

Each contact with another QCWA member counts one point. Two additional multipliers are available. One point for each different QCWA Chapter shown in your log (there are 166), or one point for each different state, province or country logged for contacts with members who do not report a designated QCWA chapter. These folks are considered "members at large" exchanging letters "A-L" and their state, province or country instead of a chapter number.

The total number of contacts times the total number of multipliers equals the final score of each QSO Party. Each chapter number OR state, province or country of A-L members may only be counted one time per party log. However, CONTACTS with the same person on different bands are valid.

Log entries must contain the three following minimum information exchanges:

1. QSO number starting with #1 and continuing numerically for party duration.
2. Contact's name or handle.
3. Contact's QCWA Chapter number OR A-L's geographic identifier.

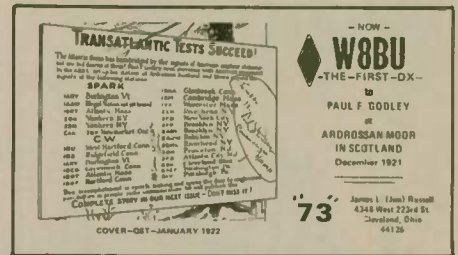
The last page of the log must show the calculation of the total number of contacts times the total number of multipliers. This final score total must also be entered on the first sheet of the log when submitted.

Further information and a suggested QSO Party log sheet appear on page 122 of the Winter 1988 Issue of the *QCWA Journal*.

Plaques will be awarded to top scorers Worldwide in each party.

Completed and computed logs should be mailed to Bob Bloor, W8LYD, 24338 Smith Ave., Westlake OH 44145.

Log checking will be handled by Cleveland Chapter #1. Results will be published by QCWA's Activities Manager.



W8BU's current QSL card shows a reproduction of the January 1922 cover of *QST*.

These annual QSO Parties are an excellent opportunity to earn one or more of QCWA's four special certificates for working: 50 different states, 60 different chapters, 100 or 500 different QCWA members.

Applications for earned certificates should go to QCWA Headquarters, 1409 Cooper Dr., Irving, TX 75061.

Honored in May 1987 as one of two QCWA members known to be eligible for the 75 year plaque, Jim Russell, W8BU, now licensed 76 years, is 90 years young. He still holds his original call and in the first amateur DXpedition on record, 8BU was the furthest DX amateur station to work Paul Godley on Ardrossan-Moor in Scotland.

In 1921 the ARRL sent Godley overseas with US brewed gear to see if amateur trans-Atlantic communications were feasible. Godley succeeded in making six spark contacts to amateurs in New England, upstate New York and Ontario, Canada; he then switched to CW, on which 20 contacts were established, including 8BU in Cleveland.

Other CW contacts were New England and eastern areas of New York, New Jersey and Pennsylvania. As the C(ro)W flew, 8BU was definitely the greatest DX for Godley and as 1921 ended, Jim Russell became the US amateur with the furthest amateur QSO.

Russell is an active member of Cleveland Chapter #1, and he has an excellent collection of early amateur equipment and a wonderful store of early day memories. His YF of 66 years, Eila, WA8EBS, is a past president of YLRL and they have at least six other licensed Amateurs in their immediate family.

QCWA President, Leland Smith, W5KL, announces his appointment of a nominating committee to recommend candidates for QCWA's 1990 election. Those serving will be Chairman John Brown, W7CKZ; Leonard Yerger, K6SS; Fred Linn, W9NZF; Betty Strattan, W2PVS and William Staples, W4SME.

Everybody loves a party and it's a tremendous undertaking when that event is set up for 11,000 eligible participants. QCWA Activities Manager, Onie Woodward, W1ZEN, is the party planner and announces that the Quarter Century Wireless Association invites its full membership to take part in the annual QSO Parties.

As outlined in the winter issue of the *QCWA Journal*, there are two 24-hour periods of fun, fellowship, recognition and everything but catered refreshments supplied for the partygoers. QCWA stresses that these events are not contests and participants are urged to take advantage of this oppor-

RADIO CLUB *continued*

WEST VIRGINIA

Jackson County Amateur Radio Club.
D. Geneal Bailey, NK8P, Sec.-Treas. 113 Winters Dr., Ripley, WV 25271. First National Bank of Ripley. Meets: 1st Thursday/monthly, 7:30 p.m.

Tri-state Amateur Radio Assn. Meets: 3rd Tues./monthly, 7 p.m., Green Valley Vol. Fire Dept., Norwood Rd. & 16th Street Rd., Huntington, WV. ARES net Thurs. 9 p.m. on 146.76/16 W8VA/R. Info N8IKP 523-5264.

WASHINGTON

Mike & Key ARC K7LED. Good Neighbor Center, 305 So. 43rd Street, Renton, WA 98055. Meets monthly on 3rd St., 10 a.m.

North Seattle Amateur Radio Club (NSARC). Meets: 3rd Tuesday, 7:30 p.m., (except Jul. & Aug.) at the First Interstate Bank, 30th Ave. NE and NE 125th St. (Lake City) in basement. Info: Mike Jr., W7WHT, (206) 282-1438 or P.O. Box 20279, Seattle, WA 98102.

WYOMING

University ARC. 146.01/61 Meets: 1st Tues., 7:30 p.m. Sept.-May. U.W. Physical Plant Bldg., 15th & Lewis St., P.O. Box 3625, Laramie, WY 82070. June-Aug: Bernie Club picnics Wednesdays.

WEST GERMANY

Wiesbaden Amateur Radio Club (WIESARC), DA1WA. Meets 2nd Tuesday/monthly at Stadion Restaurant, Wiesbaden. Steve Hutchins, DA2HS, Box 4205, APO NY 09633. PH: (011) (49)-6725-3462. American and German members.

HI-PERFORMANCE DIPOLES

MPD-3

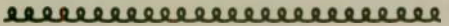
Antennas that work! Custom assembled to your center freq. es. band • Advise ht. of center and each end • Hang as inverted "V" • Horizontal, vert. dipole, sloping dipole • Commercial quality • Stainless hardware • Legal power • No-trap, high-efficiency design. Personal check, MO, or C.O.D. (63)

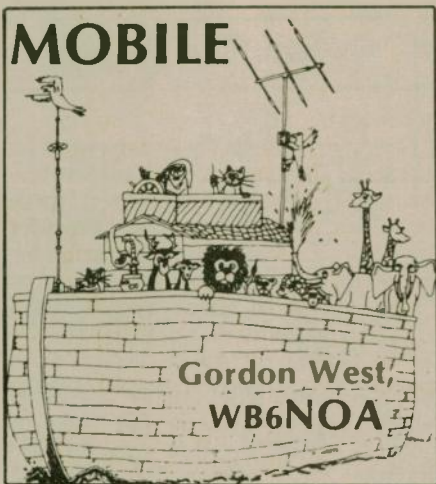
MPD-5*	80-40-20-15-10M max-performance dipole 87' long \$105ppd
MPD-2	80-40M max-performance dipole, 85' long-982 86-\$86ppd
HPD-3*	180-80-40M hi-performance dipole 113' long \$70ppd
BSD-8*	180-80-40-20-15-10M space-saver dipole 71' long \$125ppd
BSD-5*	80-40-20-15-10M space-saver dipole-specify L, 42-\$105, 52-\$108ppd	
BSD-4*	80-40-20-15M space-saver dipole-specify L, 48-\$93 60-\$86ppd

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High Frequency Mobile KW Amplifier

My test results are finished — an unbelievable high frequency, 12-volt DC, mobile, kilowatt amplifier priced under \$1,000! Run anywhere from 50 to 100W into the amplifier, on ANY frequency between 2 and 30 MHz, and the Magnus MA-1000B will deliver a cool 600-800W output!

Most conventional high frequency, KW amplifiers must run on 220 or 110VAC house power. Running a home amp aboard a boat or in the car or motorhome is almost out of the question because of the large house-power requirements.

Most home-style kilowatt amplifiers will only operate within selected ham band limits, and adding 10M KW operation is a lot more than a "simple modification." Home-style amplifiers also contain very expensive, fragile, output tubes, and although fine for the shack — they have no place aboard a boat or in a car.

The Magnus MA-1000B has been around for sometime, but under different labels and ownerships. It is designed specifically for mobile and mobile marine use and operates from 12 volts. On SSB voice peaks it could draw up to a peak of 75 amps — this re-

quires direct connection to your main battery, or better yet, your auxiliary battery system.

The amp is relatively small when compared to home units — a skinny 4 inches high, 10 inches wide, and a long 18 inches deep. It weighs under 20 pounds.

The amp may be mounted in any location where it is not exposed to excessive heat. The cooling fins need to be unobstructed. You can run it right next to your rig, or hide it out of the way and run it from a simple-to-wind-up remote control panel.

If you do plan to run it at home, I suggest you run it from a storage battery. Leave the battery outside so you don't get overwhelmed by the fumes when you recharge the battery. During my tests, I ran it for five hours from a regular automobile battery, with plenty of talking before I needed a recharge.

A simple control line toggles the amplifier on TX when you squeeze the mike button. Most ham sets offer a PTT to ground pin on the back of the sets for controlling such a device. Read over the instruction manual, find the din pin that came with your ham set, plug it in, wire in the 2-conductor control line, squeeze the mike, and the amp goes "clunk."

The amp takes anywhere from 30 to 100W drive power on its input. Don't overdrive it, and 70W PEP will run the amplifier at full tilt. Yes, after a simple 10M modification, even those QRP 25W Radio Shack™ and President/Uniden Monoband 10M mobile rigs will drive the amp nicely to 500W output.

The amplifier will drive any type of resonant antenna system. This could include:

- Hustler mobile antenna with KW coil
- Valor mobile whips (but they do get warm)
- Mobile Mark KW helical whips (cool operation)
- Home-style dipoles, quads, and beams

If you run a manual tuner on your HF system, chances are this amplifier will blow it up unless it's rated for a KW power output. The amplifier is more at home driving a resonant antenna system, such as mobile whips or home beams and dipoles.

Caution: Never allow anyone or anything to come in contact with an exposed metal antenna with 600W of power in it. It will ignite trees and badly burn fingers when touched.

A front panel switch, which may be remote-controlled, provides manual selection of band-pass filters. Five pole Tchebycheff low-pass filters keep the output clean as a whistle — we tested minus 34 dB third order.

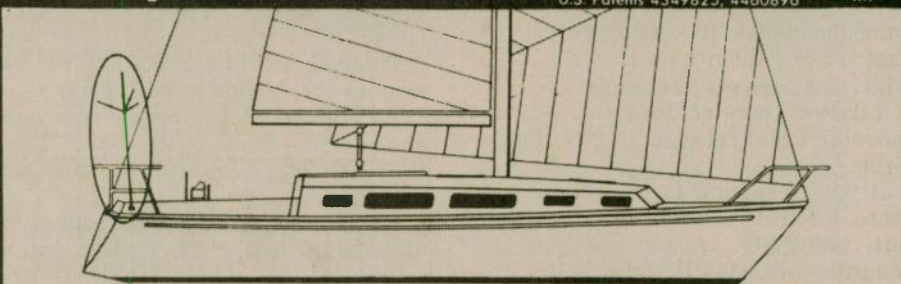
And here's the good news about those filters:

- 160m 1.8 MHz - 2 MHz
- 75m 2 MHz - 4 MHz
- 40m 4 MHz - 7.5 MHz
- 20m 7.5 MHz - 14.5 MHz
- 15m 14.5 MHz - 21.5 MHz
- 10m 21.5 MHz - 30 MHz (ham modified)

In case you missed it, what we see here is uninterrupted HF band coverage! This means the amplifier will respond quite nicely in an emergency to any marine frequency well outside of ham band limits. In fact, into a dummy load, the unit runs continuously from 1.6 MHz to 35 MHz without interruption.

The Spider™ Maritimer™ Antenna

U.S. Patents 4349825, 4460896



The only amateur radio antenna made specifically for use on the ocean. Non-magnetic stainless steel mast and nickel-chrome plated bronze fittings make it virtually corrosion-proof. Operate on 10, 15, 20 and 40 meters without making any antenna changes. A resonator for 75 meters is available as an accessory. A special marine mounting fixture for deck use is also available.

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Gordon West loves the new KW Mobile Amplifier from Magnus. 3-30 MHz, 700 + Watts out.

Our exhaustive testing on the water and in mobile units and homes gave us great results. Harmonics were attenuated greater than minus 54 dB on amateur bands. At 75 amps at 12 volts DC, typical power out was always greater than 700W. We never got the unit warm enough to trip the 75 degree C thermostat protection relay. The 8 power output transistors, running 4 push-pull amplifier circuits, gave our transceivers an easy 50 ohm input match.

These newly developed transistors use an emitter ballasted chip design to control impedance and gain over a bandwidth of more than 30 MHz. The amplifier operates at Class AB.

The unit draws only a few mills while "resting" turned on, so you can leave it ready to go whenever you are aboard the boat, or out on the highway.

The Magnus 1000B Solid State Mobile AMP is manufactured by Magnus Electronics, 7101 Ridgeway Ave., Lincolnwood, IL 60645. It is sold through participating amateur radio dealers for about \$900, plus a fee to install the 10M modification.

Pay for the modification and let someone else do it — the instructions that came with my unit, while somewhat clear, were still complicated, and it takes a hefty soldering iron to remove and add selected filter components.

If you're looking for a mobile solid-state, kilowatt amplifier (kilowatt input, 600-700W output), I rate the Magnus MA-1000B an outstanding performer.

'Polar Bridge'

Amateur Radio volunteers in North America joined with their Soviet counterparts to provide the Soviet/Canadian Transpolar Ski Expedition, "Polar Bridge," with communication linkages for the incredible 91-day journey over the top of the world.

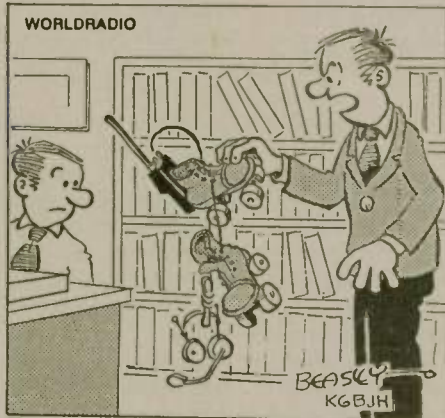
The Amateur Radio operators distinguished themselves and came in for considerable praise from involved parties of both countries, reported Peter Baird of the Polar Bridge Expedition

company.

