

WR 940250TOSJ08278 LIFE  
JOHN TROSTER  
W6ISQ  
82 BELBROOK WY  
ATHERTON CA 94025

Year 16,

February 1987 • \$1



Handicapped youth talks on 2 meters; Stan Mains, K6ARJ, assists. (Photos by Armond Noble, N6WR — more on page 4)

## Handicapped Jamboree 1986

Norm Brooks, K6FO

"More to the left — no, to the right!" Crash — and another plastic traffic cone is knocked over. These were instructions being called by a sighted person in a wheelchair to his (or her) blind wheelchair pusher. All this was taking place at the Handicapped Jamboree at Candlestick Point Park near San Francisco, California, October 4, 1986.

This was the 2nd Annual Handicapped Jamboree put on by the Telephone Pioneers of America. Four chapters of the Pioneers provided the event. The John I. Sebin Chapter, Sacramento; George S. Ladd Chapter, San Francisco; Sierra Pacific Chapter, San Jose; and the Mission Chapter, Alhambra, California joined forces under General Chairman Clyde Wright to host over 50 people who were blind, in wheelchairs or otherwise handicapped.

The various events included basketball throw, archery, beep-baseball,

horseshoe throw, 40-yard dash, obstacle course, and steeplechase. Have you ever seen a blind person hit the target with real arrows in archery?

Amateur Radio operators were there, too, providing point-to-point communications over the 10 acres of the park.

"This event could not succeed without the radio hams," declared Wright. "Safety is first in our minds with a group like this. Just knowing that the hams can get our medic quickly to the scene of an accident is reassuring."

The Radio Club of the Ladd Chapter provided the communications. They brought their emergency operating van right onto the park property, which provided a visual presence as well.

One young blind participant, when asked what he enjoyed most, answered "Two meters! I talked to several people on 2 meters, and I'm going to become a ham!" □

## K7UGA retires

U.S. Senator Barry Goldwater, K7UGA — Amateur Radio's representative on Capitol Hill — retired on October 19, 1986. For years, the 78-year-old lawmaker has been Amateur Radio's strongest ally in Washington. (He was elected to Congress in 1952 and has served five terms in the Senate.)

His first license was 6BPI, received in 1923. In the early '60s (after an absence of several years), he obtained the license he now holds. Goldwater finds the public service aspect of Amateur Radio the most satisfying part of the hobby. For that reason, his home station near Scottsdale, Arizona has run thousands of phone patches for U.S. servicemen, many of whom were stationed in Vietnam.

K7UGA has been directly responsible for several major governmental changes, two of which paved the way for the all-volunteer testing program and the joint ARRL/FCC Amateur Auxiliary.

—Information from Westlink Report □



Michael T.N. Fitch, the new Chief of FCC's Private Radio Bureau

## New PRB Chief

The FCC has appointed Michael T.N. Fitch as Chief of its Private Radio Bureau, effective November 28, 1986.

Among matters which Fitch will oversee in his new post is the regulation of Amateur Radio through the Special Services Division and its personal radio branch. Fitch has been with the FCC (please turn to page 15)



# Worldradio

February 1987

Vol. 16, No. 8

TM

is published monthly by  
**Worldradio, Inc.**  
2120 28th Street  
Sacramento, CA 95818  
(916) 457-3655

Subscription Dept.  
**Worldradio**  
P.O. Box 271309  
Escondido, CA 92027-0770  
(619) 487-3213 or 487-3212

## STAFF

Publisher..... Armond Noble, N6WR  
Editor.....Christine Wilson, KA6TAL  
Assistant Editor.....Lynn Martin  
Associate Editor..... Norm Brooks, K6FO  
Consulting Editor..... Lou Ann Keogh, KB6HP  
Advertising Director..... Helen Noble  
Ass't Adv. Director..... Rosalie Hernandez  
Graphics Director..... Dianne Dunning  
Circulation Mgr..... Dorothy Schwartz

**Worldradio** (USPS 947000) is an international conversation. You are invited to 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 alliance of active radio amateurs concerned with reality, using radio as a communications tool to develop the skill, quality and full potential of Amateur Radio.

We emphasize the positive aspects of this great activity, and desire your contributions dealing with dramatic, personal and

humanitarian uses of Amateur Radio.

**Worldradio** is an independent newspaper not affiliated with any other firm, group or organization. Its pages are open to all. Permission is hereby automatically granted to reprint from this publication with appropriate source credit. If there is something useful, we wish to share it.

Subscription rates: \$11.00 per year, \$21.00 for two years, \$30.00 for three years and \$110.00 for life; \$3.00 extra per year for surface mail delivery outside the U.S. Please remit international postal money order. IRCs will be accepted.

Second-class postage paid at Sacramento, CA.

## Help HANDI-HAMS start year right

How many times are you asked for money? Lots, I'll bet. It seems sometimes that a day doesn't go by without someone asking for a contribution to a worthwhile organization. With so many very worthy services needing so much support, it's tough to decide *what* and *when* to give.

I really hope you'll decide that now is the time and the Courage HANDI-HAM System is the place for a New Year's gift. Your help is more important now than ever. Contributions to the Courage HANDI-HAM System were down last year. I know that Amateur Radio has a unique meaning for you. Help us bring this excitement to others with your support.

I hope you'll give special consideration to the needs of the Courage HANDI-HAM System as this new year begins.

Yours very truly,  
**BRUCE HUMPHRYS, KØHR**  
Courage HANDI-HAM System

•••

"Code matters" will resume next month.

## N6KW QSL Cards

The finest QSL Cards at reasonable prices. Basic cards, map cards, cartoon cards, photo cards and more. Your idea converted to ink, or use standard designs. 525 ink colors, any type of card stock. Photos in b/w or beautiful color. Have a card that fits your style. Call or write for free samples and details. Postage appreciated.

Chuck Miller - N6KW

Yavapai Press

Box 98 • Seligman, AZ 86337

(602) 422-3521

## Pitcairn fuel fund donors

The following list, compiled by Dr. Charles "Mert" Moser, W6HS, shows the most recent donors to the Pitcairn Island generator fuel fund. Thanks to these and numerous others who have donated over the past several years, Tom Christian, VR6TC, keeps DXers happy with his regular skeds.

The value of this radio link with the rest of the world is especially clear in times of emergency (as with the life-and-death situation in July 1981, when Tom's wife, Betty, developed complications five months into her pregnancy. She was treated by a nurse who was given instructions by a California physician via Amateur Radio.)

Kari Young, VR6KY (see article on page 4 of May 1983 issue) and Tom are grateful to those who send donations for the fuel fund, as a barrel of fuel shipped from New Zealand costs about \$130 and lasts four to six weeks.

Warren Gilleran, KD6UD, Santa Clara, CA  
Leonard Mendel, K5OVC, Pearcy, AR  
Ian Elliot, W7JMX, Bozeman, MT  
Denny Dugal, WG6P, Modesto, CA  
Alice Epperson, KD7SH/6, Santa Barbara, CA  
Paul Perck, KA5RGE, Gonzales, LA

Don Birch, K7NN, Tucson, AZ  
Jack Casebeer, K6CE, San Carlos, CA  
Makoto Inami, JA6AV, Fukuoka, JAPAN  
Bob Jordan, NJ7H, Salem, OR  
Ron Stockton, NØRR, Nederland, CO  
Denny Chestney, KM9L, Bloomington, IL  
Mark Melton Sr., KA4UPI, Dublin, GA  
Fred Seifert, W5FS, Albuquerque, NM  
Tom McShane, NW6P, Cupertino, CA  
David Moser, WU6I, Dos Palos, CA  
David Frost, VE7FJE, Vancouver, B.C., CANADA  
Martin Bluhm, W8AKS/6, Lancaster, CA

TOTAL: \$161.00

## CONTENTS

### FEATURES

Handicapped Jamboree 1986 — 1  
Pitcairn fuel fund donors — 2  
Readers' survey — 3  
The convention scene — 14  
Tropospheric ducting — 3

### COLUMNS

Advertisers' Index — 59  
Amateur "Hi" — 28  
Amateur Radio Call Signs — 8  
Awards — 23  
Bob's Corner — 50  
Clubs — 42  
Contests — 53  
Digital Bus — 46  
DX World — 32  
FCC Highlights — 8  
Hamfests — 55  
MARS — 41  
MART Classifieds — 57  
Mobile — 40  
New Products — 52  
Off the Air — 21  
Propagation — 37  
QCWA — 45  
QRP — 48  
Silent Keys — 26  
Special Events — 11  
Station Appearance — 28  
Subscription, **Worldradio** — 9  
10-10 International News — 38  
Traffic — 49  
VE exam schedules — 12

## HI-Q BALUN

- For dipoles, yagis, inverted vees, doublets & quads
- For full legal power & more
- Puts power in antenna
- Broadbands 3-40MHz.
- Small, light, weather-proof
- 1:1 Impedance ratio
- Replaces center insulator
- Helps eliminate TVI
- Fully Guaranteed \$14.95



**Van Gorden Engineering**

BOX 21305, S. EUCLID, OHIO 44121

# Tropospheric ducting

**Norm Brooks, K6FO**

Gordon West, WB6NOA, one of **Worldradio's** columnists, was a featured speaker at the "Tropo" Forum, HAM/WEST Convention, Las Vegas, November 8, 1986. In addition to his many other talents, Gordon is a knowledgeable person on long-range VHF and UHF communications via tropospheric ducting.

A majority of the attendees in the packed meeting room had not operated on tropo. So Gordon started with the basics.

## What is tropo?

If you live in Los Angeles, and San Diego TV stations are coming in well, it's due to tropo. If you drive across the desert on a hot day, you will see a mirage. The roadway far ahead of you appears wet. The same thing happens to radio frequencies that happens to light frequencies in a mirage.

A mirage is a quick change in the refractive index of the hot air right above the asphalt. It's a very sharp band of warm air. That band of warm air is so sharp that it actually causes light waves to reflect back off of it and into our eye as we're looking at the mirage. When we look at what seems blue and shimmering, we're actually looking at the sky.

VHF and UHF signals, for many years, have been known to go a lot further than normal. At times, the airport tower in Los Angeles has heard Honolulu tower on 122 MHz. We investigated this and found that every August, there is a high pressure cell that sits off southern California, and the tip of it reaches to Hawaii. This is a well-defined cell of hot non-moving air, with a pressure reaching 1020 to 1030 millibars. It gives us a nice reflection of radio waves.

In August in southern California, our weather forecasters tell us we're going to have one of those days with tons of smog. You've seen that smog; it sits at about the 1,000-foot level. It's a band of warm air sandwiched in between cooler air above and the cool air off the ocean.

Along the coast of southern California and Mexico, the cool water will help create some fog that will be 200 to 300 feet thick, being moist, cool air at about 75°. Right above it is a layer of superheated air, at 80° to 85°. Experts tell us that it is this superheated air that gives us the long tropospheric duct, like a long waveguide, that goes hundreds of miles. Of course, we have the dry, cool air above it.

Every August in southern California, we have our famous California to Hawaii

# Readers' Survey

In an effort to serve you better, we're trying to assess the interest areas of our readers. Please fill out the following questionnaire and return by February 6.

A = Always	F = Frequently	O = Occasionally	N = Never
Aerials	A F O N	Off the Air	A F O N
Amateur "Hi"	A F O N	Public Service	A F O N
Awards	A F O N	QCWA	A F O N
Bob's Corner	A F O N	QRP	A F O N
Clubs	A F O N	Repeater & FM News	A F O N
Computers & Hams	A F O N	Station Appearance	A F O N
Digital Bus	A F O N	Traffic	A F O N
DX World	A F O N	Who's Who in Amateur Radio	A F O N
FCC Highlights	A F O N	With the HANDI-HAMS	A F O N
MARS	A F O N	10-10 International News	A F O N
Mobile (Maritime Mobile)	A F O N		

If you're interested in any areas we don't cover, please list them on a separate sheet of paper, along with comments on our current columns. Thanks!

duct. Last August it lasted for 10 days. We've found that propagation via ducting is really frequency independent.

How do we know it's Hawaii? By listening for the beacons. On Mauna Loa mountain there is a beacon that continuously sends KH6HNE at a fairly low power. On 2 meters the frequency is 144.171 MHz. The CW ID is sent at 13 wpm. You need a CW or SSB radio to hear the signals clearly. Other beacon frequencies are 432.0749 MHz at 20

wpm, 1296.000 MHz and 10.525 GHz.

## Tropo is predictable!

Bob Deblinger, KD7YZ, was a "surprise speaker" for the forum. He told of his method of collecting radiosonde atmospheric pressure data to actually predict tropo openings.

The U.S. Weather Service sends up radiosonde-equipped weather balloons

## THE CHAMP

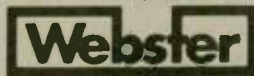


BIRD MODEL 4304

NO ELEMENTS  
25-1000 MHZ

RF SAMPLING PORT

AUTHORIZED **Webster** DISTRIBUTOR



WEBSTER COMMUNICATIONS INC.  
115 BELLARMINE  
ROCHESTER, MI 48063  
313-375-0420

CALL TOLL FREE

**800-521-2333**

**800-482-3610**

## ANTENNAS

- Assembled & Ready to Use
- Full Legal Power
- No Traps
- Matches 52 Ohm Coax
- Space Limited (AP Models)
  - Use as Inverted "V"
  - Use in "U" Shape

### MULTIBAND ANTENNAS

- Model AP-1 . . . . . \$45.00 ppd.  
• Covers 80, 40, 20, 15 & 10 Meters  
• 102 feet long
- Model AP-2 . . . . . \$40.00 ppd.  
• Covers 40, 20, 15 & 10 Meters  
• 51 feet long
- Model AP-3 . . . . . \$35.00 ppd.  
• Covers 20, 15 & 10 Meters  
• 26 feet long
- Model AP-4 . . . . . \$55.00 ppd.  
• Covers 160, 80 & 40 Meters  
• 204 feet long

### LOOP, TRIANGLE OR QUAD LOOP

Built to frequency of your choice

- Model TP-1 80 or 75 Meters \$55.00  
Model TP-2 40 Meters . . . . \$41.00  
Model TP-6 30 Meters . . . . \$39.00  
Model TP-3 20 Meters . . . . \$37.00  
Model TP-4 15 Meters . . . . \$33.00  
Model TP-5 10 Meters . . . . \$30.00

SHIPPED POSTPAID USA  
SEND FOR FREE BROCHURE

**RUDY PLAK — W6TIK**  
PO Box 966 • San Marcos, CA 92069



Participants in the Handicapped Jamboree

twice a day from 250 or so places in the United States. The atmospheric pressure readings are what we are interested in, and they are available for the asking. Plot the twice-a-day readings for the cities you are interested in. Your graphs will have a sawtooth appearance.

The 850 millibar pressure seems to be the key. All the ducts include this pressure. Look for sudden decreases in pressure. Compare the graphs for two cities. If there is an overlap in pressures and 850 millibars is included, you probably have a tropo duct between them.

Bob showed us a correlation between his predicted ducts and weather satellite cloud pictures. The tropo ducts showed up quite clearly, as clear, long, high pressure areas, with clouds on each side.

What equipment is needed to work tropo? Ten to 100 watts CW or SSB to an 11-element horizontally polarized antenna will do it. Your reporter suggested that an OSCAR-10 station would do the job just fine. See you on tropo! □



Pioneer volunteer coaches handicapped child at Beep-Baseball.



Gary Britten, KE6GC, driving the emergency communications van, which belongs to the George Ladd Pioneer Radio Club of San Francisco, California

## Servicemen can phone home free

U.S. military personnel can telephone home toll free thanks to an annual lashup involving ham operators and U.S. Sprint, the long-distance people. Tony Paladino, WA5ORS, of Gretna, Louisiana, is the program's director. He has a crew of about a dozen amateurs, scattered throughout the United States, who have free Sprint access.

Service personnel at sea or stationed in foreign lands that have amateur or MARS stations need only ask for the toll-free operator on the 20 or 15-meter band. They will then be patched in to their homes and loved ones at no cost. The toll-free network operates on 14.313 MHz or 21.390 MHz, depending upon propagation.

The free telephone service started during the Mexico City earthquake disaster. Tony originally appealed to U.S. Sprint to help after he saw one of their television commercials. Sprint later agreed to continue the free access. "They went along with me. I have been doing it for over a year now. I keep in touch with them by telephone." Tony, who has a telephone "budget", gets a

monthly read-out of all toll-free phone calls handled.

"We have handled hundreds of telephone calls. It is wonderful to hear from the commanding officers telling us what a tremendous morale builder something like this is! Some of our operators have received citations . . . certificates. We have also handled third-party traffic to the State Department from the Philippines over our network."

The service is restricted to disaster relief and to service personnel on U.S. ships at sea or stationed overseas. Tony's toll-free service accommodated many in need during the recent San Salvador earthquake.

At present, toll-free ham/Sprint operators are located in (W7EMZ) Seattle; (N6LSO) San Diego; (W2PCZ) Lake Hiawatha, New Jersey; (K4PT) Apollo Beach, Florida; (WA7CYB) Glendale, Arizona; (N5MX) in New Orleans; (W5UK) New Orleans; and (WB4ESB) Miami, Florida. Plans are to expand the system and frequencies next year.

— W5YI Report □



KEY PAD MIKE  
\$68.00\*

AUTO DIALER MIKE  
Stores 10 Phone Numbers  
\$97.00\*

WITH LED LIGHTED  
KEY PAD ADD \$10.00

\* Add \$2.50 packing shipping &  
insurance. Check/Money Order -

For C.O.D. add \$3.00

With AZDEN Mike Plug

attached, add \$4.50

Also available for  
other 2 meter rigs

### 5 1/4" DISKETTES

DOUBLE SIDED/DOUBLE DENSITY

Each Diskette 100% Certified

5 1/4" Double Sided  
Double Density  
MIN. ORDER 100  
+ \$3.40 UPS

**59¢ each**

or 50 for 65¢ + U.P.S. \$2.00

(Includes: Tyvek Sleeves,  
Labels, Tabs & Hubs)

Check or Money Order

C.O.D. add \$3.00

Order 250 Units and Ups only  
is FREE in 50 States & Canada

EXTRA WRITE PROTECT TABS  
100 for \$1 Prpd.

### 10 AMP.

**REGULATED**

POWER  
SUPPLY

10 AMP

OVERLOAD  
PROTECTED

PILOT LIGHT  
ON-OFF SWITCH  
WELL FILTERED

ALL METAL CABINET, FUSED

**\$54.00**

PLUS  
UPS

NOW USE BOTH SIDES  
OF YOUR DISKETTE!



5 1/4" DISKETTE  
HOLE PUNCH

NO GUESSWORK  
WITH DEPTH GUIDE  
and EDGE GUIDE

**DEALERS WANTED**

only \$10.00 EACH  
add \$2.00 EACH shipping  
CHECK OR MONEY ORDER

AZDEN Service Manuals

PCS 4000  
\$9.00 EACH

300-3000  
\$5.00 EACH



N.P.S. Inc.

1138 BOXWOOD RD. JENKINTOWN, PA. 19046

(215)884-6010



A 24 HR  
ANSWER'G MACHINE

# KEEP ON TOP OF THE WORLD ...WITH YAESU AND HENRY RADIO



**FT-767GX.** . . A new concept in convenience, control and reliability: the next generation of amateur base equipment. Receives 100 kHz to 29.99999 MHz and transmits on all HF amateur bands. Optional 6m, 2m and 70cm modules plug in. Built-in automatic antenna tuner included in addition to Yaesu's exclusive Computer-Aided Transceiver System. Offers the most logically grouped controls yet.



**FT-757GX.** Get maximum HF performance for your dollar in a compact mobile-ready package. Includes electronic keyer, 600-Hz CW filter, AM and FM modes, AF speech processor, 25-kHz marker generator, Dual VFOs, Single-button VFO memory swap for split-frequency operation. Eight memories. Push-button quick memory. Band scan. High performance general coverage receiver. QSK operation. Computer interface capability. And more.



**FRG-9600** 60-905 MHz scanning receiver. One of the best of it's breed.

**Find out more.** We carry the complete line of Yaesu HF and VHF/UHF transceivers and accessories. For full information, contact us today.

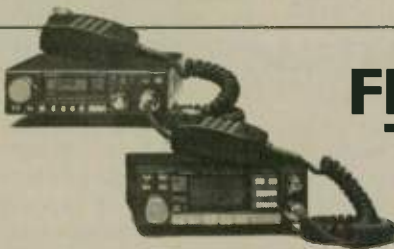
In addition to Yaesu, we also stock the following fine names:  
AEA • ARCO • ARRL • ASTRON • B & K • B & W • BIRD • CDE • CONNECT-SYSTEMS • CUSHCRAFT • EIMAC • HAL • HENRY AMPLIFIERS • HUSTLER  
• HY-GAIN • ICOM • KENWOOD • LARSEN • NYE • TEMPO • VIBROPLEX



## Henry Radio

TOLL FREE ORDER NUMBER: (800) 421-6631 For most areas except California. Calif. residents please call collect on our regular numbers.

## FROM MOBILE TO GLOBAL.



**FT-270RH.** Smallest 2-meter, 45 watt mobile rig available. Includes: 10 memories, LCD display, Band scanning with programmable upper and lower limits. And much more.

**FT-2700RH.** The only dual-band 25-watt mobile rig with crossband full-duplex capability. Great for telephone style communications, or 2-meter and 440-MHz operation. Compact package fits most anywhere.



**FT-726R.** Link up to OSCAR 10 for amazing satellite DX. Perfect for apartments and antenna-restricted neighborhoods. FT-726R offers crossband full-duplex capability on 2-meters and 435 MHz. Other features include 11 memories and dual VFOs.



### FT-209RH. FT-709R.

Get out with 5 watts on 2 meters, or 4½ watts on 440 MHz. There's a battery saver for extended monitoring. Microprocessor-based functions offer 10 memories for

receive frequency, standard or non-standard offset and tone encode/decode with an optional module. Even a variety of sophisticated scanning functions, plus much more, all within an ultracompact, light-weight case.

**FT-727R** is a completely self-contained VHF and UHF FM hand portable transceiver providing up to 5W or 0.5W RF output on user-selectable channel steps across both 2m and 70cm amateur bands.



### FT-23R

"Mini-handly". Odd splits on 7 memories, standard splits on all 10. Six digit frequency display, plus memory channel, CTCSS information,

repeater shift information. Bargraph shows signal strength and relative power output. 144-148 MHz frequency coverage. Zinc/aluminum die cast case. It's even rainproof. Power output is 2.5 watts with 600 mA standard battery. .5 watt with optional battery pack.

**FT-73R** 440-450 MHz.

2050 S. Bundy Dr., Los Angeles, CA 90025 (213) 820-1234  
Butler, Missouri 64730 (816) 679-3127

## Interference threat to weather satellite receivers

The National Oceanic and Atmospheric Administration (NOAA) operates weather satellites which produce data used in the study of the Earth, its weather and resources. Among these satellites are those in the TIROS-N series, whose data are sent down to Earth by radio on frequencies in the 1700-1710-MHz band. This band is currently used only by these satellites, and by other systems which do not interfere with the satellite receivers.

An unknown number of receiving ground stations for these signals have been built by weather forecasters, TV broadcast operators, universities and private individuals. FCC regulations don't require licensing or registration of these receivers, so their existence and locations may be unknown to NOAA. Because they are unknown, NOAA can take no steps to protect them from interference. So far, this has not caused a problem.

Now, however, the situation may be changing rapidly. The FCC is considering a proposal to allow an entirely new type of radio device in the band, which has the potential for causing severe in-

terference to weather satellite receivers. These receivers can be protected only if they are identified. NOAA is appealing to anyone who knows of such a receiver, or who may be aware of plans to build one, to notify it. NOAA will provide additional information on how operators of such receivers can protect themselves from potential interference from these new devices.

There is no charge for this information, according to NOAA, nor will anyone be obligating themselves in any way by asking for it. NOAA wishes to register such stations in a government mas-

ter file, to help prevent interference from occurring. Whether operators register their receivers or not, they are free to continue listening to NOAA's weather satellites. If they don't register, however, they may someday be unable to monitor them through the interference.

For information, contact Richard Barth at (202) 377-0635 in Washington, D.C., or write to: Office of Radio Frequency Management, U.S. Department of Commerce, Room 6106 Main Commerce Building, Washington, D.C. 20230.

— ARRL Letter □

## Surprise storm in Ohio

Bill Price, N8FRA  
Terry Callahan, N8CDN

Tuesday, August 26, 1986 started off as a typical late August day in northern Ohio. We had had a relatively quiet summer as far as severe weather was concerned. The National Weather Service forecast calling for showers and thunderstorms, some possibly severe, was somewhat of a surprise so late in the year.

The National Weather Service issued a tornado watch for the western two-thirds of Ohio during the afternoon and several thunderstorms in western Ohio approached the severe levels.

A strong thunderstorm over Lake Erie took an unexpected turn and headed right for the city of Lorain and unleashed its full fury on the city. Rain fell at the rate of 2 inches per hour and a peak wind of 75 mph was recorded at the Coast Guard station in Lorain. Within this thunderstorm was a twister that touched down in a wooded area in Sheffield Township, tearing the roof off an apartment complex and leaving approximately 50 families homeless.

The twister then proceeded east, where it knocked down the 300-foot WZLE radio tower, taking the 443.60 WA8CAE/R and the station's satellite dish with it. The twister then skipped to south Lorain where approximately 50

homes were damaged.

The LCARA was called upon by the Lorain County Chapter of the American Red Cross to provide communications for the disaster relief effort. The LCARA repeater is housed at the Red Cross building and Jeff Burge, WD8LQA, was there hooking up the emergency generator as most commercial power was lost in the area.

Terry Callahan, N8CDN, established the Lorain County Emergency Net at the chapter house and was met there by Bill Price, N8FRA, EC for Lorain County. Bill established and sent a priority message to Ohio SEC Larry Solak, WD8MPV, advising him of the emergency. Glenn Thome, N8AKS, monitored the Ohio statewide ARES frequency 3875 kHz.

From there, N8CDN picked up his wife, Gina — a member of the Red Cross disaster action team — and the two headed out to the south Lorain area to establish the disaster perimeter and start a windshield survey.

All through the evening, hams helped Red Cross personnel by maintaining communications between mobile canteens, relief crews and at the shelter set-up at a local elementary school. Fearing another wave of storms, Jerry Murphy, K8YUW, sent his emergency equipment to the shelter "just in case" the second line of storms moved through with equal strength.

The National Weather Service later declared the tornado a Class 3 with winds estimated at approximately 140-185 mph. Operations were shut down at approximately 1 a.m., Wednesday, August 27.

The total number of hams for the entire disaster operation was 44 with a total net time of 33 hours and total man hours of 330 hours. Over 190 houses and 87 apartments had been damaged.

Our thanks go out to all the hams who proved that public service communications is alive and working in the Lorain County area. □

**ANTENNA And TOWER ACCESSORIES HOT DIPPED GALVANIZED**

**GINPOLE KITS**

GP-81 \$129.50

GP-51S \$139.50

BG-18 Ladder Mast \$249.50

FOB Oaklawn

**MAST ADAPTERS**

MA-2 \$22.50

MA-3 \$29.50

**BEAM MOUNT**

BM-1 \$29.50

**STANDOFFS**

SO-1 \$34.50

SO-2 \$64.50

SO-3 Commercial Antenna Standoff \$99.50

PO-1 Pully Kit \$8.50

VISA

Request our FREE Y-3 Catalog for new springtime accessories.

**IIX** IIX EQUIPMENT LTD.  
P.O. Box 233  
Oaklawn, IL 60454  
(312) 423-0605

## RFI KIT

Use ferrite beads and toroids to keep RF out of your TV, stereo, telephone, etc.

Free catalog and interference tip sheet on request.

## PALOMAR ENGINEERS

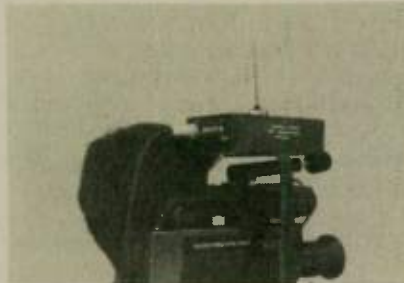
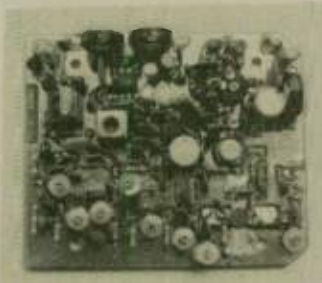
Box 455, Escondido, CA 92025  
Phone: (619) 747-3343

• For the gift that keeps on giving, see p.9. •



P.C. ELECTRONICS 2522 S. PAXSON LN. ARCADIA CA 91006 (818) 447-4565  
 TOM W6ORG MARYANN WB6YSS

## THE "KREEPIE PEEPIE" ATV TRANSMITTER



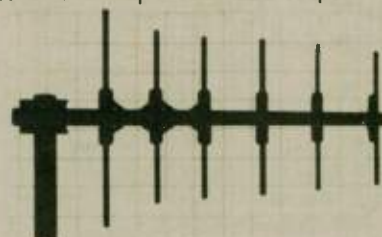
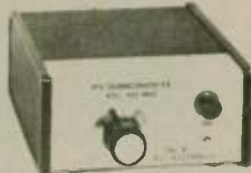
### KPA5 1 WATT ATV TRANSMITTER BOARD FEATURES:

- ★ 1 watt pep minimum RF output on sync tip.
- ★ Full color and sound on one small 3.25 x 4" board.
- ★ Composite video input from camera, VCR, etc.
- ★ Runs on external 13.8 vdc at 300 ma supply or battery.
- ★ Wired and tes'ed board covers 421 to 439 MHz.
- ★ Supplied with one xtal on 426.25, 434.0, or 439.25 MHz but capable of 2 freq operation with the addition of 2nd xtal (add \$15). Other 70cm freq. available on special order.
- ★ Mic input from a low Z dynamic and line level audio input: found in most portable color cameras, VCRs, or home computers provided.
- ★ Schematic and application notes supplied for typical external connections, packaging, and system operation.
- ★ Price delivered via UPS surface in the USA is only **\$159**. Technician class amateur license or higher required for purchase and operation.

### DO SOME OF THESE APPLICATIONS INTRIGUE YOU?

1. **PORTABLE CORDLESS TV CAMERA.** No heavy VCR to lug around or cable length limitation. You can even use your home VCR rather than a portapak. Now you can creep around and peep thru your camera more easily. Gives good pictures up to a mile with simple whip, and 40 miles using beams in flat terrain.
2. **MOBILE OR PORTABLE ATV** for public service events such as races, parades, marathons, etc. A Mirage D24 40 watt amp can be added for greater mobile coverage or base operation. Mount in an airplane for CAP and rescue searches for an eye in the sky.
3. **REMOTE CONTROL OF R/C AIRPLANES or ROBOTS.** Fly with a camera in the nose to control as if you are in the plane. Likewise a robot can now be out of site of the operator.
4. **REPEATER SITE SECURITY OR COMPUTER VIDEO DISPLAY.** Turn on thru your repeater a camera at the site to see the area, weather, read meters, or if a computer is used, show status, play games, etc. by remote control. With all the new technology using TV displays, it is natural for hams to adapt these new products to transmission over the air. What applications come to your mind?

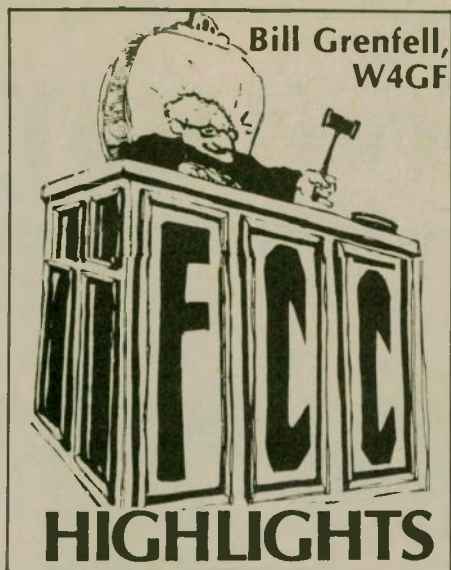
**WHAT IS REQUIRED FOR A COMPLETE OPERATING SYSTEM?** Either a TVC-2G or TVC-4G downconverter connected to any TV set tuned to channel 3, and coax cable to a good 70cm antenna to receive. Package up the KPA5, add 12 to 14 vdc, antenna, and any home TV camera, VCR, or computer with composite video output. **SIMPLE, EH?**



### ACCESSORIES:

- TVC-2G GaAsfet downconv. board wired & tested...\$59  
varicap tuned, 420-450 MHz to ch3. Req 12vdc
- TVC-4G (TVC-2G in cabinet with 120vac supply)...\$99
- TVCX-70 crystal controlled GaAsfet downconv.....\$99  
specify in freq. & out on ch3 or 45mhz IF. 2 freq...\$114
- Hammond 1590D Use for KPA5. 7.3x4.7x2".....\$17  
1590C 4.6x3.6x2" aluminum box. Fits TVCX-70...\$11
- 800J 10 pin VHS color camera chassis connector....\$10
- VOR Video (horiz sync) operated relay board.....\$25

- ALINCO ELH-730G 1 in / 20 out all mode amp...\$129
- MIRAGE D24N-ATV1in / 50 out all mode amp....\$219
- 450 ISOPOLE omni 4dbd vert. gain antenna.....\$65
- KLM 440-6 8dbd, 60 deg. beamwidth antenna.....\$62
- KLM 440-14 11dbd, 48 deg. BW antenna.....\$77
- KLM 440-27 14dbd, 36 deg. BW antenna.....\$111
- SAXTON 8285 100ft 50 ohm coax 3.5db/C loss...\$41
- COLUMBIA 1180C 100ft coax, 2.5 db/C loss.....\$59
- UG21 type N male connectors for larger ID coax.....\$5



The new Chief of the FCC's Private Radio Bureau is its former Deputy Chief, Michael T.N. Fitch. He succeeds Robert S. Foosner who was Chief of the Bureau from August 1983 through October 1986, when he left for a position outside the FCC. The new Deputy Chief is Ralph A. Haller, N4RH, formerly with the Commission's Office of Science and Technology Laboratory at Columbia, Maryland.

The text of the amendment of the Part 97 Rules which allow re-examination credit for written elements passed during an otherwise unsuccessful examination is as follows: "97.25 Examination credit. . . (b) Upon presentation of a certificate of successful completion of an examination (see Section 97.28(e)) for any examination element, examiners shall give applicants for Amateur Radio operator licenses examination credit for any element that has been successfully completed within the previous 365 days. Examiners shall give applicants credit for Element 1(A) or 2 upon presentation of a photocopy of FCC Form 610 which has been submitted to the FCC indicating the applicant has qualified for the Novice operator license within the previous 365 days.

"97.28 Examination administration. . . (e) A certificate of successful completion of an examination will be issued by the examiners to an applicant who successfully completes an examination element coordinated by a VEC under Subpart I. A certificate is valid for a period

of 365 days from the date of its issuance."

The effective date of the amendments was moved to 12/15/86, contingent upon approval of necessary revisions of FCC Form 610 by the Office of Management and Budget. (PR Docket 85-63; see *HIGHLIGHTS*, last month)

By Public Notice issued on 11/10/86, the FCC announced that the rules for transfer of maintenance of question pools for amateur operator examinations to VECs are effective as of 12/31/86. Part 97 is amended as set forth in the Appendix attached to the Report and Order in PR Docket No. 85-196 adopted by FCC on 08/04/86.

On November 6, the FCC announced that the maximum fee VECs can charge for an examination in calendar year 1987 would be \$4.37, which is derived from the Department of Labor Consumer Price Index increase of 1.87% during fiscal 1986. The ARRL VEC will round this off to \$4.35. "The one fee covers all the elements a candidate may take at a single test session." (ARRL, 11/13/86)

Upon receiving a protest from an amateur concerning a net activity for domestic purposes in the 3.790-3.800 DX Window, an FCC Commissioner's answer decried the small minority who would not support "good amateur practice," implying that the Commission could bring sanctions to bear on the recalcitrants. The Commissioner wants more teeth in Rule Section 97.78, "Good Amateur Practice." (ARRL, 11/26/86)

"If you receive an official-looking letter offering to renew your ham license for \$50, be aware that this is not coming from FCC." All it takes to renew an amateur license is a properly filled-in FCC Form 610, an envelope addressed to the FCC, P.O. Box 1020, Gettysburg, PA 17325, and a 22¢ postage stamp! The outfit soliciting such renewals (from a Box 610 Gettysburg address!) has been told to make it clear their service was not connected with the Commission but so far has not done so in their publicity sent to Amateur licensees. (ARRL, 11/26/86; *Westlink Report*, 11/28/86)

The FCC "...has upheld a Review Board decision revoking James W. Smith's license for W6VCE and suspending his Advanced Class operating license for the remainder of its term." The Board concluded that without identifying his station, Smith had transmitted music over his station. It noted he willfully and maliciously caused interference to other amateur operators. (ARRL, 11/26/86)

Unfortunately, but in the interest of economy, FCC Notices and Orders are now being sent by electronic means to the Department of Commerce where they are printed and released, resulting in delays of a few weeks rather than a few days, after the Commission's action before the test is available to the public. (ARRL Letter, 11/21/86)

"The Electronic Communication (please turn to page 10)

## 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 December 1, 1986.

For more information about 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 17325.

Radio District	Group A Am. Extra	Group B Advanced	Group C Tech./Gen.	Group D Novice
0	NV07	KE0JK	N0HPE	KA0YXI
1	N11J	KC1BF	N1EMS	KA1PEV
2	NU2X	KD2WX	N2GUY	KB2BYC
3	NE3M	KC3ZY	N3FFW	KA3QHL
4	AA4XT	KK4DN	N4PDR	KB4VOH
5	WT5H	KF5SZ	N5JZH	KB5BGX
6	WZ6R	KI6NK	N6OOH	KB6OZK
7	NY7N	KE7VY	N7ITZ	KA7ZZO
8	NU8P	KE8IT	N8HXP	KB8AOV
9	NP9Z	KE9AZ	N9GEW	KA9WHX
N. Mariana Is.	AH0E	AH0AC	KH0AI	WH0AAG
Guam	AH2Y	AH2BM	KH2CG	WH2AKK
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra, Jarvis Is.	AH5A			
Hawaii		AH6HN	NH6HT	WH6BMS
Kure Is.			KH7AA	
American Samoa	AH8C	AH8AC	KH8AD	WH8AAW
Wake Wilkes Peale		AH9AC	KH9AD	WH9AAF
Alaska		AL7IM	NL7JM	WL7BLY
Virgin Is.	KP2Q	KP2BA	NP2BY	WP2AFG
Puerto Rico	WP4V	KP4LP	WP4AY	WP4GKR



**Magnetic Call Sign**  
Instant transfer  
car to car

Magnetic call sign 2" x 8" clings securely to your car, weather resistant. Your choice of black, blue, green or red lettering on white background. Only \$8.50 each sign ppd. Sign-On, 1923 Edward Lane • Merrick, NY 11566



# Subscription form

If you received this copy of Worldradio and you aren't yet a subscriber . . . this was your sample copy.

We sent it to you to acquaint you with our reporting on this great activity. Amateur Radio is exciting, challenging, stimulating, satisfying and very rewarding.

You are cordially invited to subscribe to, and be a part of Worldradio.

**Yes** . . . I want to know even more about the wonderful world of Amateur Radio .

TO FACILITATE FASTER HANDLING OF YOUR SUBSCRIPTION, PLEASE USE THIS BLANK

(SOURCE)

--	--	--	--

(59 60)

**Name** \_\_\_\_\_

**Call** \_\_\_\_\_

**Address** \_\_\_\_\_

**City** \_\_\_\_\_

**State** \_\_\_\_\_ **Zip** \_\_\_\_\_

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> <b>NEW</b><br>12 issues<br>24 issues<br>36 issues<br>Lifetime | <input type="checkbox"/> <b>Renewal</b><br>(92¢ per issue)<br>(88¢ per issue · save \$1)<br>(83¢ per issue · save \$3)<br>Be a WR super booster | <input type="checkbox"/> <b>Gift</b><br>\$11.00<br>\$21.00<br>\$30.00<br>\$110.00 |
|--|---|---|

**Overseas Readers!** Prices quoted are U.S. funds. Please include \$3.00 extra/year for surface mail delivery outside the U.S. Subscriptions may be paid in U.S. funds drawn on U.S. banks, by International Money Order, VISA or MasterCard. Canadian Postal Money Orders (in U.S. funds) are also acceptable.

- Check enclosed**                       **MasterCard**                       **AmEx**                       **VISA**

**Card #** \_\_\_\_\_ **Exp. date** \_\_\_\_\_

**Signature** \_\_\_\_\_

Please clip and mail to . . .

