

Worldradio

JAMES MAXWELL W6CUF
000588 0000
P O BOX 473
REDWOOD ESTATES CA 95044

March 1982 • Year 11, Issue 9 • 80¢

Amateurs aid mudslide victims

ED: The following story was written from notes compiled by "Planetary Mary" Duffield, WA6KFA as she assisted with communications during the recent emergency situation caused by rainstorms and mudslides in Santa Cruz County, California, with additional information from an article which ran in the Santa Cruz Sentinel on 17 January 1982.

Mary Duffield, WA6KFA

The total flood disaster relief depends upon communications when telephone trunk lines are down. This means communications between the Red Cross staff, road crews, county governmental agencies, fire departments, Salvation Army, helicopters, rescue vehicles (truck, boat, bicycle). This is where the trained, disciplined corps of Amateur Radio operators provides vital electronic links between all these agencies.

This past week (4-11 January), the San Lorenzo Valley repeater and the other repeaters on central California's highest mountains have been coordinated and manned for 24 hours daily. Our 1-watt to 10-watt radio batteries run down, however, and ultimately we have to fall back upon electrical power. We need fuel to generate our electricity, but that is increasingly scarce, because the gas pumps are helpless sans electricity. So we need to

travel to where gas can be pumped . . . but how to travel when the roads are impassable to get the fuel to generate the power to coordinate the operations to clear the roads?

Well, the synchronized, long-prepared plans work and the communications center at the Santa Cruz County Courthouse furnishes the electrical and human energy required. County disaster personnel and amateurs keep equipment going, antennas up and the information flowing.

It's not easy to split your consciousness between two microphones, two speakers, one telephone, and still respond quickly when a scratchy voice calls Barry, Gerry, Mary or Gary! But that towering babble is more welcome than the threatening silence during the power breaks. "Treat every power failure as permanent" has been burned into our brains.

Our audio nerves have registred fear, suffering. An isolated father kept urging us to find his flu-stricken child. We finally tracked the boy down to a Red Cross shelter and were able to so inform the father. Sitting warmly there in the "county communication center," our hearts experienced the 48 hours of cold, dark agony that family shared with many others.

San Lorenzo Valley amateurs, whose families have been without water, heat and power for several days, risked their

last few gallons of gas to recharge repeater batteries, then clawed up the mud-choked paths to keep the repeaters' vital networks flowing. These people didn't use precious repeater power to say so, but we know temperatures were below freezing, and these guys had not had time to change their mud-chilled clothing.

Down in the courthouse basement, the generator keeps all systems go. We hear that the river is still rising and will peak at 6:00 a.m. We are dimly aware that the river is 200 yards away and over our heads, with sandbags clogging the entrances. No way to reroute the river through a handier frequency as we have been doing with communication. Being on the same generator as the jail, security is a nagging requirement, and county officials have started requiring IDs. One amateur — too busy to get an ID sticker — slipped out to use the toilet, and it took 15 minutes to get back to man his station again.

Electronic troubleshooters keep rerouting the coax and antenna noodle nightmares so they can support two-way traffic between increasing pockets of trapped people and Red Cross personnel.

Someone tells us the weather report speaks of another storm starting Wednesday. No way can our tenuous lifelines survive the total damage that would do.

Sometimes those precious lifelines are interrupted or hampered by trivial people for trivial reasons, but for the most part, the whole county has responded with heroic generosity — people risking their vehicles and their lives fighting to get through to those pockets of people.

Incredibly grim stories unfolded via radio. One elderly lady amateur had nursed a terminally ill husband for weeks, at home. He died during the storm and she blindly tried to get her car up to San Jose to make funeral arrangements.

(please turn to page 3)

ATV Magazine goes monthly

Amateur Television Magazine has expanded publication to 12 issues per year (monthly) beginning with the March 1982 issue. Now in its 15th year of service to specialized communication operators, Amateur Television Magazine covers all modes of Amateur Television such as FSTV-NBTV-MSTV, SSTV and coverage of other specialized modes such as FAX-RTTY, microwave-EME-satellite-CATV and computers.

Henry B. Ruh, KB9FO, former publisher of Amateur Television Magazine, had petitioned the FCC with RM-2861 (now Docket #80-252 June '80) for General Class operators (and above) to have SSTV privileges in the allotted phone portions of the General bands. The FCC adopted this proposal formally on 24 November, with operation dates expected sometime in February. This will give a tremendous boost to SSTV activity and sales for manufacturers.

New rates for Amateur Television Magazine are \$10 (six months), \$20 (one year), \$38 (two years), \$56 (three years) U.S./Canada and Mexico surface rate. First class rate add \$5 per year. Foreign subscribers in Central and South America add \$3 surface, \$10 airmail per year. All other foreign add \$3 surface, \$13 airmail per year.

For more information on ATV Magazine, contact Mike Stone, WB0QCD, P.O. Box H, Lowden, IA 52255-0408. □

Shell amateurs

Malcolm Nisbet, G3OGO, is endeavouring to form an Amateur Radio club within the Shell Oil Company. All licensed amateurs and shortwave listeners who work for Shell anywhere in the world and who are interested in joining are asked to write to: Malcolm Nisbet, PAF/16, Shell Centre, London SE1 7NA, ENGLAND. □

A visit with Katashi Nose

Norm Brooks, K6FO

My memory goes back at least 30 years to an experience I had every time I worked in a contest. Be it the Sweepstakes, DX or whatever, KH6IJ was there, and to work with him you had to speed up to about 40 words per minute. I would sit there and practice sending KH6IJ de W6WLI on my old bug, until I felt fairly confident I wouldn't botch it up when I called him. When there was a break in the contacts, I called him brrrp brrrp, and he answered brrrp brrrp and it was all over. And by the time I wrote it down in my logbook, he had worked five more stations.