However, substantial costs were incurred in the transportation of volunteer radio operators to the main North American Radio Base at Resolute Bay, N.W.T.; and in transportation for communications organizers to the Soviet Union to check systems and establish procedures. Polar Bridge Expedition also provided Soviet radio operators' transportation and accommodations.

These expenses (\$43,000) were not covered in advance as were the \$600,000 in hard equipment costs. The time was too short to pull all financing together. So Polar Bridge is requesting assistance from Amateur Radio enthusiasts and would be most grateful for donations.

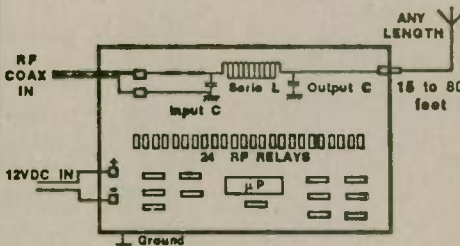
Donors of \$25 can receive a sterling silver lapel pin; donors of \$35 or more can receive a limited edition commemorative cover with special Soviet and Canadian stamps and autographs of the four expedition members. Make donations payable to Cross Country Canada and send to Polar Bridge Expedition Inc., Ste. 300, 55 Murray Street, Ottawa, Ontario, CANADA K1N 5M3.



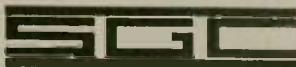
I TOLD THE BOSS I WANTED SOME COMPANY WHEELS SO I COULD OPERATE MOBILE TO AND FROM WORK!

AT LAST! AN ANTENNA COUPLER THAT WILL LOAD THE PROVERBIAL 'WET STRING'*

And, the *Smartuner* (tm) is fully automatic. It requires nothing more than RF from your rig and 12 VDC from the intelligent switch CPU. When it "sees" a new frequency it takes 2-3 seconds to find a low SWR for your transmitter. How? During this time, it switches 64 input and 32 output capacitors plus 256 inductance combinations in a pi-network. That's over a half-million different ways to ensure a perfect match for your ham rig. Even more important, it remembers the frequency and the tuning values. The next time you transmit on this band, the *Smartuner* re-selects these values in less than 10 ms.



Still skeptical? Write Gordon West, WB6NOA, for his "Best Coupler Ever Tested" review of the SGC Model SG-230 *Smartuner* and the name of your nearest dealer. Or, better yet, send \$10 (refundable with purchase) for a copy of the instruction manual.



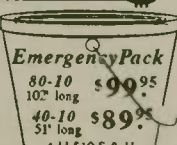
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The people who make up the wonderful world of Amateur radio never cease to amaze me! I've said that before, and I say it again now. Amateurs are wonderful!

Here is the latest incident to cause me to expound on this idea: Way back in 1936, when I was working for Technicolor in Hollywood, I made friends with a genuine California native named Ray Donald. At that time I had a 5M transceiver which contained two tubes, a '30 and a '33.

Powered by a 135 volt B battery and a couple of dry cells for the three-volt filaments, it was the state of the art for that time period. For you latecomers to the Amateur world, we once occupied 5M before the band was moved to six.

I had a 5M antenna on top of the apartment house in which I lived, and for portable use, a vertical that bolted onto the black box that contained the rig and the batteries. But the range was limited from my apartment, so my friend Ray and I took the little rig up into the mountains that surround the

Los Angeles area to try for 5M DX.

When I say DX, I mean the next county, not hundreds of miles like today. With 2W at best, you could work about as far as you could see in those pre-smog days, so altitude was important.

Our treks to the hills became a regular Saturday afternoon adventure. There was a lot of activity on the band during that time so we made a lot of new Amateur friends.

Now, Ray had a great interest in Amateur radio, but his occupation kept him busy most of the time. He just didn't have the time to learn the code, which at that time was 10 wpm. So he used to say: "If there was a pill I could buy that would install the code in my head, I'd spend a fortune on it!" And I'm sure he would have.

The Hollywood hills at that time were covered with brush, no homes to spoil the wilderness. And there were a number of paved roads with viewpoint parking areas, so it was a good place to take the little black box up and call CQ. From there we worked many stations in the Los Angeles basin, plus some in the San Fernando valley.

On one excursion up in the Hollywood hills, Ray took along a set of binoculars because it was a very clear day. It was then we made the discovery that the hills were a favorite place for guys to take their girlfriends for a little afternoon fun. We also discovered that there were a strange breed of guys that would park their cars up on top of the range and then stealthily climb down through the brush to voyeur peek on the funseekers. It was a strange world, believe me!

In our search for 5M DX, we took a trip up to Mount Wilson, where we tried to work another station, call long forgotten, on Mount Palomar.

We failed at that, but had a thrilling ride down the mountain when an engine problem caused us to coast down to a service station at the bottom.

The real story is not those adventures, but a tale of packet radio to the rescue.

My friend Ray now lives in a little town up in the Sierra Mountains far from the hustle and bustle of Balboa, where he spent his working years as an oil company executive. My wife and I visited him a few years ago and I'll say it's a beautiful place in which to retire.

Well, Ray has rediscovered the joy of Amateur Radio, and is working on getting a novice license. He spends a lot of time listening on the bands because disease has caused his eyesight to fail. In a telephone conversation with Ray, he told me he was working on the code, but wasn't sure about getting help for the exam, etc.

That's where packet radio comes into this story. I figured that if I sent a packet message simply addressed to the NTS ZIP code area near his home, it might generate some help for Ray. And it did!

In two days I received a packet answer from Robby Robinson, N6LAM, telling me that Ray Jamison, WB6B and Delores Jamison, KB6ACR, were willing to help my friend get his license; and, get this, the Jamisons only live six miles away from Ray's home.

Robby also stated that the Golden Empire Radio Society (GEARS) of Chico, CA would help with the exam and materials. Now that's the real Amateur spirit! And that's why I say — it never ceases to amaze me.

Publications

Chod Harris, VP2ML, publisher of the *DX Bulletin*, has started a monthly magazine to supplant the special reports he occasionally puts in with the weekly DX poop sheet. Called *The DX Magazine*, the first issue featured a dramatic story on the ill-fated Spratley DXpedition of some years ago. Congratulations, Chod, we will look forward to more! (*The DX Bulletin*, P.O. Box 50, Fulton, CA 95439)

Doc Klaes, KD9BS, edits the impressive *Family Motor Coach Association's Amateur Radio Chapter Newsletter*. Doc reports the FMCA has about 350 members, of which 50 hang out on packet. He also states that he gets about 50 messages a month via



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for the Radio Amateur
especially covering
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A GREAT GIFT



Bill Snyder in 1936 DXing from the Hollywood hills on 5M with his battery operated Black box.

packet reporting news from around the country. The FMCA has a RTTY net daily at 1800z on 14.096 MHz.

Dots and Dashes, the official publication of the Morse Telegraph Club Inc. (1101 Maplewood Dr., Normal, IL 61761), is a quarterly newsletter for anyone interested in either the American and International Morse Code. If you have ever wondered why the difference in the two codes, here's an explanation from the pages of the newsletter:

"Since the American Morse Code's space letters (C,O,R,Y and Z) and the long dash for 'L' caused problems when used with the submarine cables, the 'International' or 'Continental' Morse code was developed at the International Telegraphic Conference in Berlin. It combines portions of the Davy Code (1838) and the Bain code (1846). It is interesting to note that Davy was a dentist and Bain a clock-maker." Morse code must have been a hobby back in those days, too.

Eavesdroppings

"WISHING YOU AND YOURS A VERY FRAGRANT SPRING ... I GOT A MESSAGE FROM STATION GHOST ON MY PACKET RIG, WONDER WHAT ZONE THAT'S IN ... SORRY, WRONG BUTTON, THE MERRY CHRISTMAS WAS LEFT OVER FROM DECEMBER ... VERY FINE ON YOUR VERY FINE SETUP ... NOW THAT FOOTBALL IS OVER I PLAY THE PIANO IN CHURCH ... ANTENNA HERE IS A HALF WAVE CHAIN LINK FENCE ... I'M SURE THE FCC WON'T GIVE US A CITATION IF WE DROP DOWN ONE KHZ ... RTTY AND AMTOR ARE DEAF PEOPLES SIDEBAND ... I HAVE A BIG DECISION TO MAKE: TO FREEZE THE TURKEY OR THE GOOSE ... I LIVE IN A SMALL TOWN AND ITS ALL RELATIVES ... YOUR ENGLISH, JOSE, IS BETTER THAN MY TYPING ... I HAVE TWO FANS ON THE 2 KW AMP TO COOL IT DOWN ... A REAL TRAFFIC JAM HERE IS WHEN THERE ARE MORE THAN THREE CARS ON THE ROAD ...

THE TYPE AHEAD BUFFER IN THIS COMPUTER KEEPS MY EMBARRASSMENT DOWN TO ZERO ... I HURE DO SIT RRONG KEYS A BOT ... IT IS RAINING AND MY SWR IS GOING UP - MY SET COMPLAINS ABOUT RAIN ... EXCUSE MY POOR TYPING AS I'M PEELING AN ORANGE TOO ... I'M LOOKING IN THE MANUAL NOW TO SEE HOW TO TURN THE THING BACK TO YOU ... I'M REALLY SLOPPY ON THE KEYS, I SPILLED COFFEE ON THEM ... THE PAPERWORK FOR A BIG CONTEST IS MORE WORK THAN THE OPERATING ... IT'S AWFULLY HARD TO WORK ON RICE BOX GEAR WITH BIG THUMBS ... THERE'S NOTHING LIKE BUYING A BIG EXPENSIVE RIG AND THEN HAVING IT DAMAGED IN SHIPMENT ... THE COMPUTER HERE BELONGS TO THE SCHOOL, BUT I USE IT WHEN I CAN BRING IT HOME ... I'LL SEND MY CARD BY THE U.S. SNAIL ... MY WIFE SAYS I SHOULD BE A SEX EDUCATION TEACHER ... USING A BELTA LOOP ANTENNA ... MY XYL IS STANDING HERE SUGGESTING I SHOULD BE DOING SOMETHING BESIDES TYPING ON THE RTTY MACHINE ... SORRY, I HIT THE WRONG BUTTON AND THE COMPUTER WENT INTO THE NEVER, NEVERLAND OF 50 BAUD ... GOT TO QRT AND GET THE BAGPIPES OUT AND PRACTICE ... I MEANT STATION RUNDOWN, NOT RUNDOWN STATION ... ONLY HAVE 100 LOBSTER TRAPS IN NOW, BUT HAVE 400 SHRIMP AND CRAB TRAPS. TOO COLD ... I HAVE 3 KIDS, ONE OF EACH ... MUST QRT, THE CLOTHES DRYER JUST WENT QRT ... THE ANTENNA DOESN'T HAVE MUCH GAIN UNLESS IT IS POINTED AT YOU ... THE 120 VOLTS AC ACCIDENTALLY GOT ON THE 12 VOLT DC AND THAT MADE A BIG SPARK IN THE 930.

Thanks to W0HAH, W7VFR, KA8WOT, KZ6U, W7GHT, KC0FT and a big batch of RTTY/AMTOR types who unknowingly contributed eavesdroppings to this column. I welcome your comments. My packet address is W0LHS @ W0LHS. ND.USA.NA and my mail can be sent to Bill Snyder, 1514 S. 12th St., Fargo, ND 58103. For our Amateur friends it's DIT DIT and for railroad fans it's TOOT TOOT.

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The AU Report DX Plaque

Art Hubert-N2AU, of the *AU Report*, will award a plaque to the station in U.S./VE and one to the DX station who works the most DXCC countries in 1989.

The competition will start at 0000Z Jan. 1 and end at 2400Z Dec. 31.

A list of countries, call signs, dates and times are needed to be submitted by Feb. 15, 1990. No QSL's need be sent, but he reserves the right to ask for any/or all for verification. You need NOT be a subscriber of the *AU Report* to be eligible.

French 6M status

Eric-F9LT, confirmed the rumors concerning the French loss of 50-50.2 MHz to commercial interests. It has been assigned for commercial radio links used by private FM broadcasting.

French Amateurs are strictly excluded from that segment of the band. They

did not even have permission to work 6M until earlier this year.

Bordeaux already has one of these links in operation on 50.100. If you hear French stations on Six, make sure you work them above 50.2 to get a legal contact. Don't work French stations not adhering to their own rules. It is feared that if they continue to work below 50.2, the French may rescind all 6M authorizations in France.

Eric said there are 104 applications from Amateurs near the Swiss and German borders waiting for approval from those countries since any operation in that area may have an adverse effect on their TV industry. This same information was provided to me by Hal Lund-ZS6WB, in his Dec. 11, 1988 *ZS VHF News*. His source was Jean-FC1BUU.

SMIRK party contest

The starting date in #41 SIX SHOOTER is in error. The contest starts on Friday night, June 17 at 0000UTC, NOT June 18!

DX news

All times UTC. On Oct. 30, 1988-Flux=167, KH6IAA and 9H1CG had a close call, as they heard each other, but no QSO. 31st-Flux=161, brought many JA contacts to FT5ZB and OH2BYW worked JA4NBM! Nov. 1-Flux=157, had many ZS's, 9H1BT and PA0ERA working ZBO/G1CWP. ZS's have Med. area, 9H1FL heard in QSO w/FR5EL. Nov. 2-Flux=167, 1050 has GI8YDZ and GM8CDX working TK5BF. 1700-ZBO/G1CWP worked by ZS's.

Nov. 3-Flux=167, 1650-ZS6LN works LU5EZT for 1st So. African to So. America QSO for Cycle 22. 2300-W5UWB works W8's, and W9's. Nov. 4-Flux=162, 0100-PA3EUI heard TF3SIX/B. 5B4 and 9H1 beacons heard in evening. Nov. 5-Flux=169, 1500-W5UWB works HC5K, 1500-W5,6,8's on BS.

Nov. 6-Flux=165, 1600 W5UWB

works W5,6,7's on BS. 7th-1630-1645-5B4CY/B and 9H1SIX/B heard in ZS. Nov. 9-Flux=156, 1715-ZS6WB and ZS6BMS QSO PA's. 1710-1725-ZS's work PA's.