**Worldradio™**

For Subscriptions                      P.O. Box 271309 • Escondido, CA 92027-0770  
(charge cards only)

Thank you!

**TOLL FREE 800-341-1522**

Subscriptions received by the 20th of the month will begin with the issue dated two months from the month of receipt, i.e., if we receive the subscription by April 20, your first issue will be June, and will be mailed to you in early May.

Worldradio is a two-way communication. Send in Amateur Radio information and news. Share your knowledge with your fellow amateur and Worldradio reader. We are most interested in your comments and suggestions. We would appreciate being placed on the mailing lists of amateur club bulletins.

# FCC Highlights

(continued from page 8)

Privacy Act of 1986, most recently known as HR 4952, was signed into law by President Reagan on October 21. It now is known as Public Law 99-508.

"Senator Report Number 541, which explains the bill, may be requested from the offices of your local Congressman or Senator. Additional information will be available in an early issue of QST." (ARRL Letter, 11/11/86)

The FCC's General Docket 85-301 to relax the present technical restrictions on RF leakage from cable terminal devices "is ill-advised" comments the ARRL in its filing in the docket proceeding. The League reports its engineering studies have established that even present limits permit cable systems to leak RF on some amateur frequencies, producing severe interference at distances in excess of 100 feet.

"ARRL further states that the cable operator should be responsible for disconnecting any terminal which is leaking RF in excess of FCC rules whether or not owned by the subscriber, and obligation to resolve any RF-generated interference should rest with the cable company." (ARRL Letter, 11/11/86)

The Environmental Protection Agency proposal to limit public exposure to RF radiation would directly affect only governmental entities. (The comment period ended 12/15/86.) "Separate action by FCC would still be necessary to impose the standard on FCC licensees after it is adopted." (ARRL Letter, 11/11/86)

"Right now the best guess on a release by the FCC on Novice enhancement is sometime late in the first quarter of 1987. (Westlink Report, 11/14/86). See HIGHLIGHTS two months ago for details on the expansion of Novice and Technician privileges (including 28 MHz voice) proposed in PR Docket No. 86-161.

When asked what was the status of amateurs being able to select a call sign of their choice, an FCC official replied, "We are still positive (on) the concept, and hope that around the first of the year we will be able to have something on it 'out on the street' ... The first thing we will ask is the threshold question. Is it a good idea to have a special amateur call sign system administered in the private sector ... and if it is, what is a good way of doing it? ... We think that sometime this winter (we) will be going out with an inquiry along those lines." (W5YI Report, 11/15/86)

On 10/23/86, FCC personnel destroyed an estimated \$65,000 worth of illegal RF amplifiers and modified CB transceivers at San Francisco. Collected from several CB sales outlets and from individual CB operators, the radios operated on frequencies outside the CB Radio Service with unauthorized emissions and illegal transmitter power and were capable of causing harmful interference to public safety and emergency radio services as well (as) to home electronic equipment. (W5YI Report, 11/15/86)

Reports are being received "... about Amateur Radio operators working DX through an unusual spectrum combination of 75-meter ham band frequencies being uplinked to a commercial satellite transponder. ...

"It seems that a (member) of a Salt Lake City, Utah, group calling itself 'FM America' was uplinking amateur transmissions to hams around the country who also owned TVRO backyard

satellite dish set-ups. Transmissions on 20 and 75 meters are uplinked from Murray, Utah, to the Telstar 303 satellite. Only the audio is transmitted on Transponder 18's 6.2 MHz audio channel. Amateurs have long-distance two-way communications by talking on 20 or 75 meters and listening to their TVRO earth station."

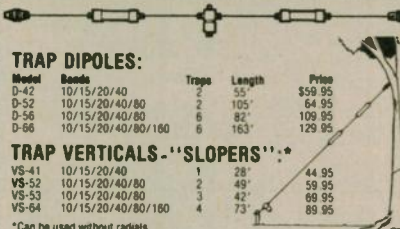
When asked about such use of common carrier satellite-delivered signals, an FCC official responded in part with: "I would say that common carrier uplinking of amateur signals will certainly focus a great deal of attention in the area and could lead to some interesting precedents. Every time you get our attention with a particular mode of conduct, all related modes of operation come into question and you take the consequences."! (W5YI Report, 12/01/86)

The FCC advises "... that exam irregularities in tests of candidates examined under the all-volunteer testing program is not a viable reason for retesting, but the Commission will seek license revocations and other penalties in cases where fraud in the examination process can be proven." VECs must weed out cheaters, be they exam candidates or members of VE teams. VECs may simply not certify examinations if there is something wrong with a test.

"In that case, there would be no retesting involved. The individuals simply wouldn't get their licenses where the VEC had determined this." The FCC does retain its right to reexamine any amateur operator licensee. (Westlink Report, 11/28/86)

Instant Amateur Radio licenses issued through the all-volunteer testing program is the subject of a rule-making request filed with FCC. The petitioner "... proposes that the FCC end the waiting period between the time an unlicensed person takes a test and receives a license by having the Commission issue random blocks of unassigned calls to VECs for distribution to candidates who successfully pass an amateur exam. The FCC would continue to use its current 'sealed envelope' technology for distributing call signs, with the call signs printed on the license form by the Commission's computer." (Westlink Report, 11/28/86)

## MULTI BAND TRAP ANTENNAS



**TRAP DIPOLES:**

Model	Bands	Traps	Length	Price
D-42	10/15/20/40	2	55'	\$39.95
D-52	10/15/20/40/80	2	105'	64.95
D-56	10/15/20/40/80	6	82'	109.95
D-66	10/15/20/40/80/160	6	163'	129.95

**TRAP VERTICALS - "SLOPERS" \***

VS-41	10/15/20/40	1	28'	44.95
VS-52	10/15/20/40/80	2	49'	59.95
VS-53	10/15/20/40/80	3	42'	69.95
VS-64	10/15/20/40/80/160	4	73'	89.95

\*Can be used without radials  
\*Feed line can be buried if desired  
\*Permanent or Portable Use

ALL TRAP ANTENNAS are Ready to use - Factory assembled - Commercial Quality - Handle full power - Comes complete with; Deluxe Traps, Deluxe center connector, 14 ga Stranded CopperWeld ant. wire and End Insulators. Automatic Band Switching - Tuner usually never required - For all Transmitters, Receivers & Transceivers - For all class amateurs - One feedline works all bands - Instructions included - 10 day money back guarantee!

**SINGLE BAND DIPOLES (Kit form):**

Model	Band	Length	Price
D-15	15	22'	18.95
D-20	20	33'	19.95
D-40	40	66'	22.95
D-80	80/75	130'	25.95
D-160	160	260'	34.95

Includes assembly instructions, Deluxe center connector, 14 ga Stranded CopperWeld Antenna wire and End Insulators.

**COAX CABLE:** (includes PL-259 connector on each end)

Type	Length	With antenna purchase	Separately
RG-58	50'	\$8.00	\$11.95
RG-58	90'	12.00	16.95

**DELUXE CENTER CONNECTOR**

- NO RUST Brass Terminals
- NO Jumper Wires Used
- NO Soldering
- Built-in Lightning Arrestor
- With SO-239 Receptacle
- Handles Full Power
- Completely Sealed, Weatherproof
- Easy Element Adjustments
- Commercial Quality

CE-1 \$8.95

**DELUXE ANTENNA TRAPS:** Completely sealed & weatherproof - Solid brass terminals - Handles Full Power - NO jumpers - NO Soldering. Instructions included. For 4-band Dipole Ant. 40/20/15/10 \$36.00/pr. For 5-band Dipole Ant. 80/40/20/15/10 \$38.00/pr.

ORDER DIRECT FROM FACTORY. All orders shipped US Postpaid. VISA/MC - give card #, Exp. date, Signature

**SPI-RO MANUFACTURING, INC.**  
Dept. 102, P.O. Box 1538  
Hendersonville, NC 28793  
Dealer Inquiries Invited

## END-OF-MONTH LICENSE TOTALS

September	1986	October
40,768	Extra	40,824
98,195	Advanced	97,788
116,864	General	116,218
86,148	Technician	85,495
79,107	Novice	78,986
421,082	Totals	419,311

# SPECIAL EVENTS

## Marshall Islands

The Kwajalein ARC will operate KX6BU from 0600Z, January 31 until 0600Z, February 9, to commemorate the 43rd anniversary of the Battle of Kwajalein and Roi-Namur. Frequencies: SSB — 14.250, 21.350, 28.550; CW — 7.025, 14.050, 28.050.

For \$6, KX6BU will issue a QSL, certificate and a 64-page book on the battles of Kwajalein and Roi-Namur. To receive the QSL and certificate, please send \$3. All requests should be to KX6BU, Box 444, APO San Francisco, CA 96555-0008. □

## DXpedition to the Caribbean

Bill O'Kain, K4LTA, and his XYL — Ruby, N4FKO — are planning their eighth DXpedition to the Caribbean (for 10 days beginning February 19) on St. Lucia, followed by a stop-over in Dominica the first 10 days of March. Other operators will include Dick Bishop, NF5Z, and XYL Gladys; Dave Short, W5PWG; and Bill Weaver, WE5P. They will operate the ARRL DX contest on CW from St. Lucia — probably with the call of J6LTA unless a new prefix double numeral call sign is granted them.

## Lost Dutchman Days

In commemoration of Lost Dutchman Days, Superstition ARC is offering a certificate to those who work WB7TJD in the 40, 15 or 10-meter Novice bands, or in the lower end of the 40, 20 or 15-meter General phone bands, February 20-21. Hours are 1500-2400 UTC

## Western Canada's winter carnival

This is to inform you that the North Okanagan Radio Amateur Club will be operating special station VE7NOR, February 6-15, to commemorate western Canada's largest winter carnival. The frequency will be 14.230 every afternoon.

For commemorative certificate and QSL send log info and \$1 or 2 IRCs to NORAC, Box 1706, Vernon, B.C. V1T 8C3 CANADA. □

On Dominica, the group will operate the ARRL DX contest on SSB with the new prefix call sign of J70A with the assistance of Lambert, J73LC. The group will be very active on CW 25-30 kHz from the low end of the bands plus 7005, 3505 and 1833 kHz.

You can catch Ruby for a YL QSO on SSB right after their schedules back home at 2200Z weekdays on 14257 kHz and just before their schedule for Novices and slow-speed CW operators at 2230Z weekdays on 21123 kHz. QSL routing to be announced later. □

both days. (CW operators should listen for "CQ LDD.")

Please QSL with either 9" × 12" SASE, with 29¢ postage, or — if you don't mind it being folded — a business-size 22¢ SASE. Please include your QSO number on your QSL and mail to: SARC, P.O. Box 1551, Apache Junction, AZ 85217-1551. □

## Battle of Ft. Donelson

The Clarksville Amateur Transmitting Society will operate a special event station WD4DBJ from 1600Z to 2200Z, February 14 and 15, to celebrate the 125th anniversary of the Battle of Fort Donelson, Dover, Tennessee. Suggested frequencies: 20, 40 and 80 meters of the General phone band.

For certificate, send QSL and SASE to Nadine Burns, KB4EFW, Box 162A, Indian Mound, TN 37079. □

## Jack London event

The Valley of the Moon's special event station, N6KM, at Jack London State Park in Glen Ellen, California this September was a resounding success. The event commemorated world-famous writer Jack London, author of *Call of the Wild* and *The Sea Wolf*.

The club has enough certificates printed to furnish all the stations worked, so we are encouraging those hams who worked the Jack London Special Event to send their QSL with \$1 to VOMARC, 358 Patten St., Sonoma, CA 95476.



The event itself went smoothly, with some extraordinarily outstanding organization by our club president, Kermit Parker, W6JFN.

Kermit is supposed to be retired, but you wouldn't know it by the amount of hard work and time he put into this (please turn to page 14)

**WRIGHTAPES:** (Since 1976) Unconditionally guaranteed Morse Code Practice on 60 min. cassette tapes. Beginners 2-tape set 5 WPM \$7.90. Also 3, 4, 5, 6-8, 10, 9-11, 12-14, 14, 16-20, 22, 24-28 WPM. Specify Plain Language or Code Groups. Also plain lang. only 30-35, 35-40, 45-60. FCC type tests: 5-8, 11-12, 11-17, 13-14, 20-24. Call signs: 12-15, 20-24. No.s.: 5-22, 13-18, 18-24. Check, M/C, Visa \$3.95 ea. PPD 1st class USA. Can. Printed texts add \$5.00 per tape. Call anytime.

**Instant Service**  
**PH: 517-484-9794 WRIGHTAPES**  
 235 E. Jackson S-3 • Lansing, MI 48906

WB8VAVS W6JFN

# MOVING SALE

Call for prices —

916/638-8626

in CA call 1-800-237-9108



11257 Coloma Rd., Ste. A-6 • Rancho Cordova, CA 95670

# VE exam schedules

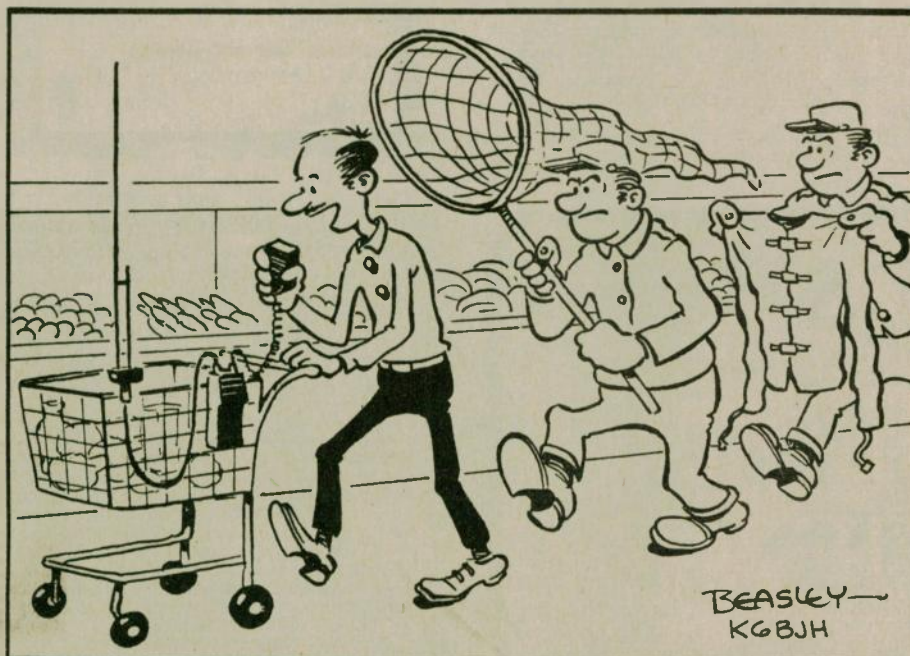
As a service to our readers, Worldradio presents a feature listing those VE exams, times and locations which are sent to us. Please remember that our deadline for publication is two months in advance. For example, if your VE group is scheduling an exam for September, please have the information to us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

Our address is 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.

Date	City	Contact person	Notes
<b>California</b>			
Jan 25	Napa	W6DNY (707) 224-1530	
Feb 1	Pleasant Hill	WX6A (415) 932-0491	
Feb 7	Clear Lake	KB6AMP (707) 263-4213	
Feb 7	San Diego	(619) 465-EXAM	pre-reg by 1/28
Feb 7	Burbank	W6JEP (818) 848-9340	pre-reg pref some w/i
Feb 14	Yucaipa	NQ6M (714) 795-2867	pre-reg pref some w/i
Feb 14	Los Altos Hills	W6NLG (408) 255-9000	
Feb 14	San Marcos	(619) 465-EXAM	pre-reg by 2/4
Feb 17	Eureka	KB6FIW (707) 442-9245	
Feb 21	Sacramento	WA6RPB (916) 483-3293	
Feb 21	Sebastopol	W6DTV (707) 823-7885	
Feb 21	Chula Vista	(619) 465-EXAM	pre-reg by 2/11
Feb 28	El Cajon/Escondido	(619) 465-EXAM	pre-reg by 2/18
<b>Colorado</b>			
Feb 14	Denver	W0IJR (303) 366-9689	pre-reg pref w/i OK
<b>Florida</b>			
Feb 21	Melbourne	WB9IVR (305) 724-6183	w/i OK
<b>Illinois</b>			
Feb 17	Aurora	N9AKE (312) 892-1252	w/i OK
Feb 21	Bolingbrook	(815) 886-5135	
Feb 26	Chicago	(312) 495-0498	

Date	City	Contact person	Notes
<b>Indiana</b>			
Feb 7	Speedway	KA9H (317) 241-1272	in advance
<b>Kansas</b>			
Feb 7	Parsons	NC0N (316) 421-8468	pre-reg pref some w/i
<b>Massachusetts</b>			
Jan 24	Melrose	Richard Meuse (617) 665-6061	w/i
Feb 3	Acton	W1QLT (617) 263-8742	pre-reg by 1/27
<b>Michigan</b>			
Feb 21	Garden City	(313) 562-1243	
<b>Minnesota</b>			
Feb 21	Hamel	NA0U (612) 920-7473	
<b>Nevada</b>			
Feb 21	Reno	K7HRW (702) 825-1242(D) (702) 972-3933(N)	30-day pre-reg some w/i
<b>Oregon</b>			
Feb 7	Portland	KZ7T (503) 649-5066	30-day pre-reg some w/i
Feb 26	North Bend	WA7PHI (503) 756-6846	30-day pre-reg some w/i
<b>Texas</b>			
Feb 7	Midland	KT5G (915) 694-9450	w/i OK
Feb 14	San Antonio	NS5I (512) 681-0702	w/i
Mar 7	San Benito	WA2VJL (512) 399-2865(D) (512) 399-0328(N)	30-day pre-reg some w/i
<b>Vermont</b>			
Mar 7	Windsor	WB1GXM (603) 543-1389	pre-reg by 2/7 some w/i
<b>Virginia</b>			
Mar 7	Chesapeake	AA4MB (804) 487-6526	30-day pre-reg some w/i
<b>Wisconsin</b>			
Feb 21	Milwaukee	WD9JKZ (414) 672-7704	w/i



## Are you active?

*Are you an Active Member,  
The kind that would be missed?  
Or are you just contented  
To be on the list?*

*Do you attend the meetings,  
And mingle with the flock?  
Or do you stay at home  
To criticize and mock?*

*Do you take an active part  
To help the work along?  
Or are you just satisfied  
To only just belong?*

*Do you work with your committees  
And jump right in and mix?  
Or leave the work to just a few  
And talk about the cliques?*

*Think this over, member,  
You know right from wrong,  
Are you an Active Member,  
Or do you just belong?*

— SCRA newsletter

YEAH, I'M OPERATING SHOPPING CART MOBILE, BUT I THINK THE SQUASH IS SOAKING UP THE RF!



# Presenting two small cases for a lot of mobile power.

You won't find a 45-watt, 2-meter FM mobile rig that's built smaller than the Yaesu FT-270RH.

Nor will you find a dual-band FM mobile that offers the crossband full-duplex capability found in the 25-watt Yaesu FT-2700RH.

It shouldn't be surprising. We've been coming up with a lot of innovative concepts lately.

The FT-270RH measures just 2 x 6 x 7 inches. Conveniently fitting its high-power punch into many small spaces of your car. Places where other 45-watt mobiles just won't fit.

The FT-2700RH is small too. Smaller than other dual-banders. But with one big difference: a "DUP" button. Push it, and you're operating full duplex, 2 meters on one VFO, 440 MHz on the other. Each at 25 watts. So you can simultaneously

transmit and receive in true telephone style.

Once installed, you'll find the FT-270RH and the FT-2700RH equally simple to operate. Just turn the rig on, dial up a frequency, select offset or duplex split, and you're on the air.

Each rig gives you 10 memories for storing your favorite frequencies. Dual VFO capability. A clean, uncluttered LCD display for easy readout. Push-button jumps through the band in 1 MHz steps. Band scanning with programmable upper and lower limits. And priority channel operation.

You don't even have to take your eyes off the road to determine your operating frequency and memory channel. An optional voice synthesizer announces them both at the push of a button on the microphone. The FT-2700RH announces both your

2-meter and 440 MHz operating frequencies.

Also, tone encode and encode/decode capability is programmable from the front panel, using an optional plug-in board.

So when you need a lot of power in a compact mobile radio, discover Yaesu's FT-270RH and FT-2700RH. There's nothing else like them on the road.

## YAESU

**Yaesu Electronics Corporation**  
6851 Waltham Way, Paramount, CA 90723  
(213) 633-4007

**Yaesu Cincinnati Service Center**  
9070 Gold Park Drive, Hamilton, OH 45011  
(513) 874-3100

Prices and specifications subject to change without notice.





Of course you're not working any DX with your hand-held ... What you need is an AMPLIFIER.



Honest, fellas, packet works better than your Model 15s.

## HAM/WEST The convention scene



I am now demonstrating the invisible antenna.

### ESTABLISH A HAM TESTING CENTER IN YOUR AREA

As of 1984, all ham radio license testing is handled by the amateur radio community itself. Teams of three Extra Class volunteer examiners (VE's) can now conduct all ham license upgrade examinations.

W5YI-VEC, the initial national VE Coordinator approved by the FCC, oversees the largest alternative (to the ARRL) testing program in the U.S. You can be a part of it by following the simple testing instructions provided.

Administering Technician through Extra Class examinations is no harder than administering Novice examinations — which VE's have done for decades. We offer...fastest VE accreditation, complete instructions, immediate testing...with testing fees (expense reimbursement) shared with the VE team.

Send an SASE today for a VE application if you are an Extra Class amateur and serious about conducting periodic amateur radio examination sessions in your area so that others may upgrade.



**W5YI-VEC**  
P.O. Box #10101  
Dallas, TX 75207  
(817) 461-6443

Let's get Amateur Radio growing again!



Hey, if you sold as many counters as we did, you'd be smiling too.

### Special Events

(continued from page 11)

event. He did everything from lining up towers and antennas to getting the city of Sonoma's 5kW emergency generator working after it had sat in the city corporation yard for years. After the two-

weekend event, his work continued — making the certificate up, having it printed, and then organizing the mailing at our club meeting room in the EOC at our local police station.

The setting for the event was picture-postcard-beautiful, high on the hillside overlooking Sonoma Valley, among the ruins of Jack London's ranch and surrounded by vineyards and trees.

The club had advertised frequencies on 15, 20 and 40 meters, but we found 15 dead, so worked both weekends on 20 and 40 meters. Propagation remained good until about midnight, so our graveyard crew was able to get some sleep and rise refreshed to man (and woman) the radios the next morning.

The whole club had so much fun that someone suggested we have the event again next year. Kermit just groaned and said he might be out of the country.

**NEW - MULTI-BAND "KT5BA" ANTENNA -**  
160M thru 10M

- Single coax
- Legal limit
- No traps
- Dipole, V or sloper
- Ready to use!

**ONLY \$49.95**  
plus shipping and handling

**KILO-TEC • P.O. Box 1001**  
Oakview, CA 93022  
(805) 648-9645



I com, you com, we all com for ICOM.



You ask about a rig. Well, let me tell you what I use to win all the contests.

## New PRB chief

(continued from page 1)  
since 1970, has been Deputy Bureau Chief since 1983, and Acting Chief since November 1, 1986.

ARRL 1986 National Convention attendees may remember seeing him at San Diego. He holds degrees in engineering and law, and was honored as a Presidential Exchange Executive in 1979-80.

—de WB5PTO/official bulletin station, Las Vegas, NV

\*\*\*\*\*

Check your license expiration date.



# ICOM

# KENWOOD

# YAESU



HF Equipment	IC-735	List	Juns
IC-735 Gen. Cvg Xcvr		\$999.00	Call \$
IC-745 Gen. Cvg Xcvr		1049.00	Call \$
IC-751A Gen. Cvg. Xcvr		1649.00	Call \$
<b>Receivers</b>			
IC-R7000 25-1300 + MHz Rcvr		1099.00	Call \$
IC-R71A 100 kHz-30 MHz Rcvr		949.00	Call \$
<b>VHF</b>			
IC-271A All Mode Base 25w		859.00	Call \$
IC-271H All Mode Base 100w		1099.00	Call \$
IC-275A 2m Base 25w		1199.00	Call \$
IC-275H 2m Base 100w		TBA	Call \$
IC-27A FM Mobile 25w		429.00	Call \$
IC-27H FM Mobile 45w		459.00	Call \$
IC-28A FM Mobile 25w		429.00	Call \$
IC-28H FM Mobile 45w		459.00	Call \$
IC-38A FM Mobile 25W		459.00	Call \$
IC-2AT FM HT		299.00	Call \$
IC-02AT FM HT		399.00	Call \$
IC-2AT Micro HT		329.00	Call \$
<b>UHF</b>			
IC-471A All Mode Base 25w		979.00	Call \$
IC-471H All Mode Base 75w		1339.00	Call \$
IC-47A FM Mobile 25w		549.00	Call \$
IC-48A FM Mobile 25W		459.00	Call \$
IC-4AT FM HT		339.00	Call \$
IC-04AT FM HT		449.00	Call \$
IC-3200A FM 2m/70cm 25w		599.00	Call \$
<b>220 MHz</b>			
IC-37A FM Mobile 25w		499.00	Call \$
IC-3AT FM HT		339.00	Call \$
<b>Repeaters</b>			
IC-RP3010 440 MHz		1229.00	Call \$
IC-RP1210 1.2 GHz		1479.00	Call \$



HF Equipment	TS-440S/AT	List	Juns
TS-940SAT Gen. Cvg Xcvr		\$2249.95	Call \$
TS-940S Gen. Cvg Xcvr		2049.95	Call \$
TS-930S/AT Gen. Cvg Xcvr		1849.95	Call \$
TS-830S Xcvr		1099.95	Call \$
TS-530SP Xcvr		899.95	Call \$
TS-430S Gen. Cvg Xcvr		819.95	Call \$
TS-440S/AT Gen. Cvg Xcvr		1199.95	Call \$
TS-440S Gen. Cvg Xcvr		1049.95	Call \$
<b>Receivers</b>			
R-5000 NEW!		899.95	Call \$
R-2000 150kHz-30 MHz		649.95	Call \$
TS-670 All Mode Quad 6 M		799.95	Call \$
<b>VHF</b>			
TS-711A All Mode Base 25w		899.95	Call \$
TR-751A All Mode Mobile 25w		599.95	Call \$
TM-201B FM Mobile 45w		369.95	Call \$
TM-211A FM Mobile 25w		399.95	Call \$
TM-2530A FM Mobile 25w		429.95	Call \$
TM-2550A FM Mobile 45w		469.95	Call \$
TM-2570A FM Mobile 70w		559.95	Call \$
TH21-BT FM, HT		259.95	Call \$
TH-205 AT, NEW 2m HT		259.95	Call \$
TR-2600A FM, HT		359.95	Call \$
<b>UHF</b>			
TS-811A All Mode Base 25w		1049.95	Call \$
TM-401B FM Mobile 25w		399.95	Call \$
TM-411A FM Mobile 25w		449.95	Call \$
TH-41BT FM, HT		269.95	Call \$
TR-3600 FM HT		369.95	Call \$
<b>220 MHz</b>			
TM-3530A FM 220 MHz 25w		449.95	Call \$
TH-31BT FM, 220 MHz HT		269.95	Call \$
TL-922A HF Amp		1499.95	Call \$



HF Equipment	FT 757GX	List	Juns
FT-ONE Gen. Cvg Xcvr		\$2859.00	Call \$
FT-757 GX Gen. Cvg Xcvr		995.00	Call \$
FT-767 4 Band New		1895.00	Call \$
<b>Receivers</b>			
FRG-8800 150kHz-30 MHz		599.95	Call \$
FRG-9600 60-905 MHz		679.95	Call \$
<b>VHF</b>			
FT-270RH FM Mobile 45w		439.95	Call \$
FT-290R All Mode Portable		579.95	Call \$
FT-23 R/TT Mini HT		299.95	Call \$
FT-209RH FM Handheld 5w		359.95	Call \$
<b>UHF</b>			
FT-770RH FM Mobile 25w		479.95	Call \$
FT-73 R/TT Mini HT		314.95	Call \$
FT-709RH FM HT 4w		359.95	Call \$
<b>VHF/UHF Full Duplex</b>			
FT-726R All Mode Xcvr		1095.95	Call \$
6m/726 6m Module		269.95	Call \$
FT-690R 6m, All Mode, Portable		569.95	Call \$
430/726 430-440 MHz		329.95	Call \$
440/726 440-450 MHz		329.95	Call \$
HF-726 10-15-20M		289.95	Call \$
SU-726 Sate Duplex		129.95	Call \$
<b>Dual Bander</b>			
FT-2700RH FM 2m/70 cm 25w		599.95	Call \$
FT-727R 2m/70 cm HT		479.95	Call \$
<b>220 MHz</b>			
FT-109 RH New HT		379.95	Call \$
<b>Repeaters</b>			
FTR-2410 2m Repeaters		1249.95	Call \$
FTR-5410 70cm Repeaters		1289.95	Call \$

\*\*\*\*\* CLOSING OUT SALE \*\*\*\*\*

KENWOOD TR-2600A w/PB-26 \$259.95

\*\*\*\*\*



ENCOM • TE • MIRAGE • AMERITRON • BIRD • AMP. SUPPLY • KANTRONICS • AEA • ASTRON •

• AMATEUR • TWO WAY • MARINE • CELLULAR MOBILE PHONE • SCANNER  
★ Free U.P.S. Cash Order ★ SE HABLA ESPANOL  
(Most Items, Most Places)

(213)390-8003

3919 Sepulveda Blvd.  
Culver City, CA 90230

## Lend a hand to this Kentucky ham

Carl Nelson, NJ6K

John A. Thernes, WM4T, continues to do battle with the City of Lakeside Park, Kentucky, as legal fees mount in his efforts to overturn their restrictive antenna ordinance. More than \$20,000 has gone into this effort.

In the hope that he could generate some assistance from other hams, John spent an additional sum to fly to the San Diego Convention. By the last day, he had received few contributions and was understandably dejected.

Sybil Allbright, W6GIC, took note of his situation and an announcement was made at the ARRL Forum. Attendees were asked for donations. Only about \$250 was collected, so John had still to receive enough to pay his airplane fare to San Diego.

At this point Eileen Stephen, KA6KDN, and Chris Vance, K6YNW, stepped in and started their own promotion efforts. They had already assisted John by helping to manage his booth.

As a result of the efforts of these dedicated hams, John went home with \$800 in contributions, which — although it does not alleviate all of his financial pains by any means — is of much more help than appeared to be forthcoming earlier in the day.

John says his fight is not just for him, but for hams everywhere. He still needs your help. And you can help by sending your contributions to the Northern Kentucky Tower Fund, P.O. Box 17721, Lakeside Park, KY 41017. □

● Pass it on . . . WORLD RADIO ●

## Power Squadrons net

The USPS (United States Power Squadrons) National Amateur Radio Net, with the participation of members of the Canadian Power and Sail Squadrons, is an important media for members to discuss problems relating to electronics and telecommunications, and exchange information concerning the activities of districts and squadrons.

It has proven to be important to public relations as non-member amateurs and short-wave listeners (SWL) inquire on the net and by letter as to the USPS and CPS activities, including the Public Boating classes and our Cooperative Charting assistance to NOAA. During the net sessions, mention is made of the Public Boating classes conducted by both USPS and CPS.

Inquiries received from both amateur non-members and SWL listeners are replied to by letter, with a copy going to the Commander of the squadron nearest the domicile of the inquirer. This creates potential for new members on a selective, invitational basis.

The net procedure is for the control stations or assistant control stations to accept check-ins from the net participants. After the group has formed, each station is re-called for their

technical remarks or questions, and activities of their district or squadron. Participants are requested to keep their transmissions as short as possible, but still cover their subject, so as to allow time for all participants. Members wishing to conduct long conversations should arrange a schedule to directly follow the net session.

The net sessions are heard internationally as we have had a check-in from West Germany, from a schooner 300 miles west of Tahiti, and from Japan.

A roster of both USPS and CPS registrants is furnished to each interested member. The net is in session every Saturday at 1700 GMT, on 20-meter frequency 14323. Interested USPS members should contact Stf/C George M. Hock, 2950 Washta Bay Road, Excelsior, MN 55331, and CPS members should contact P/C/C Bill Booth, 32 Dukinfield Crescent, Don Mills, Ontario M3A 2S1, CANADA.

We have received inquiries from members who presently hold Novice licenses and are anxious to upgrade to at least a General license. It appears that their problem in each case is conquering the code. Arrangements will be made to meet them on a Novice frequency, and assist them in their code problems at graduated speeds. □

## Tree vee antennas

Britain's *New Scientist* Magazine reports a scientist has been investigating the use of tall trees as TV antennas. Coaxial cable links the television with a hole drilled beneath the bank. The signal is transmitted via the xylem and

phloem, which carry the plant's food and water.

In recent experiments, date palm, coconut and papaya trees produced a better quality picture than conventional metal antennas. — *Organic Gardening*, September, 1984 □

## Hamvention Lodging - available at this time

Alexander Motel Fairborn  
Belton Inn  
Best Western Springfield  
Coach N Four Motel  
Command Motel Fairborn  
Cross Country Inn  
Crossroads of America  
Days Inn Dayton Mall  
Days Inn North  
Days Inn South  
Dayton Airport Inn  
Daytonian Hilton  
Econolodge  
Fairborn Motel

Hampton Inn (Englewood)  
Holiday Inn Wright State  
Holiday Inn Dayton Mall  
Holiday Inn Fairborn  
Holiday Inn North  
Holiday Inn South  
Holiday Inn Troy  
Knights Inn Franklin  
Knights Inn Dayton North  
Knights Inn Dayton South  
Knights Inn Vandavia  
L & K Motel (Brandt Pike)  
LaQuinta Inn South  
Marriott Hotel

Motel Capri  
Penny Pincher (L&K Troy)  
Ramada Inn Downtown  
Ramada Inn South  
Red Horse Inn  
Red Roof Inn South  
Rodeway Inn (Dayton)  
Rodeway Inn (Xenia)  
South Dayton Motel  
Traveler's Motel North  
Traveler's Motel South  
Travelodge (North Dixie)  
York Motor Lodge Fairborn



# DAYTON Hamvention

April 24, 25, 26, 1987

## Early Reservation Information

- 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 (for 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: Awards chairman, Box 44, Dayton, OH 45401.

### License Exams

Novice thru Extra exams scheduled Saturday and Sunday by appointment only. Send current FCC form 610, copy of present license and check for \$4.25 (payable to ARRL/VEC) to: Exam Registration, 8836 Windbluff Point, Dayton, OH 45459

### Slide Show

35 mm slide/tape presentation about the HAMVENTION is available for loan. Contact Dick Miller, 2853 La Cresta, Beavercreek, OH 45324

### 1987 Deadlines

Award Nominations: April 4

Lodging: April 4

License Exams: March 28

Advance Registration and banquet:

USA - April 11

Canada - April 4

Flea Market Space:

Orders will not be accepted before January 1

### Information

General Information: (513) 433-7720  
or DARA, Box 44, Dayton, OH 45401

Flea Market Information: (513) 223-0923

Lodging Information: (513) 223-2612  
(No Reservations By Phone)

HAMVENTION is sponsored by the Dayton Amateur Radio Association Inc.

## Lodging Reservation Form

(Please attach your name, address, and telephone number to this form.)

Dayton Hamvention - April 24, 25, 26 1987  
Reservation Deadline - April 4, 1987  
MAIL TO - Housing, Dayton Hamvention,  
1880 Kettering Tower, Dayton, OH 45423-1880

Arrival Date \_\_\_\_\_  
 Before 6 pm  After 6 pm  
 Departure Date \_\_\_\_\_  
 Room:  Single  
 Double (1 bed, 2 persons)  
 Double Double (2 beds, 2 persons)  
 Lodging Preference -  
 See list of Lodging on adjacent page.  
 1 \_\_\_\_\_ 2 \_\_\_\_\_  
 3 \_\_\_\_\_ 4 \_\_\_\_\_

PLEASE SEPARATE

## Advance Registration Form

(Please attach your name, address, and telephone number to this form.)

	<u>How Many</u>		
Admission (valid all 3 days)	_____ @ \$8.00*	\$	_____
Grand Banquet	_____ @ \$15.00**	\$	_____
Women's Luncheon (Saturday)	_____ @ \$7.25	\$	_____
(Sunday)	_____ @ \$7.25	\$	_____
Flea Market (Max. 3 spaces)	_____ @ \$23.00	\$	_____
Admission ticket must be ordered with flea market tickets			Total \$ _____

Make checks payable to - Dayton HAMVENTION.  
Mail to - Dayton Hamvention, Box 2205, Dayton, OH 45401

\* \$10.00 at door \*\* \$17.00 at door, if available

# ARM WATCH

Jim Keele, K2SN

The Marion County, Florida, amateurs have organized a Mobile Watch program under the direction of the sheriff department and sponsored by the Silver Springs Radio Club. This program, referred to as ARM WATCH, which stands for "Amateur Radio Mobile Watch," is acting as eyes and ears for law enforcement and fire services.

We are not "cops"; we don't apprehend nor chase anyone; we just report what we see or hear during normal driving conditions to the sheriff department through the repeater phone patch. The Sheriff Dept. Communication Center clears all reports no matter if it involves fire, FHP, or city police. We report such items as DWI, reckless driving, accidents, fires, hit and runs, assaults, etc.

Each member of ARM WATCH completed a six hour course conducted by the sheriff department, received a Certificate of Training, an identification card, and a very attractive decal for the car. An ARM WATCH number for reporting purposes was also assigned. By the way, the very clever decal was designed by one of our members, Jim Brenner, NT4B.

So far, we have 50 members assigned identification numbers and more amateurs wanting to get involved in this program. We feel this program is a very good example of Amateur Radio involvement in public service. Any Amateur Radio group wishing to establish an ARM WATCH program within their county may request a copy of our approved plan, address: 4231 N.E. 22 Ct., Ocala, FL 32670; (904) 629-3149.

— Florida Skip

# One op's story

Mark Pilnick, WB4DTQ

Before the plane landed, I could feel the tension building. I'd been away from home for a week and all that time, my mind had never been far from what I love. Now I was coming back to it and I couldn't wait to get to it soon enough.

Running through the concourse and airport terminal, people must've thought I was either being pursued by the police or was trying to evade a photographer from the *National Enquirer*. Risking life and limb, I put the pedal to the metal and tore up I-95. A piece of cake. The last stretch of my journey back to Miami Beach, however, was an exercise in frustration. The thoroughfare I was on was fraught with urban vehicular congestion. Using driving techniques learned from watching innumerable episodes of the "A-Team," I plowed my way through traffic. It seemed as though I had a clear patch, but then, the flashing lights told me I'd been stymied. The damn drawbridge! I'd come too far to allow anything to stop me. With my foot on the brake, I revved up the engine of the Renault, then let it fly. Just like John Wayne in "McQ," over the span I sailed. Confidence welled up in me.

With brakes squealing and a cloud of dust propelling upward, I grabbed my valise and bounded up the three flights of stairs. Violently thrusting the door open, I threw the valise down, ran into the shack, and with hands shaking and breathing labored, I hooked up the antenna, plugged in the power supply, then . . . a great calm came over me. I was in Nirvana.

Some of you may recognize yourselves in my tale of desperate desire. Yes, I can say it now. I'm a radio junkie. I can't get through the day without a daily fix of

CW mixed with heavy doses of QRN and QSB. If I can't get that, I'll take a phone contact in any condition. Sometimes, when the conditions are poor, I've — and it pains me to admit this — I've tuned to 11 meters just to listen to a QSO in progress. It's amazing how far down one will go when they're hooked by the radio habit. But I don't want to give it up. It makes me feel too good. I've had the habit for 22 years and I may make QCWA. The old-timers know how good it makes you feel.

There are probably those of you who are reading this and vehemently denying that you're a radio junkie. That's a natural reaction. Let me give you the early signs to look for.

1) Does your mouth become dry and your palms become sweaty when you're browsing in a radio store or looking at advertisements in a magazine?

2) Do you cruise neighborhoods looking for a beam or quad on a tower or the roof of a house?

3) When you look at a magnificent tree, do you say to yourself, "That would be great for stringing up an antenna."?

4) Do you translate words and numbers that you see into code?

5) When you're away from home, without a rig, do you make up imaginary QSOs and carry on both sides of it?

Yes, those are indications that you are on the way to becoming a full-fledged radio junkie. But don't worry. The best news is that it's not harmful. There are even those who state unequivocally that the radio habit saved their lives. So, indulge your habit. It's not unhealthy or illegal. And remember, tribanders and DX forever!