Katashi Nose, KH6IJ has been a legend in Amateur Radio circles for all these years. You will find his call sign in the results columns of all the important contests. He was a Professor of Physics at the University of Hawaii, and took the time to represent Hawaii to the world in those operating events. That's why amateurs around the world were saddened to learn he had a stroke three years ago.

I have good news for all of you. Katashi is on the mend, and doing nicely. I visited him at his home last December when I was on a Hawaiian vacation.



Norm Brooks, K6FO (right) sits next to Katashi Nose, KH6IJ at KH6IJ's QTH in Hawaii. The two amateurs had an eyeball QSO while K6FO was on vacation last December.

As I approached Katashi's home, I realized that he had a reason for choosing to live there. He is on a rise, with a clear shot to the Pacific Ocean in all directions, except for a small segment dominated by Diamond Head. He admits he bought there purposely because it was a perfect DX location, and that Diamond Head doesn't seem to make any difference.

I saw a three-section crank-up tower with a tri-band Yagi antenna, along with wire antennas for the lower frequencies. It seemed a typical amateur antenna

installation, until I noticed the 2-meter and 70cm beams on an azimuth-elevation mount for satellite operation.

Inside, the equipment is that of a typical amateur, with the exception of the linear amplifier. Katashi proudly opened the panels so I could see the innards, which he had built himself. It uses a 4CX1500, surrounded by the usual vacuum variable capacitor and heavy coils. All of this was put together by

(please turn to page 3)



Worldradio

is published monthly by
Worldradio, Inc.
Offices at 2120 28th Street
Sacramento, CA 95818 USA
Telephone: (916) 457-3655

STAFF
Armond Noble, N6WR
Chris Wilson
Jeanette Inouye
Norm Brooks, K6FO
David Tykol, WA6RVZ
Jack Schwartz, WA6TRZ

March 1982 Vol. 11, No. 9
Worldradio (USPS 947000) is an international conversation. You are invited to take part. Our newspaper is written by its readers.

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 into this avocation.

Our readers are participants — an alliance of active radio amateurs who are concerned with reality, who use radio as a communications tool. We ask your cooperation in helping us develop the skill, quality and full potential of Amateur Radio.

We are positively-oriented. We print all the news of this great activity, and particularly desire an input of stories dealing with the dramatic, the personal and humanitarian uses of Amateur Radio.

Worldradio needs your help to reflect the invaluable service of Amateur Radio.

Through Worldradio you can make contact with other individuals who share your interests.

Worldradio is an independent newspaper. It is 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. If there is something useful, we wish to share it.

Subscription rates: \$9.00 per year, \$17.00 for two years, \$24.00 for three years and \$90.00 for life; \$2.00 extra per year for surface mail delivery outside the U.S. Overseas. Please remit international postal money order. IRCs and local currency will be accepted.

Controlled circulation postage paid at Sacramento, CA.

Oklahoma Central 6-meter Club Reunion

During the weekend of 24-25 July, there will be a 25th reunion of the VHF Radio Amateurs who were members of the Oklahoma Central 6-meter Club, later known as the Oklahoma Central VHF Club.

All persons who were at any time a member of this group are urged to write to T.W. Stevens, W5VCJ, P.O. Box 976, Edmond, OK 73083. Give him your name, address and present call, and indicate whether you are interested in attending the reunion. It will be held at the same time as, but not in conjunction with, the Oklahoma City "Ham Holiday" during the last weekend in July.

How to reach SPAR

On page 3 of our February issue, we ran an article entitled "SPAR (Society for the Protection of Amateur Radio) protects Amateur Radio," but did not include an address or phone number. For those of you who might be interested in getting in touch with the group, here's the info: SPAR, P.O. Box 41, Santa Barbara, CA 93102; phone (805) 969-5304, 969-5623, 642-7141. (See related article in this issue, page 3.)

Repeater users take note

Those of you who make general calls for information on 2-meter repeaters, please remember to indicate which frequency you're on, so that anyone listening on a scanner, or a transceiver which is scanning, will know which frequency to come back on. This is especially important when working amateurs who are monitoring several repeaters at once.

Meteor showers

Tom Segalstad, LA4LN/W3

The International Union of Radio Science has published its International Geophysical Calendar for 1982. These are the predictions for unusual meteor shower activity for the Northern Hemisphere: 21-23 April, 3-6 May, 8-12 and 23-24 June, 27-30 July, 11-15 August, 20-23 October, 2-3 November, 13-15 and 22-23 December.

— Nittany ARC, PA

Cassettes for the visually impaired

The Crossbander is a newsletter for eastern Massachusetts radio amateurs. It is published monthly by Phil Temples, K9HI, 50 Catherine St., Boston, MA 02131; telephone 617-327-5986.