Nov. 10-Flux=152, PP8AO, LU3's work W1,2,3's, as does CX3HVS, OA3, while G3MY got CT4KQ at 0720 and G3JVL/EA8 heard YBOCXN! Nov. 12-Flux=156, 1100 F5QT and CT1-DTQ active. 1425-HC2FG and HC5K work W5UWB, while John had W5's on BS, followed by Es at 1830. Nov. 13-Flux=171, 1200-5B4CY/B into ZS. OH5NQ and CTOWW/B heard by G3SED.

Nov. 14-Flux=179, 0915-G3COJ reports R1,E2 TV, while G3MY reports working F5GZ.

Nov. 17-Flux=180, 1115-CT1WW worked by G's, who hear ZD8MB/B-1150. 1315-K1JRW QSO's ZD8MB. SZ2DH heard ZS6/B. 18th-ZS's have good TE, 1800-CT1BY QSO's ZS6XJ, ZS6BMS. SZ2DH has QSO's. 9H1BT QSO's ZS4AAB. 19th-ZS6's QSO SZ2DH.

21-24th-5B4 and 9H1 beacons in around 1730. 26th-1630-ZS's have 5B4 and 9H1 beacons. SZ2DH QSO's ZS4PV. 27th-ZD8MB works 5 F's, EA4 (crossband) and CT1. Nov. 28-Flux=142, W5OZI works W4's in GA on Es. 1550-ZB2/G4VXE works ZS6's.

Dec. 2-Flux=154, 1830-KA7WOZ heard OA8ABT, who heard NOLL/B, while N7JJS heard VP5D/B. 5th-Flux=163, W1's hear FY7THF/B, and P43AS reports ZD8MB got PZ1AP at 0000, and he worked both of them. 6th-Flux=164, 1400-VE1YX got G's and PAO's, followed at 1417-G4UPS works VE1YX crossband, followed by NF7X hearing WD7S/B at 1945.

7th-Flux=165, 1400-G's, PAO's work VE1YX, VE1BNN. 8th-Flux=169, 1325-G's work VE1YX, K1IKN, and hear FY7THF/B. K1JRW heard CO2KK, and CT4KQ heard VE1YX. 9th-Flux=170, 1330-G's QSO VE1YX and WA1OUB.

10th-Flux=164, 1330-K1JRW heard FY7THF/B. 1530-G's hear the No. East and 1630-found K1JRW hearing VP5D/B. 11th-Flux=184, 1510-J52US, running 6 CW, worked K1TOL, K1JRW, WA1OUB, W2CAP/1 on 1st day on 6! K8WKZ (1510), W5OZI, K6QXY, Neb. and Colo. operators hearing him around 1600. 1738-Ea. U.S. hears G3CCH, VE1YX works G's, K1JRW gets EI6AS, W2IDZ QSO's GI8YDZ, GMOEWX, and W1's work G's and W6's simultaneously, for 1st event of this type since 1981. 1830-KH6IAA, KH6HI, KH6VP all have a major opening into Western and Central U.S.. 2149-NOLL works KX6OI for 1st known contact with KX6 this solar

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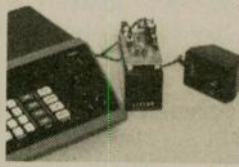
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cycle.

Dec. 12-Flux=180, 1410-VE1YX works CT1DTQ. 1437-1647-we have HC2FG/B here. 1554-G3JVL, G4JCC work WD4KPD-N.C.. 1556-W1's hear CT1WW. 1609-W1's work DJ3OS/EA8 for 1st known activity from Canary Islands. VE1YX, WA1OUB, W2CAP/1, WA2QCE, W2IDZ, K1GPJ, W2MPK, K2QWV all get contacts, Bernd is also heard in CT, MD, MICH. VE1YX gets W5FF and W5SFW. 1620-WA5HMK-Houston, is heard by G4JCC, while K8WKZ works CT1's.

13th-Flux=186, 1319-VE1YX works CT1DTQ. 1415-W1's hear the HC2FG/B. 1502-OK W5's hear HC2FB. 1550-W1's QSO CT1DTQ. 1558-K1JRW works GU2MHL. 1605-J52US gets QSO's with G's and PA's. 1646-J52US heard W3WFM. 1653-W1's work DJ3OS/EA8. 1653-W1's, 2's QSO G's. 1718-G7s have Russian TV video. 1724-VE1YX, VE1BNN work EA8 and F5QT. 1735-G's QSO VE1YX. 1747-DJ3OS/EA8 works WB6FCS! W6UXN heard the EA8 also. 1803-W3's in PA. MD. work F5QT. 1812-K1JRW works 9H1BT, 1815-F5QT. 1815-W2IDZ works F5QT, 9H1BT, as does WA2QCE. 1821-W3's in PA. QSO's CT1DTQ. 2000-DJ3OS/EA8 QSO's G3GJQ/5N0. 2017-he got ZS3AT.

14th-Flux=215, 1404-VE1YX got G2ADR. 1543-G3GJQ/5N0 works G's. 1556-PA0EUI works G3GJQ/5N0. 1618-G's hears 9H1SIX/B. 2230-J52US QSO's ZD8MB. 2238-Dave worked CT1WW, followed at 2248 by CT4KQ. Dec. 16-Flux=239, 1530-G's have aurora. 1605-SE Colo. reports hearing 48.260 video. 1845-W1's, 2's work J52US. 1900-ZS3E hears 9H1SIX/B.

17th-Flux=250, KP2A works CT3-BX. 1345-W1's hears J52US. 1400-FY7THF/B heard by W1's. 1454-VP2MJ worked by VE1's. 1454-W1,2,3,4's have huge F2 BS up and down the E. Coast. 1454-CT's work the No. East. 1502-HC1BI QSO's Maine. 1529-HC2FG heard by W7HAH. 1814-W6XJ heard by K1JRW. 1930-W6,7,0's and TN operators work KH6HI. 2000-W6JKV heard KP2A/B for about 45 minutes. 2100-W7's hear a HP3 (HUX?). 18th-Flux=250, 1352-K3ZO QSO's HC1BI. 1415-PZ1AP works W1,2,3's. FY7THF/B in also. HC1BI, HC2FG, work into the No. East. They are also in here, as is OA8ABT, for a long time. 1500-HC5K in here. 1507-K3ZO got O A 8 A B T, 1 5 0 9 - H C 2 F G . 1515-OA8ABT works VE2DFO. 1521-P43AS into No. East and VE's TI also. 1535-HC2FG into W1's still. 1600-J52US worked KP2A, WB4OSN and W5UWB! Dave was also into

W1's, K8MMM and worked 4 Colo. stations. 1832-an unknown VK4 was heard by W5OZI. 1930-Es in W. U.S.. 1950-WD7Z on Es.

Dec. 19-Flux=249, 1310-1320-HC1BI and HC2FG work G's. 1430-G's have Russian TV video. 1800-1830-KH6IAA and KH6JJI in here and No. W7's. KH6IAA works VE1YX at 1920. 1925-W7FN QSO's VP5D. W1,2,3's have F2 to W6's and No. W7's til 2120Z. Ore. W7's work W4's. 2245-W5OZI has 50.760 ZL TV audio at the same time ZD8MB heard VP5D/B.

20th-Flux=252, 0003-PZ1AP worked J52US. 1345-VE1YX and W1's QSO G's. 1440-PA's get VE1's 1515-WA4VCC, S.C. worked a G4, OH1's have Es to G's. 1600-K6QXY, N6QXY, N6AMG hear W6SKC/7/B, AZ on Es. 1629-Montana reports hearing a G4. 1638-K8EFS works PA0OOS. G's and PA's work some W8,9's and W. and Central PA. VE1YX got 50 QSO's into Ireland, G's, and PA. F2 continued til about 1730. LA stations also heard. Icelandic TV reported into Europe. 1739-VE1YX reports F2 transcontinental opening to W6's, who report hearing some of the G's working into W3,8,9 land. 1748-K1GPJ hears N0LL/B. K A 2 R D O w o r k s G 3 L Q R . 1807-W5OZI worked KH6IAA.

21st-Flux=252, 1250-HC5K worked PA0HIP. 1330-G's work N.E. U.S. KP2A is into Finland. 1400-W2IDZ reports FY7THF/B. W2GU works G's, PA's and F's. 1436-P43AS QSO's W8's, W9's. WB8VYF reports he worked 30-40 G's, 3 PA's. Fred-K3ZO, from 1438-1615 worked 32 G's, 3 GW's, 1 CT, 1 PA, 1 GJ, 1 GM. 1536-VE1YX makes over 100 contacts today. K2QWD got 26 QSO's with G's, CT and PA's. 1600-G4BWJ says he hears No. and So. W6's! 1645-parts of N.E. U.S. still have Europe in. The VP5D/B is also in. 1658-W3WFM works KG4SM-Guantanamo, Cuba! Steve worked quite a few people this

day. 1709-K3ZO got KG4SM and HH7PV. 1712-HH7PV into W3's. K8EFS worked P43AS, G3, heard GW3MHW, LA9T. WB4KNF worked GW3MHW. 1715-W6UXN heard VE1YX and K0GUV/B. 1745-K6FV/B heard in N.E. U.S.. 1800-W2's work W6's, W7's on F2. 1835-VP5D/B into VA. 1933-1935, K1FJM/4, FL, worked KA7MCX, KD7PY, W7FN, NF7X on F2. 2252-KC7IJ-Idaho, works JA8ISU, other JA's also heard!

Dec. 22-Flux=255, 1245-OH2TI works KP2A. 1330-the G's and PA's are working VE1YX, KP4, KP2A, P43AS (who got 7 new countries today), HC1BI, HC5K. OZ2TI QSO's WP4G. 1420-K4GOK worked PA0HIP and G3LQR and had a close call with ZD8MB. 1445-W1's work ZD8MB. G4UPS and PA0HIP heard CO2KK, but Arnie was not able to hear them. Arnie's son, CO2KW, will also be operating 6M soon. The F2 moves west as VE1YX, K1TOL and others work F2 to numerous western states. 1900-KH6IAA works into southwestern states, as far east as AZ. 1947-W2's have VP5D/B. 2135-2145-KL7NO in here on F2 for first time since last solar cycle peak! 2150-W5OZI works Al for WAS on Six! Al was also working NM, AZ. 2200-NJ has an Es opening to FL.

23rd-Flux=255, 1300-1310-G's QSO

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W1's, W3GUF. They also have an opening into the Caribbean. 1335-FY7THF/B into K11KN. 1420-K3ZO works GM8SVB, GM3WOJ. 1513-NY, W. and E. PA, W1's still work G's. 1522-HC2FG/B in here. N.E. U.S. stations still being heard in U.K.. 1515-F9LT works 10M/6M to N.E. U.S.. 1540-HC5K in here briefly. Between 1700 and 1900 W7FN works FL to VA and W1's. 1711-VE3KKL QSO's F6BSJ. 1715-N6AMG works W1's on F2. 1800-VE1YX is into Nev.. N7JJS had F2 from W1's to N.C.. 1815-WA1UQC still hears W6's. 1825-N7DB, OR works into FL via F2. HH7PV hears the W7's. 1835-VE1YX works into AZ. 1810-1835-WB8ZTV-WVA works S.F. W6's. 1900-HH7PV QSO's W7's. 1911-W6JKV works W4's on F2. 2008-KL7NO is in to W6JKV and W6's. 2200-W3's in MD has Es to W0's, K1's to W8, W9's.

24th-Flux=229, 0743-0745-VK3OT reports he was heard by OH1VR/OH2 during this time frame. Steve was getting 48.250 TV video, which he wrongfully thought was from Hong Kong (who is on the U.K system), and he pointed his antenna that way. He found out, too late, that the video was European! 1345-J52US QSO's G's, PA's and OH's while G's also work V01. 1530-W1's, 2's, 3's, and K8MMM work G's and PA's. 1850-KL7WE/B on 50.065 is into W1's. New beacon. 1915-KL7NO QSO's into AZ. 1820-N2AU QSO's W7FN on F2. 2000-KL7WE/B into W7's. 2105-KL7NO works IL, MN, NB for 18 QSO's. 2145-AH6IO-HI, heard HC2FG.

Who's on six!

Besides CT3BX, CT3CX, CT3CL and CT3DK are said to be active on 6M from Madiera Island. CT3BX has 10W and a 4ele yagi. I5TDJ is said to have

regained his temporary 6M permit. KE9A/DU3 is said to be active on 160-2M. QSL via WB9YXY. Hal Lund, ZS6WB, SMIRK's African Regional Coordinator, has provided 6M gear to ZS3JO-Zimbabwe!

The rig is a Tokyo Hi-power transceiver, 10W SSB/CW, and 4ele yagi. QSL to Mal Geddes, P.O. Box 57, Centenary, Zimbabwe, Africa.

SV0FE is now VS6WV, Hong Kong. It is said CP6IH is now on 50.110 and 28.885 with 20W on Six. Steve, KG4SM, is now on 6M with IC-551D and 5 element yagi. He will be there until June of 1990. On Christmas Day it was reported that Tom, 9Q5NW, finally put the rig on the air!

P29ZJS is now operating from 3D2. Macquarie Island is active on 6M with VK9YQS/0 on now until Dec. '89 with a TS-680S and 150W. QSL to VK3OT.

VY1AU w/150W and 5el @ 50', VY1BQ w/5W and 5el @ 45' and VY1CW w/180W and 4el @ 55' are all active from Grid CP20, according to KA3B. VE8BY may no longer be on from NWT, but VE8CM might be.

FR5EL, Reunion Island, is on with 15W. He monitors 50.105. If you worked G0AZT and AA5U/VP5, you can QSL G0AZT to Eddie Schneider, P.O. Box 5194, Richmond, CA 94805 before March. Tim, KX6TY is on 6M from the Marshall Islands, til the summer of 1990, running 150W to a dipole. He plans on putting up a better antenna soon. QSL via KX6BU.

SMIRK accepting equipment donations

We just gained another Yaesu FT-620B by donation from one of our members and are accepting donations for others. There is another FT-620B available for \$250. We have received over \$100 towards it.

Can you help put another new country on Six? Send donations to SMIRK at my address.

Care to get rid of your old, but working, FT-620B, ICOM IC-551, SWAN 250, HEATH SB-110, TS-600? Send it to SMIRK so we can send it to an operator in a needy country.

QSL info

SMIRK has a new QSL Info List available for a green stamp and a #10 SASE to me. It presently has four pages of QTH info on it, but I am sure it will grow. The green stamp will be applied to the equipment fund.