**IMRA**  
People  
Helping  
People

Service to Missioners  
(all denominations)

Missionary Net • 14.280 MHz, Mon. thru Sat.  
2:00-3:00 Eastern Time  
(1800-1900 Z DT, 1900-2000 Z ST)  
Annually 20,000 check-ins, 9,000 traffic


Membership • 800 amateurs in 40 countries  
• Directory & bi-monthly newsletter

If monitoring the net, please come in and join us. You will be cordially received.

For further information, write:

**Br. Bernard Frey, OFM, WA2IPM**  
1 Pryer Manor Rd. • Larchmont, NY 10538


\*\*\*\*\*  
\* GO MOBILE WITH YOUR H.T. ! \*  
\*\*\*\*\*



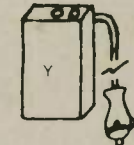
Model I — ICOM IC-2AT, Etc.  
Model K-1 for TR-2500 & 2600  
— Slides on bottom of radio

**Guaranteed!**

---



Model K — TR-2400;  
— powered thru battery plug  
Model N — FT-203R, 208R, 209R  
Model T — Simple mod for Tempo  
and all Santec



Model Y — FT-207R, Wilson  
— fits into battery compartment  
\* A unique battery eliminator \*  
HANDI-TEK Regulator allows  
constant hand-held operation  
from auto DC or base supply  
with no nicad drain and  
WITHOUT RADIO MODIFICATION!  
\$24.95 PPD in USA.  
Call! add \$1.50 Sales Tax.

**HANDI-TEK**  
P.O. BOX 357 • PINON HILLS, CA 92372  
\*\*\*\*\*



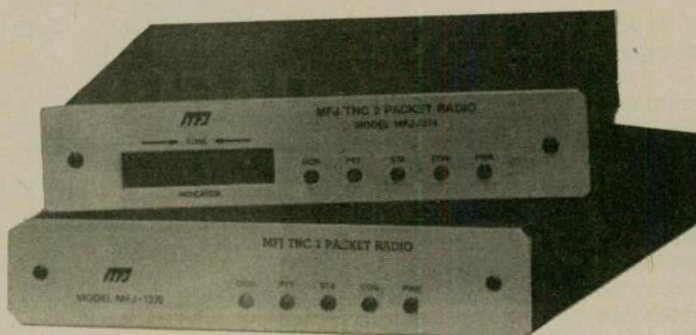
Elizabeth Adams, NQ8J — newly move to Chula Vista, California from Michigan — is an Extra Class licensee. She first became licensed at age 10; she's now 12. Her 14-year-old brother, Michael, is N8GEV (Advanced). Elizabeth is Worldradio's youngest life subscriber. Editor Chris Wilson, KA6TAL, is on the left.

# New MFJ-1274 lets you work VHF and HF packet with built-in tuning indicator for \$169.95 . . .

. . . you get MFJ's latest clone of TAPR's TNC-2, TAPR's VHF/HF modem and built-in tuning indicator that features 20 LEDs for easy precise tuning

MFJ-1274  
**\$169<sup>95</sup>**

MFJ-1270  
**\$139<sup>95</sup>**



**Now you can join the exciting world of packet radio on both VHF and HF bands with a precision tuning indicator . . . for an incredible \$169.95!**

You get MFJ's top quality clone of the highly acclaimed industry standard TAPR TNC-2. We've made TAPR's modem selectable for both VHF and HF operation, added their precision 20 segment LED tuning indicator, a TTL serial port, an easily replaceable lithium battery for memory back-up and put it all in a new cabinet.

If you don't need the tuning indicator or the convenience of a switchable VHF/HF modem, choose the affordable MFJ-1270 for \$139.95.

All you need to operate packet radio is a MFJ-1274 or MFJ-1270, your rig, and any home computer with a RS-232 serial port and terminal program.

If you have a Commodore 64, 128, or VIC 20 you can use MFJ's optional Starter Pack to get on the air immediately. The Starter Pack includes interfacing cable, terminal software on disk or tape and complete instructions . . . everything you need to get on packet radio. Order MFJ-1282 (disk) or MFJ-1283 (tape), \$19.95.

Unlike machine specific TNCs you never have to worry about your MFJ-1274 or MFJ-1270 becoming obsolete because you change computers or because packet radio standards change. You can use any computer with an RS-232 serial port with an appropriate terminal program. If packet radio standards change, software updates will be made available as TAPR releases them.

Also speeds in excess of 56K bauds are possible with a suitable external modem! Try that with a

machine specific TNC or one without hardware HDLC as higher speeds come into widespread use.

You can also use the MFJ-1274 or MFJ-1270 as an excellent but inexpensive digipeater to link other packet stations.

Both feature AX.25 Level 2 Version 2 software, hardware HDLC for full duplex, true Data Carrier Detect for HF, multiple connects, 256K EPROM, 16K RAM (expandable to 32K with optional EPROM), simple operation, socketed ICs plus much more.

You get an easy-to-read manual, a cable to connect your transceiver (you have to add a connector for your particular radio), a connector for the TTL serial port and a power supply for 110 VAC operation (you can use 12 VDC for portable, remote or mobile operation).

Help make history! Join the packet radio revolution now and help spread this exciting network throughout the world. Order the top quality and affordable MFJ-1274 or MFJ-1270 today.



**MFJ-1273, \$49.95**

**Now you can tune in HF, OSCAR and other non-FM packet stations fast!**

This MFJ clone of the TAPR tuning indicator makes tuning natural and easy - - it shows you which direction to tune. All you have to do is to center a single LED and you're precisely tuned in to within 10 Hz. 20 LEDs give high resolution and wide frequency coverage.

The MFJ-1273 tuning indicator plugs into the MFJ-1270 and all TNC-1s, TNC-2s and clones that have the TAPR tuning indicator connector.

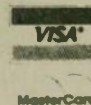
Order any product from MFJ and try it -- no obligation. If not satisfied return within 30 days for prompt refund (less shipping).  
• One year unconditional guarantee • Add \$5.00 each shipping/handling • Call or write for free catalog, over 100 products.

# MFJ

MFJ ENTERPRISES, INC.  
Box 194 M... State, MS 39762

To Order or for Your Nearest Dealer  
**800-647-1800**

Call 601-323-5869 in Miss. and outside continental USA.  
Telex 53-4590 MFJ STKV



# School Amateur Radio clubs Pt. II

*Last month we ran the first part of Wayne Green, W2NSD's keynote speech that he gave at the HAM/WEST banquet on November 8. Here is the conclusion of that speech.*

In 1970, King Hussein was given the present of an Amateur Radio set for Christmas. I heard about it and sent a cable over and said, "You need somebody to show you how to use that, don't you?" I got a cable back which said, "Sure, c'mon over."

I immediately hopped over there and went to the summer palace and operated the ham rig every day for a couple of weeks, taking thousands and thousands of people off King Hussein's back, who needed the country of Jordan desperately, as DXers do. Every afternoon, King Hussein would come back from the downtown palace and say "How's the ham-biz doing?" and I'd say "Fantastic, how's the king-biz doing?" He said "Not that great."

I explained, "You've got a country here, and you're not even teaching Ohm's Law in your schools. If you're going to join the 20th century with Jordan, you must have youngsters who are interested in electronics and communications. What I recommend is to put Amateur Radio into Jordan, get a club station going in every school in the country, and you will have engineers and technicians. So he gathered the entire government around a big table, and had me explain this to them. It didn't hurt that he sat in the background and said, "and it will be so."

In 1973 he said, "I want you to come over and see what you've done." My wife and I flew to Jordan and drove from one end of the country to the other, visiting every city in Jordan. I shook hands with and took pictures of over 500 licensed amateurs. Forty percent were women. I also got a look at the first electronic manufacturing plant they were beginning to put in. Today, Jordan has a graduate course in electronic engineering and communications and is the leader in the entire Arab world in electronics and communications.

When I was in China last year, I talked with some of the top people there, and I explained what I wanted to do. I suggested that I prepare a course, in a joint venture with the country of China, to teach every child in China — 10 through 17 years old — the fundamentals of electronics, communications and computers. I would do this with a monthly magazine that would be self-teaching, so they wouldn't have to take 10 years to train the teachers first. They liked the idea a lot, so I have submitted a proposal to China.

I was in Hong Kong a couple of weeks ago, and my people there are translating that proposal into Chinese. It turns out by coincidence that they're very good friends of Deng Chow Peng's wife, and they are going to get the proposal into the hands of Deng Chow Peng. That's as high as I can go!

I further proposed that once you have children who are interested in this, you have to have a special college for them. I outlined my idea for a college that would cost about 10 to 15% of what a college costs today. Indeed, I am working with Rensselaer on just this type of plan — I'm a member of the Board of Overseers of Rensselaer and just named as Executive in Residence.

I've had a couple of letters, and there was an editorial in one of the magazines saying the trouble with getting kids into Amateur Radio is that they have too many things to do today, too many distractions.

I look back at what I was doing when I was in high school. Erasmus Hall had 120 clubs for the kids to join after school. I belonged to the camera club, book club, radio club, choral club, and Savoy Arts. I attended dancing class, dated a lot, went out skating many evenings. If it was snowing we went out

with sleds. In Brooklyn, sledding is a little different; we don't have any hills, so we'd go out and grab the bumpers of cars.

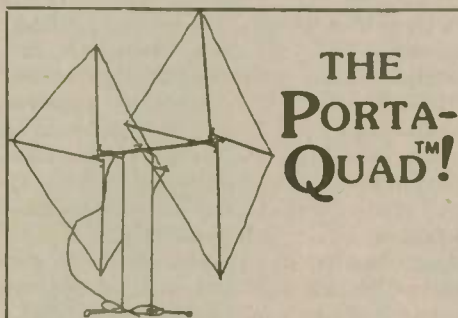
I went to movies a lot — two or three times a week, double features. I belonged to the Philharmonic Choir of Brooklyn. I was a member of the Boy Scouts. In the summer I went swimming a lot at Coney Island. Bicycling, ice skating. I was the manager of the fencing team. So, I was kept fairly busy but I still was able to get my ham license.

How are we going to get Amateur Radio going again? How are we going to build up the people we need, the engineers, technicians and scientists? Very simple. Let's get those school radio clubs going again. That means that every radio club has a responsibility to go out and sponsor a local school radio club. Send somebody from the club to tell them about the fun of DXing, contests, repeater operating, awards, emergency operating, RTTY, slow scan TV, high speed CW, traffic operating, clubs, packet radio, building things, service nets, UHF, moonbounce, 10.5 GHz, DXpeditions, OSCAR. We have so many things to do in this hobby that you can't remember them all.

We need these people desperately because communications is going to be expanding at about 200% a year as far into the future as we can see. That means by the year 2000, we're looking at about 8,000 times the amount of communications we have today.

We're going to have small computers that will take a message and send it anywhere in the world. We can do it with today's technology — we don't have to invent anything. Amateurs could do this. You'd write it, you'd have a little 800 MHz transceiver in here, go through a repeater in your house, which goes to the local repeater, to an area repeater, to the satellite, and comes back down wherever you will have addressed it. The computer will keep track of where you are. The minute you turn this on it will hook you into the network and know you're there. Any traffic for you that it has will go to you. Any traffic that you have will be automatically dumped and go where it needs to go. We can do this, and because we can do this, you know as well as I do that it is going to happen. It has to happen — it cannot fail to happen.

We're talking about thousands of businesses. We're talking about hundreds of billions of dollars. Are they all going to be Japanese, or are there going to be some Americans in there? With 73 I'm going to do everything I can to help. We have a new column starting on how to get a school club started. We're going (please turn to page 24)



**THE  
PORTA-  
QUAD™!**

**Patented 2 Meter Cubical  
Quad Antenna. Folds into  
case for Transportation.**

**Case holds Antenna upright  
when in use.**

**Structure made of Acrylic and  
ABS Plastics, and Aluminum.  
Gives Approx. +8dBi of gain.**

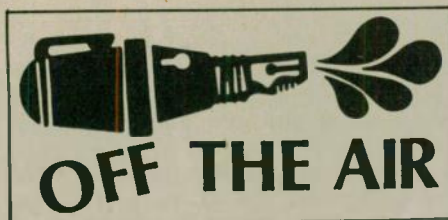
**IDEAL FOR EMERGENCY OR  
PORTABLE OPERATIONS, &  
APARTMENT DWELLERS!**

**220 MHz Version available  
upon request.**

**More Info Available.**

**\$73.95 CA. ADD TAX**

**RADIO ENGINEERS**  
**3941 MT. BRUNDAGE AVE  
SAN DIEGO, CA 92111**



## A pleased Kantronics customer

With all of the less than desirable business practices going on in this world, it is with pleasure that I relate a good experience to you.

After purchasing a Kantronics UTU Universal Terminal Unit, I discovered that there was a problem with "hand-shaking" between the UTU and the computer. After inserting a breakout box between the two, I found that the UTU was not sending a CTS or Clear To Send signal to the computer. This prevented the computer from ever sending anything to the UTU, because as far as the computer was concerned, the UTU just wasn't ready.

I called Kantronics and spoke with their service technician. He informed me that I was using an older version of Firmware (version 1.0) and that if I would give him my address, he would send me the updated version (1.3). I informed him that I had purchased this unit used, and he informed me that it was company policy to correct any manufacturing errors. The replacement EPROM was received about four days later, and it works just fine.

Thus, in this day of the quick buck, it is a pleasure to announce to the world that there are still quality firms out there doing business.

RICHARD MAINHART, WB3EXR  
Mystic, Connecticut

## NOT all foreign-made

In re: OFF THE AIR, November, pages 24 and 26

This is in regards to a letter from Arnold J. Meyer, KD6DB — ("Hams need to 'shape up'") — with which I tend to agree, but for one glaring exception! That is in paragraph 2, sentence 4: "... professionally built transceivers now all foreign made."

I just can't sit still on that one, because my station consists of all professionally built gear made in the USA — i.e., Ten-Tec Omni D transceiver, Ten-Tec Corsair transceiver, Ten-Tec Hercules 444 Linear, Ten-Tec 4229 Antenna Match, and a Ten-Tec Corsair II, just coming out of the boxes.

You can take the covers off these rigs and actually get your fingers in there. And all the boards have easily read component markings.

Just for the record, Athens, Greece is a long haul if you consider sending gear back to the factory!! And more for the record: my only real problem with any of this gear was a "near" lightning miss that took out some diodes in the Corsair transceiver. Oh yes — there are now "Transi Traps" in the coax feedlines.

More for the record: I am 74 years young, first licensed in 1931 as W1DCE (also a 2nd Class Commercial Radio Telegraph License), and this later led to a commercial seagoing career and 22 years active duty in the U.S. Navy, retiring as a warrant officer in 1961.

My first four receivers and first three transmitters were homebrew, ending with a 600W CW rig built in '46-'47 and used through 1953. But I'll admit that by that time the receivers were an NC173 and an HRO-50, then an HRO-60!

Have given Novice tests to two successful applicants here in Athens . . . no more around!

C.H. "JACK" JACKSON, SV0AA  
Athens, Greece

## 'GDZ Special' comments

In re: "GDZ Special antenna," BOB'S CORNER, Worldradio, November 1986, page 48

I've seen several mentions of this (1980 ARRL Antenna Book, for instance), and I became a ham long after 1960. I've used this antenna for years and as long as I was satisfied with a narrow section of each band, got a maximum SWR of 1.5:1 using a balun.

I started with a fancy kit with special spacers, but couldn't tune it. I found that I had to space the elements horizontally in a radial pattern with 80 meters north and south, 40 meters NW and SE, etc. I did get some use out of the plastic spacer rods from the kit as extra end insulators!

I did not need an antenna tuner until I got a General ticket and wanted to cover the whole 80-meter CW band.

ALAN REID, KA7LLD  
Springfield, Oregon

## Belgian ham has not forgotten

I want to send you this letter because one of my good friends — Edwin "Ed" Lausman, W4RKB, from Louisville, Kentucky — became a Silent Key on August 31, 1986.

On the road back home, coming from Tennessee where he did some radio amateur business, he got caught in a bad rainstorm, lost control over his car and slid in front of a big truck. He was

## PREAMPLIFIER

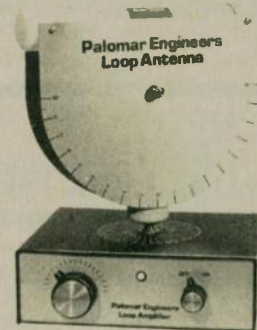


Can't hear the weak ones when conditions are bad? Receiver lacks sensitivity on 20, 15 or 10? Get the world famous Palomar pre-amplifier. Tunes from 160 to 6 meters. Gives 20 db extra gain and a low noise figure to bring out those weak signals. Reduces image and spurious responses too.

An RF sensing circuit bypasses the pre-amplifier during transmit. The bypass handles 350 watts.

Model P-410X (for 115-v AC) or Model P-412-X (for 12-v DC) \$149.95. Model P-408 (SWL receive only for 115-v AC) \$129.95. Add \$4 shipping/handling in U.S. & Canada. California residents add sales tax.

## LOOP ANTENNA



Loops pick up far less noise than other antennas. And they can null out interference. Palomar brings you these features and more in a compact desktop package. The wideband amplifier with tuning control gives 20 db gain. Plug-in loops have exclusive tilt feature for deep nulls. Loops are available for 10-40 KHz, 40-150 KHz, 150-550 KHz, 550-1600 KHz and 1600-5000 KHz.

Model LA-1 Loop Amplifier \$84.95. Plug-in Loops (specify range) \$62.95 each. Add \$4 shipping/handling in U.S. and Canada. California residents add sales tax.



Send for FREE catalog that shows our complete line of noise bridges, SWR meters, pre-amplifiers, loop antennas, VLF converters, audio filters, baluns, RTTY equipment, toroids and more.

# PALOMAR ENGINEERS

BOX 455, ESCONDIDO, CA 92025  
Phone: (619) 747-3343

killed instantly. This happened near Cave City, Kentucky.

This man was someone special to me. He was not only one of my radio amateur friends, but he was also one of my good veteran friends, too.

When he was 19, he fought in WWII for my freedom against a stubborn enemy under horrible odds, in what is called "The Battle of the Bulge" in the Belgium Ardennes area. He served in the 143rd AAA gun battalion. This man and his comrades stopped one of the most brutal SS Panzer Divisions under command of Jochen Peiper at Stoumont-Station.

I met Ed on the air about three years ago, January 27, 1984. Since then, we wrote many letters, exchanged books about WWII and I visited places where he and his comrades once fought for a free Belgium. I sent him many photos too. We had a great time.

This letter is the least I can do for this radio amateur-veteran friend. It was very hard to lose him. I also want to let your veteran-ham readers know that we have not forgotten, even "40 years after." Ed Lausman, W4RKB, I am sure you are in heaven and I was proud to call you a friend.

EDGARD "ED" POTS, ON6PQ  
Wachtebeke, Belgium

## UPGRADE AMATEUR RADIO LICENSE

Let your computer test you before the license examination. FCC Amateur License Pool Questions. Complete multiple choice answers. Computer generated questions. Keeps running score (percentage) so you know how well you are doing. User friendly. For IBM PC/XT/AT and PC "look alikes" using DOS 2.1+ also Apple II+, IIe, & IIc having 128K of memory using ProDos or Apple Dos 3.3.

NOVICE	\$24.95
TECH/GENERAL	\$34.95
ADVANCE	\$34.95
EXTRA	\$34.95

Each Sold Separately. Add \$1.50 for shipping & handling. Phone orders - Visa/MC. Illinois residents add 7% sales tax.

**DIAMOND SYSTEMS,  
INC.**

P.O. Box 48301 NILES, IL. 60648  
(312) 763-1722

## Fancier license solution

In re: "Could fancier licenses raise renewal rate?", November 1986, page 24

I agree wholeheartedly with Jerry Prus, N2CNE, BUT:

As the FCC is already overloaded, for a paltry \$3 one can dress up "A very insignificant-looking piece of cheap paper certificate for all of his hard efforts. Not much to show a newcomer what his or her credentials will look like."

If Jerry and all others with similar complaints will carefully peruse the ad(s) in Worldradio, they will find the answer to their problem and end up with a very "official-looking" 8½" x 11" cer-

tificate hand-lettered with their name and call sign, plus slots for inserting their "insignificant-looking" license. It's a very worthwhile dress-up and makes one proud to show to friends. On upgrading, the same may be used for the new license, unless — of course — the call sign has changed. I liked mine so well I ordered four for newcomer friends.

If Jerry and others will look on page 42 of the November issue (the same issue his letter appeared), he will find the answer. Previous editions also contain the information mentioned.

NEIL CHRISTENSEN, W6ERL  
Reno, Nevada

## Help find children

In a past issue of Worldradio (September 1986, page 21), there was an article about a ham club that had set up a booth at a public mall and were making videotapes of children. These tapes were kept by the parents in a safe place so that if their child was abducted, they would have these pictures of the child and other pertinent information.

This is a very good idea, but it is too late for the children who are now missing. There are many organizations who are publishing pictures of these children, but it still is not widely published.

Why couldn't the four major ham magazines take one page, both sides, and print an 8" x 10" color picture of a child on one side and a description with identifying marks on the other? With over 400,000 hams in the United States, the four magazines would be getting these pictures to quite a few hams who could keep their eyes open. This service would be in the interest of the public.

One person could gather the pictures from the right law enforcement organization and send one picture a month to

each of the magazines. Or the same person could send a different picture to each magazine. One of the magazines could have a staff member take care of this. How long could it take to mail a picture?

Give this some thought. Maybe we could do our part in helping to find these children.

GEORGE JOHANNSEN, WB0ZQN  
St. Clair, Minnesota

## ARRL election results

The ARRL Committee of Tellers met November 20 to count ballots in the elections for Director and Vice Director. The first listed candidate is declared elected for the 1987-8 term.

Central Division, for Director: \*Edmond A. Metzger, W9PRN, 2268; James J. Coleman, KA6A, 1887; Bruce B. Woodward, W9UMH, 653.

Central Division, for Vice Director: \*Howard S. Huntington, K9KM, 3035; Kenneth A. Ebner, K9EN, 1732.

Hudson Division, for Director: Stephen Mendelsohn, WA2DHF, 2590; \*Linda Ferdinand, N2YL, 1097; Vincent J. Biancomano, WB2EZG, 728.

Hudson Division, for Vice Director: Paul S. Vydareny, WB2VUK, 2469; Gary J. Ferdinand, W2CS, 1960.

New England Division, for Vice Director: Robert B. Weinstock, KN1K, 1982; Clevis O. Laverty, W1RWG, 1924.

Northwestern Division, for Director: Rush S. Drake, W7RM, 2523; \*Mary E. Lewis, W7QGP, 1777.

Northwestern Division, for Vice Director: William R. Shrader, W7QMU, 2908; Bradley Wells, KR7L, 1354.

West Gulf Division, for Director: Jim D. Haynie, WB5JBP, 2660; \*Raymond B. Wangler, W5EDZ, 2085.

\*incumbent

The new Directors and Vice Directors took office on January 1, 1987.

—ARRL Letter



An organization of amateurs licensed over 25 years who are interested in preserving the history and traditions of Amateur Radio and in pioneering the developments of the future.

For information, write:

**Quarter Century Wireless  
Association**

1409 Cooper Drive Irving, TX 75061

# AWARDS



Kenneth M. Miller, K6IR

## RCA honors K6IR

Kenneth M. Miller, K6IR, was presented with the Radio Club of America's Sarnoff Award at the organization's annual awards banquet in the New York Athletic Club on November 21, 1986.

The award, named after David Sarnoff, founder of Radio Corporation of America, is given annually to the person who has made the most significant contribution to the advancement of electronic communication. The Radio Club was founded in 1909 for the interchange of knowledge of radio art.

During his lifetime career in electronics and related industries, Miller has been responsible for many technological innovations. A pilot and engineer in the aircraft industry for many years, he developed the first automatic pilot for general aviation use, a life-saving automatic rudder control to prevent airplanes from falling into a fatal spiral and the first solid-state automatic direction-finder for planes.

With his then-boss Bill Lear, he created the first eight-track audio tape player and cartridge in the mid-1960's.

Before leaving the Penril Corporation in early 1986, where he served as presi-

dent, CEO and director for 13 years, he was responsible for the development and sales of that company's sophisticated product lines. These included modems, test instruments, digital panel meters, high-performance power supplies and stereo systems.

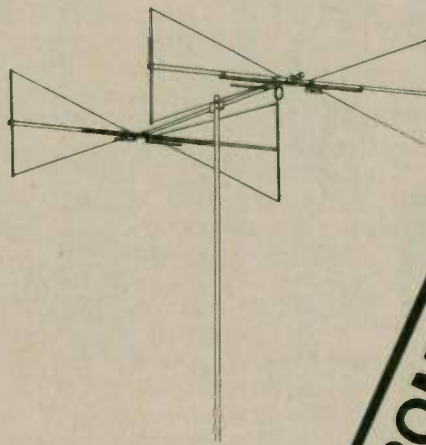
He expanded the manufacturing operations from the headquarters plant in Rockville, Maryland to facilities in nine states and plants in Europe, Japan and Mexico. He increased sales during that period from \$1 million to \$80 million.

Miller is a graduate of the Illinois Institute of Technology and the University of California. He is a licensed pilot and counts flying and international travel among his hobbies.

He has been a licensed radio amateur for over 40 years. From his radio shack in his Rockville, Maryland home, he has chatted with King Juan Carlos of Spain, King Hussein of Jordan, Japanese explorer Naomi Uemura en route to the North Pole by dogsled, Senator Barry Goldwater and residents of such islands as the Falklands and South Georgia in the South Atlantic. K6IR has confirmed radio contacts with more than 40,000 hours in over 320 countries.

The Sarnoff Award singles out Miller for his major contributions in radio communications and in applications of electronics to aviation, instrumentation and computers; also for his leadership of the Radio Club's Grant-in-Aid scholarship program. □

### The HF4B "Butterfly"™ A Compact Beam for 20-15-12-10 Meters



- Unique design reduces size but **not** performance.
- No lossy traps; full element radiates on all bands.
- Retrofit kit for 17 meters coming soon.
- Turns with TV rotor
- Only 17 lbs.

HF ANTENNAS FROM BUTTERNUT

#### Butternut Verticals

Butternut's HF verticals use highest-Q tuning circuits (not lossy traps!) to outperform all multiband designs of comparable size!

#### Model HF6V

- 80, 40, 30, 20 15 and 10 meters automatic bandswitching.
- Add-on kit for 17 and 12 meters available now.
- 26 ft. tall

#### Model HF2V

- Designed for the low-band DXer
- Automatic bandswitching on 80 and 40 meters
- Add-on units for 160 and 30 or 20 meters
- 32 feet tall - may be top loaded for additional bandwidth.

For more information see your dealer or write for a free brochure



BUTTERNUT ELECTRONICS CO.

405 East Market

Lockhart, Texas 78644

## Change of address?

If you are moving, we need to know your new address six to eight weeks before the address becomes effective.

# YASME awards

## YASME

A beautiful plaque will be issued to any radio amateur or SWL who submits proof of contact (QSL cards) from 30 contacts with YASME officers, past and present. Any call they had counts, and any contact with past or future DX-peditions by any YASME member (see list below).

## YASME Supreme

A replica of the yawl YASME will be

issued to any amateur or SWL who submits proof of contact with 60 YASME members. The replica of the YASME is a brass ship mounted on base, with name, call and award number on base.

All applications to be submitted to YASME Award Manager George McKercher, W0MLY, Box 7, Rippey, IA 50235. All applications should include QSL cards and contact lists (showing call, date, time).

Some DXpeditions with Martti Laine, OH2BH, were operated by other than Martti; the QSL should show who was

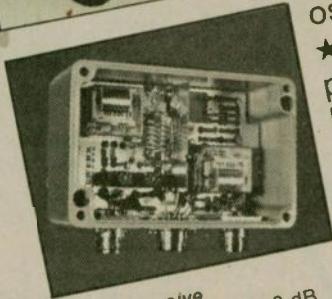
operator. If Martti is not indicated as operator, it is not valid for the YASME awards.

3C0AN	JA2KG	W0MLY/TJ8
3C1EG	JA2US	W0MLY/TL8
3D2KG	JY8KG	W0MLY/TN8
3D6QL	K2CC	W0MLY/TR8
4T4WCY	K3Z0	W0MLY/TT8
4W1MY	K3Z0/HK3	W0MLY/TZ2
5L2KG	K4BV0	W2USA
5T5KG	K4KCV	W4KE
5V1KG	K4WAB	W4DVL
5V4MY	K5JLQ	W4QDZ
6L6MY/Qatar	K5RC	W4TO
6T1YP-Martti	K6ALH	W4ZEW
6W8CD	K6AN	W5IGJ
7P8KG	K6AWP	W5NC
8P6QL	K7JDG	W6AH1
9G1KG	K7JG	W6AM
9J2LC	KC6SZ	W6ANS
9K2QL	KE6ITU	W6BSY
9L1KG	KG4KG	W6BWS/KG6
9N1OAT	KG6SZ	W6DOD
9Y4KG	KG6SZ/KC6	W6GN
AA5LES	KL7DTB	W6IPF
AC0MLY	KL7JDG	W6KFD
AJ3AA	KL7KG	W6KG
AX2HD	KL7USA	W6KG/4X
C21NI*	KN6ALH	W6KG/A4
CN8HF	KV4AA	W6KG/A7
CR1OAB	KZ5WD	W6KG/AJ3
CT2YA	LUSHFI	W6KG/CE0
CT3AU	N6KB	W6KG/CP6
CT3BZ	NSF	W6KG/HC8
CT9AT	N7NG	W6KG/HK0
DL4ZB	OH0AM	W6KG/KG6
DL4ZBD	OH0V	W6KG/PZ1
DL4ZC	OH2AM/OH0	W6KG/SV5
EA8CR	OH2BH	W6KG/SV9
FA8JD	OH2BH/ZD3X	W6KG/TI5
FG0FOK	OJ0DX-Martti	W6KG/ZS
FG0FOL/FS	OJ0WR-Martti	W6LDD
FK0KG	SV1GA/A	W6MLY
FL8MY	T19RC-W0MLY	W6OAT
FM0FOL	TU2CA	W6QL
FO0DCW	TY2KG	W6QL/6Y5
FO0XX	TY2MY	W6QL/BR1
FO0XX/MM	VK2EO	W6QL/CE0
FO8AN	FW8DW	W6QL/HK1
FW8DW	FY0FOL	W6QL/HK3
FY0FOL	G2DC	W6QL/PJ2
G2DC	G5ACI/AA	W6QL/SV5
G5ACI/AA	G7DW/MM	W6QL/VP2A
G7DW/MM	GC5ACH/W6KG	W6QL/Z2
GC5ACH/W6KG	GC5ACI/WB6QEP	W6QL/ZP5
GD5ACH/W6KG	GD5ACH/WB6QEP	W6RGG
GD5ACI/WB6QEP	HC2VB	W7JPG
HC2VB	HC8VB	W7KG
HC8VB	H16XQL	W7YA
H16XQL	H18XAL	W8EWS
H18XAL	HK0AA-Danny	W9AC
HK0AA-Danny	HK3NBB	W9SZR
HR0QL	HS1ABD	WA5LES
HS1ABD	HS3AL	WA6DFR
HS3AL	HS5ABD	WA7NIN
HS5ABD	HZ1AB**	WW6ITU
HZ1AB**	HZ1MY	XE2FU
J2AHI	J2ODU	YJ8KG
J2ODU	J2USA	YV0AB
J2USA	J3ABV	ZB2AX
J3ABV	J6LOO	ZD3I
J6LOO	J7DBB	ZF2CI
J7DBB	JA1KSO	ZK1BY
JA1KSO		ZM6AW
		ZS9/W6QL

\*3/1/76 through 3/25/76  
\*\*2/19/83 through 2/20/83

**THIS IS IT!**  
...an affordable high  
quality masthead  
VHF/UHF preamplifier

HEAR SIGNALS THAT YOU'VE  
NEVER HEARD BEFORE



- ★ Negligible losses on transmit, the SWR is  $\leq 1, 1:1$ , with a 50 Ohm load at input.
- ★ Professional HF-VOX and PTT for short switching time between receive and transmit.
- ★ Because of the matched 50 Ohm output, a modern receiver with a GaAsFET-input-transistor will not oscillate.
- ★ VOX operation is possible up to 150 Watts PEP. PTT operation up to 750 W PEP.
- ★ The price...only \$179.00 Prices subject to change without notice

**SPECIFICATIONS:**  
Receive Noise figure ..... 0.8 dB  
Gain ..... 18-20 dB  
Transmit Switchable power (VOX) ..... 150 W  
Max TX power (PTT) ... 750 W PEP

the Landwehr masthead preamplifier, available only from Henry Radio  
...in fact, we have it all... We are OSCAR specialists. Henry Radio leads the way. Let us answer your questions and help you with your needs. Give us a call — at the L.A. store ask for Jack (WA6VGS).

**Henry Radio**

2050 S. Bundy Dr., Los Angeles, CA 90025

TOLL FREE ORDER NUMBER: (800) 421-6631  
For all states except California.  
Calif. residents please call collect on our regular numbers.

## School

(continued from page 20)

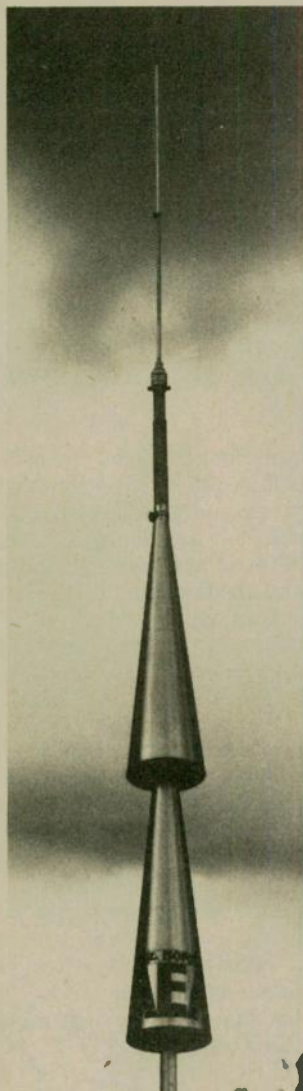
to have a lot on that.  
Once we have the clubs in schools, then is the time to really lean on the PR — get things on the air and get the kids to come to the clubs. But without the clubs, you don't have the infrastructure, and you're going to be in the same position I was when I went to a high school without a radio club. I didn't do anything for a couple of years except build audio equipment and bootleg a lot.



# Put More Punch in Your Packet

Outstanding mechanical design makes the IsoPole the only logical choice for a VHF base station, especially for Packet operation. All IsoPole antennas yield the **maximum gain attainable** for their respective lengths and a maximum signal on the horizon. Exceptional decoupling from the feed line results in simple tuning and a significant reduction in TVI potential. The IsoPole antennas are all impedance matched in the factory so that no field tuning is required. The IsoPoles have the broadest frequency coverage of any comparable VHF base station antenna. This means no loss of power output from one end of the band to the other, when used with SWR protected solid state transceivers. **Typical SWR is 1.4 to 1 or better across the entire band.**

A standard 50 Ohm SO-239 connector is recessed within the base sleeve (fully weather protected). With the IsoPole you will not experience aggravating deviation in SWR with changes in weather. The impedance matching network is weather sealed and designed for maximum legal power. The aerodynamic cones are the only appreciable wind load and are attached directly to the support (a standard TV mast which is not supplied).



## High Performance Hand-Held Antenna — The Hot Rod

The Hot Rod antenna can be expected to make the same improvement to hand-held communications that the IsoPole antennas have made to base station operation. **Achieve 1 or 2 db gain** over ANY 5/8 wave two meter telescopic antenna. The factory tuned HR-1 is 20% shorter, lighter and places far less stress on your hand-held connector and case. It will easily handle over 25 watts of power, making it an excellent emergency base or mobile antenna. In the collapsed position, the Hot Rod antenna will perform like a helical quarter wave. Three Hot Rods are available; HR-1 1/2 wave 2M Ant., HR-2 for 220 Mhz, and HR-4 for 440 Mhz. Amateur Net Price on all Hot Rods is \$19.95.

For either base station or hand-held operation AEA has the perfect VHF/UHF antenna. Put more punch in your Packet station with an AEA IsoPole or Hot Rod antenna. To order your new antenna contact your favorite Amateur Radio Distributor. For more information contact Advanced Electronic Applications, P.O. Box C-2160, Lynnwood, WA 98036, or call 206-775-7373.

### IsoPole Specifications

Model	144	220	440
Freq. Coverage (Mhz)	135-160	210-230	415-465
2.1 VSWR bandwidth	>12Mhz @ 146Mhz	>15Mhz @ 220Mhz	>22Mhz @ 435Mhz
Power Rating	1 kw	1 kw	1 kw
Gain**	3 dbd	3 dbd	3 dbd
Radiating Element Length	125.5" (3.2m)	79.25" (2m)	46" (1.2m)
Amateur Net Price	\$49.95	\$49.95	\$69.95

\*\*dbd — db gain over a dipole in free space

Prices and Specifications subject to change without notice or obligation.

**AEA** Brings you the  
Breakthrough!

# Silent Keys

## David Minton, WB6KFC

Northern California's "Man From MARS," David H. Minton, WB6KFC, died unexpectedly at his home in Rancho Cordova, California, on November 14, 1986. Minton, who had headed Mather Air Force Base's Military Affiliate Radio System (MARS) support team for over a decade, was widely known throughout the world for his humanitarian acts and compassion for the unfortunate.

Born in Saint Joseph, Missouri in 1918, Minton's career spanned an era ranging from the steam locomotive and land telegraph to modern aviation and the computer. His lifelong passion for communication began as an apprentice telegrapher at his uncle's side with Western Union in 1928. Soon, he was assisting in the rail repair yards. Before long, he was a highly decorated naval aviator, piloting seaplanes and bombers in World War II. He made the Navy a career, working at the Naval Research Laboratory on prototype computers and later on worldwide weather and radio-navigation projects.

He held numerous degrees, including Bachelors of Science in Physics, Mathematics and Meteorology, and had done extensive graduate work in Environmental Planning and Business Administration.

The king of Morocco had personally cited Minton for setting up the first radio link out of that country in the aftermath of one of the largest human disasters ever recorded — the 1959 earthquake which destroyed the city of Agadir.

Over the years, he relayed more than 100,000 phone calls for service families through the Amateur Radio station at his home. During the Viet-Nam era, the streets of his Rancho Cordova neighborhood were often jammed as family members came to inquire about soldiers, sailors airmen in the combat zone. At his own expense, he installed additional telephone lines into his home to handle the volume of calls, and at one time had to schedule shifts of assistants to help run the station.

In 1984, the Air Force presented Minton its Meritorious Service Award for Community Service for his many years of work as a MARS volunteer. In 1980, he received the "Tam Award" from Senator S.I. Hayakawa in recognition of his community service.

While working on many community projects in the mid-1970's, Minton devised a system for taking Amateur



David H. Minton, WB6KFC (left) and Gen. Curtis E. Lemay, W6EZV (Ret.). (1980 photo by Jay Dunlevy-Wilson, N3DAK)

Radio Equipment to local schools for disabled children each Christmas so that the students could talk to Santa Claus at the North Pole on shortwave. His annual visits were, according to the principal of one institution "...the single most important event in the lives of our children. Youngsters who have never responded to an adult have found ways to communicate through Mr. Minton."

Gradually expanding the "Operation Hello Santa," he began regular visits to special schools and constant care facilities. Using his extensive computer system as well as his VHF amateur gear, he developed a radically new and unique teaching system which allowed communication with persons previously thought to be incapable of speaking, reading or writing. Always traveling with his portable Air Force MARS gear, Minton became known throughout northern California as "THE MAN FROM MARS."

The worldwide broadcast to all MARS stations announcing the loss of Minton

concluded with these words: "Christmas 1986 will be the first in almost 40 years that service members will not be calling home through a radio station operated by David Minton. For over 20 years as a naval officer operating morale-welfare stations, later as an Army MARS operator, and for the last 20 years with Air Force MARS, Dave Minton made a unique and invaluable contribution to his fellow man that was felt around the world."

He had been featured in numerous TV clips and newspaper articles concerning his use of Amateur Radio to work with the disabled. Through the years he had been active in coordinating amateur emergency communications with many organizations, including the American Red Cross in Sacramento.

He is survived by his wife, Mary Dee, sons David and Terry and daughter Cris, and seven grandchildren. One grandson, Gabriel D. Minton, KB6GQB, carries on the Minton tradition in amateur communications.

Dave's admonition to "Elmers" and teachers in general had always been: "It's not that your students don't know how to learn. It's just that you haven't found the way to teach them!" For Dave Minton, few things seemed difficult and nothing seemed impossible. The Amateur community and leaders in special education will miss him for a long time. — Jay Dunlevy-Wilson, N3DAK □

## Virgil Neilly, K3CA

Virgil E. Neilly, K3CA, of State College, Pennsylvania, became a Silent Key on February 14, 1986.