A taped version of The Crossbander is available on returnable cassettes for visually impaired radio amateurs in the United States and Canada. To obtain a one-year subscription, send your name, call letters, address, telephone number and \$5 to George Hickin, W4GH, P.O. Box 7453, Macon, GA 31209; telephone 912-474-8685.

This is W4GH, the reader and distributor, and my handle is Kel. The tape comes to you in returnable mailers. The return address is on the box. Close it so the squared-off edges are on the outside. There is no postage required for their return. If any tape is faulty, return it and a replacement will be provided at no additional cost.

Monthly cassettes of Worldradio are also available to visually impaired radio amateurs. The cost is only \$3 for a lifetime subscription. To start receiving Worldradio, send your personal data and \$3 to W5GH.

WPE shortwave club being formed

Former Worldradio columnist Vern A. Weiss, WA9VLK is organizing a shortwave-listeners' club geared toward Amateur Radio operators and particularly those who hold Popular Electronics WPE "Shortwave Registration" call signs.

To receive a questionnaire and to be added to the mailing list, send a business-size self-addressed stamped envelope to Vern A. Weiss, WA9VLK/WPE9GHF, 895 West Park Drive, Kankakee, IL 60901.

Request for DX YL news

Verline Ferris, KI8V

As the international correspondent for YLRL in 1982, I would like to request individuals or clubs to send any information about DX YLs on to me. I would especially like any club newsletters with this information as well.

Send news to: Verline Ferris, KI8V, 308 E. Harry, Hazel Park, MI 48030.

Purple Heart amateurs

Clem Harris, KC5MM (ex-WB5VDL) has been appointed by the National Headquarters of the Military Order of the Purple Heart, Inc. to organize a national Amateur Radio chapter and net.

The Purple Heart is awarded for wounds received in action and was established by George Washington. It is the nation's oldest military decoration. The Purple Heart organization is a patriotic, congressionally chartered veterans service organization made up of combat-wounded veterans. Eligible veterans are asked to contact Clem Harris, KC5MM at 6110 Pecan Trail Drive, San Antonio, TX 78249 for information, application and to get name on roster.

•••

Armond Brattland, K6EA's column — The Exchange — will reappear next month.

CONTENTS

FEATURES

Amateurs aid mudslide victims — 1
A visit with Katashi Nose — 1
Call for papers — 4
Equipment sent to China — 4
Novice sails solo to Japan — 12
Radio Club honors W5AE — 8
SPAR prepares plan to attack antenna problems — 3

COLUMNS

Advertisers' Index — 56
Aerials — 45
AMSAT/OSCAR — 30
ARRL — 22
Art of Contesting — 34
Awards — 38
Clubs — 32
Construction — 47
Contests — 53
DX World — 24
FCC Highlights — 10
Hamfests — 51
HAPPY FLYERS — 42
Maritime Mobile — 36
MARS — 40
MART classifieds — 54
New Products — 49
Off the Air — 14
Propagation — 26
Public Relations — 12
QCWA — 33
QRP — 31
Silent Keys — 6
Special Events — 6
Subscription, Worldradio — 11
Traffic — 44
Who's Who in Amateur Radio — 16
With the HANDI-HAMS — 35

It's Incredible!
Now You Can...
CODE QUICK

Master code or upgrade in a matter of days! Code Quick is a unique breakthrough to revolutionize the learning of Morse Code. Instead of an endless maze of dits and dashes, each letter will magically begin to call out its own name! Stop torturing yourself with old-fashioned methods. Your amazing kit contains 5 power-packed cassettes, visual breakthrough cards, and original manual. All this for only \$39.95! Send check or money order today to WHEELER APPLIED RESEARCH LAB, P.O. Box 3261, City of Industry, CA 91744. Ask for Code Quick #104. California residents add 6% sales tax.

You can't lose! Follow each simple step. You must succeed or return the kit for total immediate refund!

HI-Q BALUN

- For dipoles, yagis, inverted vees, doublets & quads
- For full legal power & more
- Puts power in antenna
- Broadbanded 3-40Mhz.
- Small, light, weather-proof
- 1:1 impedance ratio
- Replaces center insulator
- Helps eliminate TVI
- Fully Guaranteed

\$12.95
PPD U.S.A.

Van Gorden Engineering
BOX 21305, S. EUCLID, OHIO 44121

ANTENNAS

MULTIBAND ANTENNAS

- Assembled & Ready to Use
- No Traps
- Matches 52 Ohm Coax

Model AP-1.....\$45.00
• Covers 80, 40, 20, 15 & 10 Meters

Model AP-2.....\$40.00
• Covers 40, 20, 15 & 10 Meters

Model AP-3.....\$35.00
• Covers 20, 15 & 10 Meters

Model AP-4.....\$55.00
• Covers 160, 80, 40 Meters

LOOP, TRIANGLE OR QUAD LOOP

- Assembled & Ready to Use
- Match to Frequency of Your Choice
- Match 52 Ohm Coax

Model TP-1 80 or 75 Meters \$45.00
Model TP-2 40 Meters \$41.00
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

SPAR prepares plan to attack antenna problem

The Organizing Committee of SPAR (Society for the Protection of Amateur Radio) is most encouraged with the outcome of its meeting at the Scottsdale, Arizona ARRL Southwestern Division Convention with the officials and Harry Dannals, W2HD, president of the ARRL. The president expressed his agreement with many of the concepts proposed by SPAR and stated that meetings would be arranged in the near future to study the need and implementation of the concepts.