6M beacons

50.073 is about to become an active beacon frequency from Texas and Hawaii. Pat Rose, W5OZI, will have his beacon on that frequency soon. It will put out about 25W to a turnstile antenna about 30' up his ranch tower.

Bert Ingalls, KH6HI, will also have his beacon active on that frequency soon. It will put out about 10W to 2 stacked turnstiles.

An updated beacon list is also available for a green stamp and a #10 SASE. It will be applied to the equipment fund.

The CANADA award

I have a correction regarding information published concerning this beautiful award. Six Meter applications can be sent to the Canadian Amateur Radio Federation, P.O. Box 356, Kingston, Ontario, Canada K7L 4W2. This is per John Iliffe, VE3CES, President of CARF.

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10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ
10-10 19636

The various questions I have been receiving lately, from both potential new members and old members, lead me to believe that there is much that is not known about the 10-10 organization and what 10-10 is really all about.

Perhaps many of us who have been active in 10-10 for a number of years take for granted that the knowledge that we have is generally known by all of the members. Therefore, I believe that a review of the 10-10 organization, purpose and activities available to 10-10 members, would be well worth reading.

First, it would be impossible to cover all of 10-10 in one column. This month's column will endeavor to cover those aspects that are perhaps most important to newer members, and may be a "refresher" to those older members that may have been inactive for a period while the 10M band was at the low ebb of the sun spot cycle.

What is the 10-10 International Net?

The 10-10 International Net was formed back in 1962 as the Ten-Ten Net of Southern California. The purpose then, as it is now, is to promote activity and good operating practice on the 10M Amateur band.

It grew slowly at first, but by 1975 there were over 10,000 members worldwide. There is an official 10-10 Net Meeting each day, except Sunday, at 10 a.m. Pacific Standard Time (1800 UTC) on 28.800 MHz. Hence the name, 10-10, from the original group who met on 10M at 10 o'clock each day. The saying in those days was "see you on 10 at 10."

There is now an alternate net on Wednesdays, same time, on 28.450 MHz. The basic idea in those days was to keep 10M occupied with activity so it could be justified as an Amateur Radio frequency band.

At the beginning 10-10 numbers were non-existent, and members just used their radio calls for identification. Someone came up with the idea that 10-10 members should have an identification number, unique to 10-10, so

each member was assigned a number in sequence.

The first 200 or so numbers were assigned by a drawing so all had an equal chance of obtaining a low number. Today, numbers are still assigned basically in sequence, except each district manager is assigned a block of numbers that they assign to each new member in their district.

What do I do with my 10-10 number after I receive it?

I get many letters requesting information about 10-10. The most common comment is "Send me some information about this 10-10 thing" or "I keep getting asked for my 10-10 number. Send me some information so I know what this is all about." It is obvious that there is a lack of knowledge about 10-10 among newly licensed hams. So here goes with some answers to another popular question, "What do I do with my 10-10 number after I receive it?"

First, you can exchange it with other 10-10 members and keep a log or record of their number. There are numerous awards for keeping track of all of the 10-10 numbers you contact, and submitting lists of these numbers to the Award Managers for the various awards.

The most popular award is the Bar Awards. A "Bar" is issued for each 100 10-10 contacts made and reported to the Bar Award Manager. With the first Bar — the "100 Bar" — you will receive a Certificate that will accommodate 40 Bars, or a total of 4000 contacts. Don't worry about filling up the Certificate with the 40 Bar Awards too quickly, since at the last count only about 220 10-10ers have made the 2500 Bar, and only 43 have made the 5000 Bar.

But on the other hand one 10-10 member, Robert Osborn, WA5JDU, 10-10 #3017, has logged a total of 16,800 10-10 contacts, and has his 16,800 Bar! And if you consider the fact that Robert is blind, you will agree that is a remarkable feat.

Robert keeps his records in Braille, which brings me to the next item of business. Records must be kept of each 10-10 contact, and there are many recordkeeping systems in use.

Many keep a record of each contact on a 3x5 inch index card and file these

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in numerical order. Some, such as I, use a computer.

There are other ways and you should establish one that fits your needs. One thing to remember is that each 100 contacts (no more, no less) must be submitted to the Bar Manager in 10-10 numerical ascending order along with the call sign, handle and location, in order to receive a "Bar" Award.

Upon reaching the 500 Bar level, you automatically become a member of the "International 500 of the World" and receive an honorary VP Number. Another certificate, the VP Certificate, can be had for contacting and exchanging VP numbers with other VP members. VP stands for Vice President, so when you have made your 500 Bar, you automatically become an Honorary Vice President of the International 500 of the World.

In addition 10-10 also has a Worked all Continents Award, a Worked all States Award and a Countries Award. Certificates for these awards require proof of contact by the submittal of QSL Cards with the application.

The Bar Awards are issued based on the honor system without proof of contact, but spot checks are made by the Bar Awards Manager for legitimate contact information. To my knowledge, no 10-10 member has ever been disqualified from any Bar Award for submitting false information, and I, for one, hope it never happens.

What happens to my 10-10 number if for some reason I loose interest in 10-10 or do not continue to pay my dues?

Once you are issued a 10-10 number, it is yours for life, in fact it is assigned to your call forever. If you ever decide not to participate in 10-10 and do not continue to pay your dues each year,

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your number is still yours. You can still give it out to other 10-10 members and you can still collect numbers yourself.

Non-dues paying members cannot participate in the "Bar" Award program or receive any other awards or certificates. They will also be removed from the ACTIVE list of members who receive the quarterly *10-10 International News* magazine. You must recognize that it is the dues paying members that are the backbone of any organization. The dues for 10-10 is one of the lowest of any Amateur Radio Organization, only \$4 per year (\$5 foreign).

Next month I will cover the subjects of Who Runs the 10-10 Net?, What is a 10-10 Chapter? and more.

New directors

President Norm Lefcourt, W6IRT, has appointed two new directors to fill the openings created when George Elliott, W6ENC, became a Silent Key, and for Carl Winter, W6AOW, whose term expired.

Hough Sullivan, WA4QZU, 10-10 #23166, was appointed to fill one of the director positions and Jim Beswick, W4YHF, 10-10 #13610, will fill the other. In keeping with the promise to spread the offices around the country, 10-10 now has the first two directors outside the state of California. Hough lives in Owensboro, KY and Jim lives in Ellijay, GA. Both of these 10-10'ers have been active in the organization for many years, as noted by their early 10-10 numbers, and will be an asset.

New bar manager

For personal reasons, Bobby Vaughn, WB7NUU, 10-10 #17416, has found it necessary to resign as Bar Manager for the 100 through 900. Bobbie has served 10-10 for over three years and has done a fantastic job in keeping those early Bars coming back in a timely manner. We thank Bobbie for her service to 10-10 and wish her well for the future.

Replacing Bobbie is a relatively new 10-10 member, but an old time ham of some 28 years. Wayne Childress, KJ6HP, 10-10 #4851. By the time you read this the transfer of records should be complete and 100-900 Bar applications should be sent to Wayne at 4455 Harding Ave., Los Angeles, CA 90066. We welcome Wayne to the core of 10-10 volunteers and hope he will enjoy his new duties.

Finally

If you are interested in obtaining an Information Pack and Application Form for the possibility of joining 10-10, send me a "green stamp" (\$1)

and one of your address labels (if you have one) and you will also receive the latest copy of *10-10 International News*. My address is 18130 Bromley St., Tarzana, CA 91356-1701.

If you have lost your 10-10 number or do not know to whom to send your dues, a SASE to the above address will get you that information. If you are looking for your lost 10-10 number, please enclose a list of all of your previous calls as well as your current call. Previous address information is not required.

Until next month, have a good time collecting 10-10 numbers, and if I don't cu on 10 I hope to cu next month. 73

Mark your dials

To replace the white markings on dials and knobs, try a white lacquer stick. If you cannot get these at a local hardware or automotive supply house, try Antique Electronics Supply, 688 W. First St., Tempe, AZ 85281. Ask for their catalog.

Remove the excess with a toothpick, then clean thoroughly, wipe and dry. Next, apply the stick and wipe excess carefully with a soft cloth. —David Knepper, W3BJZ; AM Press/Exchange, Woodlawn, TN

Quiz answers

(from page 18)

1. A fuse.
2. An electron tube better known as a glassfet.

—Atlanta Radio Club, GA

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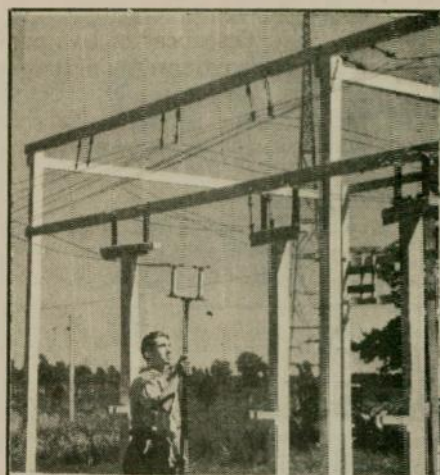
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AERIALS

KURT N. STERBA

We continue the series of what may be called "clandestine" antennas. These are transducers that are not in the usual form, the point being to prevent neighbors or landlords from knowing that electromagnetic radiation is taking place from certain premises.

During the ARRL 10M contest last December, the radiator used here was ... the downspout of the eaves troughs.

The connection was made with an alligator clip and three radials of 8.5 ft. each were laid out. Transmitter was 100W output.

One will not sit and call CQ and run up thousands of contacts with such a set-up; however, with the search and find operation I'd see contacts at :19, :20, :22, :23, 25. Another string went :59, :00, :02, :02, :04, :05. There were :20, :21, :22. And :36, :37, :38.

This might be called PRQ operation. You know, a QRPer runs 3W into a 3L Yagi up 60 ft. I turn it around, run 100W into no antenna, thus QRP in reverse.

Those of a scientific bent may be asking, "What is the radiation resistance of a downspout?" "What is the j factor?" I don't know, and don't much care!

Armed with the MFJ Model 949C Versa Tuner II, the downspout presented 1:1 SWR with a setting of 2 K 2. Without the tuner in the circuit the needle went into infinity.

This tuner has one feature I really like. The feed from the downspout went to the Coax 2 input. Then I had another antenna I'm experimenting with go to another tuner and from that it went to input Coax 1 direct, bypassing the internal tuner. Thus I could do instant A-B comparisons between the downspout and something else, which I will discuss more in a future column.

I had several instances of two contacts in two minutes, three contacts in four minutes, etc. Actually I could have worked tons of stations, but was concentrating on trying to find missing states and seeing what DX there was in order to exhibit and establish the viability of a downspout. Unfortunately I had to leave the rig midday Saturday (the best propagation time) for four hours for a matter of highest priority.

What were the results? I worked call areas 1-2-3-4-5-6-7-8-9-0. Worked every state in every call district except one; and missed two Canadian provinces. Alaska to Florida, Maine to Hawaii on the downspout. DX? JA and UA, VK and ZL, XE and CE, YV and PY, G and EA, HC and CX, LU and VP, TI and NP, the airplane P40 and more.

I had a grand time. It was twice as much fun working all this on a downspout than on a real antenna. I can hardly wait for the DX contest in March!

And again, here's proof that no matter what your particular situation may be regarding antenna restrictions, you can be there too.

Another topic: A letter came in regarding narrow SWR bandwidth on 75M with one of those trap verticals, and what could be done? Short of repealing the laws of physics, not much.

Actually with a tube rig, as it is in this case, a SWR of 2.5 (at the edge) as mentioned is not the end of the world. Contrary to radio "bulloney," your finals will not be destroyed.

To those that say "He's losing half his power" (which he's not), remember that a 3 dB difference is "barely audible." Tweaking the loading control may bring it in. A small tuner will make everything just perfect.

By the way, for newcomers, if you should have two antennas up, say a vertical and a dipole, and you are wondering which one will transmit better to a station you are hearing on a particular band, the answer is: the one you are hearing the station better on. The conditions that make the incoming signal louder will also be working the same going the other direction.

Next topic: Heard on 20M was a sta-

tion in Florida telling another about his 2M antenna. He'd built a long quad rather than a Yagi and then stacked another on top of that and put two more on the side. He announced that this had 40 dB gain and that from Florida he could work New York, "when the band was open."

Either this guy is the ultimate BS artist or an absolute ninny. If the FCC monitoring station heard him they'd have grounds for a call for re-examination. 40 dB is a power gain of 10,000. With legal limit amateur power that would be an ERP of 15,000,000 watts!

I started to work out what type of array one would have to build for 40 dB gain and got lost somewhere around 4,096 elements. I think a 30 ft. dish might do it. I leave all this to those who know more about VHF than I do (which wouldn't take too much), but I suspect that with 40 dB gain you wouldn't have to wait for band openings. You would be it, everywhere.

Those knowledgeable about such matters are invited to write in.

What would it take to get 40 dB gain? Possibly 256 16 element beams? What's the beam angle of a 40 dB gain antenna? Would a Florida ham have to rotate it to talk to someone in the Bronx after signing off with someone in Manhattan?

I call upon those whose VHF experience exceeds mine (which consisted of a Heathkit Twoer with a coat-hanger vertical coming out of the coax connector) to write in. 7,680 elements you say?

Since some of you really get your teeth grinding when I point out the follies in books, I shall not mention the author. However, a trip to the bookstore introduced me to a book in which the feed to a vertical showed the center conductor going to both the radiator and the ground. The shield went nowhere. On a V-beam there was an insulator in both legs between the feedline and the antenna wires. Hey, not going to work much on that one! I'm not ever going to say who published it (I hope all hams build those antennas. I'll be the biggest signal on the band with my downspout). I'm just going to go to the fridge, get a diet TAB and forget the whole thing.

You may have read somewhere recently some hokum about the ZL-Special antenna being a real "barn-

burner." Well, before you go about tearing down whatever you have up, kindly allow me to point out that a two-element beam is a two-element beam is a two-element beam. Alas, there is no magic out there anywhere.

(Krusty Kurt draws his Ninja cloak of invisibility so he can say that W9SCH really knows of what he speaks and never expect a cup of coffee in return. He can praise a product and not ever expect payola in the form of a good cigar. He can also call a spade a spade and avoid the hissy fits of the rascals.)