Virgil was very active in doing phone patching with Latin American countries

### START COPYING CW THE EASY WAY!

\*\*Start copying words instead of letters! \*\*

\*\*Master the standard exchange in just a few evenings! \*\*

\*\*Gain on-the-air confidence quickly! \*\*

THE QSO-TRAINER™ Code Course · For the ham who already knows the code. If you have been a ham for a while, tried the "traditional" random-letter approach to code practice, and still don't have the on-the-air confidence you'd like—this course may be exactly what you need.

Easy-to-learn lessons on two 60-minute audio cassettes.

Send \$14.95 + \$2.00 shipping and handling (IN residents add \$0.85) to:

AVC INNOVATIONS, INC.

Dept. W, P.O. Box 20491

Indianapolis, IN 46220-0491

BUSINESS SIZE SASE GETS DETAILS

in the '60s and '70s. Before retiring in 1977, he was an adviser to the Penn State ARC for 11 years. He had been an associate professor of engineering at the school for almost 29 years.

A 1934 graduate of Glasgow (Kentucky) High School, he served in a Kentucky National Guard anti-aircraft unit from 1941-45, participating in five invasions: North Africa, Sicily, Salerno and Anzio in Italy, and Southern France. As one of the first WWII veterans to enroll at Penn State, he received his bachelor's degree in electrical engineering in 1948.

K3CA was a life member of the Penn State Alumni Association and of the ARRL. His radio equipment and antenna were donated to the Nittany ARC by his wife, Mary. □

## Esther Gardner, WA6UBU

A very special YL became a Silent Key September 24, 1986, leaving admiring memories with her many friends: Esther Gardner, WA6UBU.

She and Lyle, N6LB, had been married 59½ years, both dedicated to public service.

Esther earned her first call in 1960, to better serve her Girl Scout Troop while taking them on camping trips in the mountains. She'd been an active scout leader, both in Chicago and southern California, from 1932 to 1970, and never lost her interest in scouting.

She was a devoted member of the Order of Eastern Star. Esther also served over 22,000 hours of service as a volunteer Pink Lady in the Long Beach Community Hospital.

The Young Ladies' Radio Club of Los Angeles elected her president after she served in other offices; her graciousness and willingness to help made her very popular.

Esther and Lyle were most active in ARES and did emergency work whenever called. She was a life member of QCWA and belonged to the Long Beach Chapter, and served as secretary for the Associated Radio Amateurs of Long Beach. Esther and Lyle were very interested in and helpful to W6RO, the station aboard the *Queen Mary*.

In addition to her public service work, Esther Gardner was a loving wife and mother. There are two daughters, four married grandsons and six great-grandchildren.

Esther, WA6UBU, will be remembered by everyone who knew her as a remarkable YL who left the world better than she found it. □

• People reaching People •  
Amateur Radio is what Worldradio is all about.

## NEW Super ComShack 64

Repeater Controller/Dual Remote/Autopatch

CODE PRACTICE GENERATOR WITH VOICE READBCK INCLUDED! TURN IT ON WITH YOUR ACCESS CODE!

The Super Comshack has features never before available & the cost is so low!!

### Super Repeater Controller

- \* Remotely programmable with Touchtones/ change up to 9 sets of access codes & parameters from HT!
- \* Synthesized speech consisting of high quality male or female digitized human voice
- \* Dual Remote base (H.F. and V.H.F.)
- \* Autopatch and Repeater Controller
- \* Programmable CW or voice ID and courtesy beep
- \* Automatic voice clock & activity timers
- \* Multiple commands can be executed at once (up to 16 digits per command string)
- \* Sub-audible tone compatible
- \* Alarm clock & auto-excite command string!
- \* Optional cartridge eliminates disk drive

### Special Club Features

- \* Generates random code practice @ any speed with voice readback after each 20 random code group!
- \* Set CW speed & pitch from your H.T.
- \* 5 touchtone defined voice ID tail messages!

### Autopatch Specifications

- \* 300 Touchtone loadable Autodial numbers plus 10 Emergency Autodial (quick access)
- \* 300 Reverse patch call signs uploaded from your H.T./general or directed page modes
- \* Incoming caller receives voice message & may select the station to be paged with 3 digit code
- \* Phone number memory readback
- \* Toll restrict-leading 1/0 and 3 digit prefix
- \* Full or half duplex (repeater on/off)
- \* Storage of MCI/Sprint access codes
- \* Call waiting allows switching to second phone line
- \* Touchtones are regenerated onto the tel./speed dial
- \* Touchtone or dial pulse mode
- \* Ring detected while in all remote modes
- \* Last number redial memory
- \* Single digit resets autopatch to dial tone

### Dual Remote Base Specifications

- \* H.F. remote supports: Yaesu FT-757/767, Kenwood TS-440/940, Icom IC-735
- \* 2nd remote or link supports: Yaesu FT 727 (VHF & UHF); Kenwood 7950/TS-2530/70 series with RAP I (Remote-a-Pad)
- \* 10 H.F. Memory channels/enter or recall
- \* Automatic USB/LSB/FM mode select
- \* Scan up/down, fast/slow, or 100hz steps
- \* Control CS-8 relay/latch option with master reset & status announcement
- \* All control inputs are voice confirmed including frequency, mode, scan status, time, outputs on/off
- \* autopatch audible ring/page while in all modes

### System Options

- \* 8 Relay control (CS-8) \$ 79.95
- + 3 DPDT 2A relays, 5 open collector outputs
- + user defined 2 letter function name
- + on/off position user defined
- + automatic PTT fan/blower control line enables when repeater or any PTT line is activated
- \* Optional CMOS auto-boot 72k EPROM Cartridge programmed with your parameters \$99.95
- \* RAP I Keypad controller for VHF remote \$149.95

model CS64S-\$349.95 (wired and tested)

includes: computer interface, disk, cables & manual, duplex & simplex versions are supplied (some features not applicable when in simplex mode) (add \$4.00 shipping / Ca. residents add 6%)

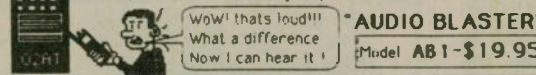
MASTERCARD/VISA/CHECK/M.O./COD

## Engineering Consulting

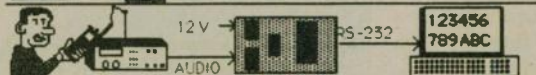
583 Candlewood St.  
Brea, Ca. 92621  
tel: 714-671-2009

### Audio Blaster Module IC-02AT/IC-04AT/IC2AT

Module installs inside the radio in 15 Min. Boost audio to 1 watt! Low standby drain/Corrects low audio/1000's of happy users (Works in other H.T.'s too)



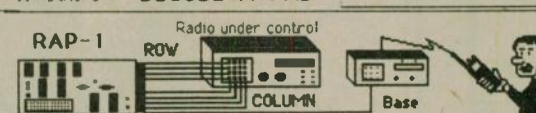
**"AUDIO BLASTER"**  
Model AB1-\$19.95



### Touchtone to RS-232 (300 baud interface)

Program your computer in basic to decode multidigit "strings", sound alarms, observe codes. Simple to install, +12 VDC /audio, includes basic program for C64/VIC20/C128, all computers!

**DECODE-A-PAD** Model DAP \$89.95

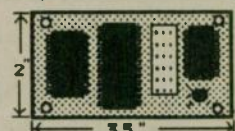


Remote Keypad Rows & Columns Controller Plus Two 4 digit decoders (on/off)/Will control frequency of any keypad entry radio such as the Kenwood 7950/2530/IC04-AT. Easy to install! In parallel with existing keypad/Use with ComShack 64 as a freq. controller or with Pro Search rotor control box/A versatile board for all remote control applications. The latches may be used for on/off or momentary

**"REMOTE-A-PAD"** Model: RAP-1 \$149.95

### Touchtone 4 Digit Decoder & on/off latch

50,000 combinations



### Repeater on/off Master control

Wired and tested +5 to +12 Volts/ User programmable to 50,000 codes/ All 16 digits/Send code once to turn on, again to turn off/ Momentary & Latching output/drives relay/LED latch indicator/Optional 4 digit extra custom latch IC's \$8.95 each/add as many latches as you want to your external board

Model TSD \$59.95



**Touchtone Decoder Kit**  
M957 Teltone  
5 to 12v 15ma  
(SSI-201 compatible)/Inc 3.58 Mhz Crystal/ 22 pin socket, Data Sheet, Sample circuits, decoder specs, all 16 touchtones, BCD/HEX  
No filters req

Model TTK \$22.95



# KF6GU

## STATION APPEARANCE

If you have a station you're proud of, that is **NEAT** in appearance (i.e., no hanging wires, loose papers, etc.), take a picture and submit it to our **STATION APPEARANCE** contest. All photos will be returned.

Joseph H. Berns, KF6GU, of Beverly Hills, California, wins the February **STATION APPEARANCE** with this photo of his station. Following is a description of his station equipment.

On shelf above desk (left to right): Tax-an 12" monitor, Yaesu SP901P speaker/phone patch, Yaesu YO901 multi-scope, ICOM 751 transceiver (on top of the 751 is a Kenwood World Clock), Yaesu FC902 antenna tuner, Kenwood SP230 speaker (used for 2-meter work), Lunar preamplifier for 2 meters, and Panasonic TV-AM-FM stereo receiver.

On desk (left to right): Star STX 90 thermalprinter, Astatic desk mike, Hal KB2100 keyboard, Hal CT2200 RTTY communication terminal, HAL ARQ1000 AMTOR, ICOM desk mike, Ham IV rotator, Palomar preamplifier, TRS-80 Model 100 computer (used to keep log), Bearcat 300 scanner, Yaesu FT-209RH 2-meter handi-talkie with speaker/mike, and Yaesu HC15 quick-charger.

Gear goes up 50 feet to KLM 34A



4-element tribander, Butternut 10/15/20/40/80-meter vertical antenna, Butternut 2-meter vertical antenna, and a long-wire (mainly for general coverage receiving).

If you are curious as to what is atop the circular table to the left of the desk,

it is a telephone answering machine. Behind me is part of my hi-fi gear.

Gun owners might be interested in the weapons on the wall: (top) Remington 870 12-gauge trap shotgun, (middle) Browning BAR 30-06 rifle, and (bottom) Wetherby MARK XXII .22 caliber rifle.

## 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!*

*Lawrence I. Cotariu, KA6GVI, of Skokie, Illinois, is this month's winner. He'll be receiving a free one-year subscription to Worldradio.*

I lived in a multi-unit apartment

building in Chicago, Illinois. One day, the apartment next to us was rented. In the afternoon, I could have sworn that someone was whistling CQ. I looked outside and saw nobody, but I kept hearing someone whistling Morse code. I thought I was imagining things and locked myself in the washroom!

The next morning it happened again. Then the CQ turned into a call sign and a message for me: "Hi, my name is Woody and I'm your new neighbor." I put my ear to my bedroom wall and sure enough, a ham had moved in next to me.

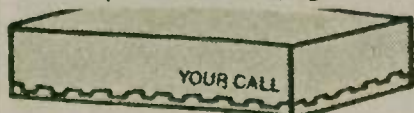
How did he know his new neighbor was also a ham? The building's janitor told him when they were looking at the vacant apartment. □

## KAGIL "over the top" DUSTCOVERS

... over one thousand in use worldwide ...

- PROTECTS your gear
- Waterproof PAK Nylon
- PERSONALIZED
- FIVE Colors
- Most gear \$7.99-11.99

Now offering MINI-Covers @ 1.99 — \$2.39 — \$4.29 up to 15" total H x W x D



- SAMPLES & Order Forms
  - SEND SASE NOW TO:
- KAGIL • P.O. Box 06780  
Portland, OR 97206**

## Are you radioACTIVE?



Dean LeMon, KRØV sure is! Dean got active in Amateur Radio when he was 16 years old and earned his Extra Class license in less than four years! "It's a fascinating hobby and a great

way to meet all kinds of new people from all over the world."


Dean has cerebral palsy and got started in Amateur Radio with help from the Courage HANDI-HAM System. The HANDI-HAM System is an international organization of able-bodied and disabled hams who help people with physical disabilities expand their world through Amateur Radio. The System matches students with one-to-one helpers, provides instruction material and support, and loans radio equipment.

Isn't it time you got radioACTIVE with the Courage HANDI-HAM System?



Call or write the Courage HANDI-HAM System  
WØZSW at Courage Center,  
3915 Golden Valley Road,  
Golden Valley, Minnesota  
55422, phone (612) 588-0811.

# Mobile or Remote — Emergency or Routine . . .



## Trust Your Data Transmissions to Kantronics' RF Packet Modem

Whether you require emergency mobile communications, or ongoing remote data collection, you can rely on the RF Packet Modem™ for error-free, high-speed data exchange.

The RF Packet Modem (RFPM), combined with your radio and terminal/computer or telemetry sensor, allows you to both access and receive vital digital information via radio link in a local area network.

The RFPM, while keeping transmissions station specific, also allows multi-users on one frequency simultaneously, increasing channel usage. And unlike voice, digitally transmitted data gives you hard-copy capability for permanent transmission records.

The RFPM's unique "error-checking

protocol" guarantees data sent or received to be error-free — a must for emergency situations or remote data collection. And the optional "key encryption" assures that your information stays confidential.

Operating in an X.25-like protocol, packets are sent at 300, 1200 or 2400 BPS. Our 16K RAM buffer with flow control allows computer or terminal rates of 300-9600 BPS.

Additional applications for the RFPM include security computer-to-computer links, and automatic repeater operation.

To find out how the RFPM can improve your emergency or remote data communications, contact **Kantronics, The RF Data Communications Specialists.**

**Suggested List \$439.00**

**\$499.00 (with encryption)**

 **Kantronics**  
RF Data Communications Specialists

1202 E. 23 Street Lawrence, Kansas 66046 (913) 842-7745

Dealer inquiries  
welcome.

WORLDWIDE DISTRIBUTION



# HAM RADIO OUTLET

LARGEST HAM OUTLET IN THE WORLD

OUR COMMITMENT TO YOU IS  
QUALITY, ACTION & SERVICE.

## 7 STORE BUYING POWER

### KENWOOD TS-940S

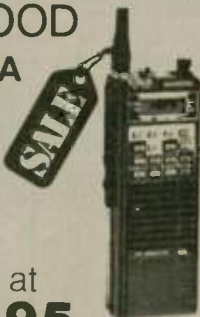


TOP-OF-THE LINE  
HF TRANSCEIVER

**GREAT PRICE, CALL**

### KENWOOD TR-2600A

**SUPER  
SALE!**



A few left at  
**\$269.95**  
plus free spare PB-26

### HAM RADIO HOME STUDY NOVICE VOICE COURSE



- Updated novice-voice questions
  - 6 stereo code & theory cassette tapes
  - 2 text books, code oscillator, key & battery
  - Color Ham Bands wall chart & frequency list
  - Sealed novice exam for a Ham friend to give you the code & theory test in your home
  - FCC license application forms & instructions to your examiner. **Ideal for spouse & the kids!**
- \$49.95**



**MA-40**  
40' TUBULAR TOWER  
**\$745 SALE! \$549**

**MA-550**  
55' TUBULAR TOWER  
**\$1245 SALE! \$899**  
• Handles 10 sq. ft. at 50 mph  
• Pleases neighbors with tubular streamlined look

**TX-455**  
55' FREESTANDING  
CRANK-UP  
• Handles 18 sq. ft. at 50 mph  
• No guying required  
• Extra-strength Construction  
• Can add raising and motor drive accessories

Shown with optional  
MARB rotor base

**IN STOCK FOR QUICK DELIVERY  
OTHER MODELS AT GREAT PRICES**

### hy-gain

#### CRANKUP SALE!

**Single Strength**  
(handles 9 sq. ft.)  
HG37SS - 37' Tower  
HG52SS - 52' Tower

**Heavy Duty**  
(handles 16 sq. ft.)  
HG54HD - 54' Tower  
HG70HD - 70' Tower

- All steel
- Includes base & rotor plate
- No guying required
- Hot dip galvanized
- Accessories available

**CALL FOR PRICE!**

### KENWOOD R-5000

**NEW**



High Performance Receiver

- Covers 100 kHz - 30 MHz in 30 bands
- Superior dynamic range
- Computer control option

**LOW PRICE!**



### YAESU

#### FT-727R

**NEW**

5w, Dual Band  
2m/440 MHz

**Enhanced Version  
Now Available!**

**GREAT PRICE!**



### LUNAR

30w in, 180w out,  
with low-noise  
preamp!

MODEL  
2M30-180P  
for 2 meters  
**SALE!**

**\$219.95**

From the **Originator** of the  
**QUALITY VHF AMP/PREAMP COMBO!**

Full Line Now Includes  
UHF Models with  
GaAs FET PREAMP!



## All Major Brands in Stock Now!

# CALL TOLL FREE (800) 854-6046



Toll free including Hawaii. Phone Hrs: 7:00 am to 5:30 p.m. Pacific Time. California, Arizona and Georgia customers call or visit nearest store. California, Arizona and Georgia residents please add sales tax. Prices, specifications, descriptions subject to change without notice.



WORLDWIDE DISTRIBUTION



# HAM RADIO OUTLET

LARGEST HAM OUTLET IN THE WORLD

NEW ATLANTA STORE!  
EASY SERVICE FOR  
OUR EASTERN CUSTOMERS

## 7 STORE BUYING POWER

### ICOM IC-R7000



25 MHz-1300 MHz

**IN STOCK FOR IMMEDIATE DELIVERY**

### ICOM IC-275A/275H **NEW**



138 - 174 MHz  
IC-275A (25w) IC-275H (100w)

**GREAT PRICE!**

### ICOM IC-1271A



1.2 GHz Transceiver:  
The First Full-featured  
1240-1300 MHz Transceiver

**ARE YOU READY FOR 1.2 GHz OPERATION?**

### ICOM IC-28A/28H



2-METER MOBILES  
IC-28A (25w) IC-28H (45w)

**LOW PRICE!**

## February is ICOM Month!

7th Burlingame  
Anaheim

14th San Diego  
Phoenix

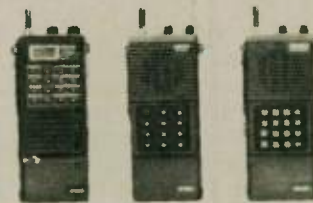
28th Oakland  
Atlanta  
Van Nuys

Special pricing will be honored at all of our locations for the entire month of February.

On the designated date at the above locations:

- Free prize drawing each hour
- Grand prize drawing (must be present to register and win)
- ICOM personnel available to demonstrate equipment

### ICOM HAND-HELD VHF/UHF



IC-02AT IC-2AT IC-3AT  
IC-04AT IC-4AT IC-3AT

### ICOM IC-735



The Latest in ICOM's Long Line of HF Transceivers

**CALL FOR LOW, LOW PRICE**

### ICOM IC- $\mu$ 2A/ $\mu$ 2AT

Mini Hand-Held AT Model w/ TT Pad

**GREAT PRICE!**



## All Major Brands in Stock Now!



**Bob Ferrero W6RJ**  
President  
**Jim Rafferty N6RJ**  
VP So. Calif. Div.  
Anaheim Mgr.

**ANAHEIM, CA 92801**  
2620 W. La Palma  
(714) 761-3033, (213) 860-2040  
Between Disneyland & Knotts Berry Farm

**ATLANTA, GA 30340**  
6071 Buford Hwy  
(404) 263-0700  
Neil, Mgr. KC4MJ  
Doraville, 1 mi. north of I-285

**BURLINGAME, CA 94010**  
999 Howard Ave.  
(415) 342-5757  
George, Mgr. WB6DSV  
5 miles south on 101 from SFO

**OAKLAND, CA 94606**  
2210 Livingston St.  
(415) 534-5757  
Al Mgr. WA6SYK  
17N-5in Ave /17S-16th Ave

**PHOENIX, AZ 85015**  
1702 W. Camelback Rd.  
(602) 242-3515  
Bob, K7RDH  
East of Hwy. 17

**SAN DIEGO, CA 92123**  
5375 Kearny Villa Rd  
(619) 560-4900  
Tom, Mgr. KM6K  
Hwy. 163 & Claremont Mesa Blvd.

**VAN NUYS, CA 91401**  
6265 Sepulveda Blvd.  
(818) 988-2212  
Al, Mgr. K6YRA  
San Diego Fwy  
at Victory Blvd

**STORE HOURS**  
10 AM-5:30 PM  
**CLOSED SUNDAYS**



## CALL TOLL FREE (800) 854-6046



Toll free including Hawaii. Phone Hrs: 7:00 am to 5:30 p.m. Pacific Time. California, Arizona and Georgia customers call or visit nearest store. California, Arizona and Georgia residents please add sales tax. Prices, specifications, descriptions subject to change without notice.





# DX WORLD

**John F.W. Minke III, N6JM**

6230 Rio Bonito Drive Carmichael, CA 95608

## Activities Calendar

14-15 February	VERON Dutch PACC Contest
14-15 February	RSGB 1.8 MHz Contest (CW)
14-15 February	SRL Yugoslavian Contest (CW)
20-22 February	CQ Worldwide 160-Meter Contest (CW)
21-22 February	ARRL International DX Contest (CW)
21-22 February	RSGB 7.0 MHz Contest (CW)
21-22 February	REF French Contest (SSB)
07-08 March	ARRL International DX Contest (SSB)

With four contests running during the last weekend of February, we wonder which one will win out. Active contest stations usually participate in both CQ and ARRL contests, but with both at the same time this should be interesting. ARRL contests, as with most IARU affiliates, are set years ahead. As for CQ's policy, we don't know if they are set on specific dates or what. The ARRL contest is always the third full weekend in February.

## Peter I Island (3Y0)

This operation was scheduled to take place for 24 hours sometime between December 28 and January 4.

Bob Winter, KD7P, Chief Radio Operator of the U.S. Coast Guard ice breaker POLAR SEA, has received permission to operate from Peter I Island and was assigned the call 3Y0AK, according to QRZ DX. The landing permission and license documents are in the possession of the Northern California DX Foundation, who provided the operation with a generator, antennas and the QSL cards.

## China (BY)

The list of stations active in the People's Republic of China is growing. The first station to be reported coming on the air a few years back was BY1PK, which is still active. As of this date, almost all call areas are or have been represented.

Several of these stations have been very active and include BY1QH, who

has been worked by West Coast stations near 14.200 MHz around 0130 UTC and in the eastern regions of Canada on 14.227 MHz at 0045 UTC. This station also works CW and has been found near 14.030 MHz at 1230 UTC and later around 2330 UTC.

Another active station — according to the reports — is BY5RF, who has been reported only on SSB. Check 14.180 to 14.235 MHz after 0030 UTC for this one. Also in the 5th call area is BY5QA, reported on 14.215 MHz around 0230 UTC. This station has also been on 15 meters working Europeans.

In the 4th call area, BY4AA has been worked by the Europeans near 14.175 MHz around 1100 UTC along with BY4RN. The latter station has also been worked from the West Coast on 14.195 MHz around 0100 UTC.

Other stations that have been reported include BY9GA found on 14.011 MHz at 0030 UTC by the deserving DXers of Ontario, BY8AC on 21.009 MHz around 0800 UTC by Europeans, BY5RA on both modes (14.027 MHz at 0030 UTC and 14.194 MHz at 0130 UTC), and BY6LC on 7.004 MHz at various times. This latter station is reported to be Slim.

The reports also indicate other stations such as BY4SZ, BY5HZ, BY5QH and BY5RS. Only one report of each of these stations were listed and as they are unfamiliar it is possible that it is a reporting error or Slim at work.

Tom Wong, VE7BC, who makes several trips a year to mainland China, has been issued the call BX1BC. Tom is reported to be the first foreign amateur to be licensed in China. We assume that they are not counting those DXers who operated from there in the 1930s and 1940s — there were several active then.

## Morocco (CN)

We found about a half dozen calls from Morocco in the reports for November, with much of the activity on 15 meters. Near 21.226 MHz, CN8AR was worked around 1700 UTC, with CN8EL being grabbed on 21.203 MHz at 1730 UTC.

Canadian DXers were keeping Khal, CN8LS, busy on 21.233 MHz around 1930 UTC, and CN8LI, located in Rabat, on 21.271 MHz at 1815 UTC. Another active station is CN2AQ, who has been reported on 21.220 MHz around 1815 UTC, 28.505 MHz at 1330 UTC and 3.790 MHz at 0330 UTC.

On 20 meters, CN8EA has been worked on 14.181 MHz at 2030 UTC and then up on 10 meters near 28.567 MHz around 1630 UTC. As the 10-meter band is so unreliable these days, working any DX station up there will be a pleasant surprise.

Back on 15 meters, we have CN8MK who was found on 21.260 MHz around 1700 UTC. The last station reported is CN0TV, found on 3.515 MHz around 2330 UTC being reported from Florida.

## Cuba (CM/CO)

This one is in our backyard, but there are many DXers who do not have this one under their belt. And if you are a supporter of the top band, you might want to look for CO2PY who has been found near 1.830 MHz from 0500 UTC.

There have been several Cuban stations reported during November so we will just list them below, with frequencies and times in MHz and UTC, of course.

CM3JA	3.802	0630
CO2CE	3.796	0800
CO2DX	7.043	0230
CO2HT	7.010	1000
CO2LE	7.001	0345
CO6CD	3.794	0430
CO7CG	3.798	0130
CO7JC	21.269	1445
CO7RG	3.795	0130
CO7UA	21.271	1645
CO7KR	21.270	2030

## Bolivia (CP)

For the newer DXers here is some more common garden variety DX for you to work. You SSB types that need Bolivia will have to get out the old key as all the reports we have seen this past period were for CW contacts.

Forty meters seems to be the popular band for working this one as we have CP1XC being worked between 7.005 and 7.009 MHz from 0015 UTC from the eastern regions of North America and Europe. CP8AK was found on 7.010 MHz around 1030 UTC and later on 7.006 MHz at 0120 UTC.

CP6IB has been worked on both 40 and 15 meters, being worked near 7.023 MHz in Ontario at 0330 UTC and on 21.008 MHz at 2130 UTC in Georgia. Also multiband is CP8XA who was worked on 14.029 MHz at 2010 UTC and on 21.031 MHz at 1800 UTC. CP1GB is another station being reported in Canada near 14.174 MHz at 2400 UTC (or 0000 UTC).

## South Shetland Islands (CX0)

The Uruguay DX Group will be mounting a DXpedition to the South Shetlands on February 15, when a plane is scheduled to leave Punta Arenas, Chile. Operation will be on all bands (CW and phone). Chief op for CW will be Bert (Beto in Spanish) Allende, CX3AN; on phone will be Mario Rebufello, CX4CR. QSL Manager will be Ricardo Susena, CX2CS. The station will be

**MULTI-BAND SLOPERS**

— ALSO DIPOLES & LIMITED-SPACE ANTENNAS —

Outstanding performance of W9INN antennas is well known. Now even for multiband BIG-SIGNAL reports! Automatic bandwidthing. Very low SWR. Coax feed. Save power. Combined. Call for ASSEMBLED to your specified center frequency each band. Call for INQUIRY. Very low profile. Complete instructions. Your original check accepted.

1 BAND SLOPER - 160 80 40 30 or 20M	40 ft. long	\$ 48 ppd
.. .. 160 80 40M	40 ft. ..	\$ 43 ..
.. .. 80 40M	40 ft. ..	\$ 35 ..
2 .. NO-TRAP DIPOLE - 160 80 40M	113 ft. long	\$ 71 ..
.. .. 80 40M	88 ft. ..	\$ 55 ..
3 BAND SPACE SAVER DIPOLE - 160 thru 10M*	46 ft. long	\$ 55 ppd

\* Requires wide-range tuner! 80 40 20 15M without tuner!

SEND SASE for complete details of these and other unique antennas

W9INN ANTENNAS 312 394 3414  
BOX 393 W. MT. PROSPECT, IL 60056



ICOM-equipped, and a special call — CX0XY — will be used.

### Martinique (FM)

The reported most active station from Martinique in November was FM5CT. This station seemed to favor 15 meters and was found mostly near the low end around 21.030 MHz around 1815 UTC, and also on 20 meters on 14.030 MHz at 1130 UTC.

Other stations reported from Martinique include:

FM4DN	3.789	0130
FM5BH	3.505	0300
FM5BX	28.500	1500
FM5EB	28.544	1930
FM5ES	7.016	0015
FM5DK	7.005	0115
FM5WH	14.019	(no time given)
FM5WO	7.003	1000

Frequency and time, of course, are in MHz and UTC. We also had a report from an FM4ES who was worked on 7.007 MHz at 0430 UTC. This, most likely, is the same station as FM5ES above, but we aren't sure which is the correct prefix, FM4 or FM5.

### Tromelin (FR/T)

The *DX Bulletin* reports that Hoarau Yoland, FR5AI, will spend a month on Tromelin as FR5AI/T this spring, from March 2 to April 2. He will be operating with a dipole on 15 and 20 meters.

### Jan Mayen (JX)

On 20 meters CW, JX1AC has been worked near 14.018 MHz from 1330 UTC. This station, along with JX5AG, are reported to be that of Jan Mayen Slim. The only active station reported that is to be genuine from this one is JX8KY, although no recent reports have been found for this one.

### Grenada (J3)

If you visit the various DX nets, then more than likely you have worked J37AH as he is a frequent visitor. If you shy away from those things, look for him on 75 meters as he has been worked on 3.797 MHz around 0630 UTC.

Another active station on Grenada is J37AJ, who has been worked in the maritime provinces between 28.505 and 28.520 MHz from 1900 UTC. If 10 meters is shut down, try 14.189 MHz around 1930 UTC. Also, try 15 meters as J37AE has been found on 21.026 MHz at 1530 UTC.

### Dominica (J7)

Al, J73D, has been reported on at least three bands. Look for him near 14.006 MHz at 2045 UTC, 21.017 MHz at 1800 UTC, or 28.026 MHz at 1915 UTC. If you prefer SSB, try 21.205 MHz at 1500 UTC.

Another active station is J73LC as he has been near 21.278 MHz between 1730 and 2200 UTC. He has also paid visits to

75 meters and has been found on 3.797 MHz between 0230 and 0415 UTC.

Other stations include J78A on 7.010 MHz at 0055 UTC, J78PB on 14.227 MHz at 2130 UTC, J78EH on 3.790 MHz at 0100 UTC and J78BC on 21.223 MHz at 1930 UTC.

QRZ DX reports that during November, stations in Dominica were using the J78 prefix to celebrate eight years of independence. Therefore, calls such as J78A and J78PB are normally J73A and J73PB.

Top band fans might want to take a listen for J73DF who has been found on 1.832 MHz at 0030 UTC and later at 0230 UTC on 1.826 MHz.

### Johnston Island (KH3)

George Winford, KL7VZ, reports that Joe Voelkelt, KL7LF, will be active from Johnston Island for at least a year beginning in December. No call was given, but we assume it will be KL7LF/KH3. The first weekend in December we heard a big pileup from Japan, so it looks like Joe is already busy.

Joe expects to be operating all bands, 10 through 80 meters, mostly on SSB, and will be in the Novice bands to give the newcomer to Amateur Radio a taste of DX.

George, KL7VZ, will handle the QSL chores, and he says that QSL cards may be routed to him directly (Callbook address) or the Alaska QSL Bureau. Joe will be active in all the major DX contests.

### Gabon (TR)

The frequency 7.006 MHz seems to be a favorite spot for TR8JJC who has been worked by many after 0500 UTC. This station has also been worked on 14.030 MHz at 2015 UTC and on 21.023 MHz at 1600 UTC. A switch to 75 meters will bring you TR8JLD who has come up on frequency at 3.797 around 2345 UTC.

On 20 meters, TR8RAL has been working SSB near 14.160 MHz after 2100 UTC with TR8LD further up the band at 14.215 MHz. TR8SA has been reported several times near 21.274 MHz after 1830 UTC with TR8RC on CW near 21.020 MHz at 1930 UTC.

On 10 meters we have a sole report of TR8AHO on 28.550 MHz at 1200 UTC working into Europe.

### Mali (TZ)

Dennes, TZ6MG, has been found often near 14.160 MHz from 2200 UTC, and up on 15 meters near 21.280 MHz around 1630 UTC. He has also been reported on 40 meters on 7.042 MHz working Europeans at 0030 UTC.

Seventy-five meters near 3.799 MHz after 2330 UTC is a good spot to check for TZ2XN if you need a Mali contact on this band. Check 14.227 MHz around

2200 UTC for TZ6WC or 14.214 MHz at 1900 UTC for TZ6XP. Further down the band, TZ6LPY was reported in California on 14.160 MHz at 2230 UTC.

Europeans report TZ1GH on 21.295 MHz at 1100 UTC and 14.320 MHz at 1600 UTC. DXers who only hold a General Class ticket should check this latter frequency. Also reported in

## Step up

to the world's most-advanced antenna system!

WITH NOT A SINGLE WATT WASTED IN LOSSY TRAPS! (There aren't any!)

Hams in over 50 DXCC countries have done so already!



The DJ2UT-Multiband-Systems offer:

- Maximum gain plus F/B ratio with low VSWR across each band
- 2 kW CW output power
- 10/15/20/(30) 40-meter bands with up to 7 band coverage incl. WARC bands with self-supporting "TWIN-BOOM" and boom-legths from 8 to 20 ft
- Air-core teflon dielectric coax-balun and stainless-steel hardware at no extra cost
- traditional Blackforest craftsmanship

The DJ2UT-MULTIBANDERS provide the superior full-size monoband-beam performance required during the present sunspot minimum.

For further information contact:



H. J. THEILER CORP.  
P.O. Box 5369, Dept. 15  
Spartanburg, SC 29304  
Tel: (803) 576-5566

Europe is TZ4VB on 14.114 MHz at 0745 UTC and TZ6BG on 7.061 MHz at 0630 UTC.

In the maritime provinces of our neighbor, Jean, TZ6FIC, has been reported on 10 meters near 28.490 MHz at 1645 UTC.

#### Aves Island (YV0)

Asociacion de Radioaficionados de Venezuela announces their 1987 Aves Island DXpedition as one of their celebrations for the 20th anniversary this spring. The dates for this operation have been set for March 19 through 22, which will be an all-band and all-mode affair.

The call 4M0ARV will be used, and it will be the first time the 4M0 prefix will have been used from this island.

For CW contacts, look for 4M0ARV on or about 25 kHz above the lower edge of each band, 10 through 160 meters, and for SSB contacts look for them on 1.825, 3.795, 7.095, 14.195, 21.295, 28.595 and 144.090 MHz. On 2 meters they will be using both SSB and FM.

The ARV will send a special QSL card to all amateurs who contact 4M0ARV. All QSL requests should be sent to 4M0ARV, P.O. Box 3636, Caracas 1010-A, VENEZUELA.

#### Chatham Island (ZL7)

ZL7BKM has been reported by Canadian DXers near 7.093 MHz after 0900 UTC, and also on 14.188 MHz around 0300 UTC. Our European source reports ZL7AA on 14.122 MHz at 0915 UTC.

#### Cyprus (5B)

A couple of these have been reported on 75 meters recently. Near 3.795 MHz, 5B4TI has been found after 0300 UTC working the East Coast. He has been reported in Colorado later at 1430 UTC. On 3.796 MHz, 5B4LT has been worked in the 5th call area around 0030 UTC.

On 20 meters we have Earl, 5B4UN,

operating from Nicosia on 14.146 MHz working into Ontario around 2030 UTC. Keeping Earl company on the band we have 5B4SC on 14.245 MHz at 1000 UTC and 5B4UC on CW near 14.021 MHz at 1830 UTC.

On 15 meters, 5B4SA was worked from Florida on 21.251 MHz around 1400 UTC with 5B4JE on 21.223 MHz at 1445 UTC and 5B4LP on 21.268 MHz at 1430 UTC working lucky W5's.

On one of the near bands, 5B4OG was found on 10.106 MHz at 1445 UTC working Europeans.

#### Tanzania (5H)

Pat, 5H3ZO, has really kept things hopping with much activity on several bands. On 20 meters look for him near 14.028 MHz after 1830 UTC, or on 15 meters try 21.029 MHz from 1400 UTC. If you need Tanzania on 40 and 80 meters, look for Pat near 7.007 MHz around 0030 UTC, or near 3.510 MHz from 2100 UTC. Unfortunately, that time is of no use to West Coast DXers. Pat's home call is K0ZO.

You SSB types might want to take a look for Roel, 5H3RB, who has been reported after 1800 UTC near 21.203 and 21.255 MHz. Also on this band, 5H3RJ has been reported on 21.286 MHz at 1600 UTC working into Colorado, and 5H3CM working into Ontario on 21.258 MHz at 1800 UTC. Also check 21.026 MHz at 1830 UTC for CW contacts.

For 20-meter contacts look for 5H3TM on 14.016 MHz around 1745 UTC or 5H3ZR on 14.027 MHz around 2015 UTC. 5H3ZR has also been reported on SSB near 14.191 MHz about the same time period.

#### Kenya (5Z)

Four stations from Kenya were reported in the bulletins this past month.

5Z4DX	7.001	0515
5Z4FC	14.022	1830
5Z4DU	14.203	2130
5Z4MR	14.236	2000

#### Malta (9H)

If you need Malta you might take a listen for these stations:

9H1GY	3.799	0530
9H1GP	7.002	2330
9H1FG	7.074	0700
9H1CL	21.004	1330
9H1ED	21.019	1500
9H1RGS	21.221	1600
9H1RHQ	21.265	1630
9H1VS	21.277	1500

In addition to those above, we had a report of a 9H1BFS and 9H1FBS on 15 meters. Obviously, this must be the same station. The information was taken from two different DX newsletters, but we don't know which is correct.

#### Zambia (9J)

Brian, 9J2BO, seems to be the old standby for this one and has been very active recently. On 40 meters, a good place to look for him is near 7.002 MHz from 0400 UTC. Later in the day you might find him up on 15 meters around 21.027 MHz after 1700 UTC, or even up on SSB between 1615 and 1715 UTC near 21.242 MHz. QSL cards for Brian are to be sent to his manager, W6ORD.

Brian isn't the only station in Zambia. The bulletins also list 9J2DX who was worked on 21.270 MHz after 1830 UTC, 9J2HD up on 10 meters near 28.539 MHz at 1430 UTC, 9J2LG on 14.195 MHz at 1830 UTC and 9J2WS on 21.269 MHz at 1930 UTC.

#### Zaire (9Q)

This one used to be known as the Belgian Congo. Tullio, 9Q5TM, has been busy on 15 meters near 21.250 MHz from 1730 UTC. He has been reported to also be active on both 40 and 80 meters, although we have not seen any reports to support this.

Two other stations were reported during the month of November — 9Q5MA on 14.183 MHz working into eastern Canada at 1930 UTC and 9Q5TV working Europeans on 21.255 MHz around 1430 UTC.

The DX Bulletin reports that Marjan, YU3KI, was scheduled to go to Zaire in December and hoped to obtain a license to operate.

#### IOTA

There is no room for IOTA (Islands-on-the-Air) listings this month, but we would like to give you the address for additional information on the program, sponsored by the RSGB. Send U.S. \$3 (or 8 IRCs) to Roger Balister, G3KMA, La Quinta, Mimbridge, Chobham, Woking, Surrey GU24 8AR, ENGLAND. In return, you will be sent the latest IOTA Island Directories, which lists all islands (please turn to page 36)

## Increase your QSL return ratio THE RADIO AMATEUR'S CONVERSATION GUIDE

A conversation guide containing numerals, phonetics, 147 phrases covering many fields of Amateur Radio; antennas, contests, DXing, equipment, personal information, QSLing and much much more, plus a 450 word dictionary. Languages:

• ENGLISH • FRENCH • SPANISH • RUSSIAN  
• GERMAN • ITALIAN • PORTUGUESE • JAPANESE

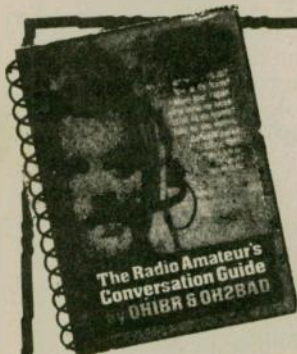
Supplements are now available in

• SWEDISH • FINNISH • DANISH • YUGOSLAVIAN • NETHERLANDS  
Many languages are also available in 60 minutes cassette tapes. Prices: POSTPAID

- Guide Book \$9.41 each (plus 59¢ shipping)
- Supplements \$1.75 each or all five for \$7.00
- Guide and all supplements \$16.50 postpaid
- Cassette tapes in all languages \$6.00 each (3 or more \$5.00 each)

### TRANSELECTRO-AMERICA

ATT: Helen  
2301 Canehill Avenue  
Long Beach, CA 90815 U.S.A.