The August (1981) bulletin of SPAR provided a 14-point question-and-answer discussion of the *what, why* and *how* of SPAR and its proposed bylaws.

The first formal meeting with officials of the ARRL was held at Scottsdale to reach an understanding on ways in which SPAR could actively support the policies of the ARRL through political and legislative action at all levels.

Southwestern Division Director Jay Holladay, W6EJJ convened the meeting which included the vice director, president and General Council of the League, and members of the ARRL Headquarters staff and of the Organizing Committee of SPAR.

A thorough review of the active role of the League and its representatives in Washington, D.C. and the purposes and objectives of SPAR brought forth discussion on the increasing problems which the League faces in its role as advocate for the interests of Amateur Radio.

President Dannals expressed concern that ARRL and SPAR would conduct separate, uncoordinated discussions with

government agencies, thereby raising questions as to which organization was representing Amateur Radio. He was reassured that SPAR's primary role is to fight for policies promulgated by ARRL when the tactics call for additional manpower and effort beyond the capacity of the ARRL staff and officers; that action on the part of SPAR would commence upon request from ARRL. It was stated that SPAR's actions should be reversed for those situations which are of such significance and magnitude that ARRL determines help is needed.

President Dannals stated that he perceived the growth of widespread prohibitions against towers and antennas as one of the most urgent and dangerous problems facing Amateur Radio. He noted that such ordinances and actions were proliferating throughout the nation to the extent that ARRL could use help. He asked if SPAR was proposing to assist with such problems. The members of the Organizing Committee assured him that it was; that in such circumstances the League staff needed additional skilled, dedicated help to develop the necessary clout to contain such problems nationally.

SPAR is preparing a detailed plan for attacking the antenna problem. (The plan may also be applicable to the widely growing cable TV system VHF interference problems.) Commencing at the local level, the plan would proceed through municipal and state agencies to Washington where federal preemption will be the final goal.

Upon completion of the proposed plan, another conference will be scheduled with ARRL officials in preparation for the ARRL Board of Directors meeting in March 1982.

Concerned amateurs may obtain a copy of the initial bulletin by sending a legal-size SASE to SPAR, P.O. Box 41, Santa Barbara, CA 93102. □

Katashi Nose

(continued from page 1)

Katashi, including the winding of the power transformer, which uses separate pie windings and silicon steel ribbon for a core.

Katashi is back on the air, using an MFJ keyboard for sending. He operates it with his left hand, because the stroke left his right hand less agile. You'll find him almost any evening on 20-meter CW, just inside the Extra Class band.

The day I visited was also the day of the running of the Honolulu Marathon; 7,500 runners started off at 6:00 a.m. that day, and the Honolulu Radio Club was providing communications along the route. Katashi was interested in how this was coming along and monitored it on one of his several 2-meter radios. The Diamond Head repeater (146.28/.88) is line-of-sight for him, so there is no problem communicating with a rubber duckie antenna indoors. 7,200 of those marathoners finally finished the course and received distinctive T-shirts. They could later be seen all over Honolulu, proudly showing off their T-shirts. People would call "congratulations" to them, much to their delight.

Katashi's charming wife, Matsuyo, and my wife Rita hit it off immediately, with their mutual interest in Hawaiian flowers. The Nose lot is covered with hundreds of exotic blooms that Rita wishes we could raise here.

Thanks, Katashi, for being the high point of our Hawaiian vacation. I know that determined drive you have shown over the years will see you through to a complete recovery of your health. □

Mudslide

continued from page 1

Luckily she had 2 meters so we talked her back home via dangerous detours, where she had to spend the next few days alone with her deceased in that heatless, lightless, hopeless house.

We heard two repeaters being choreographed to route an ambulance through a labyrinth of detours to the exact spot where two amateurs and a rescue team were trying to free a woman who had been pinned for two days under a huge tree. She was still conscious as they loaded her onto the stretcher.

Future architects, please note: Do not design hospitals and county emergency quarters with generators in basements — in a notoriously floodable terrain. Every hospital in Santa Cruz County has only basement generators.

Note also: The new "space" heaters are OK for well-ventilated rooms, but dangerous in crowded rooms with outside temperatures below freezing, as in the case with the San Lorenzo Valley this time of year.

Irony No. 7677: The first night, 60 evacuees were taken to the Red Cross-designated shelter of a Santa Cruz church. The ham arriving there announced they had no candles, cots, coffee, blankets, etc. Yet that church was a pre-planned shelter. But the Red Cross kept hurtling past incredible obstacles everywhere, so who could criticize?

A bicycling ham en route to "county comm" stopped to tie up several boats floating loose at the harbor. Sears opened up and emptied shelves of blankets, shovels, etc. A Watsonville 7-11 store offered needed supplies. Boulder Creek's Brookdale Lodge opened up to 200 refugees, creating a shambles out of their newly decorated tourist palace.

Each hour, the emergency enlarges. Amateurs have been arriving from everywhere to man the shelters, road crews, fire department vehicles, forestry centers and pharmacies, relocating supplies, medicines, personnel. They push pass impassable detours to equip each newly opened pocket of disaster with communications, water, etc. Other amateurs have lent their expensive equipment for forays into mud-splattered territory, risking — and sometimes losing — vehicles and gear. (Through the height of the crisis, approximately 150 operators — some from San Luis Obispo, King City, Contra Costa County, San Jose and Monterey — kept up to 18 stations operating.)