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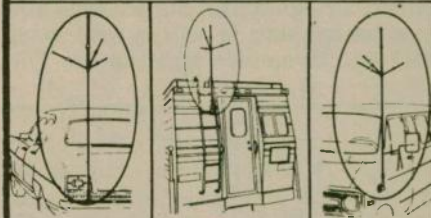
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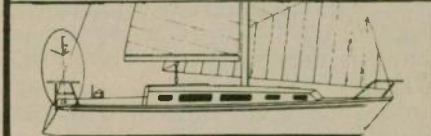
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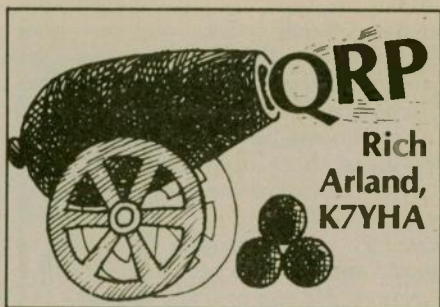
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This month, we are going to continue our exploration of audio processing techniques. There are a few tricks that we will borrow from our SW DXer brethren that will make your listening a lot more pleasurable. After all, in QRP as well as in all other areas of Amateur Radio, if you can't hear 'em, you can't work 'em. The better the receive audio is, the easier your task of getting that rare station or QRP milliwatt into your log book will become.

Most of the receivers (or receiver sections of transceivers) on today's market have very poorly designed audio stages. Little thought has been given to good audio reproduction. It seems that the maximum attention is given to designing RF stages with low noise figures and IF strips with good IMD and dynamic range specs. The

mundane audio stages get left out.

Most Icom HF radios have a decidedly bassy sound to them. Low frequency rumble, static and poor modulation of the target station all combine to make a marginal signal downright bad by the time it gets processed by a less-than-well-designed audio amplifier. Poor high frequency response allows splatter and heterodynes to become very bothersome and produce excessive listening fatigue. Add to this the nasty things that poor propagation can do to the receive audio and you can see why, when DXing, you need all the help you can get!

Obviously, short of redesigning the receiver audio section (and there are "modifications" regularly done by ham radio retailers just to improve the audio states of your kilo-buck radio), your best bet is a combination of steps to increase your listening pleasure.

First, try using a graphic equalizer in series with the audio output from your receiver. If you can take the audio from the record output jack it will suffer less distortion, as this is low level audio which hasn't been amplified (and distorted) by the rig's audio section. Run the output of the graphic equalizer (Radio Shack has some good ones) into the input of a GOOD quality active audio filter. The results will be amaz-

ing!

Some purists actually take the output of the filter and run it into a separate audio amp and speaker! This assures the listener that the very best audio is available at the speaker or headphone output.

By tweaking the equalizer you can reshape the audio bandpass and attenuate those offending frequencies prior to processing them in the audio filter. The thing to remember here is that communications audio differs from "Hi-Fi" audio considerably.

Manufacturers tend to forget this concept and continue to provide an audio channel much wider than is really necessary to support communications. Good communications audio can exist within an audio passband extending from 500 Hz to 2500 Hz at the 3dB (half-power points) on the frequency response curve. Considering that most receiver audio sections have a frequency response of between 100 Hz and 20,000 Hz, you can see that there is plenty of room for improvement (fig. 1).


By pre-conditioning the audio channel with a graphic equalizer, you will allow a much narrower band of frequencies into the front end of the filter. This makes the filter's job that much easier.

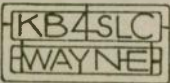
Take the output from the filter and feed it into your favorite pair of headphones. Not only do headphones isolate you from your environment, they place the sound closer to your ears so you can hear subtle changes in the target station's audio. This means that you miss much less information when tuning the bands. Figure 2 shows an ideal set-up using a graphic equalizer and an active audio filter. You just can't do much better than this (short of a complete audio stage re-design) for good sounding audio.

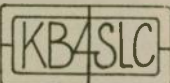
Not everyone has the bucks or the desire to purchase a Cadillac audio filter like the Datong FL-3 (discussed in detail in the last issue). Therefore, in an attempt to provide a compromise, we'll look at the MFJ Signal Enhancer II (SE-II) as a low cost alternative for the active audio filter solution.


If the Datong FL-3 is the Cadillac of audio filters, then the MFJ SE-II is surely the Ford of audio filters. I do not mean that in a negative sense at all. MFJ products have a long history of extensive R&D, being well designed and working forever. The folks at MFJ have been marketing quality active audio filters for a loooong time.

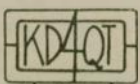
I first became acquainted with the MFJ CWF-2 (CW filter) in 1973. I have since used this type of filter in every HW-7, 8 and Ten-Tec Argonaut that I have owned (10 in all). They work great and provide very good audio filtering for a modest cost.


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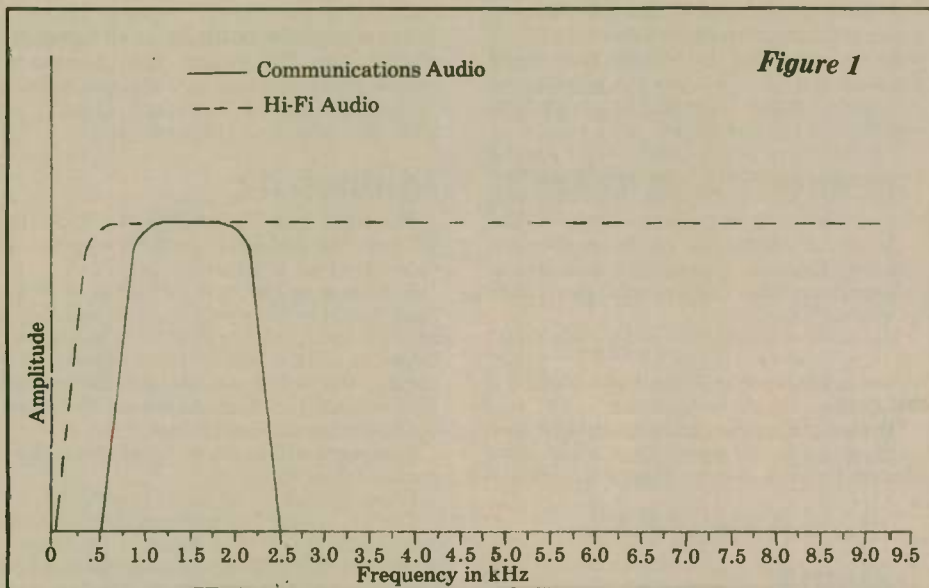
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Sadly, MFJ no longer markets their humble little 4-pole CW filter. They do, however, have a flexible filter in their inventory (the SE-II, model #752-C) which will provide good CW and SSB selectivity, and a notch/peak filter for added audio channel control.

The MFJ SE-II is a full function active audio filter. It has two separate manually controlled filter sections (a Primary and an Auxiliary filter) that can be used singly or in combination to modify your receive audio passband. The receive audio bandwidth can be varied from 40 Hz to 3000 Hz by using the Primary and Auxiliary filters in combination. The Auxiliary notch/peak filter will attenuate or enhance a signal by about 70dB and is manually variable through the entire audio passband.

Construction is an all metal cabinet and top with plastic woodgrain end panels. Input/output connectors on the back are RCA-type phone connectors.

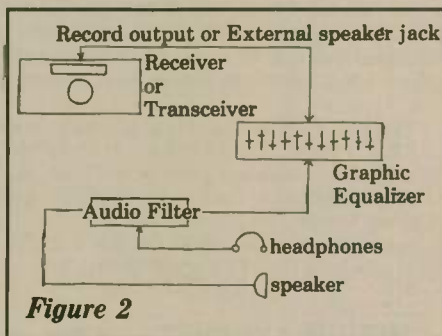
One nice feature is the dual input selection, allowing this filter to be permanently hooked up to two receivers. The proper receiver is selected by a rear panel push button. There is a noise limiter function on the Primary filter, also. The SE-II is powered by 9-18 VDC. A modular wall block power supply is available from MFJ or power can be generated from the 12 volt buss in the shack. Current draw is about 300ma.

When using the peak/notch feature to attenuate an intruding heterodyne, it is first necessary to peak the offending signal, and then switch to the notch mode. The notch is very narrow, therefore, it is faster to peak the signal and switch to notch mode than to try and zero the notch in by ear.

It is possible to cause the SE-II to start ringing. The very Hi-Q filter circuitry coupled with high gain of the in-

dividual stages can result in ringing under certain conditions, namely when using very narrow bandwidths while copying CW. Normally, it is only necessary to broaden the bandwidth of the filter slightly to stop the feedback.

Using extremely narrow bandwidths also has the drawback of limiting off-frequency listening capability. During a heated QRP contest, being able to hear what sits to either side of your frequency can mean the difference between making a QSO or not.



Although there is no record output jack on the SE-II, I discovered that by routing the output of a tape recorder through the filter, you can easily launder the audio and recover useful information for those hard to handle cases. This is especially helpful to the SW DXers out there who record a lot of their sessions and review the tapes at a later time to extract the information needed for a QSL report.

The MFJ Signal Enhancer-II is a well designed, low cost answer for those radio amateurs and SW DXers who need to improve their receive audio. The SE-II is a very good value for the money. It does not have a lot of bells and whistles, but it does work very well laundering your receive audio.

(please turn to page 53)

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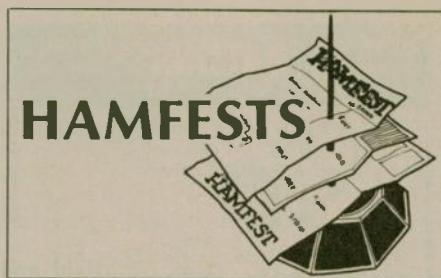
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Florida

The weekend of March 18 and 19 the PLAYGROUND ARC will hold the 19th Annual North Florida Ham/Swapfest at the Shrine Fairgrounds in north Ft. Walton Beach, FL.

Doors open at 8 a.m. both days.

Flea market, commercial exhibits and ARRL, MARS and QCWA meetings will be featured at the festivities. A banquet will be held Saturday night.

Free parking is provided. RV parking is \$10 with hookups.

Talk-in on 146.79 and 52.

Admission is \$3 in advance and \$4 at the door. Tables are \$10 for one day and \$15 for both.

For more information write PARC, P.O. Box 873, Ft. Walton Beach, FL 32548. □

Illinois

The LIBERTYVILLE AND MUNDELEIN ARS will be holding its annual LAMARSFEST 1989 on March 19 at the Lake County Fairgrounds in Grayslake.

Large indoor electronic and radio swapfest and commercial exhibitors will be featured. A rest area, free parking and a public cafeteria are provided.

General admission is \$2 in advance and \$3 at the door. Swapfest tables are \$5, commercial tables are \$20, by reservation only.

Talk-in on 147.63/03 Waukegan repeater and 146.52 simplex.

Doors are open at 8 a.m. Setup will begin at 6 a.m.

For information write LAMARS, P.O. Box 751, Libertyville, IL 60048; or phone Bob Dick, NY9E, 312/362-9634 after 7 p.m. □

The STERLING-ROCK FALLS ARS 29th annual Hamfest will be held at the Sterling High School Field House in Sterling on March 12.

There will be commercial distributors, dealers, a large flea market and space to accommodate self-contained campers overnight.

Doors will open at 7:30 a.m. and a concession stand will be available. Tickets are \$3 in advance, \$4 at the door. Tables are \$5 including electricity. Bring your own cord.

VE Testing is provided (write Jim Buikema, 207 W. Park St., Morrison, IL 61270; or phone 815/772-3793 after 3 p.m.).

Talk-in on 146.25/146.85 W9MEP repeater.

For information, tables or tickets contact Sue Peters, P.O. Box 521, Sterling, IL 61081; or phone 815/625-9262. □

Kentucky

The LINCOLN TRAIL ARC's Hamfest Committee announced that the Kentucky State ARRL Convention will be held at the

Pritchard Community Center in Elizabethtown, KY, Saturday, March 25.

There are many activities planned, including ARRL VEC license exams and numerous forums. There will be free parking, new dealers and flea market vendors.

For advanced tickets and set-up reservations and information on exams contact Chuck Strain, AA4ZD, P.O. Box 342, Vine Grove, KY 40175; or telephone 502/351-1715.

Advanced admissions are \$5 at the door. Vendor spaces are \$5 and each includes one table and chair. Each vendor must buy regular admission ticket.

For advance reservation and tickets send a check or money order and a SASE.

Vendors may set up Friday night starting at 6 p.m. Security will be provided.

Anyone taking the exams must show their original license and have a copy of the same. Exams are walk-in only. They will start at 9 a.m.

Talk in on 146.52 and 146.38/98. □

Indiana

The RANDOLPH ARA and PARKER CITY "220" CLUB are sponsoring a hamfest to be held Sunday, March 5 from 8 a.m. to 3 p.m.

Included at the 'fest are a flea market, forums, free parking and food and drinks.

Advance admission is \$3, \$4 at the door. 3x8 ft. tables (these are limited) are available for \$5 and table spaces are \$3.

Talk-in on 147.30/90 and 224.04/44.

For more information write Kedrick Robins, W9QUH, RR1 Box 389, Parker City, IN 47368; or phone 317/468-6568. □

Michigan

On March 19 the SOUTH EASTERN MICHIGAN ARA will hold its 31st annual Hamfest/Swap & Shop at the Grosse Pointe North High School, in Grosse Point Woods, 8 a.m. until 2 p.m.

The Hamfest/Swap & Shop will feature an ARRL Forum, DX Forum, Fox (hidden transmitter) Hunting Techniques Forum and a demonstration of Packet Radio including a Packet Station "on-the-air" live.

Advance tables are \$8-\$10 at the door. Advance tickets are \$2-\$3 at the door.

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 For more information, write to SEMARA SWAP, P.O. Box 646, St. Clair Shores, MI 48080. Please enclose a SASE for reply or phone Thomas J. Orlicki, N8HLY, at 313/526-9498 evenings after 6 p.m. □

Minnesota

The RED RIVER RADIO AMATEURS will hold the Red River Hamfest and Hobby Computer Fair on Saturday, March 18.

To be held at the New Day's Inn in Moorhead, MN, the show will feature commercial amateur and computer exhibitors, as well as a large flea market. Special features will be VE testing, the Sky Warn Banquet, Super Link Appreciation Luncheon, a Disaster Communication Forum and door prizes.

Admission will be \$3, \$2 for students. Flea market tables will be \$5.