# DX THAT STANDS OUT FROM THE CROWD

# A3

## 10, 15, 20,\*40 meters

Whether busting pileups, rag chewing or hunting rare DX, the A3 stands out from the crowd with the perfect combination of easy assembly, the right size, rugged durability and great performance.

\*40 METERS WITH THE A743 ADD ON KIT, STAINLESS STEEL HARDWARE KIT AVAILABLE

### OUTSTANDING A3 FEATURES

- Gain 8dBd, F/B Ratio 25 dB
- Typical SWR 1.2:1
- Average Band width 500 KHz
- Power Rating 2,000 Watt PEP
- Boom Length 14ft, Weight 27 lbs
- Longest Element 27ft
- Wind Surface Area 4.36ft
- Turning Radius 15.5ft

With the Cushcraft A3 you too will stand out from the crowd.

## W2GD STANDS OUT FROM THE CONTEST CROWD

Using the Cushcraft A3, John set a record for a DX station in the 1985 ARRL DX CW contest while operating from VP2MGD. The A3 mounted at 35 feet produced 2,732 contacts on 10, 15, 20 with the maximum possible multiplier on 15 and 20 meters.

Using a Cushcraft 40-2CD 40 meter beam, he made 1083 contacts with 68 countries during the 1986 CQ WW CW contest while operating all band single operator P40GD on Aruba.

John, W2GD says "... I am extremely pleased with the performance and ease of construction. I consider the antennas a good choice. Keep up the fine product line."



# Cushcraft

# DX World

(continued from page 34)

that count toward the awards program and directions on applying.

## Antique QSL Department

The other day, we received a selection of old QSL cards that date back to the 1930's from R.J. Cogdon, W5FIX, and we would like to share them with you. For this month we have reproduced two of them.

The call FB8AB was used by F.P. Bour of Tananarive, Madagascar, back in 1936. The card indicates that it was QSO number 3072 for this June 13, 1936 20-meter CW contact. The card also indicates that the operator was formerly FB8C.

Whatever happened to the operator of FB8AB? The call FB8AB was not listed in my copy of the Winter 1954 Callbook. Madagascar is now known as Malagasy Republic, 5R8.

Evidently, special event activities were popular even in the 1930's. Here we have a card for G5DXP for an operation in the RSGB National Field Day 1936. W5FIX worked this station on July 7, at 0325 GMT on 20 meters SSB from his Dallas, Texas location. The card lists the operators whose calls were G5RL, G6DX, G2UQ, G6WA, G6BS and G2PL. There is a building of some sort printed in light green on the card, but it has nearly faded out completely. As these cards have been tacked to the wall of the W5FIX shack, it is a good guess the sunlight was the culprit. In the old days it was common practice to tack up

cards on the wall, as you have seen in past photos in this column.

QSO No. 3072 To Radio *W5 fix*

On 14 M/Cs  
Yr Stn has been Wkd

AL 12 GMT  
On 12.6.36  
Yr stn were  
CW  
QSA 5  
R 9  
T  
ORN  
ORM  
QSB

REF

QRA  
F. P. Bour  
Tananarive  
MADAGASCAR

X/tr = 3 Stages C. C.  
59 — Xtal OSC.  
Eco. Tri-Tet.  
2 — 24A P. P.  
2 — TC 04/10 P.P.  
on 630 V. RAC  
Input 50 watts  
Aerial 1/2 W. Zepp  
R/vr O.V. 2  
Aerial "Lynch"

Psc QSL OB  
es vy 73  
bst luk DX Veloma

RSGB National Field Day 1936  
ORA HILL FARM, ST. IVES, ENGLAND

To Radio *W5 fix* CW ops wth dr. *W5* at 0325 GMT.

QSB 5 R5 E9 QRB 4 QRB 4

Transmitter  
CO FD 1A  
Vane 125D  
Watts 25  
Pins 467

Receiver  
Handmade T two  
and  
HF Del-LF

Worked 57 Countries  
QSL for a QSO National Day (0325-0350) (0100-0130)

Quc Bank  
St. Ives, Hunts.

467 70

Don't take QSL. Invection 2500. 73 do sig to B on the wings of time.

## QSL routes

A22BW	-DK3KD	FT8ZA	-F6FNU
A82AY	-N5GAP		(See Note 2)
A15P/PA	-W3HNK	GD0AVF	-W2KN
AO5EX1	-EA5EX1	H5AZA	-ZS6AEV
BV2FA	-DJ9ZB	HC5EA	-K8LJG
CN8EA	-N4DRC	HC8A	-K1XM
CP8XA	-DL3NAZ	HD8G	-KTIN
CP8XAP	-DL3NAZ	HG1S	-KA1KSA
CX0XY	-CX2CS	HJ6MLV	-HK61ID
DL1JW/VP5	-DL1JW	HK0BKX	-WB9NUL
EA9AM	-OH2BH	HL90B	-N4GNN
EL6A	-K4SE	J5WAD	-UB5WAD
	(prior 1984)		(See Note 3)
EL7W	-K4SE	J73D	-W2OB
FH/W6KG	-Yasme	JG1FVZ/5N26	-JF1EEK
FK/P6BFH	-F6BFH	JWICCA	-LA1CCA
FM5BH	-W3HNK	JW5E	-LA5NM
F05BI	-F6HSI	JW7FD	-LA5NM
F00ZA	-OH7ZAA	JX1AC	-LA3TC
FR5A1T	-FR5A1	JY7Z	-K6VNX
FR/W6QL	-Yasme	JY9RL	-WA6POZ
FT8WA	-F6FNU	K1XM/HC8	-K1XM
	(See Note 2)	K7NHV/VP2V	-K7NHV
FT8XD	-F6FNU	KK7KDU2	-N2AU
	(See Note 2)	KP2N	-K8OHC
FT8YA	-F6DZU		(See Note 6)
OE6MKG	-KB7SG	KQ1F/HC8	-KQ1F
OH5XT/EA8	-OH5XT	XF0L	-OH2BQL
ON71P/ST2	-ON71P	Z21GT	-G4MLV
P40GD	-W2GD	ZB2X	-OH2KI
PY2RRG/		ZC4CZ	-G4MGQ
PY0T	-PY1DFF	ZD9BV	-W4FRU
SM0OIG/LU	-SM0KCR	ZD9CL	-W4FRU
SU1SX	-JHDUY	ZS3GB	-ZS6AEN
	(See Note 4)	ZV8WAS	-DJ5CQ
SV0AC/9	-AA4LU		-PY4AG
T30AT	-G4GED	3C1MB	-EA7KF
T32BD	-KB61DK	3G3E	-CE3EEO
	(See Note 5)	4K1A	-UA3AEL
T50DX	-I2JSB	4K0D	-UA1MU
TJ1CH	-F6FNU	4N4A	-YU4SBH
TL8AM	-PA0UA	4S7NMR	-K28Y
TT8AQ	-F6EYS	4Z4IK	-IK8DYP
TU2MY	-WB5EPL	5B4UC	-SM6DIN
TZ6FIC	-FE6CRS	5B4YU3XU	-YU3HAM
UB5ZX/U18	-UB5ZX	5H3CM	-K0LST
V2AKW	-KA2DIV	5H3ZO	-K0LST
V2AC	-WA4WTG	5N26BAV	-I2ZGC
V2AZL	-W2HWS	5T5XX	-DL1VJ
VE0MAB	-VE2BHC	5X5GK	-DJ5RT
VP2MU	-K8WS	802PTJ	-A22TJ
	(See Note 6)		(See Note 1)
VQ9QA	-N3QA	8P9CW	-VE3CPU
VR6JR	-G3OKQ	8P9DX	-VE3ICR
WB0NAA/		8P9RF	-VE3DDC
YN1	-N0BKL	8Q7CH	-SM5DQC
WD4R/HP1	-WD4R	9J2BO	-W6ORD
XE2SI	-N6ADI		
	(See Note 6)		
A35SA	-P.O. Box 1553, Nukualofa, TONGA		
BY9GA	-P.O. Box 12, Lanzou, PEOPLE'S REPUBLIC OF CHINA		
CN8LS	-P.O. Box 3007, Casablanca, MOROCCO		
CO7KR	-P.O. Box 5343, Camaquay, CUBA		
CV1R	-P.O. Box 1, Maldonado, URUGUAY		
D68AM	-P.O. Box 1378, Moroni, COMOROS		
FO0XA	-Jacques Calvo (F6GXB), 5-10-5 Shimomoguro, Meguru-kuro, Tokyo, 153, JAPAN		
HD2A	-P.O. Box 5757, Guaquil, ECUADOR		
HP8RHT	-P.O. Box 80, Aguadulce, PANAMA		
KG4XO	-GARC, Box 73, BFBO Norfolk, VA 23593		
SU1FN	-17 El Shamed, Fouad Street, Almaza, Heliopolis, Cairo, EGYPT		
TA2G	-P.O. Box 14, Emek, Ankara, TURKEY		
TG9NT	-P.O. Box 89C, Guatemala City, GUATEMALA		
TZ6MG	-P.O. Box 2095, Lelystad 8203AB, MALI		
YC6LD	-P.O. Box 352, Medan, INDONESIA		
ZB2IH	-P.O. Box 292, GIBRALTAR		
ZC4AP	-J.S.B., BFPO 53, London, ENGLAND		
ZD7BJ	-P.O. Box 54, St. Helena, SOUTH ATLANTIC		
ZD7JAM	-P.O. Box 54, St. Helena, SOUTH ATLANTIC		
3G9SBY	-P.O. Box 2000, Punta Arenas, CHILE		
5B4UN	-U.N. Radio, BFPO 567, London, ENGLAND		
7X2LS	-P.O. Box 84, Bouzerea 16340, ALGERIA		
7Q7LW	-Helen Sampson, 57 Milford Court, Brighton Road, Lancing, Sussex BN15 8RN, ENGLAND		
8O2FCL	-P.O. Box 217, Etsha, BOTSWANA		
9H1RHQ	-P.O. Box 31, Valletta, MALTA		
9L1IS	-P.O. Box 1269, Freetown, SIERRA LEONE		

## Notes

1. QSL cards for these stations may also be sent via P.O. Box 369, Gaborone, BOTSWANA.
2. This QSL manager requests one envelope per contact -

**NEW!**  
The **AZIMUTH**  
World Time Dual-Zone  
24 Hour  
Travel/Alarm Clock

SPECIAL INTRODUCTORY OFFER!  
JUST **\$19.95** Plus P&H  
REGULAR **\$29.95** RETAIL VALUE  
SAVES YOU \$10.00

LEGENDARY QUARTZ ACCURACY—ALARM & STANDARD BATTERIES  
Ingenious new quartz digital design runs on one oscillator. Long life AAA batteries included. Excellent accuracy important in ham radio. Compact size (2" x 4.5" x 5"). Great for your station. DXpeditions or travel.

SEE DUAL-ZONES! FINDS "GREY LINE" WORLDWIDE—TOO!  
Displays LOCAL plus 24 Cities/Zones around the world. Set to LONDON for GMT/Universal for easy QSO logging. Both displays show 24-Hour Zulu. Compensates for Intl. Date Line world-wide + or - from local time. Special Summer/Daylight Savings Time switch memorizes changes Zone by Zone.

Sharp, easy to read digits. Set alarm for schedules. Folding easel stand. Black leather-like travel pouch.

Take Advantage of Our Special Low Introductory Price! Today! Thousands of Azimuth Clocks in use world-wide!

Mail To: AZIMUTH CLOCK, 11030 Santa Monica Blvd., Suite 100, Los Angeles, CA 90025. DEPT. 1C

YES! Please rush me \_\_\_\_\_ Azimuth World Time Travel Alarm Clock(s) at \$19.95 plus \$1.95 Shipping & Handling. Order 2 & SAVE \$3.90. Just \$39.90 we pay P&H. (California residents please add 6.5% Sales Tax). Enclosed is my check or money order. OR CHARGE my VISA or MASTERCARD

Account \_\_\_\_\_ InterBank \_\_\_\_\_  
Expires \_\_\_\_\_ Foreign Orders — Please include \$4.95 Postage & Handling each clock (US \$ only).

Print Name \_\_\_\_\_  
Address \_\_\_\_\_ Apt \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_  
Day Tel \_\_\_\_\_

For QUICK TOLL FREE CREDIT CARD ORDERS  
CALL 1-800-833-6363 (nat'l) or 1-800-331-6363 in Calif.  
CUSTOMER SERVICE ONLY 213/473-1332. CALL TODAY!

14-day TRIAL. SATISFACTION OR YOUR MONEY BACK! DEPT 1C

© MCMXXXVI Azimuth Communications Corp.

or send your cards via REF.

3. The operator of this station (UB5WAD) has returned home. W6CNA does not have any logs and UA4PW is out of cards for J5WAD. UB5WAD will handle his own cards for his J5WAD operations. Cards should be sent via P.O. Box 88, Moscow, USSR.

4. QSL manager JH1DUY is reported to not be in the 1986 Callbook. Send cards via JARL.

5. QRZ DX reports that manager KB6IDK, who is the son of T32BD, moves around a lot. The reported current address is 850 Russell Avenue, Apt. J-6, Santa Rosa, CA 95401.

6. This applies for contacts made during the November Worldwide DX Contest.

Contributors this month include CX2CS, KH6BZF, KL7VZ, W4FRU, W5FIX, W9LNQ, YV5EED, The Carolina DX Association (W4WMQ), Kansas City DX Club (AB0X), DX Incorporated (WA9BXB), Northern Arizona DX Association (NN7A), Southern California DX Club (NK6A), Western Washington DX Club (K7ZR), the Northern California DX Foundation, International Amateur Radio Union (K1ZZ), *The Long Island DX Bulletin* (W2IYX), *DX News Sheet* (G4DYO), *The DX Bulletin* (VP2ML), *QRZ DX* (W5KNE) and *Long Skip* (VE3IPR). □

## Propagation

### Maximum Usable Frequency from Burbank, CA (courtesy of W6LS)

The numbers listed in each column are the Maximum Usable Frequency (in MHz) for contacting five major areas of the world (Nairobi, Tokyo, Melbourne, Frankfurt, Rio de Janeiro) for low fire angle antennas.

You can get a free complete set of these predictions for low angle antennas, Maximum Usable Frequency (MUF) and Frequency of Optimum Transmission (FOT). You may also request an introduction to using HF propagation predictions. Requests should be sent to W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by an SASE (54¢) envelope at least 9"x11½".

MARCH 1987					
UTC	AFRI	ASIA	OCEA	EURO	SO AM
0100	16.8	21.3	24.6	8.2	19.4
0200	11.7	18.2	24.9	8.0	15.6
0300	8.7	16.3	21.3	7.8	12.6
0400	10.8	14.8	17.8	7.2	11.3
0500	10.3	13.6	14.8	7.5	11.6
0600	9.8	12.3	13.0	8.7	12.4
0700	9.4	11.4	12.4	9.6	13.0
0800	9.1	11.7	12.6	9.6	10.2
0900	8.9	11.5	12.8	9.6	10.6
1000	8.6	11.6	13.1	9.9	13.4
1100	8.7	11.7	13.4	9.3	11.7
1200	9.7	11.1	12.7	9.7	11.0
1300	11.5	10.3	11.1	10.9	12.8
1400	13.7	10.7	11.0	13.7	16.4
1500	15.7	12.9	14.1	15.5	19.4
1600	16.9	13.5	13.9	16.6	21.0
1700	17.4	13.0	12.2	15.9	22.1
1800	17.7	12.4	11.3	15.0	23.6
1900	18.3	12.5	12.8	13.7	25.4
2000	18.9	14.2	16.5	11.9	26.7
2100	19.1	17.1	19.8	10.2	27.3
2200	19.0	20.1	21.4	9.1	27.0
2300	18.9	21.5	22.2	8.6	25.7
2400	18.6	21.8	23.3	8.7	23.0

## JA, wife visit Oregon

Mary & John MacKenzie,  
KA7FEF/KA7FEE

Katsushi and Mami Ono, newly married, arrived at the Portland (Oregon) International Airport on June 8, 1986. While in Oregon, Mary (KE7FEF) and John (KA7FEE) MacKenzie, would be their hosts for four days.

Katsu, JH7OHF/I (formerly VK2-PJJ), had attended New South Wales University. It was during that time that Mary had her first QSO with Katsu. Over a four-year period — through correspondence, contests, Christmas cards and a card from Norfolk Island while on DXpedition — Mary and Katsu kept in touch.

Katsu is originally from Sendai but now resides in Tokyo with Mami. His formal education now completed, Katsu works for The Institute of Economy Development, a quasi-government body whose responsibility is Third World country economic development. Mami is a nursery school supervisor for 1-year-olds.

Besides the obvious advantage of having friendly hams who are eager to share their home state and want to learn first hand about JA-land, the Onos picked Oregon for their visit because of the very popular TV series, "To Oregon With LOVE." This series was produced, directed and acted by Japanese, and was a huge success here and in Japan.

This was their first trip to the United States and Mami's first away from home. It was awkward for her as she has little knowledge of our language. While here, Katsu and Mami visited the International Rose Test Gardens, parts of the Forest Park complex, viewed the city and snow-covered mountains of the Cascades, and the shores of the Willamette River. More importantly, Mary, John, Katsu and Mami shared bread and conversation together in an American home.

Katsu enjoyed the TS-520 and IC-2AT while in Mary's shack, admired her "JCC" Award, and Mami looked with interest at the hundreds of JA cards. John's shack is all mobile/QRP, so



Katsushi, JH7OHF/I, and Mami Ono, visiting the MacKenzies in Portland, Oregon.

Katsu probably got tired of sharing the front seat of the car with the rigs, HI.

Katsu mentioned that in Tokyo there are no 2-meter repeaters, but many 70cm ones.

On June 11, with many thanks, sayonaras and sharing of gifts, the Onos left Portland on the next leg of their honeymoon to New Orleans, with the promise they would try to return in the course of his work next year and visit the unique Oregon coast with their hosts. □

## Where's my CATALOG?



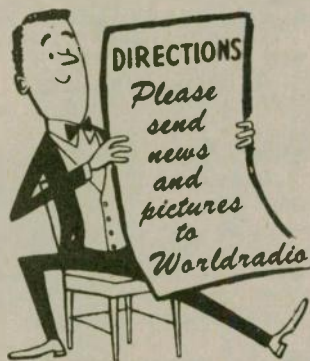
What? You haven't seen the FREE DICK SMITH ELECTRONICS catalog? Or did someone steal your copy again? After all, who can resist 148 colorful pages crammed with 1000's of electronic goodies ranging from kits & components to computers & radio-controlled cars. The selection is incredible, the values are even better! Top it all off with our exclusive 15-page electronic data section, and you'll have more than a catalog, more than a reference: it's a totally entertaining experience for the electronic enthusiast, and it's FREE! All we ask is your name, address and \$1.00 for first-class postage. What are your waiting for? Order yours today!

**YES!** Send my copy of the 1986 '87 DSE catalog today! Enclosed is \$1.00 for postage!

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

DICK SMITH ELECTRONICS, INC.  
P.O. Box 2249, Redwood City, CA 94063

702 D



# 10-10 INTERNATIONAL News

Chuck Imsande, W6YLJ  
10-10 19636

## More about 10-10

Last month I discussed a bit about the history of 10-10, how you can get your own 10-10 number and about local 10-10 chapters. Now the question is — after you have your own 10-10 number, what will you do with it? There are a number of ways to use your own 10-10 number in the interest of promoting 10 meters specifically and 10-10 generally.

First, the old axiom of "use it or lose it" could very well apply to the 10-meter band. One of the basic purposes of the 10-10 organization is to encourage the use of 10 meters. It is believed by many that having an ongoing "contest" to collect 10-10 numbers does, in fact, keep interest high on 10 meters.

The ongoing contest is the exchange of 10-10 numbers with other 10-10 members, keeping track of which numbers you have made contact with and submitting these numbers for awards. After all, there are but few who are not interested in achieving awards or a merit for accomplishment.

The basic award for 10-10 is the first 100 numbers collected. Once these are logged, they are sent to the "Bar Manager" who will certify your contacts and return to you a certificate for you to place your bars upon. Each bar earned (100 10-10 contacts) gets you a colored "bar" with the bar number, "100" for your first bar, "200" for your second bar, etc. Each certificate will hold up to the "4000" bar. Believe me, it will take some time to fill your first certificate.

When you reach the "1000" bar, you also receive a plaque. How many 10-10 numbers can you collect? Well, here are the Top Ten number collectors in 10-10 at the present time: WA5JDU 15000, K5MRU 13600, W0RWC 12700, WA9LIC 11100, PJ2WG 9200, W1KZH 8200, KS6A 8100, WB1DBZ 8000, K4KAH 7900 and WD4MPG 7900.

When you consider that over 40,000 numbers have been issued by 10-10, there are a lot of numbers out there to make contact with.

When you reach your "500" bar, you automatically become a member of the "International 500 of-the-World" and receive your own VP number. Now this opens up a whole new area of number

collecting and will be discussed next month.

## 10-10 breakdown by call area

Through the efforts of 10-10's Treasurer, Gerry Gross, WA6POZ, 10-10 #21274, the following is the breakdown of 10-10 numbers by call area, as of October 31, 1986; Call Area 0 3688, Call Area 1 2434, Call Area 2 2600, Call Area 3 2297, Call Area 4 6682, Call Area 5 3826, Call Area 6 4191, Call Area 7 2813, Call Area 8 2885, Call Area 9 2689, Others (Non U.S.) 4938 and Known SK's 1669.

The highest number issued as of October 31, 1986 was 41831, issued to Jeff Haight, WD4RAY. Numbers are issued in blocks to 10-10 Call Area Managers, and not all block numbers are used at any one time, so there are always some open numbers spread throughout the higher numbers.

## 10-10 annual meeting

The annual corporate meeting of The 10-10 International Net, Inc. was held on November 16, with approximately 40 in attendance. After dispensing with the normal business of the net, President Howard Bowman, W6QIR, presented the nominees for officers for 1987. The nominees were: Howard Bowman, W6QIR, president; Norm Lefcourt, W6IRT, vice president; Gerry Gross,



Bob Hartley, W6WPY, 10-10 #14949, became a Silent Key on December 6.

WA6POZ, treasurer; Don Hirst, W6AGP, secretary; and Jim Michaels, W6PGM, director. As there were no additional nominees from the floor, all listed were declared elected.

The "Select Committee" for planning the future of 10-10 gave their first report. Norm Lefcourt stated that the committee had received a number of letters with suggestions on what members would like to see changed, added and revised within 10-10. All comments and suggestions are being given careful evaluation and consideration.

If you would like to have your idea considered on how 10-10 should be changed, improved or whatever, send your correspondence to Committee Chairman Norm Lefcourt, W6IRT, 7713 Wilkinson Ave., North Hollywood, CA 91605. Norm will see that the other committee members — Gerry Gross, WA6POZ, and Morrie Goldman, W6EHM — receive copies.

## Bob Hartley, W6WPG

It is with deep regret that I must announce the passing of one of 10-10's most dedicated supporters — Robert O. Hartley, W6WPY, 10-10 #14949.

Bob served 10-10 first as the 6th Call Area Manager and served as president in 1979. He also served several terms as a director and most recently as secretary in 1986. Bob could always be found operating in the 10-10 contests and checked into many of the chapter

### Announcing New 6- & 8-Pole Crystal Filters

- ICOM 730/735/740/745/751/R70/R71A SSB 2.1kHz, 8-Pole — Exact replacement for FL-44A. Model IR455H1.05X — \$99
- ICOM IC-271/471/1271 CW 400Hz, 8-Pole — Great for DXing or EME.

Model IR10.7H400C — \$115

- Kenwood TS-930/940/830/R-2000 CW Super Selective 250Hz 8-Pole 455 kHz Filter — Comes mounted on high-quality glass PC board for the TS-930 and TS-940, drops into the TS-830.

Model IR455H125C — \$125

- TS-940/930/830 Super Selective CW Switch Kit — This new kit allows you to add another CW bandwidth. For example, on the 930/940/830, if you already have 400Hz or 500Hz filters installed, you can now select a set of IRI250Hz filters. Our 250Hz matched set allows for a lower noise floor for super quiet DXing.

- 9mHz 8-Pole Crystal Filters for Experimenters — All 8-Pole Filters — \$60

All 6-Pole Filters — \$50

- |                  |                 |
|------------------|-----------------|
| For SSB          | For FM          |
| A. 2.4kHz @ 6dB  | A. 1.5kHz @ 6dB |
| B. 2.1kHz @ 6dB  | B. 30kHz @ 6dB  |
| C. 1.8kHz @ 6dB  | For CW          |
| D. 2.2kHz @ 6dB  | A. 600Hz @ 6dB  |
| ★E. 2.2kHz @ 6dB | ★B. 600Hz @ 6dB |
| For AM           | ★(6-pole)       |

- A. 6.0kHz @ 6dB
  - ★B. 6.0kHz @ 6dB
- \$5.00 shipping and handling on all orders

For more information, call



International Radio, Inc.  
747 So. Macedo Blvd.  
Port St. Lucie, FL 33452  
(305) 879-6868



nets on a regular basis. Bob was the kind of person who was ready to volunteer for any job that needed doing and will be missed in 10-10.

### Ten-Ten International Convention

The word from Shreveport, Louisiana is that everything is shaping up for the first Ten-Ten International Convention to be held on August 7, 8 and 9, 1987. This convention will be held in conjunction with the ARK-LA-TEX HAM COM, sponsored by the Shreveport Radio Association. Special activities are being planned in celebration of the 25th anniversary of the Ten-Ten International Net.

Watch for additional details, but mark your calendar for the weekend of August 7-9, 1987.

### Feedback

Received a prescription (standard doctors' Rx form) for "information on 10-10" from Dr. Michael Stener, M.D. This was a first and got me thinking — How about your QSL card Mike? How about a design around a prescription form? Anyway, I filled Mike's prescription and sent him the information he requested.

Charles Evans, Jr. requested that I "enroll him in the 10-10 number

system." Sorry, Charles, you must enroll yourself by working 10 members and sending your log information to your Call Area Manager, who issues you your own 10-10 number. Charles has the information, and by now I hope he has received his own 10-10 number.

Charles also asked the correct way to show his 10-10 number on his QSL card. As far as I can find out, there is no "official" way. I looked back on a number of QSL cards in my file and find the following listings: 10X19636, 10-10 #19636, 10/10 19636, 10-X 19636, 10-10 NET 19636, TEN X 19636, etc. I happen to use 10-10 19636, but any way is acceptable as long as the number is shown on the card, either printed or written. If you took time to get your own 10-10 number, why not show it off?

From Ron House, KA7TPS, comes the question about his 11-year-old daughter, Crystal, KA7YPB, who wants to join 10-10. Crystal is only 11 years old, and Ron wants to know if there is any age requirement for joining 10-10. There are no age requirements for 10-10 membership, only the requirement of making 10 10-10 contacts on 10 meters. Crystal received her ticket when she was 10½, "with a little help from her father."

If and when Crystal gets her 10-10 number, I wonder if she will be the youngest 10-10 member? Who is the youngest 10-10 member we have? How about it? Are you the youngest? Drop me a QSL card with your 10-10 number and your age and let's see who is the youngest. Who is the oldest?

Same deal, you old-timers. Drop me a QSL card with your 10-10 number and age and let's see who is the oldest 10-10 member.

We will make this a contest with all entries postmarked on or before March 25, 1987. Prize: one year dues to 10-10 to the youngest 10-10 member and one year dues to the oldest 10-10 member. Come on you young 10-10'ers — let's see if the number of QSL cards received from the young people will outnumber the QSL cards from the old-timers.

Send your QSL cards to me at 18130 Bromley St., Tarzana, CA 91356. Also, if you want an information packet on 10-10 with details on how to become a 10-10 member, send a #10 (business-size) SASE to the above address. For 56¢ in stamps you can also receive a sample copy of the latest quarterly 32-page *10-10 International News*, the official publication of 10-10. Best 73 es cu next month. □

## 220 MHz is alive and well at Falcon

FALCON produces 8 different Base/Repeater and 9 different Mobile amplifiers. Six of these amplifiers are for the 220 MHz operator.

For example, consider the following two MOSFET Base/Repeater amplifiers. Remember, FALCON is the only manufacturer bringing you amplifiers with the advantages of RF power MOSFET's.

### Model 4112C

RF Power In..... 1 W to 15 Watts  
RF Power Out..... 10 Watts in - 100 Watts out  
3 Watts in - 50 Watts out

### Model 6135C

RF Power In..... 300 mW to 3 Watts  
RF Power Out..... 2 Watts in - 100 Watts out  
1 Watt in - 70 Watts out

### Features:

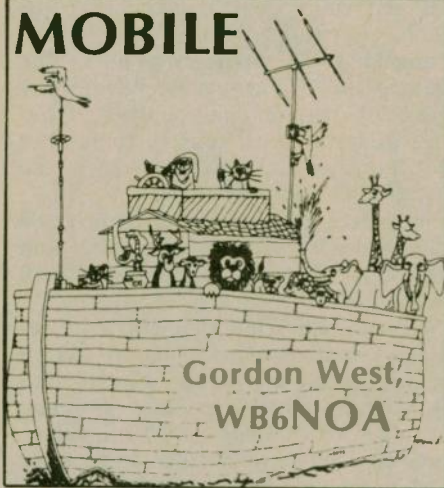
- Frequency range..... 220-225 MHz
- New, long life MOSFET transistors
- Low broadband noise (Low desense)
- Automatic Internal or External Keying
- Use for FM, SSB, CW
- Excellent high order intermod specs
- 8¾" x 19" rack panel, 13.8 VDC
- Continuous Duty (With customer fan)
- Built-in Thermal Protection
- 1 Year Warranty Made in the U.S.A.



 **FALCON**  
COMMUNICATIONS

P.O. Box 8979 • Newport Beach, CA 92658  
(714) 760-3622

# MOBILE



## Good power for your mobile

The modern microprocessor-based VHF transceiver and high-frequency single-sideband set both require good power to operate properly. Insufficient power to your mobile high frequency or VHF set may result in distortion, erratic memory operation and a severe reduction in output power without you ever knowing it.

A good power source will take us back to Ohm's Law, which you studied for your Novice ticket — Volts × Amps = Power in Watts ( $P = EI$ ). The formula sounds simple enough, but getting enough volts and enough amps to give your unit the right amount of power in watts can sometimes be difficult in a mobile or marine installation.

Your mobile battery of either an automobile or marine type normally rests at 13.8 volts DC with no load. Turn on some lights, and the voltage may dip down to 13.0 volts. This is normal.

When your engine is running, a properly operating alternator will usually drive your mobile voltage up to 14.5 to 15.0 volts at the battery terminal. Again, this is normal, and your ham radio set-up is designed to withstand this higher-than-normal "charging voltage" when your battery is being charged.

The biggest problem with most mobile ham installations is *inadequate* voltage supply when the unit is in transmit with the engine off. Your worldwide single-sideband set typically draws 18 momentary amps on voice peaks. Your new 70-watt, 2-meter transceiver might draw

well over 20 constant amps on transmit. The 45-watt VHF mobile sets typically draw about 12 amps on transmit, and the 25-watt mobiles draw about 7 amps.

Mobile VHF sets — like 2-meter, 220, and 450 MHz FM units — rarely suffer distortion if they don't get the full amount of power they need. You just won't get the rated power output. Many times you can't even tell by the front LED readouts that your power is down, too. Adequate voltage to a 10-30 watt VHF mobile is NOT absolutely essential if you don't mind less power output.

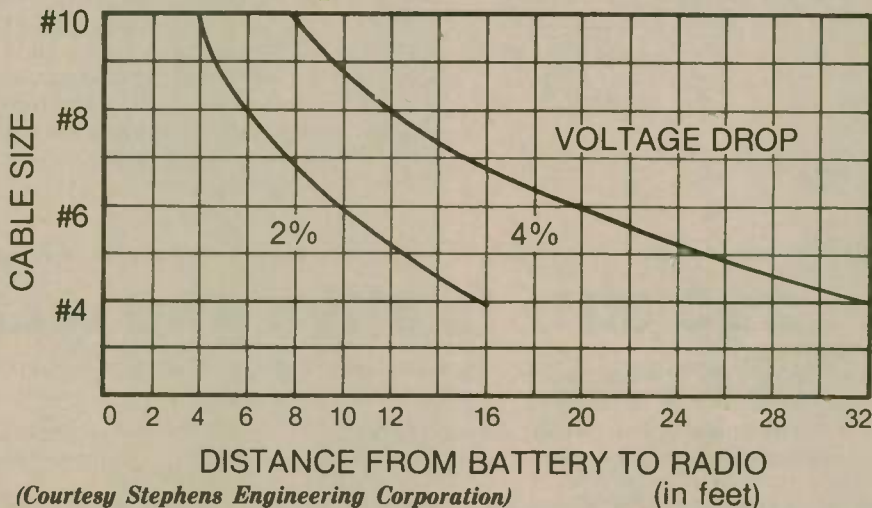
However, on a high-frequency single-sideband set, adequate voltage is *very essential* for a distortion-free transmission. Kenwood, Yaesu and ICOM microprocessor-based, high-frequency SSB sets all distort badly when the transmitter section can't see at least

12.0 volts DC at the power plug on the back of the radio. The greatest cause of inadequate voltage during transmit is improper DC wiring techniques.

The power cables that feed vehicular fuse blocks and marine switch panels is generally adequate for 45-watt and 25-watt mobile sets, but generally *inadequate* for 70-watt VHF mobile sets and 100 watt high-frequency SSB sets. This means you can't depend on the wiring that is found under your dashboard or in the switch panel in mobile home and marine installations. If you look at the wire size that feeds these fuse and circuit breaker assemblies, you will probably find nothing larger than a pair of #10 wires feeding the whole assembly. You can spot a #10 wire easily by looking at its diameter — it's usually no larger than the mike cable of your transceiver.

## DC POWER CABLE GUIDE (150W PEP)

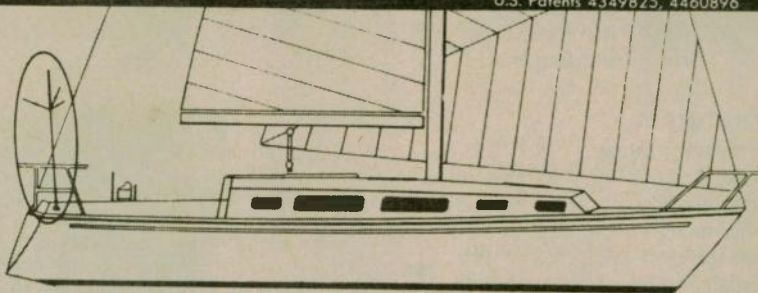
\*figures shown are maximum distance from battery to radio.



(Courtesy Stephens Engineering Corporation)

## 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.

For use on commercial marine frequencies add our Maritimer™ Adapter Collar and three special resonators. Choose from 8, 12, 16 or 22 MHz.

**MULTI-BAND ANTENNAS**  
7131 OWENSMOUTH AVENUE, SUITE 163C  
CANOGA PARK, CALIF., 91303  
TELEPHONE: (818) 341-5460

## WEATHER BOOT

- Weather seal your coax connection!
- Use with PL-259/SO-239
- Kit of 8 each your choice for RG-8, RG-58, RG-8X & RG-59, RG-214 ... only \$8.95 post paid.

Now available for BNC!

KILO-TEC

P.O. Box 1001 • Oak View, CA 93022  
Tel: 805-646-9645 • \*Dealer/OEM inquiries invited



The wire size you are looking for to interconnect your high-powered VHF set or single-sideband transceiver would be nothing less than #4 or #6, two-conductor. These huge cables are about the size of jumper cables, and they have the capability of easily powering radio equipment that might draw as much as 20 amps continuous.

Running two-conductor #6 wires is not all that easy in mobile and marine installations. I usually start from the radio, and work toward the battery or battery selector switch. I cut off the smaller radio power cable near the built-in, in-line fuses. I leave the fuses on the original power cable as a precaution. A good solder job on each conductor is the best way to do the splice. They don't make crimp connectors large enough for #4 or #6 wire.

Carefully route your new large-sized cable to your battery or battery selector switch where you can spot the same diameter cables. Make sure the cable is clear of any sharp metal that might nick it. Watch out when you go through the fire wall of an automobile — unless you use a rubber grommet, you stand a chance of shorting out your power feedline.

Connect the black wire to the negative side of your battery at the battery post or battery selector switch. You can purchase large lugs at an auto parts store. Solder the lug on the end of the black wire. Attach the lug to the battery post or battery selector switch.

Before attaching the red wire, purchase an in-line, 30-amp fuse and splice it in as close to the battery terminal as possible. You now have one added precaution against an accidental short — the fuse will protect the entire battery feedline from the red battery post connection all the way up to the fuse supplied by the radio manufacturer. Double protection won't hurt, and with wire this size, you want to make darn sure that no accidental shorts could ever occur.

Be careful not to let the wires get near any hot engine parts. The wire could literally melt, short out and sometimes cause a fire.

If all this sounds like too much work, try this simple test — with the engine turned off, check the voltage on the power plug of your transmitter on receive. Chances are it will be around 12½ volts. Now key your set. If it's a single-sideband worldwide set, give a sustained whistle while transmitting into a dummy load. In every case, the voltage will drop slightly. If it drops only about ¼ or ½ volt, your power source is adequate. However, if the voltage drops from 12½ volts to 11 volts on voice peaks, your set will undoubtedly go into distortion. If the voltage drops below 12 volts on a high-powered FM set, you're never going to get maximum power output.

A drop of more than ½ volt on transmit (SSB sets modulated to 100%) is unacceptable!

Another benefit of going directly to your battery is the natural filtering effect that a battery has on alternator whine and starter interference. Alternator whine is quite common in mobile 2-meter set-ups where you wire only to the fuse block. Going directly to the battery should eliminate the whine completely.

Have you ever lost your memory when you started the engine — even with the radio off? If you have, this is not so much a problem of low voltage during engine cranking, but rather starter spike noise that creeps into the microprocessor memory section of your high-frequency or 2-meter transceiver. Wiring directly to your battery should attenuate these spikes dramatically and protect your memory from accidental exposure during cold morning cranking.

Wiring directly to your battery may also minimize the effect your transmitter might have on other electronics on board your boat, in your motorhome or in your vehicle. I have cleared up numerous cases of cruise control transmitter interference by going directly to the battery. If you suffer from on-board electronic interference when you transmit on your radio, try a direct battery connection.

Yes, it's a lot more work than just grabbing any red wire near the fuse panel. However, many times it will resolve problems with distortion, low power output, loss of memory and transmit interference to your other electronics. Give it a try — it's the best way to go. Just don't forget that fuse by the battery positive post for maximum line protection. □

• Pass it on . . . WORLDRADIO •



**ON CALL**

**OC-1 only \$59.95**  
**Kit \$49.95**

**OC-2 only \$79.95**  
**Kit \$69.95**

Complete with shipping/handling U.S.A.

ON CALL is a complete selective call system so you don't have to monitor the frequency or it can be used as a decoder for controlling equipment at the repeater site and at home.

Compare these features

- 4 digit 16 tone sequential decoder programmable 43,680 different codes DTMF Format with Auto reset
- 1 AMP SPST relay output momentary or latched for external paging device such as Auto horn tape recorder speaker Audio etc
- Flashing LED call indicator (Energizes when your code has been accessed)
- easy connection to any radio Reg Trade Mark of ATT
- 12-16 volt DC operation

**PC boards & plans \$19.95**  
 Size OC-1 - 3 1/2 x 2 1/5 x 5 in  
 OC-2 - 2 3/8 x 3 7/8 x 8 7/8 in

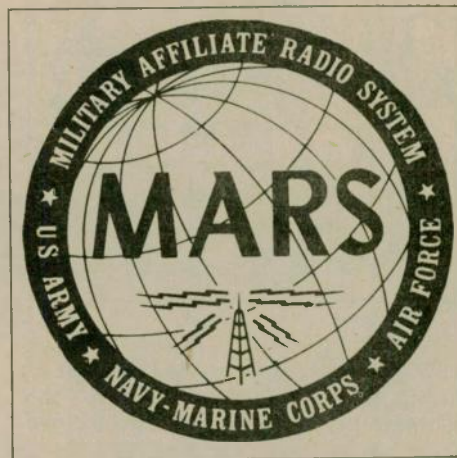
• can be used for clubs or emergency groups for help situations

To Order Send Check or Money

MC VISA  
 NYS Residents  
 Add Sales Tax

E Carter Rd  
 PO Box 384  
 Westmoreland, NY  
 13490  
 or Phone  
 315-733-3719

**DEVELOPMENT CORPORATION**



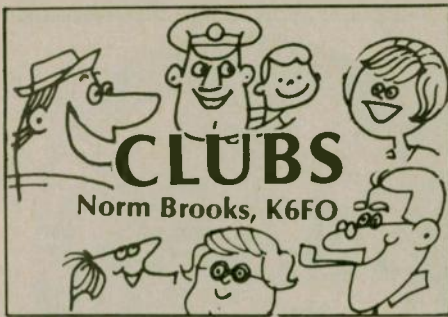
## Radio training on military bases

Plan for more focused cooperation between the uniformed Arizona services and the Amateur Radio community came out of a meeting at Fort Huachuca, Arizona on October 21, 1986. Chiefs of the three Military Affiliate Radio Systems (MARS), the Department of Defense (DoD) Liaison Officer, and a representative of the ARRL developed a program which should result in an increase in the number of Amateur Radio operators.