Agonizing decisions have been required of over-worked but smoothly coordinated county officials — decisions such as whether to shut off the few accessible roads for shoring up lest they further deteriorate or to let a truck loaded with vital supplies for people tear up what's left of the one-way road. Among these officials are Area Emergency Coordinator (EC) Ed Gribi, WB6IZF (who has put in total time); Santa Cruz County EC Ron Shannon, KD6BD; and San Lorenzo Valley EC J.F. Rudnick, K6HJU.

It's now the seventh day of the disaster. We shall hold a post mortem (if the crisis ever abates) among the many amateurs and personnel still toiling to take care of the homeless, repairing the roads, "trying to put the San Lorenzo Valley together again." The weather man is kinder, thank God, with no downpours in sight. The still-saturated shuddering earth could not handle it. The post mortem will seek to help us next time to coordinate the coordinators sooner. There has been over- and overlapping between various agencies. We realize now that we should have been feeding health and welfare traffic to the local AM radio stations, since most homes have battery-powered little transistor radios. All amateurs should maintain emergency power — renewable power not reliant upon fuel, if possible. Speech processors could record a lot of the slowly-copied traffic, ensuring speed and accuracy for communications. Also, those holding keys to repeater stations and to antenna-housing roofs should leave those keys visibly available when they are not around.

We should keep coordinating local planning groups. Perhaps each neighborhood could share the purchase and maintenance of a generator on a trailer. We should also coordinate more with CB emergency nets next time. Finally, we should find ways to lessen our helpless and total dependence upon fuel and electricity (it became an "electrocitry") and increase our dependence upon one another's localized mental and manual energies. It's already clear we can count upon one another's emotional and spiritual energies. □

Braille Institute Net

John Ruckert, WB6ZPN

The BRL QRS Net is off to a good start on 7105 every Saturday and Sunday morning at 11:00 a.m. PST. Its purpose is to extend a hand to new blind Novices who'd like to check-in at around 5 wpm. CQ'n and ragchew'n are encouraged both before and after the net. The Institute's students, staff and volunteers in Los Angeles, Palm Springs and Santa Barbara, California are called and listened for first; but everyone is welcome to break in and say hello! □

IF WE WERE YOU



MODEL 6154 TERMINALER

I'D BUY FROM US

YOUR INQUIRY OR ORDER WILL GET OUR PROMPT ATTENTION

AUTHORIZED **Webster** DISTRIBUTOR

Webster associates

115 BELLARMINE
ROCHESTER, MI 48063

CALL TOLL FREE
800-521-2333
IN MICHIGAN 313 - 375-0420

International Mission
Radio Association, Inc.

IMRA
People Helping People

Service to Missioners
(all denominations)
MISSIONARY NET

- 14.280 MHz
- DAILY EXCEPT SUNDAY
- 2:00-3:00 EASTERN TIME

(1900-1900 UTC, 1900-2000 UTC DST)

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

For information, write
Br. Bernard Frey, WA2IPM
1 Pryor Manor Rd. • Larchmont, NY 10538

WATSA TUBE??
No More!

METRON FROM MAGNUS

Solid State Broadband Amplifiers

MA1000B	Mobile 1KW Pep	\$845
A1000	Base 1KW Pep	\$1345
A2000	Base 2KW Pep	\$3493
PS75	ACPS for Mobile KW	\$495

Plus shipping

Certified check or money order—no cards

JW Miller & Associates
10919 Woodfair Road
Fairfax Station, Va. 22039
(703) 978-4020
Dealer inquiries invited

Call for papers

Papers are invited for the 1982 Annual VHF Conference sponsored by the Electrical Engineering Department of Western Michigan University. Principle emphasis will be placed on engineering developments applied to radio communication, design and construction on the frequencies of 30 to 1200 MHz.

This 28th Annual VHF Conference will be held Saturday, 23 October 1982, 8:00 a.m. to 5:00 p.m., with a 6:00 dinner. The conference will be held in Western Michigan University's Kohrman Hall.

Future trends and new ideas

Papers are solicited on from a wide range of areas including, but not necessarily limited to, those listed below:

- Antennas and transmission lines
- Applications of microprocessors
- Audio frequency equipment used with VHF transmitters and receivers
- Emergency gear
- Grounding and shielding
- Keying, break-in and control circuits
- Measurements and test equipment for VHF
- Mobile and portable equipment
- Modulation and mixing
- Narrow band voice modulation
- Noise reduction
- Phase locked loop uses
- Picture transmission and reception
- Power supplies including switchers
- Production technology and model building
- Propagation

- Recent equipment/new apparatus
- RTTY
- Satellite and moonbounce topics
- State of the Art semiconductors, I.C.s and filters with applications
- Transceivers

One of the basic purposes of this conference is to provide a maximum opportunity to present findings by those experimenting, designing, constructing, testing, and inquiring into problems and methods applicable to VHF radio.

This is an opportunity for beginning or mature researchers to report their findings to their peers. We especially encourage the unexperienced inquirers to obtain some experience by presenting a paper at our VHF Conference.