Doors open at 8 a.m. for all functions.

For VE testing reservations contact Mike Beaton, KDOA, 2267 Flickertail Dr., Fargo, ND 58103. For other information contact Tim Gooding, KD0YX, 1006 Sheyenne St., West Fargo, ND 58078. □

Missouri

The PHD ARA will sponsor the 1989 Midwest ARRL Convention March 31 through April 2 at the Kansas City, MO Convention Center.

Exhibits are open 9 a.m. to 5 p.m. Saturday and Sunday. Setups will be from 3-8 p.m. Friday.

There will be a complete program of forums and workshops, DX, QCWA, Packet, Computers, ATV, ARRL, FCC and more. 800 commercial booths and swap tables are available.

Large indoor flea market tables are available for \$10. Pre-registration is \$5 and tickets are \$7 at the door.

Exams will be held at 8 a.m. Sunday (no walk-ins). The ARRL breakfast is Saturday morning, and the QCWA breakfast is Sunday morning. Tickets are \$4 each. Tickets for the banquet on Saturday evening are \$13.50. Wouff Hong Saturday at midnight is \$1.

Guests include Midwest ARRL Director Paul Grauer, W0FIR; ARRL President Larry Price, W4RA; Gerald Hall, K1TD, Associate Technical Editor of QST; Larry Wolfgang, WA3VIL, Assistant Technical Editor of QST; Alan Dorhoffer, K2EEK, Editor of CQ; Art Reis, K9XI, Editor of 220 Notes; Robert Winn, W5KNE, Editor of QRZ DX; Bill Pasternak, WA6ITF, Producer of Westlink Radio News and others.

All Pre-registrations must be postmarked by March 20. Mail to PHD ARA, P.O. Box 11, Liberty, MO 64068; or phone 816/781-7313. Send a SASE for confirmation or information. □

New Jersey

The DELAWARE VALLEY RADIO ASSOCIATION will sponsor HAMCOMP '89, their 17th annual flea market of amateur radio and computer equipment on Sunday, March 12 from 8 a.m. to 2 p.m. The site is the New Jersey National Guard 112th Field Artillery Armory.

Admission is \$3 in advance, \$4 at the door. Indoor selling spaces are \$10 (wall space) or \$7; outdoor spaces are \$6. Sellers must provide their own tables.

Doors open at 6 a.m. for vendors and 8 a.m.

for the public.

Refreshments are available along with plenty of free parking.

Talk-in on 146.07-67.

For more information and space reservations write to HAMCOMP '89 c/o KB2ZY, R.D. 1, P.O. Box 259, Stockton, NJ 08559 (SASE please).

The facility has handicap parking and is wheelchair accessible. □

The SHORE POINTS ARC invites everyone to its Springfest '89 hamfest, to be held on Saturday, March 11 at the Atlantic County 4-H Center in Egg Harbor City, NJ.

Doors are open to buyers at 9 a.m. Sellers may arrive at 7 a.m. to set up.

8000 sq. ft. of heated indoor selling space is available, with additional space for outdoor tailgating, weather permitting. Limited AC available in indoor space.

Sellers: \$5 per space (supply of tables limited, request if needed). Buyers: \$3.

Food and drink are available.

Talk-in on 146.385/985 and 146.52 simplex.

For more information write to SPARC, P.O. Box 142, Absecon, NJ 08201. □

New York

We would like to take this opportunity to invite you to join us at WECAFEST '89, the WESTCHESTER EMERGENCY COMMUNICATIONS ASSOCIATION'S fifth annual hamfest and electronics fair. This one-day event will be held indoors on Sunday, March 5 at Westchester Community College in Valhalla, New York.

Selling spaces will be provided based on 5 ft. increments for \$12. If you will require use of our tables you must reserve quickly.

There is ramped access to the selling floor. The College caterer will provide food service.

For more information contact WECA, P.O. Box 131, North Tarrytown, NY 10591. □

North Carolina

The MECKLENBURG ARS is sponsoring the Charlotte Hamfest and Computerfair, this year's ARRL Roanoke Division Convention, to be held on March 18 and 19.

The hours are Saturday 9 a.m. to 5 p.m. and Sunday 9 a.m. to 2 p.m.

QRP

(continued from page 51)

Narrowing the bandwidth when receiving CW will result in much more production on the air time. Being able to adjust the audio channel when working SSB to suit your individual needs will mean more stations in the log. Weak signal work on the HF QRP bands becomes less a chore when using a rig equipped with a flexible audio filter like the SE-II.

Next month, The Ultimate QRP Challenge ... Milliwattig AND Microwattig! Questions/Comments: Send SASE to: Rich Arland, K7YHA, 25 Amherst Ave., Wilkes-Barre, PA 18702. □

Over 160 commercial exhibit booths and over 500 flea market tables will be featured. All of the major manufacturers and dealers will be there.

The festivities will take place indoors in an area of 87,000 sq. ft. Lots of convenient nearby parking is provided and many nice restaurants are close by, as well as food concessions inside the convention center.

There will be a full slate of programs and forums, and license exams by the Charlotte VEC on Sunday.

In addition to hourly gifts, there will be major awards both days.

Tickets are \$5 in advance, \$7 at the door and flea market tables are \$12 in advance only, none sold at the door. Children under 12 free. Tickets and tables are good for both days.

Reservations and inquiries may be made by writing Charlotte Hamfest, P.O. Box 221136, Charlotte, NC 28222-1136.

Talk-in on W4BFB/r on 146.34/146.94. □

Texas

The SOUTH TEXAS AMATEUR REPEATER SOCIETY (STARS) will sponsor a hamfest the weekend of March 4-5. The festivities will take place Saturday from 9 a.m. to 4 p.m., and Sunday from 9 a.m. to 2 p.m. at the

Casa de Amistad (Civic Center), in Harlingen.

Advance admission tickets are \$5 and tickets at the door are \$6. Tables registered in advance are \$7 and at the door tables are \$10.

Some features of the hamfest include FCC and SCT forums, packet demonstration and participation, dealer displays, an indoor air conditioned flea market, VE exams, a RACES/ARES meeting, an ARRL forum, RV parking and ladies' activities.

Talk-in on 147.99/39 (English) and 146.10/70 (Spanish).

For registration information contact Bob Tichenor, WD5KBZ, 1522 N. 77 Sunshine, Harlingen, TX 78550; or phone 512/423-6407. For VE exam information contact Fred Wasielewski, 465 Doherty Ave., San Benito, TX 78572; or phone 512/399-0328. □

Wisconsin

The FOX CITIES ARC will sponsor HAMFEST 89 at Appleton East High School in Appleton on March 4.

Tables are \$5 (by reservation only).

Doors will open for sellers at 6 a.m., for others at 8 a.m.

For table reservations or other information contact Don Baker, NB9J, 621 W. 7th St., Kaukauna, WI 54130; or phone 414/766-3886.

Alabama Amateurs will continue fight

The president of the Alabama Repeater Council says the Alabama Public Service Commission's decision in an amateur autopatch rate case will be appealed. The PSC ruled Nov. 10, 1988, to leave South Central Bell's existing rate structure in effect.

The three-member Commission's unanimous vote means that SCB can continue to charge business (instead of lower residential) rates for telephone lines tied to amateur repeaters. The ARC went before Commissioners in September and argued that SCB should charge residential rates, since federal law prohibits amateur frequencies from being used to facilitate business.

"There is no basis for singling out

amateur radio repeater stations from all the many fine public service agencies and non-profit organizations for exception rate treatment," the Commission said in its denial. "The Commission also finds that the present application of rate classifications does not affect or diminish the quality and extent of emergency services provided by amateur radio operators and clubs on a volunteer basis."

"This is just the first round," Hop Hays, K4TQR, ARC President, said. "We're going to submit some evidence that wasn't submitted previously."

Alabama's Section Manager calls the PSC's decision "unfair to the amateur radio community. We're ex-

(please turn to page 55)



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YL-ISSB QSO Party — Phone

The Phone portion of the 1989 YL-ISSB QSO Party will be held from 0001Z, March 18 to 2359Z, March 19. Categories will include Single Operators, DX/U.S. Partners and YL/OM Teams.

Exchange: Call, report, QTH, name, ISSB number, YL/OM teammate, DX/U.S. partner.

Frequencies: CW — 40-60 kHz up from bottom of 10, 15, 20, 40 and 80M bands; **Phone** — 75M (3873-3888; DX transmit 3690, 3740, 3790 and listen up); 40M (7273-7288; DX transmit 7060-7080 and listen up); 20M (14273-14300; DX transceive these frequencies plus 14300-14310); 15M (21373-21388; DX transceive these frequencies plus 28565-28573).

Scoring: Contact with non-member regardless of QTH = 1 pt.; Contact with member on your own IARU continent = 3 pts.; Contact

with member on another IARU continent = 6 pts.

Multipliers (only member-to-member contacts qualify as multipliers): 1 for each of the following that are QSO'd with a member: DX-CC country, state, Canadian province, Australian call district, New Zealand call district. 1 for each YL/OM Team when BOTH teammates QSO'd; 1 for each set of DX/U.S. Partners when BOTH partners QSO'd; 2 for each partner in a Partners QSO, when they QSO each other.

Multi-band operation — 1 for contacting any 15 or more members on a second band; 2 for contacting any 15 or more members on a third band. **Limited power operation** — 5 for maintaining 250W or less input throughout the contest.

Notes: 1) Contacts should be one-to-one and unassisted; contacts made on nets should not be submitted for point or multiplier credits. 2) 14.332 is reserved for emergencies, system business and informal contacts; QSO party credit should not be claimed for 14.332 contacts. 3) VHF and UHF may be used simplex only. 4) Check 40 and 80M on the hour; more often after dark.

5) Only QSO's between members can count as multipliers and once a multiplier is claimed, it may not be claimed again on another band. 6) The same station may be worked on other bands for additional QSO points. 7) A member contact within your country counts as a DX-CC multiplier. 8) KH6 and KL7 and U.S. states and DXCC countries. 9) IARU (WAC) criteria determines continent; DXCC list determines country status. PJ2-3-4-9, P4 and 9Y are South American. □

15M—21.380-21.410, 10M—28.380-28.410 MHz.

Scoring: Score 1 pt. for each different YL worked. "Western" YL's may count only "Eastern" YL's and "Eastern" YL's may count only "Western" YL's.

Awards: Winner will receive YLRL post-cards.

Logs: Please print or type logs. For each QSO, logs must show the station worked, QSO number given and received, RS(T) given and received, country/state/province of station worked, time, band and date. Logs must also state the power output used and the operating breaks taken. Do not send a carbon copy of your log. All logs must be signed by the operator. No logs will be returned. Indicate claimed score in the log.

Logs must be received by April 18 by YLRL Vice President Carol Shrader, 4744 Thoroughgood Dr., Virginia Beach, VA 23455. □

Wisconsin QSO Party

The West Allis Radio Amateur Club is sponsoring the Wisconsin QSO Party for 1989. Operation will last from 1800Z, March 19 to 0100Z, March 20.

Modes: CW and Phone. All stations may be worked once per mode on each band. In addition, mobiles may be worked once per mode per county that they operate from. *No repeater QSO's allowed.* Only one transmitter on the air at one time from an entry.

Entry classes: Single Operator, Fixed; Single Operator, Mobile; Single Operator, Novice; Single Operator, Technician; Multi Operator, Fixed; Multi Operator, Mobile; Multi Operator, Novice; and Multi Operator, Technician.

Exchange: Wisconsin stations send county. Non-Wisconsin stations send state/province.

Frequencies (suggested): CW — 3550, 3725, 7050, 7125, 14050, 21150 (other bands may be used). **Phone** — 3890, 7290, 14290, 28400.

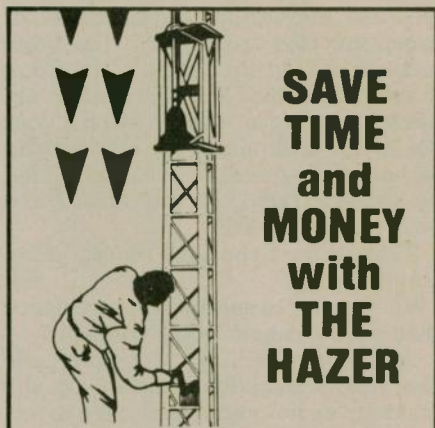
Scoring: Phone contacts count 1 QSO pt.; CW contacts count 2 QSO pts. *Wisconsin stations* — multiply the sum of QSO points by the sum of Wisconsin counties (max. 72), plus states (max. 50) plus provinces (max. 13). (NOTE: DX countries count for QSO points but not as multipliers.) *Non-Wisconsin stations* — Multiply the sum of QSO pts. by the number of Wisconsin counties (max. 72).

Bonus: Add 100 bonus points for using original entry form or photocopy of original. *Wisconsin mobiles/portables* — Add 500 bonus pts. for each county that you operate from, outside your home county, with a minimum of 15 QSO's per county to qualify.

Logs: Entries must contain a log consisting of time (GMT), call, band, state/province, Wisconsin county, mode and a complete score summary (including your name, address and call). Circle new multipliers as worked. Logs containing more than 100 QSO's must be accompanied by a dupe sheet (separate dupe sheet for each mode). Mobile entries must indicate county changes in log and submit a separate dupe sheet for each county.

Entries must be postmarked by April 15, and sent to: Wisconsin QSO Party, West Allis RAC, P.O. Box 1072, Milwaukee, WI 53201.

Awards: *Non-Wisconsin* — Awards will be presented to the highest single operator score in each single operator category in each state/province. *Wisconsin* — Awards will be presented to the following: a) Plaque to highest single operator score in the QSO par-



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East Meets West SSB

The Young Ladies' Radio League announces its "East Meets West SSB Contest," to be held 1800-2200 UTC, March 18. All licensed women operators throughout the world are invited to participate.

Procedure: Call "CQ YL East" or "CQ YL West." Those considered "East" are: 1st, 2nd, 3rd, 4th, 8th and 9th call districts, VE1-3, Europe, Africa, South America, Caribbean and Central America (except Mexico). Those considered "West" are: 5th, 6th, 7th, 10th, KL7 and KH6 call districts, VE4-0, Asia, Oceania, Australia, New Zealand and Mexico. Those classified "East" may count only those classified "West" and vice versa.