On the government side, the new amateur training program is a practical manifestation of Department of Defense Directive 4650.2, January 17, 1986 which formalizes support by the DoD for both the MARS and civil Amateur Radio activities within the Armed Forces. For the amateur community, the program helps implement a goal adopted by the ARRL Board of Directors to increase the number of licensed amateurs to 600,000 by 1990. (The present ham population in the United States is about 425,000. Separate but related recruiting programs are underway to attract members of other groups — youth, computer enthusiasts, and the senior and retired communities, for instance.) The program also responds to an ARRL Board motion calling for a close working relationship with the military establishment, particularly for its MARS programs, which utilize already-licensed amateurs in disciplined emergency backup communications networks.

The ARRL will ask its local affiliated clubs near military bases in the United States to locate volunteer instructors for Amateur Radio courses. These will be offered to interested off-duty personnel either on base or in a nearby town. The League will have available to these instructors appropriate course outlines, instructor guides, cassettes for instruction in the Morse code, and other audiovisual material.

(please turn to next page)



What may be the first amateur newsletter with copy moved by means of Packet Radio, the recent issue of the Delaware-Lehigh ARC News (which has W3OK as its club call) was almost entirely transmitted from the station of W3PYF to KB3UD Packet BBS on 145.05 and downloaded from that board by Editor Ed Field, KA3EED. Material was retyped from various sources, placed in a large file and transmitted to the BBS.

It may be asked why BBS was used and why it wasn't sent direct to the editor. The reason behind this is the fact that the editor puts the newsletter together once a month, while the material is written from various sources, such as the local editorials, the *W5YI Report* and the ARRL newsletter during the entire period.

The advantage of having a storage area and sub-directory separate from the rest of the board is that the editor has a chance to check all copy with the OK designator on it and download it.

Although Clarence Snyder, W3PYF, uses a Digital Rainbow, the BBS at Tom Teel, KB3UD's is an IBM and the editor uses an Apple IIe, the use of pure ASCII and the 1200 baud modems make it a quick "trip". With most of the copy originating at the residence of W3PYF (who is using a Kantronic KPC2400), and KB3UD using a Kantronics KPC1, the editor uses a Taper TNC1.

If anyone would like any more information on this procedure, contact W3PYF, KB3UD or editor KA3EED. □

## Club sponsors class

The Yucaipa Valley ARC will be sponsoring a Novice, Technician/General class, to start at 7 p.m. on February 3, at the Yucaipa Adult School Education Building at 12797 Third Street (Yucaipa Boulevard off-ramp from Interstate 10 and a right by the Bank of America to 12797 Third — on your left).

The instructors will be Don Ames, W6RTM (12574 Eighth Street, Yucaipa, CA 92399; (714) 795-5743) and Jim McDonald, KA6VIT (35428 Sunlight Drive, Yucaipa, CA 92399; (714) 797-5067). Any additional questions can be addressed to them or our club president, Fred Schmidt, KG6QN, at 13082 South Lane, Redlands, CA 92373 or telephone (714) 794-1244. □

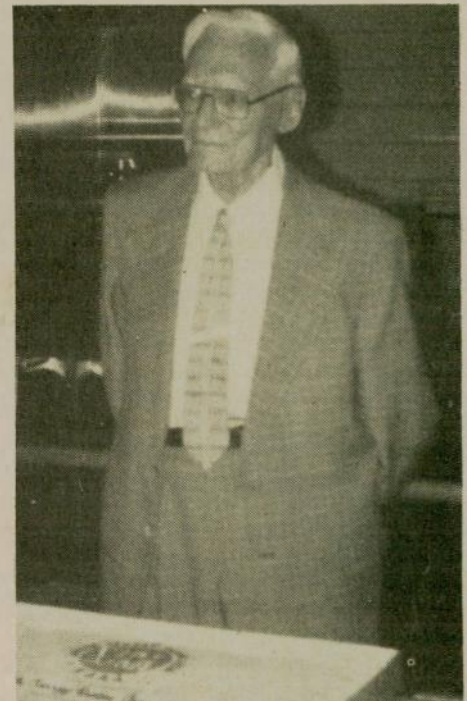
## Club remembers its beginnings

June 12, 1986 marked the South Jersey Radio Association's 70th anniversary. A special event station held June 7 to June 15 commemorated the event.

The club's station, K2AA, received calls from stations throughout the United States, congratulating them on their 70 years. Those who asked if any charter members were still with the club were told of Gordon Kressel, W2BQ, and William Pyle, W3WR.

Gordon and Bill still QSO with each other on a weekly basis, although they no longer live in the same town (Camden, New Jersey) as they did in 1916. Bill resides in Millsboro, Delaware, while Gordon lives in Collingswood, New Jersey. Bill is still active in Army MARS and participates in a Delaware MARS Net, and Gordon recently renewed his license for 10 more years.

The club received the call sign W3CIV in 1932 (South Jersey was in the 3rd FCC District at that time). After World War II, with members returning, activi-



Charter member Gordon Kressel, W2BQ, at South Jersey Radio Association's 70th anniversary celebration

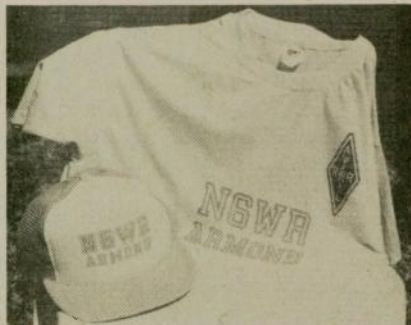
ties picked up and in 1950, the Association acquired the call sign K2AA, as a memorial to Williams Ebensperger, who had served as president in 1926.

Also in 1950, the official monthly publication of SJRA was changed from a dittoed sheet called *SJRA NEWS* to *HARMONICS*, and with it a change in the method of reproduction.

Worldradio wishes to congratulate South Jersey Radio Association on its longevity and continued vigor.

(Information from *HARMONICS*, April/July '86 □

Only One Person in  
the World has your call . . .  
**YOU!**



Letter style on shirt is "Ivy Open" and on cap is "Sportswear."

Now you can wear and display your call, name and your club name on a high-quality T-shirt for only \$10.00. Your call, name and A.R.R.L. logo (if desired), printed on shirt front, with club name printed on shirt back. Shirts (sizes S, M, L, XL) are available in light blue, light yellow, beige (tan) or white. A.R.R.L. logo available in 2 1/4" x 5" or 1 3/8" x 3" in red. Lettering is available in two styles — Ivy Open or Sportswear — and the following colors: black, royal blue, maroon, brown, green, red, or orange. For individual orders please add \$1.50 shipping and handling. Club orders (would prefer quantities of 10 or more) are shipped postpaid.

Matching cap printed with your call and name has foam front and mesh back, is adjustable for size, and costs \$5.00.

High quality golf shirts available, printed one side \$12, both sides \$14.

Make checks or M.O. payable to:

**Anne Wright, N6BOP**  
**2272 Kellogg Park Drive**  
**Pomona, CA 91768**

California residents add 6% sales tax.

WorldRadioHistory

## MARS

(continued from previous page)

If approvals can be obtained, pilot programs are tentatively planned for selected military installations throughout the United States. Personnel interested in the program are invited to get in touch with either the ARRL, 225 Main St., Newington, CT 06111 or the appropriate MARS group; HQ Army MARS, U.S. Army Information Systems Command, AS-OPS-OA, Fort Huachuca, AZ 85613-5000; Director, Navy-Marine Corps MARS, Naval Communication Unit, Washington, D.C. 20390-5161; or Chief, Air Force MARS HQ, AFCC/DOOCC, Scott Air Force Base, IL 62225-6001. Similarly volunteers who wish to assist the program may get in touch with one of the sponsoring groups.

—Submitted by Perry Williams, ARRL Secretary and the Joint MARS Chiefs Panel □

# Visit Your Local RADIO CLUB.

## ALABAMA

**Birmingham Amateur Radio Club, Inc. (BARC)**  
Meets at the American Red Cross Building  
2225 3rd Ave. North in downtown Birmingham, Alabama  
1st and 3rd Thursdays/monthly at 7:30 p.m.  
For info call Chuck Conkell, N4MLN, (205) 833-9555

## ALASKA

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

## ARIZONA

**Scottsdale Amateur Radio Club**  
Scottsdale Senior Center  
Corner of Wells Fargo/2nd Street  
1st Wednesday/monthly — 7:30 p.m.  
rpt. 147.18(+ ) or 444.000(+ ) • Call (602) 951-8300

## Old Pueblo Radio Club

Meets: 2nd Wednesday/monthly — 7:30 p.m.  
Location: Franklin Building  
University of Arizona  
N.E. corner of 6th St. & Park.

## CALIFORNIA

**Amador County Amateur Radio Club**  
P.O. Box 1094, Pine Grove, CA 95665, Pioneer Elementary  
School, Pioneer, CA • 1st Thurs/monthly 7:30 p.m.  
WA6W1Y Rptr. — 146.835, 146.235.  
Net Tues. 7:30 p.m.

## Anza Valley Radio Club

Anza Valley COOP  
58460 Highway #371  
Anza, CA 92306  
Meets 1:00 PM last Sunday/monthly

## Associated Radio Amateurs of Long Beach, Inc. 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

## Contra Costa Communications Club WD6EZC/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 Carl KA6OLK (415) 237-2621

## Fresno Amateur Radio Club, Inc.

P.O. Box 783, Fresno, CA 93712  
Meets: 2nd Friday/monthly — 8:00 p.m.  
Wawoha Middle School; 4524 N.  
Thorne; Fresno. W6TOR 146.34/94

## Gabilan Amateur Radio Club

South Valley J.H.S.  
385 IOOF Ave. • Gilroy, CA 95020  
Meets: 2nd Thursday/monthly — 7:30 p.m.  
Talk-in 145.47-

## Golden Empire Amateur Radio Society (VEC)

P.O. Box 508, Chico, CA 95927.  
Al Biegler WA6WJZ (916) 343-6141/call 146.25/85  
Meets in conference room 1, Enloe N T Memorial  
Hospital, 3rd Fridays/monthly — 8:00 p.m.

## Hangtown Amateur Radio Club

P.O. Box 305, Placerville, CA 95667  
Meets: 3rd Wednesday/monthly — 7:00 p.m.  
Senior Citizens Center, Spring St., Placerville  
Info: (916) 622-9488

## Kern River Valley Amateur Radio Club

P.O. Box 1902, Lake Isabella, CA 93240  
4th Saturday/monthly — 4:00 p.m., (Pot Luck)  
Veteran's Hall, Lake Isabella  
WA6UYW Repeater 146.085/146.685

## 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

## Mt. Wilson Repeater Assoc. (M.W.R.A.)

P.O. Box 1384  
Monrovia, CA 91016  
Net. Mon. 7:00 p.m.  
WB6JPI Repeater 146.400/147.435

## Naval Postgraduate School Amateur Radio Club K6LY

Monterey Peninsula; 146.97, 444.7  
2m net Weds. 8 p.m.; Meets 2nd Thurs. 7:30 p.m.  
Contact: Keith Beard WE6R  
9 Cielo Vista Terrace • Monterey, CA 93940

## 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.

## Radio Amateur Mobile Society

Meets: 2nd Tuesday/monthly — 7:30 p.m.  
Carmichael Elks Bldg.  
Cypress and Hackberry, Carmichael, CA  
Net Saturday a.m. 224.84 8:30/146.79 9:00

## River City A.R.C.S.

Meets: 1st Monday/monthly — 7 p.m.  
Glendale Federal Savings  
Maryal Dr. and Watt Ave. — Sacramento  
For info: (916) 483-3126

## Sacramento Amateur Radio Club, Inc.

Contact: Ron Wenstrom, KJ6R, (916) 962-2415  
after 6 p.m. Meets Sac. Blood Bank  
32nd St. & Stockton Blvd.  
2nd Wednesday/monthly—7:30 p.m.

## San Fernando Valley ARC Inc. (W6SD)

Meets 3rd Friday/monthly — 7:30 p.m. • Red Cross  
Bldg. 14717 Sherman Way, Van Nuys, CA 91407. Exams  
8 a.m. 1st Sat./monthly • Pre-registration via P.O. Box  
3151, Van Nuys, CA 91407

## San Gabriel Valley ARC

Bowling Green Clubhouse  
405 S. Santa Anita Avenue  
Arcadia, CA 91006  
1st Tuesday/monthly — 7:30 p.m.

## 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. W6UW

P.O. Box 6 • San Jose, CA 95103. W6UU 146.385 +  
Meets: Santa Clara County Service Center  
1555 Berger Dr., Building 2 Auditorium  
2nd Monday/monthly — 7:30 p.m.

## Sierra Foothills Amateur Radio Club

P.O. Box 3262, Auburn, CA 95604.  
Office of Education Bldg., 360 Nevada St., Auburn, CA.  
Meets: 2nd Friday/monthly at 7:30 p.m. Net Thurs.  
7:30 p.m. Rptr. 145.43-Tues. 7:30 p.m. 28.543 MHz.

## Shasta Cascade Amateur Radio Soc. (SCARS)

Redding, CA — Calif. Dept. of Forestry  
Communication Center, 1000 Cypress St.  
2nd Saturday/monthly, 7:30 p.m.

## Southern California Six Meter Club

P.O. Box 448, Cypress, CA 90630  
USB Net Tue., 8:00 p.m., 50.150  
FM Rpt. Net Thur., 8:00 p.m., 52.28/88  
FM SmpX Net Thur., 9:00 p.m., 50.300

## Sonoma County Radio Amateurs, Inc.

P.O. Box 116 • Santa Rosa, CA 95402  
Meets: 1st Wednesday/monthly 7:30 p.m.  
Repeater frequency: 146.13/73  
Contact person: Hank, W6DTV, 823-7885

## Southern Calif. Amateur Transmitting Society (SCATS)

Vine Elementary School  
1901 E. Vine St.  
West Covina, CA 91790  
1st Monday/monthly — 7:00 p.m. (coffee 6:30)

## 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

## Stockton-Delta Amateur Radio Club, Inc.

U. of the Pacific, Rm 122  
Kensington & Mendocino  
2nd Wed. monthly, 7:30 P.M.  
Rptr. 147.165/765 Net Wed. 8:00 P.M.

## Tehama County ARC

13620 Trinity Ave.  
Red Bluff, CA 96080  
Meets: 1st Wednesday/monthly — 7:00 p.m.  
CDF Training Room

## Tri-County Amateur Radio Association

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

## 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 Repeater 146.34/146.94

## West Coast Amateur Radio Club

Fun Meetings—No Business  
Meets 3rd Thursday/monthly—7:15 p.m.  
Fountain Valley Elem. School • Fountain Valley, CA  
Net every Thursday 7 p.m. • Repeater 145.440-

## Yolo Amateur Radio Society

P.O. Box 659, Davis, CA 95617.  
Meets: City Council Conf. Room.  
23 Russell Blvd. First Tuesday 7:30 p.m.  
Simplex 146.475

## CONNECTICUT

### Tri-City ARC

Groton Public Library  
Route 117  
Groton, CT 06340  
2nd Tuesday/monthly — 7:30 p.m.

## DELAWARE

### Sussex Amateur Radio Assoc.

Delaware Technical Com. College, Georgetown  
211 S.E. Front St.  
Milford, DE 19963  
3rd Wednesday/monthly — 8:00 p.m.

## FLORIDA

### Sarasota Amateur Radio Ass'n, Inc.

Meets: 3rd Tues./monthly — 8 p.m. on the 6th floor (board  
room) 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, 7 p.m.  
Herbert Hoover J.H.S.  
Indialantic, FL

## HAWAII

**Big Island Amateur Radio Club**  
P.O. Box 1938 • Hilo, HI 96721-1938  
Meets: 2nd Tuesday/monthly - 7:30 p.m.  
Helco Auditorium, 1200 Kilauea, Hilo  
Call in: 146.88(-) or 146.76(-)

## ILLINOIS

**Bolingbrook Amateur Radio Society**  
P.O. Box 495  
Naperville, IL 60566-0495  
(312) 420-0342 • Call in 147.93/33  
3rd Monday/monthly — 7:30 p.m.

**Dupage Amateur Radio Club W9DUP**  
Mid-America Savings and Loan  
55th & Holmes (55th St. near RT 83)  
Clarendon Hills, IL • 4th Monday/monthly — 7:30 p.m.  
(312) 971-1156 for more information

**Fox River Radio League**  
Valley National Bank, Lower Level  
Northgate Shopping Ctr. & RT. 31, Aurora, IL  
(312) 898-2779 for more information  
2nd Tuesday/monthly — 7:30 p.m.

**Radio Amateur Megacycle Society (RAMS)**  
Meets: Irvingwood/Acacia Church  
3900 N. Plainfield, Chicago, IL (8200W)  
Mail to W9DY, (312) 625-2879  
3rd Friday/monthly — 7:30 p.m.

**Six Meter Club of Chicago - K9ONA**  
Rptrs. 146.37/146.97 448.300/443.300  
Info net - Tues. 9:00 p.m. 146.37/97  
Annual Hamfest 2nd Sunday in June  
Santa Fe Park, Willow Springs, IL.

## INDIANA

**Fort Wayne Radio Club**  
Ron Koczor, K9TUS  
P.O. Box 15127, Fort Wayne, IN 46885  
The Salem Church  
3rd Friday/monthly — 7:30 p.m.

**Northeastern Indiana Amateur Radio Club**  
P.O. Box 745, Auburn Indiana 46706  
Meets: 2nd Tuesday/monthly — 7:00 p.m. at members homes  
Daily traffic net at 2300Z  
on 147.96/36 MHz, the WB9VDK repeater

## KANSAS

**Sandhills Amateur Radio Club**  
Wheatland Electric Meeting Room  
West Fulton Street  
Garden City, Kansas 67846  
1st Thursday/monthly at 7:30 p.m., 146.31-91

## KENTUCKY

**Kentuckiana Radio Club**  
Bill Richmond, WD4CPQ, 637-8443  
Louisville Red Cross Bldg.  
Louisville, KY  
Meets: 4th Saturday/monthly — 7:30 p.m.

## MARYLAND

**The Peninsula Radio Operators Society (PROS)**  
Family oriented activities — training and  
exams held throughout the year.  
Info net — K3NOQ/Rptr. 146.925 Tues. 1930 Local  
P.R.O.S., P.O. Box 2315, Salisbury, MD 21801

## MICHIGAN

**South Eastern Michigan A.R.A.**  
Meets: 1st Fri./monthly 7:30 p.m. K8FC Rptr. 147.75/15  
Grosse Pointe North High School  
Building C, Cafeteria Commons  
For info contact N8CDY (313) 885-5557

## MISSISSIPPI

**Miss. Coast Amateur Radio Assn. (MCARA)**  
P.O. Box 1785 • Tel: (601) 388-9232  
Gulfport, MS 39502-1785  
Meets: 3rd Monday/monthly  
Harrison County Courthouse

## MISSOURI

**Heart of America Radio Club**  
American Red Cross  
3521 Broadway  
(816) 756-2365 x65  
3rd Tuesday — 7:30 p.m.

## 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

**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

## NEW YORK

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

**Hall of Science Amateur Radio Club, Inc.**  
P.O. Box 131, Jamaica, NY 11415 — HOSARC — 2nd Tuesday/  
monthly — Hall of Science Building. 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 — 1445.225 —

**Radio Club of Junior High School 22 N.Y.C., Inc.**  
111 Columbia St. • New York, NY 10002  
"At The Core of The Big Apple," QSLs invited.  
For info contact WB2JKJ and "The Crew" learning  
English thru Ham Radio at (516) 674-4072, 24 hrs.

**Rockaway Amateur Radio Club**  
100th Precinct Police Station  
Rockaway, New York  
Berne Ross KO2F • (718) 634-2167  
Meets: 3rd Tuesday/monthly — 8 p.m.

**Westchester Emergency Communications Assn. (WECA)**  
147.66/147.06, 222.80/224.40, 447.475/442.475  
Mtg: 2nd Monday/monthly - 7:30 p.m. Little Theater  
County Center, White Plains, N.Y. For further info write:  
P.O. Box 131 N. Tarrytown, N.Y. 10591. Call (914) 631-7424.

## NORTH CAROLINA

**Cabarrus Amateur Radio Society (CARS)**  
Western Steer Family Steak House  
1390 Hwy 29 North  
Concord, NC 28025  
3rd Monday/monthly — 7:00 p.m.

**Raleigh Amateur Radio Society, Inc. (RARS)**  
P.O. Box 17124 • Raleigh, NC 27619  
Meets: 1st Wed./monthly, 7:30 p.m. • First Presb. Church  
Club net daily, 8 p.m. on RARS 04/64, W4DW  
Annual Hamfest, 2nd Sunday in April

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

## OHIO

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

**C.A.R.S. (The Clyde Amateur Radio Society)**  
Ervin Remaley, KA8CAS, Secretary  
2nd Tuesday/monthly — 7:30 p.m.  
Community Rm., City Building, Clyde, OH  
Repeater 144.75/145.35

**Northern Ohio Amateur Radio Society (NOARS)**  
K8KRG/WB8JBM • P.O. Box 354, Lorain, OH 44052  
Meets 3rd Mondays/monthly — 8 p.m. at Gargus Hall  
Info: George—WB8ANM • (216) 933-2841  
Ohio's largest general interest club.

## OREGON

**Oregon Tualatin Valley ARC**  
Beaverton Elks Lodge  
3500 SW 104th Ave.  
Beaverton, Oregon  
2nd Wednesday/monthly — 7:00 p.m.

## PENNSYLVANIA

**Penn Wireless Assoc. Inc.**  
Falls Twp. Municipal Bldg.  
Trenton Road  
Fallsington, PA 19054  
4th Monday/monthly — 8:00 p.m.

## TENNESSEE

**Middle Tennessee Amateur Radio Society**  
University of Tennessee Space Institute  
Tullahoma, Tennessee 37388  
(615) 455-0289 Call in — 146.10/70  
Meets: 2nd Thursday/monthly — 7:30 p.m.

**Warminster Amateur Radio Club**  
P.O. Box 113, Warminster, PA 18974  
Meets: 1st Wednesday/monthly — 8:00 p.m.  
at St. Johns Lutheran Church, Hatboro, PA  
Net Wednesdays — 8:30, 147.09/69

## VIRGINIA

**Southern Peninsula Amateur Radio Klub (SPARK)**  
Meets: 1st and 3rd Tuesdays  
Salvation Army Community Bldg. • Hampton, VA  
Operates 146/13 147/73 Repeater  
For info call 480-2346 or 851-5573

## WASHINGTON

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

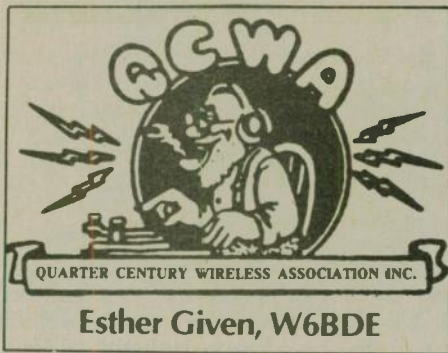
**North Seattle Amateur Radio Club (NSARC)**  
Meets: 3rd Tuesday (except Jul. & Aug.) at the First  
Interstate Bank, 30th Ave. NE and NE 125th St. (Lake City)  
in basement. Info: Mike Jr., W7WHT, (206) 282-1438 or P.O.  
Box 20279; Seattle 98102

## WEST VIRGINIA

**Jackson County Amateur Radio Club, Inc.**  
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.

## WISCONSIN

**Fox Cities Amateur Radio Club**  
Meets: 3rd Monday/monthly — 7 p.m.  
Roosevelt Jr. High School • 318 E. Brewster St.,  
Appleton, WI 54911. Talk-in 146.16/76  
Contact Jack Bigelow, KA9JOL, (414) 766-3861



QCWA's 1986 Convention — held in St. Petersburg, Florida — was well executed and well attended. Host Chapters Gator #32 and Pelican #128 anticipated every eventuality and presented a well-balanced program of activities and interest.

The annual executive board meeting, held for two days preceding the convention, covered a heavy agenda. Following reports of officers and committee chairpeople, board actions of interest included plans for QCWA's 40th anniversary and convention in San Diego, Halloween weekend 1987; decision to award seven scholarships in '87; adoption of an advertising program to publicize QCWA at major hamfests; a conclusion that no changes would be made in QCWA's logo; action to prepare tapes of QCWA News for blind members; a final decision that the QCWA directory be supplied at no charge to U.S. members; approval of name change of Nevada Chapter #44 to Hoover Dam Chapter #44; and acceptance of Central Oklahoma Chapter #63's bid for the 1988 QCWA convention to be held in Oklahoma City.

The board conducted an Open Forum for the general membership on Friday plus a fellowship coffee hour on Saturday. Presentations, speakers, tours, games, entertainment and excellent weather on the "Sun Coast" made the convention an enjoyable and successful event. The host chapters' committee members did an outstanding job of presenting a model convention.

QCWA's 30th Annual Spring QSO Party will be conducted the first weekends in February and March 1987. CW will begin at 0001 UTC Saturday, February 7 and conclude at 2400 UTC Sunday, February 8. The Phone contest covers the same times and dates a month later, 0001 UTC Saturday, March 7 ending at 2400 UTC, Sunday, March 8.

**Official rules:** Each contact with another QCWA member on each band counts 1 point. Exchanges required are A) QSO NUMBER (starting with first contact and continuing through to final regardless of band), B) FIRST NAME, C) CHAPTER IDENTIFICATION by name or number. Members not affiliated

with a chapter use "AL", meaning member at large, and D) STATE, PROVINCE OR COUNTRY.

Separate logs must be kept for CW and Phone parties. An additional multiplier of 1 will be allowed for each different chapter worked and for one "AL" in each state, province or country.

**Scoring:** Total number of contacts in each party times the total number of multipliers. No net, crossband or repeater contacts will be accepted.

**Logs:** Logs must be postmarked by March 23, 1987. In addition to plaques for top scorers, QCWA members may become qualified for QCWA certificates such as Worked 50 States, Worked 60 Chapters, Worked 100 Members, or Worked 500 Members.

Complete and more explicit information on QSO Party rules, suggested operating frequencies, and log prepara-



Guest speaker at the International Breakfast held Saturday, September 6, at the ARRL National Convention in San Diego, California, was Ing. Pablo A. Mooser, XE1SR, president of the Liga Mexicano de Radio Experimentadores A.C. Pablo is shown here (center), receiving a QCWA membership application from Ralph Held, K6QS (left), of a local chapter, and Leland Smith, W5KL, president of the QCWA National Association.

tion and submission may be found in the spring issue of QCWA News or obtained by writing to QCWA Headquarters, 1409 Cooper Dr., Irving, TX 75061.

Cassette tapes of QCWA News publications will be available at no charge to members with visual impairment. Names and mailing addresses of eligible persons should be sent to QCWA Secretary, Jim Walsh, W7LVN, 159 E. 16th St., Eugene, OR 97401.

QCWA enters its 40th year, 1987, with pride and anticipation. Pride in the many undertakings and accomplishments which have made it a viable organization and anticipation of bigger and better endeavors and achievements yet to come. In its 40-year span, QCWA has enrolled over 20,000 members, and sanctioned the formation of 160 local chapters throughout the world. It has earned the respect and prestige of Amateur Radio individuals and organizations everywhere and is the important link between the pioneer experimenters of yesteryear and the farout seekers of tomorrow. □

## Display Your License . . .

The United States of America

**Amateur Radio**

*This certifies that John T. Little station KP2DT*

GRANTING OF LICENSES UNDER FEDERAL CONTROL OF THE FEDERAL COMMUNICATIONS COMMISSION IS SOLELY ADMINISTRATIVE AND DOES NOT CONSTITUTE AN ENDORSEMENT OF THE QUALITY OF THE LICENSEE'S OPERATIONS OR A GUARANTEE OF THE ACCURACY OF THE INFORMATION SUPPLIED BY THE LICENSEE. THE LICENSEE IS RESPONSIBLE FOR THE ACCURACY OF ALL INFORMATION ON HIS LICENSE. THE LICENSEE IS RESPONSIBLE FOR THE ACCURACY OF ALL INFORMATION ON HIS LICENSE. THE LICENSEE IS RESPONSIBLE FOR THE ACCURACY OF ALL INFORMATION ON HIS LICENSE.

JOHN T. LITTLE P.O. 151 SANDPOINT IDAHO 83864	CLASS OF LICENSE CLASS OF LICENSE CLASS OF LICENSE
---	--

*John T. Little*

. . . with an official looking, 8 x 10 white parchment certificate printed with red, blue and gold ink (gold borders, gold eagle with red, white and blue shield, red lightning bolts and blue type). Looks good with original license or photocopy.

Area reserved for your license is pre-slotted for easy insertion. Your name and call are hand printed on certificate in calligraphy.

To receive your personalized certificate, print name, call, address and zip. Send with check or money order for \$4.00.

**EXTRA CLASS AMATEURS ONLY!**

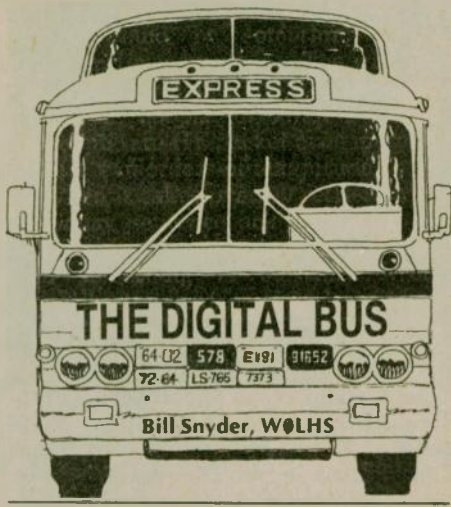
You've made it to the top!! Now you can display your name and call on an attractive, 3 color, white parchment, 9 x 12, "Extra Class Diploma".

To receive your Diploma, with your name and call hand printed in calligraphy, send your name, call, address and zip with a check or money order for \$5.00. (Diploma is not a license display).

Both certificates include postage and handling. U.S. and possessions only. U.S. license only.

John T. Little - KB7DT  
 P.O. Box 151  
 Sandpoint, Idaho 83864





As the packet world explodes, more and more packeteers are becoming disenchanting with the "new technology" buzzing on our frequency spectrum. I, too, am getting slightly disgusted; however, I'm still hopeful that something good will come out of it all, and I believe it will.

Here in North Dakota we're just getting our VHF packet operations going. Almost every day a newcomer signs on 145.01 MHz, and we're still trying to influence non-packeteers to join us and fill the digipeat gaps between us and Manitoba, Minneapolis and South Dakota. You must remember that if every ham in North Dakota got on 2-meter packet, we'd still be uncongested. So, it's hard for me to imagine what it must be like in the big metropolitan areas.

John Schmid, WA6PGA, gives us his ideas with this letter: "... I just shut the damn packet system off in a huff! I've been on the air as a ham for over 25 years, been in electronics professionally for over 40, and this mode is the most frustrating thing I've run across in all those happy years. But you'll hardly ever see that statement in the magazines, never fear! Except perhaps in a letter to the editor or so.

"It's a classic case of a communications mode that has been misapplied: The packet code and principle is designed and meant for noise-free media, high-speed rates (1200 baud isn't high-speed!), and would function beautifully on UHF thru a geostationary satellite at 20 times the present 2-meter rate. Now THAT would be something worth writing articles about. ... The way it is now, I've just about had it with packet and all the hoopla surrounding it. And that applies to HF-packet even more, by at least two orders of magnitude!

"When it takes over 30 retries to get one lousy sentence ack'd, IF you are lucky, through only three digipeaters, then something is basically wrong somewhere ... and, on HF it's infinitely worse."

John goes on to tell of his year on packet and more of his experiences. He then shifts to praising AMTOR for its abilities. And I agree with him on all counts.

When I first tried packet, I was the only ham TNC equipped in my area. I modified the AEA PK-1 and went on 20 meters. At that time there were only a handful of packeteers on the band, so we could ragchew easily.

If you have followed this column for the last two years, you will remember my statement: "Packet is not for HF ragchewing."

During those early months, I experimented with a bulletin board. I used it to trade DX information with my RTTY DXer friends, and it worked like a charm. I was able to receive traffic relayed through one HF and two VHF stations in less than two hours. And the accuracy was perfect all the time.

Then my eastern HF BBS contact moved to California, and the other BBS stations excluded me when they established an auto-forwarding net to improve the gateway traffic system. So, I was back to square one.

I tried various routings to re-establish contact with the East Coast RTTY DX fans. I put messages into other gateway operators, but alas, the little packets just disappeared into thin air.

My problem has now been solved: my eastern DXers are on HF packet. Now we communicate directly, and we're back in business. We also have an alternate route via a BBS, but you can't beat going straight — boom boom!

I was eavesdropping on a local 2-meter packet newcomer who was excited over the prospects of digipeating up and down our Red River Valley with Skywarn information. A non-packeteer asked him if he had tried HF and his answer was: "I tried listening there, but it was nothing but connects and discon-

nects. I didn't really hear anything, just that kind of stuff."

Don't get me wrong, I still like packet, but I think it's time the ARRL and the packeteers do a lot of band planning and try to fix the problems. As for me, I'll still do my ragchewing and DXing on good old steam RTTY and new-fangled AMTOR.

I'm now looking forward to the day when the Tucson Amateur Packet Radio group introduces the external modem board for store-and-forward satellite use. This should happen about the time you read this column. Tom Clark, W3IWI, demonstrated the prototype at the AMSAT Symposium in Dallas last fall. It takes care of Doppler shift and is quite impressive.

I have discovered this: if you want to get the real fun out of Amateur Radio's new modes, you must jump in early before the mob arrives and louses it up!

Rick Whiting, W0TN, Vice Director of the ARRL Dakota Division, has some strong feelings about packet operations on HF. One thing Rick is vocal about is digipeating on HF. He would like to see it curtailed and so would I. Rick writes: "Digipeating will significantly increase retries and, thus, reduce throughput for everyone using the channel ... Digipeating multiplies the number of packets and ACKs on the channel for the same message.

"Second, it decreases the probability of a frame being received without error (the frame is simply exposed to corruption more often). If the frame does get through 'N' hops, the ACK also has to get back through 'N' hops and the ACK must get back before FRACK times out at the originating station and the packet is sent again.

"Making matters worse, there is no agreement among HF operators for DWAIT. Indeed, DWAIT is generally set to '0'. Also 'hidden stations' produce a relatively high collision rate on HF. Hidden stations are stations that the packet originating station cannot hear but the digipeater can. Thus, the hidden station and the packet originating station may send colliding packets. In short, digipeating — on a "noisy" channel — increases retries dramatically."

My own DIGIpeater command is turned OFF when on HF. I did that when I discovered people digipeating through me to Japan. Both Rick and I suggest every operator on the HF spectrum do the same thing.

Rick's recommendations for HF packet (in TAPR command language) are as follows: DIGIpeat Off, FRack 10 seconds (minimum), MAXframe 1, Paclen 40, and Beacon 0. In addition, Rick cautions all to stay on the channel frequency with sufficient accuracy to make the channel detect carrier (CDC) system prevent colliding transmissions.

In my December column, I raised the

### "LET'S COMPARE RTTY TUNERS"

Other RTTY tuners will tune Hi Tone and Lo Tone pairs by a "Cross" display. They do an excellent job. Cost? Between \$295.00 and \$695.00.

"BLINKY" will tune Hi and Lo Tone pairs, International Shortwave, European Lo Tone pairs, Extra wide shifts,



"BLINKY"  
SSV-RTTY-FAX TUNER

COST? ONLY  
**\$99.95**

ORDER YOUR "BLINKY"  
TODAY:  
Wired and Tested.

Featured in Dave Ingram's "RTTY Today".

**TimeKit**

P.O. Box 22277  
Cleveland, OH 44122  
(216) 464-3820



Add \$2.00 for shipping and handling. Ohio residents add 6 1/2% sales tax.



Dave Jones, VP8AQT, standing beside the memorial to Ernest Shackleton, the Antarctic explorer, on South Georgia.

due of the beacons on 14.100 MHz and packet QRM. Rick did a little study of the beacon channel using his FT-980 receiver with 600 Hz filters. Here's what Rick found as a result of his efforts: "I observed occasional 'interference' from packet stations on 14,103 (pace frequency 14,101.2) and 14,099.43 (mark frequency 14,097.83). It appears to me that most of the 'interference' heard was, in fact, in the FT-980 rather than transmitted energy in the intended receiver passband.

"Of course, there was an occasional AMTOR, CW or off-frequency or distorted packet transmission in the 600 Hz passband. Nevertheless, the beacon channel was without interference most of the time while I was monitoring with the 600 Hz filter. There was even less with the 300 Hz CW narrow filter. On the other hand, there was quite a bit of 'interference' with the 2.4 kHz filter for LSB or USB."

Based on my monitoring, I conclude that with the 600 Hz of narrower filter I could use the beacon system satisfactorily. It will be interesting to compare the results and conclusions of other operators, particularly how they feel about whether receivers should, or should not, be expected to deal with signals 1 kHz from the beacon frequency."

#### Notes

Dave Jones, VP8AQT, who has operated sporadically from the Falklands and South Georgia, writes that the rumors about him being a pirate are true. Dave is in the British Army on the avionics side. He is now off to Germany and a different job, but hopes to

be on the air from there.

TK5UC has been on RTTY from Corsica, and V31AB is a regular from Belize (QSL via WA4WIP).

The *DX Bulletin* is now regularly listing RTTY DX stations in the Bandpass section.

#### Eavesdroppings

MY COMMODORE SPELLS LIKE A SEAMAN THIRD. . . IS THAT A MACHINE OR IS THERE AN OPERATOR THERE? . . . IT MAKES ME WANT TO EAT NAILS, NOT FINGERNAILS. . . I WAS ABOUT TO EASE UP ON RTTY AND SLIDE BACK DOWN TO AMTOR. . . HERE IN THE OZARKS A PERSON WHO IS FRUGAL OR STINGY IS SAID BE TIGHTER THAN THE BARK ON A TREE. . . THAT'S SLOP THE HOGS, NOT FLOP THEM. . . THIS IS JESSIE IN THE PIG LONE STAR STATE SAYING ADIOS. . . ONE OF THE THINGS I LIKE ABOUT RTTY IS THE LACK OF RFI — ON CW AND SSB I HAVE TROUBLES, BUT ON RTTY NO ONE KNOWS I'M ON THE AIR. . . THERE'S NOTHING LIKE TRYING TO COPY A LONG PACKET MESSAGE ON HF, AND THEN HAVING AN AMTOR STATION COME ON AND QRM YOU. . . RTTY IS MUCH BETTER THAN SSB FOR DX BECAUSE YOU CAN FIGURE OUT WHAT IS BEING SAID. . . RETIRED 10 YEARS AGO AND HOPE TO BE ABOVE THE SOIL FOR ANOTHER 10 YEARS. . . THE AGE IS 772 MORE OR LESS. . . I ALWAYS LOSE THE RACE WITH THE BUFFER. . . THE ANTENNA (please turn to next page)

## BALUNS



For beams. 1.7-30 MHz. 6-Kw PEP 1:1 or 4:1 ratio. Model BA-2000 \$62.95.



For dipoles. 1.7-30 MHz. 6-Kw PEP 1:1 or 4:1 ratio. Model 2K \$57.50.



1.7-30 MHz. 1-Kw. 1:1 or 4:1 ratio. Model 1K \$39.95.



1.7-30 MHz. 350-w PEP. Ratios to match 50/75/100/150/200/250/300/375/450/600/800 ohms. Specify ratio. Model PB \$22.95.

Add \$4 shipping/handling in U.S. & Canada. California residents add sales tax.

## TUNER-TUNER™



- Tune your tuner without transmitting!
- Save that rig!