Authors wishing to present papers should send a synopsis or abstract (typically one or two pages with diagrams) describing the paper to Dr. Glade Wilcox, W9UHF, Chairman VHF Conference, Department of Electrical Engineering, Western Michigan University, Kalamazoo, MI 49008. Foreign authors are requested to have a U.S. contact.

Deadline for submission of synopses is 30 June 1982. Speakers will be notified of acceptance by 4 July 1982. Reproducible copy for the printed proceedings should be mailed to the chairman two weeks prior to the day of the conference. □

Solar One: dream becomes reality

Submitted by Shirley Wolter, WB6QFU

The Victor Valley Amateur Radio Club of Victorville, California opened their 26th year with 1982 officers led by President David Sommers, WD6ADH and a presentation of the Solar One facility located in Daggett, east of Barstow. The slide picturization and history was provided by Pat Tong, public relations representative from Southern California Edison.

Solar One is the first solar thermal central receiver plant in the United States — the largest in the world. By the end of 1982, it will be in operation for a two-year initial testing period. The site covers 130 acres adjacent to Southern California Edison's Cool Water Generating Station, and was built at a cost of \$145 million dollars, now 99 percent completed. Over 1,800 mirror modules, called heliostats with a reflective area of 430 square feet per heliostat, collect the sunlight which is reflected to the receiver/boiler in a 300-foot tower which in turn heats recirculated water to 950 degrees when it then becomes steam. The steam is then directed to a conventional turbine generator at the existing Cool Water Plant. During periods when excess steam is available, it is stored in a thermal storage system and later extracted when no sun is available.

The entire operation is controlled by four computers which are programmed to control the mirrors, the thermal storage tank, the turbine and the electricity output (rated at 10 megawatts). One master

computer is yet to be installed which will control all of the other four computers.

Solar One is designed to serve a population of about 6,000 and will be utilized by Southern California Edison and the Department of Water and Power of Los Angeles.

Located in the high desert where sunshine is a common and reliable commodity, the eyes of energy-conscious officials, industrialists and consumers are anxiously on the actual operation of Solar One. It is an exciting alternative to controversial nuclear power and fossil fuel pollution. Many factors must still be considered — elements of wind and blowing sand and their effects on the mirrors, methods of lowering construction costs, maintenance problems (if any), and other efficiency experimentations.

Anyone may obtain further information and a personal tour by visiting the Visitor's Center located near Solar One project. Interstate 15, northeast of Barstow, and Interstate 40, east of Barstow, are the main access highways. The exits to Yermo-Daggett, Calico Ghost Town on Interstate 15, or the Daggett exit on Interstate 40 are clearly marked. You may spend 15 minutes or all day, if you wish.

Plan to make this stop when you are in the vicinity, it will be well worth the extra time it takes. The Visitor's Center is open from 9:00 a.m. to 5:00 p.m. seven days a week except for Thanksgiving, Christmas and New Year's Day. □



Thomas Wong, VE7BC stands next to boxes of equipment which were sent to the Amateur Radio Association in the People's Republic of China in October 1981. Mr. Wong is a regular traveler into China who is involved in world trade. (See related story in October 1981 Worldradio, page 4.)

Equipment sent to China

Submitted by Thomas Wong, VE7BC

All the equipment shown in the accompanying photo left Canada on 4 October 1981, en route to the Amateur Radio Association in the People's Republic of China. I was in Peking on 9 October, helping to put the equipment together at BY1PK club station, so that when China comes on they will be loud with 3kW.

The equipment was donated by the

following amateurs: Thomas Wong, VE7BC (Foreign Trade); Marti Rosenthal, VE3MR (Electronic Corporation); Fred Hammond, VE3HC (Hammond/Transformer); Charles Margelli, K7JA (Yaesu Company); Bob Ferrero, W6RJ (Ham Radio Outlet); Sid Kitrell, W0LYM (Hy-Gain Communication); Frank Brownell II, WA0OAH; Bert Moroz, W8QFR; Bill Kennamer, K5FUV; Joseph Butler, K5OS; Victor Larson, VE7JX; and George Churpek, N6FL. □

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

## Identify yourself

DAVE W2CFP  
TOMPKINS CO. ARC

PHIL WB4FDT

Identify yourself with our custom engraved call pins

- 1 line 1" x 3" ..... \$1.00
- 2 lines 1" x 3" ..... \$1.25
- 3 lines 1 1/2 x 3" ..... \$1.75
- any color

(Please add 20¢ per tag for postage.)

## Fallert's Engraving

121 N. "C," Hamilton, Ohio 45013

(919) 723-4567 ELECTRONIC ACCESSORIES CO. 3 pm - 9 pm EST  
1168 Burke St. • Winston-Salem, NC 27101

•KDK 2025 MK II \$279.00 •VOCOM 2M \$70.00  
Add \$4.00 shipping and handling 2 watt-in 25 out

NC Res. add 4% tax

Call NOW For other low prices!!!

Owners of the TEN-TEC OMNI say it all and much better than we here at the factory could...

Had Century 21 and was more than happy with performance—am upgrading soon so I decided to stay with an excellent American made product.

**KA4FJE**

As present owner of TEN-TEC 544, I have been very happy with it. Now that I need a rig for a 2nd QTH—it, of course, must be a TEN-TEC.

**WA2YHF**

This is my third TEN-TEC rig. This new one is best yet! Triton IV is now back-up to new Omni C.