Operation: All HF bands may be used. No crossband operation. Net contacts, repeater contacts and contacts with OM's don't count. Stations may be worked and counted once on each band. The maximum power output that may be used at any time during the contest is 1500W PEP on SSB.

Exchange: Station worked, RS, QSO number, name and state/province/country.

Suggested frequencies: 80M—3.940-3970, 40M—7.240-7.270, 20M—14.250-14.280,

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ty; b) 10 highest single operator scores in each entry class; c) highest multi-operator score in each entry class; and d) highest aggregate club score (club member stations to be located within 50 miles of the club except for mobiles).

Iowa QSO Party

The Fifth Annual Iowa QSO Party will be held from 1800Z March 11 until 0600Z March 12.

Stations: Work once per band and mode. No repeater QSO's.

Exchange: Signal report and county for Iowa stations; section or country for others.

Suggested frequencies: CW — 1.810, 3.550, 7.050, 14.060, 21.050 and 28.050 MHz; Phone — 3.875, 7.225, 14.275, 21.325, 28.600, 50.110, 144.200 and 146.520 MHz; Novice — Up 10 kHz from low end.

Scoring: Count 1 point for each phone contact; 1.5 points for each CW contact; and 3 points for each OSCAR contact. Novices and technicians count 5 points for each contact on Novice bands. Iowa stations multiply the total contacts by the total sections and total Iowa counties. Others multiply the total contacts by the number of Iowa counties worked (99 total).

Bonus: Multipliers for each Iowa Section Official worked (8).

Awards: Provided for Iowa Stations, Mobiles and Clubs as well as out of state stations.

Mail logs by April 1 to Bob McCaffrey, K0CY, RR#4, Box 228C, Boone, IA 50036. □

Zero District Contest

The Davenport (Iowa) Radio Amateur Club is sponsoring a Zero District QSO Party. This event will run from 1800Z to 2400Z, March 12.

Operation: Zero District stations may work anyone; all others work Zero District stations only. Work each station once per band and mode. Work Zero mobiles again as they change county.

Exchange: Signal report and state. Zero District stations also send county.

Suggested frequencies: CW — 60 kHz up from lower band edges; Phone — 3.900, 7.270, 14.300, 21.350 MHz; Novice — 3.730, 7.130, 21.130, 28.360 MHz; VHF — 146.52 MHz (no repeater QSO's).

Scoring: Count 1 pt. for phone QSO, 2 pts. for CW QSO, and 4 pts. for Novice CW QSO. Zero District stations multiply QSO pts. by total of states, Zero District counties, provinces and DXCC countries. Others multiply QSO pts. by number of Zero District counties worked. QSO with W0BXR counts for two bonus multipliers, regardless of mode. Any station with over 100 QSO's must include dupe sheet.

There is a special competition feature for Zero District clubs, providing a minimum of three logs are submitted by members of the club. Each log is scored individually; however, the total of all logs will determine the score in this category. Each log must contain the name of the club in order to be considered.

Certificates will be awarded in a variety of categories. Each club participating in the special Zero District club competition will receive a certificate.

Mail logs by April 30 to W0BXR, 5305 White Post Road, Behendorf, IA 52722. Include SASE. □

Alabama

(continued from page 53)

remely disappointed," James Spann, W04W, said. "We feel like it's pure discrimination." How the PSC could rule in favor of SCB defies logic, he said.

Bill Hooks, WD4BXI, ARC's attorney, said ARC's testimony emphasized the public services that amateurs provide through auto-patches by reporting accidents, fires, etc.

"We felt good going into this," Hooks said. "We thought the facts themselves might carry it. It appears that the Commission abided by SCB's own rules rather than by making an independent decision."

South Central Bell says the Commission's decision was correct. "The Commission made a decision that was based on not just this one small group of rate payers, but a decision based on the best interests of all of our customers in the state because all customers bear the total rate burden," Barry Copeland, SCB's District Manager in Birmingham, said.

"Where does it stop? If this is allowed, then what's next, volunteer fire departments operating out of non-

residential places at residential rates? What about civic clubs?"

Copeland says business lines wind up subsidizing residential phones because the company loses money off of home lines. "It would have worsened a rate situation that already was inequitable," he said.

Code-tapped essay

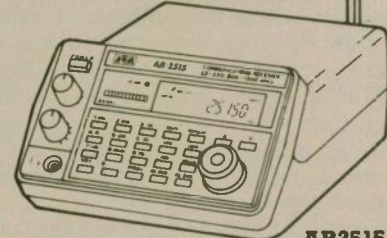
It took Kimberly Estes eight painstaking hours to tap out the essay that won her first place and \$2,000 in a contest.

Estes, who suffers from cerebral palsy, wrote her essay in Morse code. She can't walk, talk or move her arms well.

She communicates in Morse code, using a computer system her father and a friend devised. At home, she communicates by gesturing and nodding her head. (Arizona Republic, May 21, 1988) —Arizona Desert AIRE Waves □

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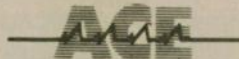
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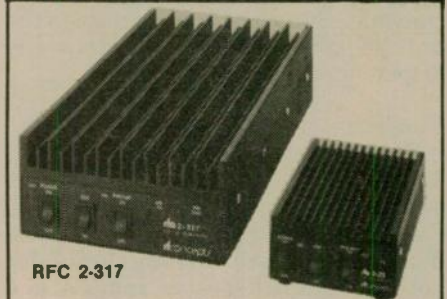
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Product Review

Kantronics KT-120

20M transceiver

STEVE HALL, WM6P

"How much HF radio can you get for well under \$400?" More than I had guessed. Much more.

Let me introduce myself as someone who firmly believes, "You get what you pay for." Prior to testing this Kantronics transceiver my idea of a good multi-mode HF transceiver was a radio having at least 40 or 50 front panel controls. I learned this may not be true. Live and learn.

Kantronics has introduced a complete line of mono band high frequency transceivers with units covering 80 through 10M, including 30 but not 12M. Modes include SSB and CW. Price class \$349.

As you open the box, your first impression is the small size, about the size of last generation's 2M mobile radios, 2.25 x 7 x 9 inches. This radio is just right for tight mobile installations or lightweight portable operations. The unit weighs under six pounds and has very modest power requirements, 13.6 VDC, 400 mA receive and 4.5 amps on transmit. Sixty mA is drawn when the unit is switched off to retain the display memory.

Controls

Front panel controls include a good sized tuning knob (large enough to tune easily), an audio volume control, RIT, CW-SSB selector, dial lock and noise blanker (optional). 3.5mm jacks for both an external speaker and CW key are provided. A standard four pin microphone connector is used.

The LED digital readout displays four digits, 100 kHz through 100 Hz; MHz are not shown.

A nice feature is dual speed tuning. If the tuning knob is rotated faster than a moderate tuning speed, the tuning rate increases from 5 kHz to 50 kHz per revolution to aid faster frequency changes.

The rear panel has a connector for DC power input and a UHF connector for RF output. There is an accessory DIN connector with pins providing +8 VDC on receive, +8 VDC on transmit, ALC input for linear amplifier operation, switched +13.6 VDC and ground.

Performance and features

The 20M KT-120 was used on the air for several hours during its evaluation, with good results. SSB contacts were made without difficulty with UAO, UB5, 9V1, TI2, JA and HC to name a few. The 20W output does limit one's ability to break a DX pile up, but under



normal operation reports were within one or two S-units of those normally received using 100W.

On-the-air audio reports were all favorable. The transmitters audio response seems to favor the higher voice frequencies, but this seemed to aid DXing.

Semi-break-in is used to key the transmitter in the CW mode, as there is no transmit switch other than the push-to-talk on the microphone. A CW side tone is included.

Receiver sensitivity equaled a Kenwood TS-930 used for comparison. Under weak signal conditions the KT-120 heard every signal detected on the Kenwood. That was a surprise.

Under extremely crowded band conditions the KT-120 had difficulty with strong adjacent signals due to the lack of band pass tuning or a notch filter. This was not a problem under more normal conditions. Considering the price differential, the Kantronics unit could not be faulted.

Stability was measured. From a cold start the unit transmitted 200 Hz low. It then stabilized to its indicated frequency within 15 minutes and maintained +/- 50 Hz.

The receive stability was more than sufficient when packet reception was attempted. Packet receive capability was very good. Further packet capability will be the subject of further tests in the future by the author to evaluate transceiver turn-around time and the adequacy of the 100 Hz tuning resolution.

A three inch internal speaker is mounted on the bottom of the case and supplies good volume.

Hinged to the bottom of the case is a wire bracket for elevating the front of the unit, providing an upward tilt if desired. This also improves the internal speaker's performance.

Accessories

Included with the unit is a mobile microphone, spare fuse, power cord

with an in-line fuse holder and instruction manual. The manual supplied for evaluation was a first draft which is under revision.

Additional optional accessories include a mobile mounting bracket, matching 100W linear amplifier, antenna tuner, noise blanker and a narrow CW IF filter.

A quality service manual is available that covers the theory of operation and an alignment procedure.

Final comments

The low primary power requirement of the KT transceiver would allow several days operation on an automotive size battery for emergency operation. Experiments with 10 D-size nicad batteries resulted in battery powered operation from four to eight hours, depending on transmitting duty cycle. The transceiver continues to function at reduced voltage as low as 8 VDC at a reduced RF output.

The performance of such a small package is a continuing surprise as the transceiver is used on the air. The convenience and price of the KT series transceiver could easily outweigh the lack of extra features found on transceivers in the \$1,000 plus price class for mobile, field day or limited budgets. Its value during an emergency operation is unquestionable.

Available from Kantronics Inc., 1202 E. 23rd St., Lawrence, KS 66046.

Product Review

Sangean SW receiver

RICH ARLAND, K7YHA

The radio hobby has two sides, those who talk and those who listen. Those of you who are regular readers of my *QRP* column in *Worldradio* know that I am an avid Shortwave Listener and DXer. Seldom do I roam far from my Icom R-70 or Sony 2010 "Worldband" (general coverage) receivers. I thoroughly enjoy tuning in on the world and logging the occasional rare tropical band station.

In my travels with the company for which I work, I always take along a portable SW receiver to make the time go by a little faster. Plus there is always a chance that I'll bag Tristin da Cunda World Service or Falkland Islands Broadcasting Service from my motel room!

Until recently I had packed the Sony 2010, Datong FL-3 audio filter and an active antenna on these trips. This system worked very well and I have spent many enjoyable hours tuning the SW and ham bands.

Last month I discovered the Sangean MS-103 portable SW receiver. This little gem is a VERY small world-

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band receiver which also tunes the AM and FM broadcast stations. The MS-103 measures a scant 3.24 x 5.5 x 1.25 inches. It boasts 12 bands (10 of which are SW bands) along with AM and FM coverage. The small size and good frequency coverage combine to make the MS-103 a logical choice for the traveling SWL.

Frequency coverage is as follows:

FM	87.5 - 108 MHz
MW	530 - 1605 kHz
SW1	2.30 - 5.20 MHz
SW2	5.85 - 6.20 MHz
SW3	7.05 - 7.45 MHz
SW4	9.45 - 9.90 MHz
SW5	11.60 - 12.10 MHz
SW6	13.55 - 13.85 MHz
SW7	15.10 - 15.60 MHz
SW8	17.45 - 17.90 MHz
SW9	21.45 - 21.85 MHz
SW10	25.67 - 26.10 MHz

As I'm sure you've noticed, the MS-103 is NOT a full coverage SW receiver, but covering only selected SW broadcast bands has some advantages. Since the slide rule dial is rather small, limited SW band coverage is a boon because it makes for easier tuning within the desired band.

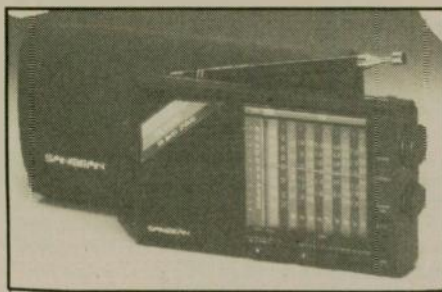
One obvious disadvantage is that there are some frequencies that are left out of the coverage and cannot be tuned. For the utility and ham bands only DXer, this restricted frequency coverage and lack of a BFO (for CW/SSB reception) makes the MS-103 a poor choice.

The MS-103 is primarily designed with the traveling SW Listener in mind. It is NOT a DXers radio by any means.

This is not to say that the occasional rare DX station cannot be logged using the MS-103. Rather, the little radio is much better suited for listening to the major international broadcasters. Of course the price difference between the MS-103 (about \$115) and a Sony 2010 (about \$350) says alot. Obviously features like digital readout, multiple memories, memory scanning, BFO, selectable IF filters, etc., present on a tabletop or portable top-of-the-line SW receiver, are not going to be present on the MS-103. Conversely, you are not going to be able to stick an Icom R-71A or Sony 2010 in your shirt pocket, either!

How does the MS-103 perform? That is a rather subjective question, given that if you take 10 SW enthusiasts and give them a radio, you'll end up with 10 separate opinions on how the radio performs. With that in mind, here is my opinion of the tiny MS-103.

The size vs. performance is remarkable. AM and FM broadcast performance is very good. FM stereo is available using the earphone set supplied with the radio. These earphones are the "hang-in-the-ear" type and take up



very little room in the carrying case. Audio quality with the earphones is quite pleasing. Audio quality using the radio's built in two inch speaker is adequate. Audio output is about 120mV at 8 Ohms.

Tuning on AM and FM is non-critical. The tuning and volume controls are rather small (.75 inch for the tuning knob and .5 inch for the volume knob) and are located one above the other on the right side of the MS-103. Tuning on the SW bands requires finesse. There is some backlash in the tuning dial; therefore, it is easy to overshoot a SW station. If care is taken, it is relatively easy to tune the international SW broadcasters with the small tuning knob. The word here is "slow." Tune very slowly and you won't have a problem.

Dial accuracy leaves a bit to be desired, especially after using a digital readout receiver. The various bands are non-linear in their tuning ranges but, again, CAREFUL tuning is the key. If you know that BBC is on 6175 kHz, careful tuning just below 6200 kHz will turn up BBC World Service. Dial accuracy is not the best, but with care, it is accurate enough for hearing the major SW broadcasters.