Do you use an antenna tuner? Then you need the new Palomar Tuner-Tuner to tune it to your operating frequency without transmitting. Just listen to the Tuner-Tuner's noise with your receiver. Adjust your tuner for a null and presto! you have 1:1 SWR. It's as simple as that.

Easy to install. Works with all rigs. Eliminates tuneup damage. Your rig will love it!

Model PT-340 \$99.95 + \$4 shipping/handling in U.S. & Canada. California residents add sales tax.



Send for FREE catalog that shows our complete line of noise bridges, SWR meters, pre-amplifiers, loop antennas, VLF converters, audio filters, baluns, RTTY equipment, toroids and more.

## PALOMAR ENGINEERS

BOX 455, ESCONDIDO, CA 92025  
Phone: (619) 747-3343

## Digital Bus

(continued from previous page)

IS AN UP-SIDE DOWN INVERTED VEE. . . SAW THE TELEGRAPH GO FROM A SINGLE WIRE BATTERY-EARTH GROUND TO SATELLITE. . . THE RIG HERE IS RUNNING IN THE FREQUENCY SHIFTY MODE, THAT'S WHY IT WOBBLES. . . LOOKS LIKE THE BAND IS OPEN TO NOWHERE, BUT I DON'T KNOW THE PREFIX FOR THERE. . . LOOKING FORWARD TO A ROMANTIC TIME IN ACACAPULCO, IF I CAN SPELL IT. . . IF YOU SUPERIMPOSE ALASKA ON THE LOWER 48 IT WOULD REACH FROM FLORIDA TO WASHINGTON. . . LIVE ON A 20-ACRE FARM — RAISE CATTLE AND ANTS. . . MY 600 FT LONG-WIRE BLEW DOWN, GOTTA ROB SOME TELEPHONE POLES. . . MY MEMORY IS GETTING AS BAD AS MY COMPUTER.

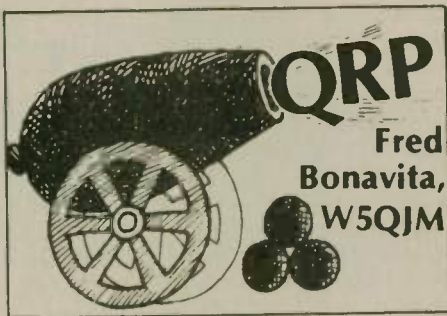
Thanks to W0HAH, CE3CEW, W0LYM, W7VFR, W2DUN, WA6PGA, W0TN, K1LPS, KT1N, N5EDH, K2AOT, KT1N, N2ETH and all those unsuspecting folks we eavesdropped on. Write me: Bill Snyder, W0LHS, 1514 S. 12th St., Fargo, ND 58103. 73 and good hunting. DIT DIT

## Maritime or Marine?

What is the difference between Maritime and Marine Mobile?

Maritime Mobile is used when you are on salt water (oceans and seas), and Marine Mobile is used when you are on fresh water (rivers and lakes).

— Golden Empire ARC, Chico, CA



CW enthusiasts should be pleased to learn that an English-language edition of *Morsum Magnificat*, a quarterly journal dedicated to Morse telegraphy, is now available.

Now in its third year of publication, *Morsum Magnificat* was begun by two amateurs in The Netherlands — Rinus Hellemons, PA0BFN, and Dick Kraayveld, PA3ALM — to find and pub-



Close . . . but no cigar. Mike Michael, W3TS, found this irresistible combination of letters on the side of a building in Harrisburg, Pennsylvania. Closer investigation, however, showed the Quality, Reliability and Performance Co. to be tree-trimmers and home remodelers.

lish the history, illustrations, anecdotes and adventures of Morse telegraphy, wire and wireless, and save them for posterity.

The English-language edition is being published by a well-known QRP operator, Tony Smith, G4FAI, author of numerous articles appearing in the Amateur Radio press around the world.

Says Smith: "*Morsum Magnificat* caters to all Morse enthusiasts — amateur and professional, active or retired — having an interest in the traditions and practice of Morse operating from its earliest concept to the present."

That there remains a healthy segment in Amateur Radio serious about CW is evident by the activity one can find on the bands and the turnout for various contests. QRPers especially rely on CW as the most reliable mode of communication.

Included in the issue of *Morsum Magnificat* which Tony sent for review was a somewhat intimidating story on high-speed operators in Europe and the two groups they've organized: the High Speed Club and the Very High Speed Club. Membership in the first requires a 30-minute QSO at 30 wpm plus a written recommendation, while the latter requires a 30-minute QSO at 40 wpm and four written recommendations. There are even faster groups for the ambitious among us.

Technical articles are not overlooked: PA0DW offers an audio sidetone oscillator which is triggered by picking up a small amount of RF from the transmitter.

Subscriptions to *MM* are (U.S.)\$10 a year, and the publishers ask that banknotes be sent instead of checks or IRCs. They go to Rinus Hellemons, PA0BFN, Holleweg 187, 4623 XD Bergen op Zoom, THE NETHERLANDS. Do not send subscriptions to Tony.

## For the record

About a week after my December column appeared, in which I criticized construction articles which do not list sources for critical parts, I got a letter from the new president of one firm which makes kits.

He announced he will now sell separately the six 1% precision resistors required by the author for the transmitter. Previously, those resistors were available only as part of the entire kit.

I am glad to report this loosening of conditions in a much-too-constricted parts market for homebrewers.

A great gift for your overseas amateur friend

is a

Worldradio subscription.

INDUSTRIES, INC.  
**LUNAR**



The ORIGINATOR of the VHF AMP/PREAMP COMBO!  
YOU KNOW THE LUNAR NAME...NOW OWN THE BEST.

- Complete Line of Multi-Mode Amps, all with Low-Noise Preamp Built-In •
- NEW! UHF Models with GaAs FET Performance •

2 METERS	220 MHZ	440 MHZ
2M2-100P	1.3M2-80P	70CM2-50PG
2M4-40P	1.3M4-30P	70CM10-100PG
2M10-80P	1.3M10-80P	70CM30-100PG
2M30-160P	1.3M30-140P	

Lunar Model # shows: Band, Drive Pwr, Output Pwr (nominal), Preamp included.

Six meter, special purpose, and repeater versions available.  
AT FINE DEALERS EVERYWHERE

INDUSTRIES, INC.  
**LUNAR**  
COMMUNICATIONS & SYSTEMS DIVISION

7930 Arjons Drive • San Diego, CA 92126 • Telephone (619) 549-9555 • Telex 181747



# TRAFFIC

Chuck Clark, K4ZN

Assistant Director  
Roanoke Division, ARRL

ly. Ideally, there should be no need for fills. The sending station would transmit at the proper speed, send correct code or enunciate properly, there would be no noise, babies wouldn't cry, phones wouldn't ring, etc. In the real world it just doesn't work that way. Despite the best of intentions at both ends of the circuit, the receiving operator frequently misses some part of the message, or at least is not sure that what was copied is entirely correct. Hence, the need for fills.

In general, there are two ways to get a fill depending on the equipment used by the sending station. If that equipment is designed for break-in operation, the receiving operator can cause the transmitting operator to stop sending and never anything is missed. In that case, time can be saved, and the transmitting operator can be spared sending a message when noise makes reception impossible.

It's important to remember that your station does not have to be equipped for break-in operation for you to take advantage of another station's break-in capability. It's a bit exasperating to be interrupted after sending a message that the receiving operator got next to nothing. "Why didn't you break me?"

Break-in is more commonly used on CW although more phone stations than CW stations are equipped for it. CW stations so equipped often begin a message with QSK to advise the receiving operator that it is available. If you need a fill, just send a few dits or dahs or hold the key down or send BK to interrupt transmission, then ask for what you need.

It is regrettable that more traffic handlers don't use break-in when passing traffic by phone. If you use push-to-talk, just take your finger off the mike during pauses. If you operate CW, set the delay short enough so that you can listen during pauses. Unless the receiving operator is copying you in the field or is using a recorder, you can pause anyway to give time to breathe, so listen for a "break" during these pauses.

There is no standard procedure for CW operators to indicate that they can be interrupted in this way, so you usual-

ly won't know whether or not it will work, and — sorry to say — most phone operators assume that you are not so equipped; they seem to figure that you hold down the mike button continuously just like they do. It's worth trying, however, and once voice operators have experienced the benefit of not having to talk needlessly to someone who can't hear them, maybe more will take their fingers off the mike button and listen.

The other way to get a fill is to ask for it after the message has been transmitted. On CW, several abbreviations are in common use: AB, all before; AA, all after; BN . . . AND, between . . . and . . . ; WB, word before; WA, word after. Or just spell it out: "Need last name of addressee," "First word of text." When operating voice, say it with words . . . just ask for what you need.

On MARS nets there are detailed voice procedures for requesting fills, and operators are expected to follow them. When conditions are marginal, such procedures may help avoid misunderstandings because the operators will expect only certain words to be used, "Say again," for example, not "Repeat," "Word after . . . and before . . ." These procedures are spelled out in the manuals and are used by the military in voice traffic handling, and by MARS stations because they intercommunicate with military stations. They are not in general use in amateur traffic handling, which tends to be more informal.

A few cautions when asking for fills. Don't send R, don't say "Roger" until you have the message 100% correct. If you do, you may find yourself unable to get a needed fill, as the transmitting station might not listen for your request: you have already acknowledged receipt.

It's nowhere written in any procedure,

but many CW operators send a couple of I's (didit didit), seemingly to indicate that fills are needed, or it may be unintentional . . . the operator is just marking time while looking over the message to see what fills are needed.

Note that AB means "all before," not "all between." BN is the abbreviation to use to get a fill in the middle of the message. When you indicate a fill that is needed, be sure your indication is clear and unambiguous. "Word after AND" might not be so good if there are several ANDs in the text.

Perhaps most important of all is that we should ask for fills whenever we are not sure. Don't guess — that's the way garbles find their way into messages.

## Third-party via packet

The FCC has issued its Memorandum Report and Order in PR Docket 85-105, which allows packet radio stations to retransmit third-party traffic on frequencies of 50 MHz and above (the ARRL Letter said "6 meters and above" but should have said 6 meters and below). This should mean that the next few years will see a nationwide linking of the packet networks already functioning and the entry of many more into the field.

More QRM? No, probably less. When (please turn to page 51)

## SYNTHESIZED SIGNAL GENERATOR

MADE IN USA



MODEL  
SG-100F  
\$429.95  
delivered

- Covers 100 MHz to 199.999 MHz in 1 kHz steps with thumbwheel dial
- Accuracy +/- 1 part per 10 million at all frequencies
- Internal FM adjustable from 0 to 100 kHz at a 1 kHz rate
- External FM input accepts tones or voice
- Spurs and noise at least 60 dB below carrier
- Output adjustable from 5-500 mV at 50 Ohms
- Operates on 12 Vdc @ 1/2 Amp
- Available for immediate delivery • \$429.95 delivered
- Add-on accessories available to extend freq range, add infinite resolution, AM, and a precision 120 dB attenuator
- Call or write for details • Phone in your order for fast COD shipment.

### VANGUARD LABS

196-23 Jamaica Ave., Hollis, NY 11423  
Phone: (718) 468-2720

## CMOS KEYSER KIT

ONLY  
\$9.95



- MEASURES ONLY 2.3 x 3.5 INCHES
- SPEED RANGE FROM 5-50 WPM
- VOLUME AND SPEED CONTROLS
- COMPATIBLE WITH GRID BLOCK, CATHODE KEYS, AND SOLID STATE TRANSMITTERS.
- COMES WITH PCB AND ALL PARTS NEEDED TO COMPLETE THE BOARD.

## MEMORY KIT FOR CMOS KEYSER

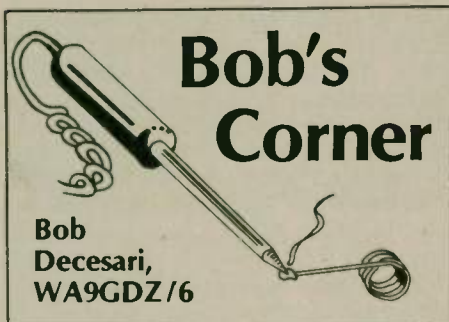
ONLY  
\$14.95



- STORE TWO MESSAGES OF UP TO 50 CHARACTERS EACH
- MESSAGES CAN BE PROGRAMMED AND PLAYED BACK AT ANY SPEED
- POWERED BY THE SAME BATTERY AS THE CMOS KEYSER
- COMES WITH PCB, WIRE, SWITCHES, AND ALL PARTS NEEDED TO COMPLETE THE BOARD
- MEASURES ONLY 2.5 x 3.5 INCHES

PLEASE ADD \$1.50 POSTAGE TO YOUR ORDER  
WISCONSIN RESIDENTS ADD 5% SALES TAX  
SEND FOR FREE INFORMATION

**BEL-TEK**  
P.O. BOX 125  
BELOIT, WI 53511



### Finger key for comfortable CW operation

Here's a simple construction article for the CW enthusiast which can be made in a matter of hours and is guaranteed to work first shot! I call it a finger key. As anyone who has ever pounded brass with a straight key knows, after several hours of key pounding, one's fist can become tired — especially if the data rate is in the 15 to 20 wpm range.

Generally, when serious CW operators run at this speed, the traditional "straight key" is replaced with a high speed "bug" or electronic keyer. The action of the hand-fist combination is sideways and the fatigue factor is great-

ly reduced. However, recently, while banging away on a piano keyboard, I realized that the combination of the index and middle finger could produce long or short bursts at a relatively fast rate, such as is done when one attempts a trill on the ivory.

The thought then came that if the ivory keys were replaced with two key-like contactors, the index and middle fingers could be alternately used to produce the dots and dashes required for medium-speed CW operation. Hence, the birth of the finger key about to be described.

Figure 1A illustrates the assembled finger key. The actual key contactors can be made out of a variety of metal materials. I used two commonly available sources of metal; the first finger key was made using tin cut from a coffee can. This worked quite satisfactorily; however, I felt that a little more spring return action was necessary for high-speed operation.

The second version was made using copper clad circuit board. This worked very well and it is recommended. Although my copper clad material was about 1/32" thick, the more common 1/8" board material will work well if the key lengths are made long enough so that the bending action of the material pro-

vides sufficient return action. Experiment with the length of the key until the return action feels fast enough for your fastest speed of operation.

The bottom section of the contact set may be either tin or copper clad circuit board material as well. In order to ensure good electrical contact, I used a center punch to emboss a raised contactor. This is optional, especially if a screw head is used in the dual role of contactor and finger block securing device! Figure 1B illustrates this.

I have noticed one advantage of the tin keys over the copper clad key. Specifically, the copper keys must be periodically shined with steel wool to remove copper oxidation for good electrical contact. Tin, on the other hand, remains oxidation-free for many months and gives good electrical operation. Perhaps a combination of both materials can be used to provide good key spring action as well as electrical contact.

The copper clad could be tin coated with the proper tinning chemical, if available. The base material simply needs to be a nonconductor. White pine is cheap, readily available, and works well. Phenolic or plastic will give you a deluxe model! If you really want to do a neat job, get a piece of oak or mahogany

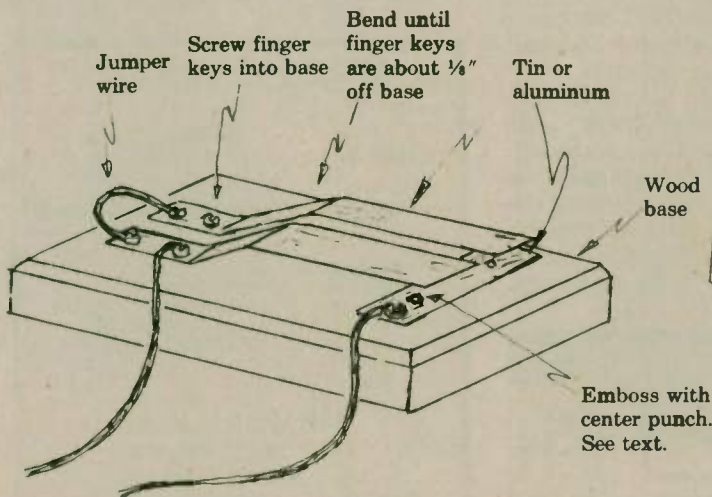


Figure 1A — Basic finger key

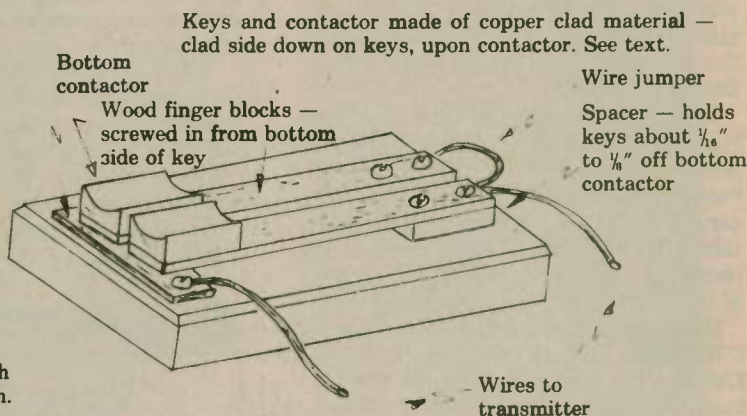


Figure 1B — Deluxe finger key

Keying wires to transmitter

## GIVE YOUR EARS A BREAK!

(And the XYL's too!)

The **AUTO-KALL** AK-10, is a DTMF selective calling unit. It connects to the external speaker jack on your VHF/UHF FM transceiver, scanner, etc. Your speaker remains silent until someone sends your personal 3-digit Touch-Tone® code. That means you (and the XYL!) don't have to listen to all the chatter all the time. But if someone wants to reach you they can. Great for families with two or more hams, activation of emergency nets, etc.

### FEATURES

- Completely assembled and ready to use.
- Easy setting of your personal code in seconds with small rotary switches. No jumpers to solder.
- Speaker resets automatically to silent-standby and leaves red LED on to let you know someone called if you were away from the rig.
- 8-15 VDC CMOS circuitry provides for low current operation.
- Built-in speaker. External speaker jack also provided.
- Measures only 1 1/4 x 3 x 5 1/2 inches. • Decodes all 16 digits.

\*Touch-Tone is trademark of AT&T



**AUTO-KALL AK-10**

**\$89<sup>95</sup>**

Plus \$3.00 shipping & handling

117 VAC power supply and audio patch cord included

**Motron Electronics**

695 W. 21st Avenue  
Eugene, OR 97405

503-687-2118

and varnish it. Rubber feet on the bottom will also make it look professional!

### Operational hints

The best way to learn to use this creation is to hook it up to a code practice oscillator and just start to fool with it! However, I have found it very convenient to restrict my dashes to the index finger and the dots to the middle finger. For long strings of dots, I use both fingers, as one would do when attempting a trill on a piano keyboard. However, what feels most comfortable to you is all that counts since there is no set rule. The other requirement, of

course, is that your CW be readable by the other guy!

### Readers write . . .

I received many letters to the questions I had asked a couple of months ago concerning the cleaning of fine enameled wire. The most common response was to use fine sandpaper in sanding the coating off. This approach I indeed have been using, and I personally believe that it is too time-consuming. What I was hoping for was someone with a chemistry background to tell me about some safe and economical chemical in which the enameled wire might be dipped. I wasn't disappointed!

Nick McDaniel, W6FGE, wrote a tremendous letter indicating that various paint and varnish removers, available at local hardware stores, work great! He also indicated that some metal cleaners, such as "Metal Bright," will do the job swiftly as well. Jim Longthorne, WA6KPW, suggested a chemical specifically made for this job by GC Electronics; its trade name is

## Traffic

(continued from page 49)

you have error-free communication at several hundred words per minute, you can say what you have to say and get off the air quite rapidly.

There is one aspect of the new rules, however, that may be a hardship on traffic handlers who want to pass traffic through a repeater or a satellite when not using packet. New Section 97.80(b), adopted in March 1986 and amended in this proceeding, now prohibits handling of third-party traffic by stations operating under automatic control unless the station is retransmitting digital packet communications on frequencies above 50 MHz using ARRL AX.25 protocol version 2.0 October 1984 (or compatible). That would seem to mean that we may no longer send any traffic by satellite or through a repeater whenever the repeater or satellite is under automatic control, unless we are using packet. Such traffic could be vital in an emergency, and in such a case there's a long-standing tradition in Amateur Radio of bending the rules a bit when lives and property are at stake — something usually tolerated by the FCC.

What makes it worse is that often one has no way to know whether a repeater or a satellite is under automatic control, whether there is actually a control operator on duty. In the case of a satellite, how would one go about finding the frequency that the control operator is monitoring? The operator could well be engaged in a QSO somewhere, or might even be operating in a mode for which you are not equipped; and anyway, how would you identify the

"Strip-X" and I can't wait to try it! Finally, Dick Harrington, WA6SCJ, had the simplest suggestions: use a match to burn it off!

Concerning the question about the winding of toroids, the most common approach is to wind some amount of wire on a "bobbin" which will fit through the toroid core. WA6SCJ again had a slick variation of this: use a yarn needle for the bobbin. It will hold a reasonable amount of wire as well and provides ease of handling during the winding operation.

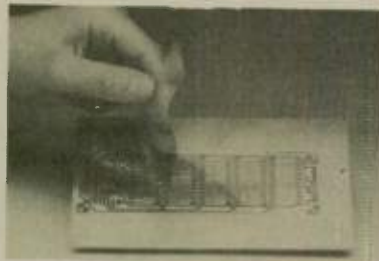
Again, many letters were received to these questions, and there just isn't enough room in this column to acknowledge them all! So a general "thanks" to all those who responded is hereby extended.

That's it for this month. If anyone has any slick, simple circuits that might be suitable for this column, send them to me, care of Worldradio, and I will give them a try — and perhaps bestow accolades of glory upon their contributors.

control operator?

In the case of a repeater, one could usually ask, but even here, a control operator in some cases is controlling several repeaters, and might at a given (please turn to page 53)

## Make Circuit Boards The New, Easy Way



### With TEC-200 Film

#### Just 3 easy steps:

- Copy circuit pattern from drawing or magazine on TEC-200 film using any plain paper copier
- Iron film with pattern on to copper clad board
- Peel off film and etch

...and the frustration of using liquid photoresists. TEC-200 makes even difficult circuits accurately and easily. Complete instructions provided. **SATISFACTION GUARANTEED**

convenient 8 1/2 x 11 size

5 Sheets for \$3.95  
10 Sheets only \$5.95

add \$1 postage • NY res. add sales tax

**The MEADOWLAKE Corp.**  
Dept. F, P.O. Box 497  
Northport, New York 11768

# Spider Antennas<sup>TM</sup> and Adapters

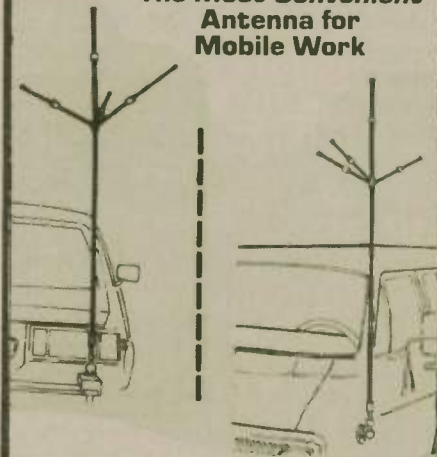
U.S. PAT. NO. 4349825



### The Mark of Distinction

As you drive along the road, a Spider<sup>TM</sup> Antenna on your vehicle immediately marks you as a *Mobile Amateur Radio Operator* — one of those people who are always on hand when emergency communications are urgently needed.

### The Most Convenient Antenna for Mobile Work



Whether you are driving a full-size van or a compact car, you can't beat the Spider<sup>TM</sup> for convenience. Once it is tuned for 10, 15, 20 and 40 (or 75) meters, you just switch from band to band on the transceiver — the antenna follows by itself.

### A Truly Practical Antenna Adapter

If you now have a single-band mobile antenna with a 1/2" mast, the Adapter will convert it into a modern 4-band antenna. Complete with 10,

15 and 20 meter resonators — use your present 40 or 75 meter coil for the fourth band.

### Now a 75 Meter Resonator

In response to requests for 75 meter operation from many Spider<sup>TM</sup> users, we now have a 75 meter resonator available for immediate shipment.

**You Want the Best  
Go With a Spider!**

**MULTI-BAND ANTENNAS**  
7131 OWENSMOUTH AVE., 163C  
CANOGA PARK, CALIF., 91303  
TELEPHONE: (818) 341-5460

**NEW PRODUCTS**

Information in "New Products" is supplied by the manufacturers to acquaint *Worldradio* readers with new products on the market.

## Correction

The address for Atlantic Solar Power, Inc. ("Solar-powered auto battery charger," October issue, page 59) was printed incorrectly. The correct address is: 6455 Washington Blvd., Baltimore, MD 21227. □

## Creative Design antennas

Creative Design Co., Ltd. announces the introduction of its exciting line of Amateur antenna products to the U.S. market, beginning with the CD 318 series of competitive, yet easy-to-assemble triband beams for the 10-, 15- and 20-meter bands, available in 4-, 5- and 6-element models.

The performance-packed AFA series 2-element phased arrays for 30, 40, 75 and 80 meters and two CD-78 rotary dipoles that feature instant operator selection of 3.5 or 3.8 MHz in a compact, efficient design.

For more information or a catalog, write to: Orion Hi-Tech, P.O. Box 8771, Calabasas, CA 91302. □

## ICOM compact mobile

ICOM is pleased to announce the IC-38A 220 MHz compact mobile which expands ICOM's existing IC-28A/H 2-meter and IC-48A 440 MHz mobiles line.

### Features

- Frequency range: Tx 220-225 MHz, Rx 215-230 MHz
- Compact size. Measures 5.5"W × 2.0"H × 6.1"D
- Large LCD readout. With automatic dimmer circuit to reduce brightness
- 25 watts
- 21 memory channels
- Scanning. Scan the entire band or the memory channels from the provided HM-12 mic.
- Easy to operate. Only 11 front-panel controls
- Internal speaker

### Options

IC-HM14 DTMF mic, PS-45 13.8V 8A

52 WORLD RADIO, February 1987



power supply, SP-10 external speaker, HM-16 speaker mic and HS-15/HS-15SB flexible boom mic and PTT switchbox.

The suggested retail price for the IC-38A is \$459. For more information, contact ICOM America, Inc., P.O. Box C-90029, Bellevue, WA 98009-9029; (206) 454-8155. □

## New 6-, 8-pole crystal filters

International Radio, Inc. is proud to announce the addition of the following new 6- and 8-pole crystal filters to their existing product line.

### 8-pole

ICOM 730/735/740/745/751/R70/R71A SSB 2.1 kHz: Exact replacement for FL-44A. Model IR455H1.05X — \$99. ICOM IC-271/471/1271 CW 400 Hz: Great for DXing or EME. Model IR10.7H400C — \$115. Kenwood TS-930/940/830/R-2000 CW Super Selective 250 Hz; 455 kHz filter: Comes mounted on high-quality glass PC board for the TS-930 and TS-940. Drops into the TS-830. Model IR455H125C — \$125.

TS-940/930/830 — Super Selective CW Switch Kit: This new kit allows you to add another CW bandwidth. For example, on the 930/940/830, if you already have 400 Hz or 500 Hz filters installed, you can now select a set of IRI 250 Hz filters. Our 250 Hz matched set allows for a lower noise floor for super quiet DXing.

9 MHz 8-pole crystal filters for experimenters: all 8-pole filters, \$60, all 6-pole filters, \$50.

SSB — 2.4, 2.1, 1.8 and 2.2 kHz at 6dB (8-pole); 2.2 kHz at 6dB (6-pole); AM 6.0 kHz (8-pole), 6.0 kHz (6-pole); FM — 1.5 kHz at 6dB, 30 kHz at 6dB; CW — 600 Hz at 6dB; 600 Hz at 6dB (6-pole).

NOTE: on all orders, add \$5 shipping and handling. For more information, please contact International Radio, Inc., 747 S. Macedo Blvd., Port St. Lucie, FL 33452; (305) 879-6868. □

## Identify yourself

with our custom engraved call pins

1 line 1"x3" . . . \$1.00

2 lines 1"x3" . . . \$1.25

3 lines 1 1/2"x3" . \$1.75

DAVE W2CFP  
TOMPkins CO. A R C

Any color • (Add 20¢ per tag for postage.)

Logos for MARS, ARRL, CD, most Lodges, OH, IN, IL, MI, PA, SMIRK, can be engraved on badges for \$.75 extra per badge. Special logos can be made at a reasonable cost; write for quotations.

**FALLERT'S ENGRAVING**  
27 Verlynn Ave. • Hamilton, OH 45013

## Fox-Tango Newsletter Cumulative Index

After serving the owners of Yaesu equipment for 14 years, Milt Lowens, N4ML, announces the termination of publication of the *FT Newsletter*, official journal of the International Fox-Tango Club (which he organized in January 1972). Most of the information in the *Newsletters* was obtained from club members, representing the folk wisdom of thousands of amateurs throughout the world for improving, modifying, trouble-shooting and repairing a wide variety of Yaesu gear. All of the back issues of the *Newsletter* have been republished in calendar-year volumes, mostly in booklet form. Each has its own index.

1976 through 1985

**FT NEWSLETTERS**

CUMULATIVE INDEX

Since 1971

BY For

Owners of YAESU Amateur Radio Equipment

\$4.00

EDITOR: Milton Lowens N4ML

However, to simplify the task of selecting which volumes would best serve the needs of individual readers, Fox Tango announces the publication of a comprehensive Cumulative Index covering the years 1976 through 1985 in detail, and a summary of 1972 through 1975.

Most of the articles are grouped by model number (such as FT-101, FT-757, etc.), and within such groupings, newsletter articles are listed chronologically by year and page; by topic (such as user report, modification, etc.); by article title and call letters of its author. Thus, the owner of — say — an FT-980, can readily determine which volumes would be of greatest value to him.

In addition, the Index lists hundreds of articles which, while still relating to Yaesu equipment, are of broader application. They are tabulated under such headings as General, Microphones, Antenna Tuners, etc. Prices of volumes and ordering information are also included.

Both the newsletter volumes and their 32-page Cumulative Index are available exclusively from Fox Tango Corporation, Box 15944, West Palm Beach, FL 33411; (305) 683-9587. The price of the Index (including a rebate certificate creditable toward the purchase of newsletter volumes) is \$4, postpaid in United States and Canada. Elsewhere \$5. □

## Uncle Bill's Code Course

After more than two years of production and mail order sales, Uncle Bill's Software\* has decided to update Uncle Bill's Code Course. At the same time, we are entering the shareware field.

Shareware is the newest form of software distribution. Shareware allows, even encourages, the copying and sharing of computer software. However, the programs are under copyright, and there is a user's fee for their use. But no fee is expected until the user has tried the program and determined its usefulness.

The user's fee is nominal, and the user is honor-bound to pay it. Uncle Bill's Software user fee is a modest \$5 per program. We feel that, due to the low cost, most users will elect to pay the fee. Information about shareware and user fees appears within the program. Also within the program is a copy routine that allows reproduction of the shareware software. This routine is accessible directly from the main menu.

As with the original Uncle Bill's Code Course, this new and enhanced version (V2.0) is made available to all clubs free of charge. All we ask is that the club provide a formatted disk and a self-addressed and stamped mailer. The clubs may share the software as shareware with members, students or anyone they wish.

Individuals may purchase Uncle Bill's Code Course V2.0 by sending \$7 to: Uncle Bill's Software, P.O. Box 2403, Falls Church, VA 22042. They, too, may share the software as shareware with others.

\*Uncle Bill's Software is written for the Commodore C-64 and C-128 computers only. □

## 900 MHz antennas

The new 900 MHz antennas are now available and specifically designed for operation in the 902-928 MHz band.

The mobile antenna uses a magnetic mount with a double coil whip. It is a 5dB gain antenna capable of a maximum of 30 watts of power. It is anodized black and is model number CMW-202N.

The 900 MHz base/repeater antenna is (please turn to page 59)

## Traffic

(continued from page 51)

time be busy on another one, or might be engaged in chasing DX on HF, just listening occasionally to the repeaters being controlled.

This seems to be a question that merits further discussion. On the one hand, the literal meaning of the rule seems clear. On the other hand, it hardly seems likely that the FCC intended to issue a blanket prohibition against handling traffic through a repeater or satellite whenever that repeater or satellite does not have a control operator on duty — something that is being done regularly already, and without causing any problems (at least none have been cited by the FCC). Does anyone want to comment? □



## YL-ISSB QSO Party

The CW portion of the 1987 YL-ISSB QSO Party, sponsored by YL International Single Sidebanders, Inc., will be held from 0001Z, January 31, to 2359Z, February 1. (The Phone portion will be held next month; see March issue for details.)

The contest is open to all amateurs, although it's geared toward YL-ISSB members.

Categories: Single-Op, DX/U.S. Partners, and YL/OM Teams.

Frequencies: CW — 3540-3550, 7040-7050, 14040-14060, 21040-21060 and 28040-28050 kHz.

NOTE: 14332 reserved for emergencies, system business and informal system contacts; QSO Party points may not be claimed for contacts on 14332.

Only Teams and Partners may work a frequency together. Third-party set-ups are not allowed. VHF and UHF frequencies may be used simplex only. Check 40M and 80M hourly; more regularly during late afternoon, evening and late night.

Exchange: Call, report, QTH (state, province, territory, district or country), name, ISSB number, YL/OM Teammate, DX/U.S. Partner.

Scoring: 1 pt. for member-to-non-member QSO; 3 pts. for two-way QSO with members on the same continent; 6 pts. for two-way

QSO with members on different continents.

Multipliers: 1 pt. for each member QSO with a DXCC country/state/province, VK or ZL call district, YL/OM Team (when both teammates QSO'd), or with DX/U.S. Partners (when both QSO'd). 2 pts. for each Partners QSO, if they QSO each other. Multi-band operation bonus — 1 pt. for operation on a second band where 15+ members QSO'd; 2 additional pts. for use of third band where 15+ members QSO'd. Limited power bonus — 5 pts. for maintaining 250 watts or less input throughout contest.

NOTES: Only QSOs with members can count as multipliers. Once a multiplier is claimed, it may not be claimed again on another band. Remember . . . 1) your own country may count as a DXCC country, and 2) KL7 and KH6 are states and DXCC countries.

Logs: Information is same as exchange information, plus date, time and band. Log times shall indicate at least two six-hour rest periods. Deadline is April 30, 1987. Submit logs, summaries and entry forms to Bill Early, WA9AEA, P.O. Box 401, McHenry, IL 60050-0401.

Awards: Certificates to category winners and country/state winners. Results to be announced at the annual convention, the first weekend in June. □

## Classic Radio Exchange

The 1987 Classic Radio Exchange will be held from 2100 UTC Sunday, February 1 to 0400 UTC Monday, February 2. Object is to restore, operate and enjoy older equipment with like-minded hams.

A Classic Radio is any equipment at least 10 years old — an advantage, but NOT required to operate in the Exchange. You can

## RADIO STORE

VISIT YOUR LOCAL

### ARIZONA

Ham Radio Outlet  
1702 W. Camelback  
Phoenix, AZ 85015  
(602) 242-3515

Ham Radio Outlet  
999 Howard Avenue  
Burlingame, CA 94010

### CALIFORNIA

Dick Smith Electronics  
2474 Shattuck Ave.  
Berkeley, CA 94704  
(415) 486-0755

Ham Radio Outlet  
2210 Livingston St.  
Oakland, CA 94606

Dick Smith Electronics  
390 Convention Way  
Redwood City, CA 94063  
(415) 368-8844

Ham Radio Outlet  
5375 Kearny Villa Road  
San Diego, CA 92123

Dick Smith Electronics  
4980 Stevens Creek Blvd.  
San Jose, CA 95129  
(408) 241-2266

Ham Radio Outlet  
6265 Sepulveda Blvd.  
Van Nuys, CA 91401

Dick Smith Electronics  
1830 Westwood Blvd.  
Los Angeles, CA 90025  
(213) 474-0626

Henry Radio  
2050 S. Bundy Dr.  
Los Angeles, CA 90025  
(213) 820-1234

Ham Radio Outlet  
2620 W. La Palma  
Anaheim, CA 92801

The Radio Place  
2964 Freeport Blvd.  
Sacramento, CA 95818  
(916) 441-7388

Shaver Radio, Inc.  
1775A S. Winchester Blvd.  
Campbell, CA 95008  
(408) 370-6665

### GEORGIA

Ham Radio Outlet  
6071 Buford Hwy.  
Atlanta, GA 30340  
(404) 263-0700

### MASSACHUSETTS

TEL-COM Communications  
675 Great Road Rte. 119  
Littleton, MA 01460  
(617) 486-3400 or 486-3040

### MICHIGAN

H.R. Electronics  
722/24 Evanston Ave.  
Muskegon, MI 49442  
(616) 722-2246

### MISSOURI

Henry Radio  
211 N. Main Street  
Butler, MO 64730

### OHIO

Universal Amateur Radio, Inc.  
1280 Aida Drive  
Reynoldsburg (Columbus), OH 43068  
(614) 866-4267

### TEXAS

Texas Comm Center  
4120-A Directors Row  
Houston, TX 77092  
(713) 957-8011

use anything, although new gear is a distinct scoring disadvantage and not as much fun.

**Exchange:** Your name, RST, QTH, receiver and transmitter (homebrew send P.A. tube) and other interesting conversation. The same station may be worked with different equipment combinations and on each band on each mode. CW call "CQ CX", phone call "CQ Exchange". *Non-participants may be worked for credit.*

**Suggested frequencies:** CW — up 60 kHz from low band edges; phone — 3910, 7280, 14280, 21380, 28580; *Novice/Tech.* — 3720, 21170, 28120.

**Scoring:** Multiply total QSOs (all bands) by total number of different receivers, transmitters, states/provinces/countries worked on each band and mode. Multiply that total by your Classic Multiplier: total age of all receivers and transmitters used, three QSOs minimum per unit. If equipment is a transceiver, multiply age by two.

**Awards:** Certificates and appropriate memorabilia are awarded every now and then for highest scores, longest DX, exotic equipment, best excuses, and other unusual achievements. Send logs, comments, anecdotes, pictures to Jim Hanlon, W8KGI, 5560 Linworth Rd., Columbus, OH 43085. Include SASE. □

## Vermont QSO Party

The CENTRAL VERMONT ARC (W1BD) will hold a Vermont QSO Party from 0001Z, February 7 to 2400Z, February 8.

**Frequencies:** Phone — 3910, 7230, 14260, 14320, 21360, 28570, 50.110, 1442; CW — 3540, 3720, 7040, 7120, 14040, 21040, 21140, 28040; RTTY — 3620 and 90 kHz from lower edge of other bands.

**Exchange:** VT stations — Send RS(T) and county (CW two-letter county designators — AN, BN, CA, CN, EX, FN, GI, LA, OG, OL, RU, WA, WM, WR). Other stations — Send RS(T) and state, province or ARRL country.

**Scoring:** VT stations — 1 pt. per phone contact; 2 pts. per CW or RTTY contact. Multiply by number of VT counties plus states plus Canadian provinces plus ARRL countries (non-W/VE). Other stations — 1 pt. per phone contact; 2 pts. per CW or RTTY contact. Multiply by number of VT counties. 20 bonus pts. for working W1BD.

**Rules:** A station may be worked three times per band; once each on phone, CW or RTTY. CW and RTTY contacts must be on CW and RTTY sub-bands. Duplicate and repeater contacts invalid.

**Awards:** Non-VT — Certificate to highest-scoring station in each state, province, country (non-W/VE). Vermont — Certificate to each station submitting a log. Plaque (annual) to highest-scoring VT station. W/VT Award to stations working 13 of Vermont's 14 counties.

Send SASE now for official score and log sheets. SASE for results. Send logs/facsimiles, name, address and county (Vermont) no later than March 1, 1987 to: D. Loverin, WA1PDN, 50 Liberty St., Montpelier, VT 05602. □

Contact Worldradio for hamfest prizes.

## 1987 New Hampshire QSO Party

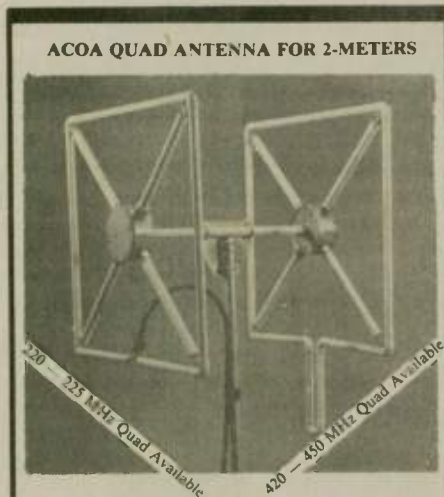
The 1987 New Hampshire QSO Party, sponsored by the New Hampshire Amateur Radio Association, will last from 1900Z, February 7 to 0700Z, February 8, and from 1400Z, February 8 to 0200Z, February 9. Exchange signal report and QTH (county for NH stations, state/VE province/DXCC country for others).