**AD1P**

This is a wonderful rig with all the serious Ham should need. All reports remark of clean keying and good quality SSB.

**N4LS**

It is a well thought out piece of equipment. I especially like the QSK and the convenient controls.

**W8NOT**

I was impressed with your reputation for providing good service and satisfying the customer.

**W4JSP**

In almost 27 years of Hamming, this is the best rig I've ever owned. Thank you all very much!

**W7WKH**

Super piece of equipment!!

**N3RG**

The transceiver has been on the air for 5 days, and I am more than satisfied. It is in my estimation a superb product and does exactly what I expected it to do. Signal reports are most flattering.

**N2CER**

Fantastic Rig, and I use on SSB ONLY.

**KB9VB**

I decided on TEN-TEC because of the excellent service policy of your company.

**WA4RRC**

I'm impressed! Will need time to take proper advantage of all of its good features. This should give the "Rice Burners" a real goal to shoot for!

**W8UGT**

Very fine Radio. I'm proud to be an Omni-C owner.

**WD4SFY**

The Omni is a beautiful transceiver. Worth every penny!

**KJ5G**

The Omni C is a joy to operate. My first contact was Romania.

**W4REW**

Numerous comments over the air pertaining to product and quality of service were very complimentary.

**W5VYT**

A prominent local amateur told us, "I have never met a man who bought a TEN-TEC and didn't like it." Also we wanted to buy American.

**AJ0S N0CEQ**

I have many friends on the air (cw) that are well pleased with TEN-TEC equipment. Especially favored among

I am extremely pleased with the OMNI-C. I have owned the best (Collins, Drake, etc.) but this product has them all beat for sheer performance and operator convenience. You are to be congratulated for producing such an outstanding piece of equipment—right here in the U.S.A.!

**W9SC**

I'm very pleased, after 14 years of DX'ing and contest operations and many more different rigs, this one tops them all. Super RX!

**KJ2H CX1BBV**

I've owned the Triton 1, then the Triton 4, now the Omni-C. Is there any other rig?

**W1ZQI**

Have had a Triton IV the past four years. I would not own anything but TEN-TEC. Super rigs and fantastic service.

**W5TI**

Had Omni-C, then tried most other rigs on market—went back to the best—The American made Omni-C.

**KC5WC**

I have previously owned Triton IV. Now have Omni-D Series B, your prompt and courteous attention to minor problems in the past together with fine equipment induced me to buy this one.

**N5CN**

Decision was on previous experience. Traded in a 544 on this rig & the only thing I would have traded that one for is another TEN-TEC—Great rig!

**WD4NZP**

Fantastic rig!! Mark me down as a TEN-TEC fan for life!!

**KA5GKO**

## Straight talk from owners of TEN-TEC OMNI...



### the rig that filters the crowd.

cw operators is the QSK full break in feature.

**W5QNT**

This XCVR has to be the ultimate "rig." I am waiting for the matching amp (the Hercules) it is on order.

**K8IST**

I owned a TEN-TEC Triton IV which was a sweet rig. It was natural to upgrade to another TEN-TEC.

**KA4GYU**

My decision was based mainly on over the air reports of TEN-TEC owners and also reported good factory service if any troubles with rig did occur.

**W7GOY**

OMNI has these features:

- All 9 HF bands
- All Solid-State
- Broad-banded
- 2-Range Offset Tuning of Receiver, Transmitter or Transceiver
- Optimized Sensitivity
- Optimized Bandwidth
- Built-in Notch Filter
- Built-In Noise Blanker
- 2-Speed Break-In
- WWV reception
- Separate Receiving Antenna Capability
- Built-in VOX and PTT
- Built-in Phone Patch Jacks
- Built-In CW Zero-Beat Switch
- Built-in Adjustable Sidetone
- Adjustable Threshold ALC
- Front Panel Control of Linear or Antenna
- Automatic Sideband Selection
- Superior Audio
- High Stability

Model 546 OMNI-Series C. . . . . \$1289  
See your TEN-TEC dealer or write for details.

**TOT TEN-TEC, INC.**  
SEVIERVILLE, TENNESSEE 37862  
EXPORT 815 LINCOLN AVE. CHICAGO, ILL. 60648

## Special Events...

### Rattlesnake Rodeo

KA4LRL — that's the call to listen for as the Anniston Good Time Gang heads south to Opp, Alabama for the 23rd Annual Rattlesnake Rodeo. Between mouthfuls of delicious southern-fried rattlesnake, we will be operating on the following frequencies: 3.965, 7.240, 14.290, 21.375 and 28.600. Operating times will be from 1200Z to 0400Z on Saturday, 6 March 1982.

For a handsome certificate, send your QSL along with \$1 (to cover postage and printing) to Dale Boothe, KA4LRL, 3430 Greenwood Ave., Anniston, AL 36201. □

### Mission's 200th year

Special Event Station WA6BMH will be operated by the Poinsettia Amateur Radio Club, in commemoration of the bicentennial of the San Buenaventura Mission, from 2000Z, 27 March to 2000Z, 28 March.



Frequencies: CW — 28.045, 28.145, 21.045, 21.145, 14.045, 7.045, 7.145; Phone — 28.545, 21.365, 14.285, 7.245, 3.945.