The only really objectionable trait of this tiny SW receiver is the presence of AM stations occasionally appearing on a SW band. These "image stations" are annoying but, so far, have not gotten in the way of my enjoyment of the receiver. These images are most probably the result of using a single

"receiver-on-a-chip" IC and inadequate IF selectivity. In all fairness the problem cleared up when I took the MS-103 on a camping trip well away from the RF saturated Wyoming Valley. While the purist might turn his nose up at this receiver for the presence of images on the SW bands, I do not find it all that cumbersome.

The receiver runs on two "AA" cells that live in the bottom of the chassis. The initial batteries that I installed in my test unit have lasted almost a month under constant use at the office, on trips and at home. To say that the MS-103 is conservative with battery consumption is an understatement. An external 3VDC adaptor "block" can be connected via a jack on the left end panel of the radio to eliminate the batteries altogether.

Antennas consist of a 24 inch telescopic whip for FM and the SW bands and an internal ferrite bar antenna for MW (AM broadcast). In tests using the InLine Components "Window Sticker" active antenna, enhanced reception was noted, along with an increase in image stations. Hence, it is not a good idea to use any kind of active external antenna system with this little radio.

I also tried a 15 ft. length of wire clipped to the whip with similar results. This indicates that the single chip receiver is being overworked when a more efficient antenna system is utilized. Best advice: stick with the built-in whip for optimum results.

Bottom line on the Sangean MS-103 12 band SW receiver: good value for money for the traveling SWL. Audio quality, battery life, tuning ranges and small size combine to make this a very attractive package to the listener on the go. Restricted band coverage, lack of a BFO and presence of image stations on some SW bands are the only real drawbacks. It cannot be over emphasized that the MS-103 is NOT a DXers or Utility buff's radio. It performs well on the SW bands when used for monitoring the major international broadcasters.

I'd like to thank Jay Menduke of Sangean America for providing the sample radio for this review. Write to Sangean America at 9060 Telstar Ave., Suite #202, El Monte, CA 91731 and request their latest catalog of portable SW receivers. Don't forget to tell them you saw it in Worldradio. □

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NEW PRODUCTS

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

New General Class - FCC License Preparation

by Gordon West, WB6NOA

Recent FCC rule changes have created new interest and excitement in Amateur Radio. Now it is easier than ever to upgrade from Technician to General class.

The new General class package contains everything that is needed:

- examination test questions and answers.
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- explanation of correct test answers.
- helpful study hints.
- FCC Form 610 application.
- ARRL application.

The General class is the worldwide voice license. Now the Technician class operators can step up to General class in a quick and easy way.

For the code portion - FCC element 1B. Two long playing C-90 cassettes help the ham to have fun building their CW Morse code speed to the 13 words per minute required for the General code test. Several sample code tests are included — just like the real VEC tests.

For the written (or theory) portion - FCC element 3B. The new General Class, FCC License Preparation 112 page book has everything the applicant needs in preparation for the General class examination. It contains the exact 286 questions with multiple choice answers used for the General class question pool. Twenty five of these questions will be used on the exam. Correct answers are chosen from the multiple choices available and an explanation is given as to why the answer is correct. Included are charts, diagrams and formulas for an easy-to-understand approach for learning.

ABOUT THE AUTHOR: Gordon West, WB6NOA, holds an Extra class License and has been a ham for over 25 years. Gordon is a well known author in the field of communications, writing monthly columns in a number of electronic and communications publications including *Worldradio*. Gordon uses his insight and experience to help the ham qualify and communicate as a licensed General class Amateur Radio Operator. □

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FM dual bander

The wide range of innovative features on Kenwood's all new 144/220 MHz FM Dual Bander TM-621A include a dual channel watch function, selectable full duplex operation, 30 memory channels, extended frequency coverage, large multi-color dual digital LCD displays, programmable scanning and more, with 45W output on 144 MHz and 25W on 220 MHz. This is a great radio for the family team with Novices and "upper classmen."

- **Extended receiver range** (138.000 - 173.995 MHz) on 2M; 1-1¼M coverage is 215 - 229.995 MHz (specifications guaranteed on Amateur bands only. Transmit range is 144 - 147.995 MHz and 220 - 224.995 MHz. Modifiable for MARS/CAP. Permits required).

- **30 multi-function memory channels.** 14 memory channels and one call channel for each band store frequency, repeater offset, CTSS and reverse. Channels "A" and "b" establish lower and upper limits for programmable band scan. Channels "C" and "d" store transmit and receive frequencies independently for "odd splits."

- **Automatic offset selection on both bands.**

- **Dual frequency display for "main" and "sub-band."**

- **Automatic Band Change (A, B, C)** automatically changes between main and

sub-band when a signal is present.

- **Call channel function.** A special memory channel for each band stores frequency, offset, reverse and sub-tone of your favorite channel. Simply press the Call key, and your favorite channel is selected!

- **Balance control and separate squelch controls for each band.** Very useful feature that provides a way to "emphasize" either band.

- **Dual watch function allows 144 and 440 MHz receive simultaneously.**

- **Full duplex operation.**
- **CTCSS encode/decode selectable from front panel main knob or UP/DWN keys on microphone** (encode built-in, optional TSU-6 needed for decode).

- **Each function key has a unique tone for positive feedback.**

- **Handset/remote control option (RC-10).**

- **Dual antenna ports.**

- **Programmable memory and band scanning with memory channel lock-out and priority watch function.**

- **Dimmer control.**

- **16 key DTMF mic included.**

- **Supplied accessories:** 16-key DTMF hand mic., mic. hook, mounting bracket, DC cable. □

Audio interfacing

The latest addition to the Creative Control Products line is the UAI-20 Universal Audio Interface board. The UAI-20 is an easy to interface repeater and link audio mixer featuring CTCSS Decode, DTMF Mute and link Monitor-Mix control.

Audio inputs consist of repeater, link, control receiver, CW/Tone, CTCSS Tone and an auxiliary input for other audio sources such as a local microphone.

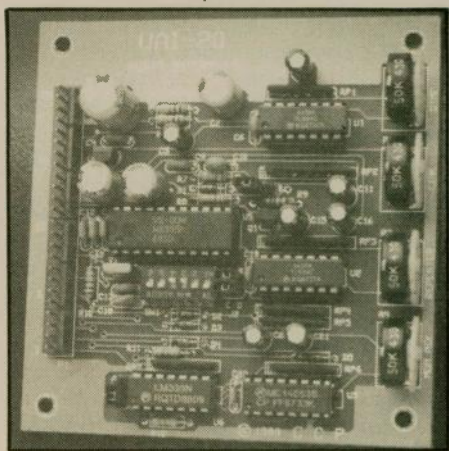
Audio outputs consist of repeater, link and a DTMF output for the DTMF decoder on your controller. Each audio output is adjustable to the level required by your system.

Control inputs to the UAI-20 consist of repeater COS (which is selectable high or low), CTCSS Mode, DTMF mute and an auxiliary output from your controller for the link mute function.

The CTCSS decode output logic level from

the UAI-20 is selectable high or low. The CTCSS decoder output will switch to the selected output level upon receiving the correct CTCSS tone.

The UAI-20 has provisions to mute the DTMF tones from the repeater transmit audio. The ability to mute or pass DTMF tones out the link transmit audio is provided via a jumper on the circuit board.



Located within the UAI-20 is an audio filter, which removes the sub-audible tone from the repeater receiver audio path. Automatic muting of the repeater receiver is also provided when the selected CTCSS tone hasn't been decoded. CTCSS tones are selected by configuring the 6-position DIP switch to the appropriate CTCSS frequency.

Normally full audio is present at the repeater transmitter audio output. Whenever the repeater COS is activated, both the repeater and link audio are mixed, resulting in the condition called Monitor-Mix.

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This monitor-mix audio is adjustable so the link receiver audio can be lower in volume than the repeater receiver audio. Also, whenever the auxiliary control input is activated, the link receiver audio will be completely muted upon repeater COS activity. Either mute or monitor-mix operation is selectable so that normal repeater receiver audio will not be overpowered by the link receiver's audio.

The UAI-20 is the perfect answer for interfacing your repeater receiver, transmitter and link radio to any stand alone repeater controller such as our SRC-10 Smart Repeater Controller.

For more information contact Creative Control Products, 3185 Bunting Avenue, Grand Junction, CO, 81504; or phone 303/434-9405. □

Lithium cell warning

Many of our H-T's contain a lithium cell for memory backup, and those with TR2400's and similar vintage gear will soon be replacing them. The RSGB magazine *Radio Communication* warns of a potential explosive danger.

The cells contain thionyl chloride, which is both volatile and toxic. Any attempt to force current back into these cells results in a large explosion. Most rigs protect against this with a series diode, but when replacing them on your shack bench, exercise extreme caution. A word to the wise!

—Fox River Radio League, Aurora, IL

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Cassette course for the blind

Gordon West Radio School introduces a code and Novice voice-class theory course specifically for the visually impaired beginner. Two stereo, long-play, audio cassettes train the visually impaired to pass the Novice entry-level code examination.

These two cassettes contain all of the instructions necessary to prepare for the Novice code test. All required numbers, letters, punctuation marks and procedural signals are included on these two tapes. There is also a sample Novice class CW exam to prepare the applicant.

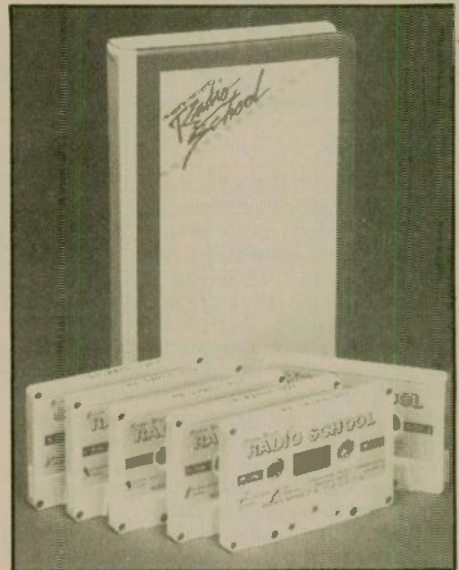
The new 302 Novice voice-class test questions are also covered in detail on the two additional theory cassette tapes. Every question is discussed with easy-to-remember comments about the questions, plus a thorough understanding of the correct answer. The incorrect answers are also reviewed so the applicant better understands what the 30-question Novice examination will be like.

The theory tapes also contain instructions to the two volunteer examiners that will administer the Novice class code and written examination. Gordon West points out how to give a test to the handicapped. Also included is the FCC Form 610 for both examiners and

the applicant to fill out.

Gordon West has also prepared cassette theory courses for the following upgrades: Technician - Element 3A, General - Element 3B, Advanced - Element 4A, Extra - Element 4B.

For more information write Gordon West Radio School, 2414 College Dr., Costa Mesa, CA 92626; or phone 714/549-5000. □



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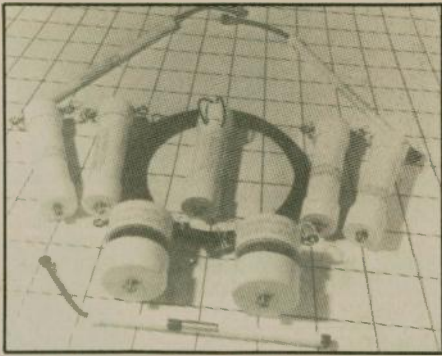
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Baluns

The Radio Works announces a new, comprehensive balun line. There are 10 different models. Three models have 4:1 ratios. The B4-1.5K is a general purpose, saturation resistant, 80 to 10M, ferrite balun. Next up the line is the B4-2K, a precision, wide band, L-C compensated, ferrite-toroid balun. A third model, a 'current-type(c)' I-Balun(c), the B4-2KX is a twin toroid core, L-C compensated design that achieves unusually good output balance and very wide operating bandwidth. The power rating is well beyond the legal limit. All models have exceptional electrical specifications, output balance and very high transmission line isolation.

There are five models in the 1:1 balun line. All are 'current-type(c)' baluns. First in this line are the C1-2K, C75-2K and C75-4K models. The 'C-series' balun line are designed for retrofit applications in wire antennas and beams from 160 through 10M. The C1-2K is a

low loss balun with unusually high transmission line isolation and excellent output balance.

The C75-2K and the C75-4K are 75 Ohm models. They are the only baluns made specifically for use with the quarter wave matching sections commonly found in Delta-Loop and Cubical Quad antenna designs.

Filling out the 50 Ohm, high power 1:1 line are the B1-2K and B1-4K models. These models feature conventional cases and stainless-steel eye-bolts. They are suitable for use with wire antennas of all types. The B1-2K and B1-4K are 'Current-type', wide band, low loss, designs. Both models have unusually large, saturation resistant, ferrite cores. Winding reactance is well controlled and SWR is nearly flat from 80 to 10M.

Two special models in the Radio Works' line are the RemoteBalun(c) and a Line Isolator(c). The 4K-LI Line Isolator is a special type of balun that is located near the transmitter. Balancing the current at the transmitter end of a coaxial cable, has an effect that simulates a balun placed right at the antenna. Thus the Line Isolator is useful for preventing RF current from entering the ham shack and causing RF feedback problems. The 4K-LI is available in 50 and 75 Ohm models.

The Radio Works' RemoteBalun(c) finally solves the problem of getting open-wire or ladder-line into the ham shack. The RemoteBalun(c) is mounted outside where it is conveniently connected to the antenna's Ladder-line or open-wire transmission line. A short length of special, low loss, coaxial cable connects the RemoteBalun(c) to your transmatch.

The RemoteBalun(c) is a special application of the Radio Works' 'current-type(c)' 'I-Balun(c)' design. This special twin-core configuration overcomes the balun core saturation, RFI, and signal distortion problems often produced by the 'voltage-type(c)' baluns commonly used in transmatches.

All Radio Works baluns feature rugged cases. If eye-bolts are used, they are stainless-steel. All internal connections are soldered and leads from the balun's windings are brought outside the case for direct connection to the antenna wire. To further assure a long, reliable operation life, each balun is completely potted.

More information is available from The Radio Works at P.O. Box 6159, Portsmouth, VA 23703; or phone 814/484-0140. An unusual catalog featuring a wide selection of wire antennas, parts and accessories is available. □



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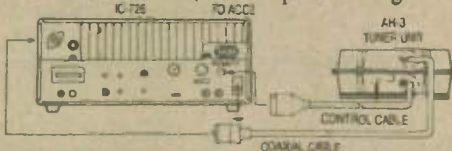
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