**Scoring:** All stations count 1 pt. per phone QSO, 2 pts. per CW/RTTY QSO, 5 pts. per Novice/Tech. CW QSO. NH stations multiply QSO points by number of states/VE provinces/DXCC countries (except United States, Canada, Alaska and Hawaii) worked; others multiply QSO points by number of NH counties worked (maximum of 10). No repeater QSOs permitted. Stations may make contact on more than one band or mode. 20 bonus points may be added to your final score for contacting each of the following NHARA member club stations: WB1CAG, WB1FFZ, N1BYQ, WBSDLV, K1RD, W1WQM, W1OC (for a maximum of 140 bonus points).

**Suggested frequencies:** CW — 1810, 3535, 7035, 14035, 21035, 28035; Phone — 1875, 3935, 7235, 14280, 21380, 28580, 50115, 144205; *Novice* — 3735, 7135, 21135, 28135.

**Awards:** Certificate to highest scorer (5 QSO minimum) in each NH county/state/VE province/DXCC country. Plaque to highest scoring NH station (sponsored by Concord Brasspounders).

**Logs:** Logs must be postmarked by March 12, 1987. Include large SASE for results.



- All metal (except insulators) rugged construction
- Withstands any weather conditions
- Copper radiator and reflector elements
- Covers entire 2-meter band
- Ready to mount on your rotor
- Weight — 9 pounds
- Wind surface area — 0.85 square feet
- Dimensions — 19 x 26 x 17 inches
- Price — \$159.00

Order direct or from your dealer  
CALIFORNIA RESIDENTS ADD SALES TAX  
DEALER INQUIRIES INVITED

ANTENNA COMPANY OF AMERICA

P.O. Box 2308  
Santa Clara, CA 95051  
(408) 246-2051

Send log and comments to: Mount Moriah Repeater Society, c/o Bud Valcourt, N1BYQ, 19 Teague Dr., Salem, NH 03079. □

## YL-OM Contest

All licensed men and women operators throughout the world are invited to participate in the YLRL-sponsored YL-OM Contest. The phone section will be from 1400 UTC, February 14 to 0200 UTC, February 16; CW section will be from 1400 UTC, February 28 to 0200 UTC, March 2.

**Procedure:** OMs call "CQ YL" and YLs call "CQ OM."

**Operation:** All bands may be used. No cross band operation. Net contacts and repeater contacts do not count. A station may be counted *only once* in each contest for credit. *Participants may work only 24 hours of the time. Operating breaks must be indicated in the log.*

**Exchange:** Station worked, QSO number, RS or RST, state/province/country. Entries in log must also show time, band, date, and transmitter power.

**Scoring:** A) Phone and CW will be scored as separate contests. Submit separate logs for each contest. B) 1 pt. is earned for each different station worked; YLs count only OMs and OMs count only YLs. C) Multiply the number of QSOs by the total number of different states/provinces/countries worked. D) Contestants running 150 watts or less on CW and 300 watts PEP or less on SSB, at all times, may multiply the results of (C) by 1.25 (low-power multiplier).

**Logs:** All logs must show your state/province/country to qualify for awards. Do not send carbon copies of logs. Please print or type. *Logs must be signed by the operator and no logs will be returned.* Remember to file separate logs for each contest. Logs must show claimed score and be postmarked by March 16, 1987, and received no later than March 31, 1987, or they will be disqualified. Please send logs to: YLRL Vice President, Mary Lou Brown, NM7N, 504 Channel View Dr., Anacortes, WA 98221, USA.

**Duplicates:** For each duplicate contact that is removed from the log by the Vice President, a penalty of 3 additional and equal contacts will be exacted.

**Awards:** 1st place phone — YL cup, OM cup; 1st place CW — YL cup, OM cup. The 2nd and 3rd place YL and OM winners in each contest will receive certificates. The winner of the phone contest cup is also eligible to win the CW cup. Certificates will be awarded to the high YL and OM phone and YL and OM CW winners of each U.S. and VE call district and country provided there are at least two logs from the district or country. In addition, there must be a minimum of 10 contacts (QSOs).

**Suggested frequencies:** CW — 80M — 3.540-3.570, 40M — 7.040-7.070, 20M — 14.040-14.070, 15M — 21.180-21.210, 10M — 28.180-28.210; SSB — 80M — 3.940-3.970, 40M — 7.240-7.270, 20M — 14.280-14.310, 15M — 21.380-21.410, 10M — 28.580-28.610 MHz. □

Are you involved in public service?

# HAMFESTS



## California

Come to the San Fernando Valley HAMORAMA, sponsored by the P.T. BARNUM AMATEUR RADIO SOCIETY. The event will be held Saturday, January 17, from 6 a.m. to 2 p.m., at the San Fernando Valley Teen Center parking lot, 17400 Victory Boulevard, Van Nuys, California. No charge to buyers or sellers!

Talk-in on 145.52 simplex.

For more information, contact N.A. Kaltman, K6SMF, 20301 Lanark St., Canoga Park, CA 91306. □

## Illinois

The STERLING-ROCK FALLS ARS 27th Annual Hamfest will be held at the Sterling High School Fieldhouse, 1608-4th Avenue, on Sunday, March 15.

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. Commercial tables and tables requiring electricity \$5; others \$3.

Talk-in on 146.25/85 (W9MEP).

For information, tables or tickets, contact Sue Peters, P.O. Box 521, Sterling, IL 61081; (815) 625-9262. □

## Indiana

The Indiana Hamfest, sponsored by the MORGAN COUNTY REPEATER ASSOCIATION, will be held on March 8, indoors, at the Indiana State Fairgrounds Pavilion Building in Indianapolis, Indiana.

Open to the public at 8 a.m. Admission is \$5 at the door. Flea market tables (8 ft., including space) are \$8 each. *NO SPACE* without table will be sold. Advance reservations suggested — first-come basis.

Set-up is from 3 to 9 p.m., Saturday, March 7 (security provided overnight), and from 6 to 8 a.m., Sunday, March 8. *ALL* vehicles out of the building by 7:50 a.m.; after 7:50 a.m., access will be through pedestrian door.

Talk-in on 145.25.

For table reservations or information, send SASE before February 25, 1987, to Aileen Scales, KC9YA, 3142 Market Place, Bloomington, IN 47401; (812) 339-4446. □

## Minnesota

The ROBBINSDALE ARC will hold its 6th Annual Mid-Winter Madness Hobby Electronics Show on Saturday, February 21, at the Medina Ballroom in Medina (western suburb of Minneapolis).

The show opens with a flea market and retail exhibits at 8 a.m. FCC testing begins at 9 a.m. Show closes at 2 p.m. with grand prize drawings.

Admission is \$3 in advance, \$4 at the door. Tables are \$8 for 8 ft. table, \$4 for half tables. Booths (8' x 10') are \$35 each. To register for FCC exam, send completed 610 form, photocopies of current license and code credit, and \$4 (payable to ARRL/VEC) to: Ron Schulz, NA0U, 6308 Peacedale Ave., Edina, MN 55424. Register by January 21 — walk-ins are limited.

Talk-in on 147.00/00 K0LTC club repeater and 146.52 simplex.

To register, send SASE and fees to Robbinsdale ARC, P.O. Box 22613, Robbinsdale, MN 55422; or call Bob at (612) 533-7354. □

## New York

The LONG ISLAND ARRL indoor hamfest, Sunday, February 15, sponsored by LIMARC at the Electricians Hall, 41 Pine Lawn Road, Melville, Long Island, New York. Door opens at 9 a.m. for buyers, no one admitted earlier. Exhibitors at 7:30. Send reservations to Hank Wener, WB2ALW, 53 Sherrard St., East Hills, NY 11577.

Our 4' x 6' tables are \$12 each or bring your own at \$1.50 a foot with an \$8 minimum. Each table sale admits one person, additional workers at \$3.25 each. Check payable to LIMARC must be with reservation. Buyers admission is \$4 at the door and \$3.25 in advance with SASE. Send check payable to LIMARC to LIMARC Tickets, Mark Nadel, NK2T, 22 Springtime Lane East, Levittown, NY 11756 by February 5, 1987.

Special gifts will be awarded to some advance buyers. LIMARC VHF rig clinic will be on hand. At Exit 49 north of the LIE, go north a block to Pinelawn Road, turn right to

site. For additional info, call Hank (516) 484-4322, at night. □

## Ohio

The MANSFIELD MID-WINTER HAMFEST/COMPUTER SHOW will be held Sunday, February 15, at the Richland County Fairgrounds, Mansfield, Ohio.

Prizes, forums and flea market in large modern heated buildings. Doors open to the public at 7 a.m. Forums include DX by K8CW, Packet and more. Tickets \$3 in advance and \$4 at the door. Tables \$5 in advance and \$6 at the door. Half tables available. Advance ticket/table orders must be received and paid by February 5.

Talk-in, call W8WE on 146.34/94.

For additional information or advanced tickets/tables, send SASE to Dean Wrasse, KB8MG, 1094 Beal Rd., Mansfield, OH 44905, or phone (419) 589-2415 after 4 p.m. EST. □

The CUYAHOGA FALLS ARC will sponsor its 33rd annual Auction-Fest on Sunday, February 22, at the Tallmadge High School (1 mile east of Tallmadge Circle on East Avenue or 2.3 miles of I-76 at exit 31).

Flea market opens at 8 a.m. and the auction begins at 11 a.m. Flea market tables available for \$6 in advance. Deadline for tables is February 9. Admission is \$4 at the door and \$3 in advance.

Check-in on 147.87/27 repeater.

For more information, send an SASE to Cuyahoga Falls ARC, P.O. Box 614, Cuyahoga Falls, OH 44222. □

## PORTA-LINK™ FOR ALL ICOM\* HANDHELDS

The PORTA-LINK can easily be plugged into an ICOM\* Handheld, using only the speaker jack and microphone input. This simple and straightforward design affords use without batteries or any external power connections. All of this gives your new PORTA-LINK the sound and reliability of the best repeater or remote base.

- High-quality glass circuit board
- Weatherproof design
- Small package
- Low cost
- No batteries needed (EVER)
- Can be used on any band to any band as an emergency repeater or remote base
- Excellent audio quality
- Two PORTA-LINKS can be used for full crossbanding
- Buy one for everyone in your club, for those big emergencies
- Provide a service to your club or emergency group by tying two bands together using a PORTA-LINK Dual. Use a PORTA-LINK Single as low power hamfest or emergency repeater.

PORTA-LINK™ Single



Use as one-way crosslink or repeater

\$24.00 Kit \$29.00 Assembled

Handie Talkies not included.

PORTA-LINK™



PORTA-LINK™ Dual



Use as two-way crosslink or one side as repeater

\$65 Assembled

Handie Talkies not included.

M. BOHNOFF PRODUCTIONS  
P.O. Box 1243  
Wheeling, IL 60090  
312/298-LINK • 312/298-5465

\*ICOM and IC-2A, IC-2AT, IC-02AT, IC-3AT, IC-4A, IC-04A, are all trademarks of ICOM USA, Inc. or ICOM Inc. PORTA-LINK is a trademark of M. Bohnhoff Productions.  
©1986 M. Bohnhoff Productions

# RENO RADIO

Mail: P.O. Box 20548 • Reno, NV 89509  
 Store: 12 Glen Carran Cir. • Sparks, NV 89431  
 Phone: (702) 331-7373  
 (800) 345-5686 Toll Free

Hours: Mon. through Fri. 10 a.m. to 6 p.m.  
 Sat. 10 a.m. to 4 p.m.  
 Closed Sunday

Reno Radio — Your newest full service  
 Amateur Radio dealer. Give us a call for  
 fast, friendly service. Now call toll free for  
 our low price quotes. (800) 345-5686  
**Jim Myers, WA6ICB, President**



Santec  
ST-20T

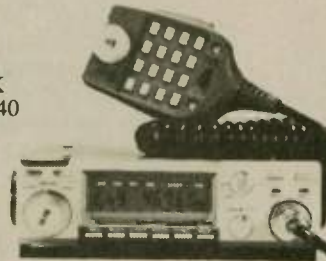


Kenwood  
TS-440S/AT

## KENWOOD



Yaesu  
FT-727R  
2m/440 5W



KDK  
FM-240



ICOM  
02AT



Yaesu FT-757GX



ICOM-751



- Cushcraft • Ameritron • MFJ • B & K • Butternut • Kenpro • KLM/Mirage • Larsen • AMP Supply • Kantronics • Kenwood • Belden • AEA • Alinco • Diawa • Hustler • ICOM • Yaesu
- Many more to choose from! For a fast and courteous response, please call our store mgr., Dale Scott, KA7QYX. Phone (702) 331-7373



# THE MART

Classified  
•Buy •Trade  
•Sell •Inform

Mart deadline  
20th of the month.

Business firms/30¢ a word, prepaid.  
Private individuals/15¢ a word, prepaid.

**THE MART Worldradio**  
2120 28th St., Sacramento, CA 95818

**WORLDRADIO ON CASSETTES** — Worldradio for blind amateurs on cassettes. To receive this free service send \$3.00 check, payable to George Hickin (for one time only contribution for tapes) with your name, address and call to **GEORGE HICKIN, W4GH, 3008 Clairmont Ave., Macon, GA 31204.**

**EDITING A CLUB PAPER?** Need one for your club? Interested in Amateur Radio public relations? Need some help? Amateur Radio News Service would like to hear from you. For info write **FRAN NORRICK, WB9WPS, Route 6, Box 239, Kankakee, IL 60901.**

**HAVE AM CAPABILITY?** Join SPAM (Society for Promotion AM). Membership is free. Write: SPAM c/o F. Dunlap, 14113 Stoneshire, Houston, TX 77060. -73 de WA5TWF (SASE please).

**HAMS FOR CHRIST** — Reach other hams with a Gospel Tract sure to please. **CLYDE STANFIELD, WA6HEG, P.O.B. 2063, Upland, CA 91785.**

**FCC EXAMS, NOVICE-EXTRA.** Sunnyvale VEC ARC, 408/255-9000, 24 hours.73, Gordon, W6NLG, VEC.

**SUBSCRIBE TO THE DXers Magazine.** Gus Browning, W4BPD, editor. Only \$15.00 per year. *The DXers Magazine*, Drawer DN, Cordova, SC 29039.

**QSLs & RUBBER STAMPS — TOP QUALITY!** State outline, straight key, space shuttle QSLs and more! Sample pack — 50¢. **EBBERT GRAPHICS, Dept. 1, Box 70, Westerville, OH 43081.**

**LEARN THE CODE** — A course for family members and friends who don't know the difference between a dot or a dash. Monday through Friday, 0630-0700 California local time, 3760 KHz ± A2/A3 LSB, January through December, K6RAU. Starts first Monday of each month. **AMATEUR RADIO REPAIR** — experienced licensed, reasonable. **ROBERT HALL ELECTRONICS, W6BSH, P.O. Box 8363, San Francisco, CA 94128, 408/729-8200.**

**CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS** with amateurs in all 10 USA call area. Award suitable to frame and proven achievements added on request. Send \$2 (USA) or \$3 (DX) to cover certificate cost. **W6LS, 2814 Empire Ave., Burbank, CA 91504.**

**QSL SAMPLES** — 25¢. **SAMCARDS, 48 Monte Carlo Dr., Pittsburgh, PA 15239.**

**KENWOOD R-1000 WANTED.** KE6RX, HARRY BROWN, 2814 Van Buren St., Alameda, CA 94501. 415/522-1561, after 1800.

**MARCO: Medical Amateur Radio Council, Ltd.** operates daily and Sunday nets. Medically oriented amateurs (physicians, dentists, veterinarians, nurses, physio-therapists, lab technicians, etc.) invited to join. Presently over 550 members. For information, write **MARCO, Box 73's, Acme, PA 15610.**

**RTTY JOURNAL** — Now in our 34th year. Join the circle of RTTY friends from all over the world. Year's subscription to **RTTY JOURNAL**, \$10.00, foreign \$15.00. Send to: **RTTY JOURNAL, 9085 La Casita Ave., Fountain Valley, CA 92708.**

**CODE PROFICIENCY DRILLS** are transmitted from **WB3IIVO Brass Pounders ARC**, each Saturday, Sunday, Monday and Thursday on 7060 kHz, starting 2000Z. Each Tuesday and Friday on 14060 kHz, starting 2000Z. Speeds range from 20 to 60 wpm.

**CIRCUIT BOARDS, KITS, & ASSEMBLIES** for QST magazine articles. For info **SASE to: A & A ENGINEERING, 2521 W. La Palma Ave., Anaheim, CA 92801. 714/952-2114.**

**VHF UHF SHF; Free sample.** **WEST COAST VHFer, P.O. Box 2041, Oxnard, CA 93034.**

**QSLs. QUALITY AND FAST SERVICE FOR 26 YEARS.** Include call for free decal. Samples 50¢. **RAY, K7HLR, Box 331, Clearfield, UT 84015.**

**WANTED: DRAKE RV-75 VFO.** Call 215/271-8898 **K3UKW.**

**CHASSIS & CABINET KITS, SASE, K3IWK, 5120 Harmony Grove Rd. Dover, PA 17315.**

**'N-TENNA QUAD KITS \$64.50.** Spreader kits, \$79.00. **Box 5332, Hickory, N.C. 28603.**

**SOLID BRASS BELT BUCKLES.** Name or call, One line - name or call — \$9.50. Two lines, name and call — \$10.50. Add \$1.00 postage. **S. Slonim/W, 320 Rose St., Massapequa Park, NY 11762.**

**USED EQUIPMENT LIST** — Send #10 S.A.S.E. to: **TONY MUSERO, K3UKW, 1609 So. Iseminger St., Philadelphia, PA 19148, 215/271/8898.**

**ATTENTION AMATEURS:** Send for free discount catalog. **AMATEUR COMMUNICATIONS, ETC., 2317 Vance Jackson, San Antonio, TX 78213. 512/734-7793**

**\$\$\$ SUPER SAVINGS** radio computer electronic parts; accessories, supplies. **SASE for catalog.** Get on our mailing list. **BCD ELECTRO, P.O. Box 830119, Richardson, TX 75083.**

**FREQUENCY DIRECTORIES 530 kHz to 512 MHz** for communications receivers & scanners! AM, CW, RTTY, SSB, FAX, FM; Maritime, Aero, Federal, Public Safety, Railroad, Broadcast, Industrial, Meteo, Diplomatic, Espionage, Clandestine, more! Big free catalog of world's most unusual communications books. **CRB, Box 56-WR, Commack NY 11725.**

**POST CARD QSL KIT** — Converts post cards, photos, to QSLs! Stamp brings circular. **K-K LABELS, P.O. Box 412, Troy, NY 12181-0412.**

**POST CARD QSL KIT** — Converts post cards, photos to QSLs! Stamp brings circular. **LABELCRAFT, P.O. Box 31, East Schodack, NY 12063.**

**ALL ABOUT CRYSTAL SETS.** Theory and construction of crystal set radios. \$7.95 each, ppd USA. Send to **ALLABOUT BOOKS, Dept. W, Box 14155, Fremont, CA 94539.**

**WANTED: UNUSED TELETYPE** repair parts; connectors, tubes. **SELL: Teletypewriter gears, ribbons, manuals, parts, toroids.** **SASE List. TY-PETRONICS, Box 8873, Ft. Lauderdale, FL 33310 N4TT, 305/583-1340 after 9 p.m. EST.**

**SOLAR ELECTRIC** components to run your station from sunlight. Why pay for electricity? \$3 technical information, prices. **SPECS INC., P.O. Box 155, Montrose, CA 91020.**

**AUTO-CALL MAGAZINE**, official journal of the Foundation For Amateur Radio, a federation of over 50 clubs in the greater Washington, D.C. area. Great coverage of FCC, ARRL, VEC, Public Service and club activities in the area. A must for those even passing through the area. For sample copy write **FOUNDATION FOR AMATEUR RADIO, P.O. Box 7612, Falls Church, VA 22046-1452.**

**WANTED** — Heath ET-100 trainer. Call **MIKE, W0XM, 913/898-4695.**

**FREE QSL CARD SAMPLES** - Quality cards at low prices, wide selection available. 100 free miniature cards with each order. Write: **INSTACOPY, Rt. 1, Box 1486, Roosevelt, UT 84066.**

**QSL CARDS** — Look good with top quality printing. Choose standard designs or fully customized cards. Better cards mean more returns to you. Free brochure, samples. Stamps appreciated. **CHESTER QSL's, 310 Commercial, Emporia, KS 66801.**

**DRAKE 2B RECEIVER.** Q multiplier, crystal calibrator, speaker, and manual. Excellent condition. \$125 anywhere in USA. **WILF. 617/899-2624.**

**QTH, NORTH OREGON COAST, 100 yds.** Pacific, built by a ham for ham's lifetime dream. Pity to sell to civilians. Sturdily built along lines of a ship, many real portholes, two cupola antenna bases, built-in coax runs, novel switching system, flat roof over radio den for easy antenna work. Throw in FT101, other goodies. Picture window view of Pacific, finished cedar den. Three other bedrooms, two fireplaces, two living rooms, deep tub, loft-apt for teenager, loft for weaving/spinning with Pacific view. Workbenches, lab bench with all the voltages. Easily divided off for extra income. Wonderful DX location, good 2M. 100x100 lot. Ideal for vacation spot for your grandkids in summer. Originally asking 150K. 10% off for straight-forward deal. Negotiable. Write **SMØRDE, Eriksbergsv. 32, 19141 Sollentuna, Sweden.**

**HAM PROGRAMS FOR PLUS/4, TI99/4a, VIC-20, C-16, C-64, C-128, Apple.** Send **SASE: EPO SOFTWARE, 7805 N.E. 147th Ave., Vancouver, WA 98662.**

**FREE ADVERTISING** for our subscribers! \$7/year (24 issues). **BLUE BARGAIN SWAP SHEETS, Box 69, Willmar, MN 56201.**

**EXPERT REPAIR** on all types of ham gear by **WA6SRX, TIMBERLINE ELECTRONICS, P.O. Box 2064, Idyllwild, CA 92349, 714/659-4018.**

**ADVANCED CLASS STUDY GUIDE** and sample exams now also available on Commodore 64 disk. \$14.95 postpaid. **DR. G. SCHILLING, A16I, 37251 Sage Road, Hemet, CA 92343-9636.**

**BROWNIES QSL's** since 1939. Catalog & samples, \$1.00 — refundable with order. 3035 Lehigh, Allentown, PA 18103.

**LEARN CODE THE EASY W6PHA WAY!** — Former USAF code champ gives unique, simple system allowing all ages to learn quickly. No tapes, etc.! Revised booklet \$4.50 ppd. Free catalog sheets; electronic, security, & exercise products. 100% money back guarantee! You can't lose! **GLOBALMAN PRODUCTS, Box 400WR, El Toro, CA 92630. (714) 533-4400.**

**NEW, UNUSED DENTRON 1000W big dummy load, only 4 pieces, \$35 each.** **ORGANS & ELECTRONICS, Box 117, Lockport, IL 60441. 815/838-1580.**

# More MART

**WANTED REPLY COUPONS** of all types, IRCs & others. Buy, sell, trade. JIM NOLL, P.O. Box 3410, Escondido, CA 92025.

**TRANSMITTING TUBES WANTED FOR MUSEUM** — Help preserve old amateur and commercial tubes for future and old time hams to see and acquire. YE OLDE TRANSMITTING TUBE MUSEUM, K6DIA, P.O. Box 97, Crescent City, CA 95531.

**R-390A RECEIVER:** \$195 checked; \$115 repairable. Parts, tubes, sections. Info SASE. CPRC-26 six meter transceiver (see HR, March 1985) \$17.50 apiece, \$32.50 pair (add \$4.50/unit shipping). BAYTRONICS, Box 591, Sandusky, OH 44870. 419/627-0460 evenings.

**FCC EXAMS** for Technician/General and Advanced class on Commodore 64 disks! Study the 500 plus questions and their answers individually for each Subelement or test yourself on FCC sample exams. Ideal complement to ARRL, W5YI-VEC or AMECO manuals. Specify Tech/Gen (\$12.95) or Adv (\$14.95) postpaid. Club and school orders 20 percent less. DR. G. SCHILLING, A161, 37251 Sage Road, Hemet, CA 92343.

**REPLACE RUSTED ANTENNA BOLTS** with stainless steel. Small quantities, free catalog. ELWICK, Dept. 620, 230 Woods Lane, Somerdale, NJ 08083.

**ROSS' \$\$\$\$ USED UN-SERVICED** February specials: Midland 13-520 — \$30.00, Kenwood TS-180 — \$299.90, TS-520 — \$339.90, Yaesu FL-101 — \$239.90, ICOM IC-3PA — \$29.90, Heathkit SB-300 & 401 — \$180.00. Phone or send SASE for more info. Over 25 on list. Over 7,500 new ham items in stock. Mention ad. Prices cash, FOB Preston. We close at 2:00 Saturdays and Mondays. ROSS DISTRIBUTING COMPANY, 78 South State, Preston, ID 83263. 208/852-0830.

**ROSS' \$\$\$\$ NEW WAREHOUSE** cleanup specials (February only): Kenwood TS-180S \$589.90, TH-31AT — \$211.90, ICOM IC-701 — \$539.90, IC-745 & PS-35 — \$929.90, Yaesu FT-720RVH — \$249.90, FV-101DM — \$199.90, all L.T.O. Phone or send SASE for over 450 cleanup specials. Over 7500 ham-related items in stock for immediate shipment. Mention ad. Prices cash, FOB Preston. We close at 2:00 Saturdays & Mondays. ROSS DISTRIBUTING COMPANY, 78 South State, Preston, ID 83263. 208/852-0830.

**TOP QUALITY NICAD BATTERIES** for Yaesu 207/208. 11V at 500 mA. Proven the best. \$28 plus \$2 shipping. AL SMITH, Box 94, East Rockaway, NY 11518; 516/599-5064.

**QSL CARDS** — Look good with top quality printing. Choose standard designs or fully customized cards. Better cards mean more returns to you. Free brochure, samples. Stamps appreciated. CHESTER QSL's, 310 Commercial, Dept. D, Emporia, KS 66801.

**NO IMPORT DUTY-OVERSTOCK SALE** — Ten-Tec Corsair II - \$1120. Argosy II \$515. Mosley PRO57-5kw 7el.5 band-10-20m-\$457. Pro67-5kw 7el 6 band 10-40m \$699. ORGANS & ELECTRONICS, PO Box 117, Lockport, IL 60441. 815/838-1580.

**HY-GAIN 105BA** — \$120. 155BA — \$200. ORGANS & ELECTRONICS, Box 117, Lockport, IL 60441; 815/838-1580.

**FOR SALE: COLLINS:** 75A2 ham rcvr. conv'd to mech filters, \$250.00, Drake: TR4CW xcvr with AC4 P-S, \$395.00, RV4C VFO, \$125.00, L4B amp 2kw with 10 meters, \$750.00, NB4 noise blander for R4C, \$93.00, filters for R4C, FL-250, \$52.00; FL500, FL1500, \$48.00 ea., "C-line" — T4XC, AC4, MS4, R4C, \$495.00. Clegg: FM DX 2 mtr xcvr, \$165.00; Tnor 6 6 met xcvr/amplif. \$100.00. Gonset: Communicator II, \$45.00. Hammurlund: HQ-170A ham band rcvr., \$250.00 clock, timer. HQ-110 gen cov rcvr., \$125.00 clock, timer. ICOM: IC-751 xcvr, \$750.00. Kenwood: R-1000 gen cov rcvr., \$265.00; R-2000, \$425.00; TS-930S with auto ant. tuner (built-in), \$1150.00; SP-930 with audio filters, \$70.00; AT-250 auto ant. tuner, \$185.00; TS-520S with CW filter, \$425.00. Johnson: Valient II, \$195.00 300-watt ant. tuner with meter and probe ... \$125.00. KDK: 2030 2 mtr xcvr., \$175.00. My Kay-Dymek — 6000 model rcvr., \$700.00. 73! TONY MUSERO, K3UKW, 1609 So. Iseminger St., Philadelphia, PA 19148. 215/271-8898.

**WANTED: DRAKE TR-4** for overseas friend. W6EUF — Wayne, 213/596-6748 (eves) 2301 Canehill, Long Beach, CA 90815.

**SWAN 400**, power supply, microphone, master station VFO, spare output tubes — \$145; Dentron, Jr. antenna tuner — \$38; Palomar antenna noise bridge — \$35. JACK / W7HWX, 20 Santa Fe, Prescott, AZ 86301. 602/445-0999.

**LEARN MORSE CODE** in 1 hour. Amazing new easy technique. Money back guarantee. \$5. BAHHR, 2549F Temple, Palmbay, FL 32905.

**NEED SCHEMATIC & MANUAL** for RME 6900 receiver. PHIL PECTOR, W7JXE/DA1PF, HHC 93RD Signal BDE, Box 559, APO, NY 09279.

## Send NEWS and PICTURES to WORLDRADIO

**UNIQUE WIRE TUNER** — \$50.00; antique beehive white porcelain insulators @ \$1.00 ea.; Vibroplex electronic keyer paddles @ \$25.00 each; new G.R. Variac 20 amp 110-volt @ \$50.00; 220 to 115 stepdown isolation transformers, new \$40.00 ea.; H.V. duty power transformers, replacements for transceivers, new — \$10 and \$20 each — advise requirements; miniature tubes @ \$1.00 each, Octals and Locals @ \$2.00. Inquire. M LEVY, W5QJT, 101 East Driftwood, #44, Fredericksburg, TX 78624. Tel 512/997-2534.

**DIGITAL AUTOMATIC DISPLAYS** for FT-101's, TS-520's, Collins, Drake, Swan, Heath and all others. Six 1/2" digits, 5" wide by 1-1/4" high metal cabinet. Send \$2. for information and receive a \$30 discount. Includes accurate comparison of the simple "BCD" readouts, found in new radios, against our "Calculating Frequency Counter" readouts. Please be specific. GRAND SYSTEMS, P.O. Box 3377 Dep't B, Blain WA 98230.

**WANTED: TELEGRAPH AND WIRELESS TELEGRAPH** collector looking for each make and model of bug made before 1945. Vibroplex, Martin, Boulter, Mecograph, DeLaney, Albright, etc. Also need spark keys and pre-1900 landline (keys, sounders, pocket sets, etc.). Need junkers for parts. K5RW, 1128 Midway, Richardson, TX 75081. Tel. 214/234-1653.

**NEW, UNUSED DENTRONS** 1000w, big dummy loads, only 4 pcs. left—\$35 each. ORGANS & ELECTRONICS, P.O. Box 117, Lockport, IL 60441. 815/838-1580

**3 FREE ISSUES!** Sign up for a year to THE SPEC-COM JOURNAL (10 issues) and get 3 back issues (of your choice) absolutely "FREE"! SPEC-COM is the USATVS Journal and has been serving SPECIALIZED COMMUNICATION RADIO AMATEURS now for 19 years. We offer in-depth coverage of ATV, SSTV, FAX, RTTY, PACKET, satellites, TVRO, EME, LASERS microwave and personal computers. We specialize in Commodore & TRS80C color computer software for ham radio! Sample issues just \$2.00 ppd. U.S.A. \$20.00/Canada & Mexico \$25.00 per year. Foreign surface and Air-Mail R-U-S-H delivery available at higher prices. Special Master Article Index issues add \$3.00. SPEC-COM COMMUNICATIONS GROUP, P.O. Box H, Lowden, IA 52255 (MasterCard & VISA accepted).

**ICOM, KENWOOD & YAESU SEPARATE NEWSLETTERS:** 7 years of back issues for ICOM & Kenwood. Cumulative Index available on each. TS930S & 430S Users Modifications Supplement available. For free brochure send SASE (39¢) to: INTERNATIONAL RADIO, INC., 747 South Macedo Blvd., Port St. Lucie, FL 33452. 305/874-6868.

**WANTED: OLD BUGS** for my telegraph key and wireless collection. I am trying to find each make and model of bug made before 1950. Vibroplex, McElroy, Delaney, Mecograph, Boulter, Albright, etc. Also need spark keys and pre-1900 landline keys. Need junkers for parts. K5RW, NEAL McEWEN, 1128 Midway, Richardson, TX 75081. Tel. 214/234-1653.

**COMMODORE CUSTOM CHIPS** at low prices, 24-hour delivery: 6510-\$9.95, 6526-\$9.95, 6581-\$12.85, 6567-\$16.50, 82S100PLA-\$16.00, 8701-\$7.25, and many others @ low prices. C-64 Power Supply @ \$29.95. Call toll free 800-642-7634 (outside NY) or 914/356-3131 KASARA MICROSYSTEMS, INC., 33 Murray Hill Drive, Spring Valley, NY 10977.

**ALL ABOUT METERS.** A learn-by-doing history of the development of electrical meters; build seven simple meters using common hardware. \$7.95 each, ppd USA. Send to ALLABOUT BOOKS, Dept. W, Box 14155, Fremont, CA 94539.

**NO IMPORT DUTY.** Ten-Tec Corsair II - \$1120. Argosy II - \$525. Mosley PRO57-5kw 7-el 5-band, 10-20m, \$457. PRO67 5kw 7-el 6-band, 10-40m, \$699. ORGANS & ELECTRONICS, P.O. Box 117, Lockport, IL 60441. 815-838-1580

**CLASSIFIED ADS FOR JOBS WANTED OR POSITIONS OFFERED** will be run free of charge in Worldradio's MART.

**THE U.S. MERCHANT MARINE** is running short of qualified radio officers. Opportunities exist for shipping out on U.S. Merchant Marine and military sealift command ships (MSC). So what is necessary to qualify for these jobs? To start, you must hold an FCC 2nd Telegraph License with radar endorsement and 6 months' sea service endorsement. However, that is a start. Next you take your FCC license to the U.S. Coast Guard and they will issue a Seaman's ID "Z" card and a Radio Officer, Merchant Marine License. Then you must obtain a passport from the U.S. State Department. When you have all these documents, you can apply for a job. The assignments are via registration with the Radio Officers Union, such as MEBA, Dist 2, Mr. Gus Guzelian, 450 Harrison Street, San Francisco, CA 94105, 415/898-4599.



Norm Brooks, K6FO, shows a copy of *Worldradio* to a booth visitor, at the ARRL National Convention in San Diego.

## New Products

(continued from page 53)

model number CFC7-71. It is a collinear fiberglass antenna with a gain of 7.14dB and maximum power capabilities of 50 watts. Mast mounting brackets and hardware are included.

Now available through independent dealers and NCG Company, 1275 N. Grove St., Anaheim, CA 92806; (714) 630-4541. □

## Digital Voice Recorder

Advanced Computer Controls, Inc., is pleased to announce availability of its new Digital Voice Recorder (DVR), which provides remote audio record and playback capability for voice repeaters. The DVR allows the repeater owner to remotely record any of the repeater's programmable messages — IDS, tail messages, bulletin boards, emergency autodial responses, alarms, courtesy tones, etc. In addition, its touch-tone-activated voice mailbox lets users leave recorded voice messages for other users.



The DVR's direct digital recording technique offers the outstanding 'no compromise' audio quality repeater owners want on their systems. In the high-quality level mode, what you hear isn't a fuzzy rendition of the person who spoke; the recording sounds indistinguishable from the original.

To conserve memory and extend recording time, two additional quality-level modes are available. These trade off audio quality vs. the amount of memory used up for each recording. The full inflection and recognizabil-

ity are preserved — the distortion is simply increased somewhat.

The highest quality level can be used for frequently played messages, and the lower quality levels for long or infrequently used messages. Total recording time available depends on the mix of quality levels of each recording, but ranges up to six minutes when fully loaded with memory.

The DVR currently uses up to 32 64K or 256K dynamic RAM chips. All 32 256K chips can be bought from a computer store for under \$100, and will provide up to six minutes of recording time.

The DVR is available with one, two or three independent record/playback channels, which means that one DVR can service up to three repeaters at your site, or two repeaters and the phone line.

Although you'll get the most out of your DVR in conjunction with your RC-850 or RC-85 repeater controller, it's usable stand alone as well.

The DVR is available from \$849. The manual is available for \$5 postpaid.

For additional information about the Digital Voice Recorder, contact Advanced Computer Controls, Inc., 10816 Northridge Square, Cupertino, CA 95014; (408) 749-8330. □

### Pass it on . . . WORLDRADIO

Be first to know precisely when and where to work all the choice DX. Bi-weekly LI DX BULLETIN has: Hot DX news — time and frequency of each goodie — QSL info — propagation forecast — and more . . . Send business size SASE for free sample or \$15.00 for 1-year domestic subscription to:

**LONG ISLAND DX BULLETIN**  
PO Box 173, Huntington, NY 11743

## ADVERTISER'S INDEX

AEA — 25  
Anne Wright, N6BOP — 42  
Antenna Co. of America — 54  
Antennas, Rudy Plak — 3  
AVC Innovations, Inc. — 26  
Azimuth — 36  
Bel-Tek — 49  
Butternut Electronics — 23  
Callbook — 60  
CDC — 41  
Courage Center — 28  
Cushcraft — 35  
Dayton Hamvention — 16,17  
Diamond Systems, Inc. — 22  
Dick Smith Electronics — 37  
Engineering Consulting — 27  
Falcon Communications — 39  
Fallert's Engraving — 52  
Ham Radio Outlet — 30, 31  
Handi-Tek — 18  
Henry Radio — 5, 24  
H.J. Theiler Corp. — 33  
IIX Equipment — 6  
IMRA — 18  
International Radio — 38  
John T. Little, KB7DT — 45  
Jun's — 15  
Kagil — 28  
Kantronics — 29  
Kilo-Tec — 40, 14  
Long Island DX Bulletin — 58  
Lunar Electronics — 48  
Mavis — 11  
M. Bohnhoff Productions — 55  
Meadowlake Corp. — 51  
MFJ — 19  
Mike Forman — 59  
Motron Electronics — 50  
N.P.S. — 4  
N6KW QSL Cards — 2  
Palomar Engineers — 6, 21, 47  
P.C. Electronics — 7  
QCWA — 22  
Radio Amateur's Conversation Guide — 34  
Radio Clubs — 43, 44  
Radio Engineers — 20  
Radio Store — 53  
Reno Radio — 56  
Sign-On — 8  
Spider Antenna — 40, 51  
Spi-Ro Distributors — 10  
TimeKit — 46  
Van Gorden Engineering — 2  
Vanguard Labs — 49  
W5YI-VEC — 14  
W9INN Antennas — 32  
Webster Associates — 3  
Wrightapes — 11  
Yaesu — 13

## Wanted: TUBES

I pay cash or trade for all types of transmitting or special purpose Tubes.

**MIKE FORMAN**  
1472 MacArthur Blvd.  
Oakland, CA 94602  
(415) 530-8840

# The "Flying Horse" sets the standards!

Continuing a great 66 year tradition, there are 3 new Callbooks for 1987. The North American Callbook, the International Callbook, and the Callbook Supplement bring you accurate up-to-date QSL information on over 900,000 amateurs throughout the world.

The 1987 North American Callbook lists the calls, names, and address information for licensed amateurs in all countries from Canada to Panama including the Caribbean islands, Bermuda, and Greenland plus Hawaii and the U.S. possessions.

The 1987 International Callbook lists the amateurs in countries outside North America. Coverage includes South America, Europe, Africa, Asia, and the Pacific area.

The 1987 Callbook Supplement is a new idea in Callbook updates. It lists the activity in both the North American and International Callbooks. Published June 1, 1987, the Supplement includes all the new licenses, address changes and call sign changes for the preceding 6 months.

Every active amateur needs the Callbook! See your dealer or order directly from the publisher.

- Over 900,000 current amateur listings in all countries of the world
- Great Circle Bearings
- 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, 1986  
Supplement - June 1, 1987

	Including shipment to U.S.A. points	Illinois residents, incl. tax & shipping	Including shipment to foreign countries
<input type="checkbox"/> Single 1987 North American Callbook	\$28.00	\$29.60	\$30.00
<input type="checkbox"/> Single 1987 International Callbook	28.00	29.60	30.00
<input type="checkbox"/> Single 1987 Callbook Supplement	13.00	13.65	14.00
<input type="checkbox"/> SPECIAL OFFER: Order both 1987 Callbooks at the same time for shipment to one address.	53.00	56.25	58.00

Name \_\_\_\_\_ Amount enclosed \_\_\_\_\_

Address \_\_\_\_\_

radio amateur  
**callbook**

Dept W  
925 Sherwood Dr., Box 247,  
Lake Bluff, IL 60044, USA

Tel: (312) 234-6600