To obtain certificate, send QSL and \$1 to: P.A.R.C., P.O. Box 268, Ventura, CA 93002. □

### Historic bridge

On 17 and 18 April 1982, the Quad Cities Amateur Radio Club, W9YCR, Rock Island, Illinois will operate a special event station in commemoration of the first bridge across the Mississippi River — a significant event in the opening of the western United States to development.

W9YCR will be on the air from 1800 UTC (noon CST) Saturday, 17 April through 1800 UTC Sunday, 18 April on the 80- through 10-meter bands on the following frequencies: in the middle of the Novice CW portion of each Novice Class band, as low in frequency as possible in the General CW portion of each band, and 30 kHz up from the lower edge of the General SSB portion of each band.

QSL via Denny Spurgeon, N9BKY, 413-23rd Avenue, Moline, IL 61265, and please enclose a business-size SASE for a commemorative certificate.

The Quad Cities is a three-county area surrounding Rock Island and Moline, Illinois and Davenport and Bettendorf, Iowa. It is the farm implement manufacturing capital of the world, the largest metropolitan area in Iowa and Illinois outside of Chicago, and boasts over 1,000 Amateur Radio operators. □

### Station W3FT

Members of the Catonsville Community College Amateur Radio Society will operate a special event station on 28 March 1982 from the Maryland State Fairgrounds in Timonium, Maryland, commemorating the annual Baltimore Amateur Radio Club Hamboree and Computerfest. The fairgrounds will be the site of the club's 1982 event.

The station will be on the air from 1200 UTC to 2100 UTC. Frequencies to be used ( $\pm$  QRM) will be: Phone — 7.275, 14.290, 21.365 and 28.550; CW (Novice band only) — 7.110, 21.120 and 28.120.

Certificates measuring 8-1/2 by 11 inches will be issued to amateurs contacting W3FT. To receive certificate, send QSL card, QSO number and 40 cents in U.S. postage. Foreign amateurs remit 2 IRCs. QSL via Glenn Tracey, KA3GSN, 6 Osborne Ave., Catonsville, MD 21228 or David Metz, KA3ENU, 6602 Seneca Ln., Sykesville, MD 21784. □

### Alamo Village

The Border Amateur Radio Society and the Uvalde Radio Club will hold their annual Alamo Village DXpedition on the weekend of 17-18 April. They will be working all bands on phone and CW. There will be handsome certificates given to amateurs who work them and send SASE 8-by-10-inch mailers.



Alamo Village is the movie-making capital of Texas. It was the site of the filming of such movies as "The Alamo" with John Wayne, "Bandolero" with Dean Martin, as well as many, many more. The local amateurs will be working out of such sites as the Cantina, Jailhouse, and even a construction of the Alamo itself.

Alamo Village is a complete reconstructed western town that is open to tourists and located a few miles outside of Brackettville, Texas. We promise that there will be 100 percent QSL to all amateurs sending SASEs. □

**CERTIFIED INTERNATIONAL**

WE STOCK EVERY KIND OF WIRE THE AMATEUR NEEDS BY BELDEN WITH CRYSTALS FRESH CUT TO YOUR ORDER FROM \$4.00

QSL CUSTOM MADE FOR YOU

CB TO 10 METER CONVERSIONS FROM THE STANDARD SET CERTIFIED COMMUNICATIONS

WE CONVERT OVER 150 MODELS \$45 AND UP AND SELL NEW 10 METER RIGS WITH DOUBLE WARRANTY FROM \$119.00

ASK FOR QUOTE CATALOG CONVERSION BOOKLET QSL SAMPLES (INCLUDE 50 MHz) OR INFORMATION

WE BRING OUR STORE TO YOU AT OVER 70 HAMFESTS PER YEAR SEE YOU IN DAVENPORT, TOLEDO, ORLANDO AND CHARLOTTE

IT'S WORTH YOUR WHILE TO CALL OR WRITE

CERTIFIED INTERNATIONAL

138 S. Ferris • Fremont MI 4812 • (616) 924-4561

### Pony Express

The Missouri Valley Amateur Radio Club will hold its third Annual Pony Express Day on 10 April 1982 from 1000 CST to 1900 CST. The event commemorates the original running of the Pony Express from St. Joseph, Missouri to Sacramento, California.

This year the club will also help the city of St. Joseph celebrate the 100th anniversary of the death of the outlaw Jesse James. This will be accomplished by offering along with the Pony Express certificate a wanted poster of Jesse James.

Anyone making contact with the club station W0NH is eligible to receive both certificates. The operating frequencies will be 10 kc's from the bottom of the General phone bands on 15, 20, 40 and 75 meters. On 10 meters the frequency will be 28.575. The CW bands will be 28.150



on 10 meters, 21.150 on 15 meters, and 7.125 on 40 meters.

To receive both certificates, send two first class postage stamps and a QSL card to the Missouri Valley Amateur Radio Club, W0NH, 401 N. 12th Street, St. Joseph, MO 64501. □

## • Silent Keys •

### Silent Key

Submitted by R.K. Green, W5GAJ

William "Bill" Searcy, W5LV of New Orleans, Louisiana passed away on 30 October 1981 at age 70. He was a retired Merchant Marine Cargo Ships Radio Officer and went to sea for many years. He

was a member of the Radio Officers Union in New Orleans. Bill worked in TV broadcasting and was a radio parts dealer in the New Orleans area. □

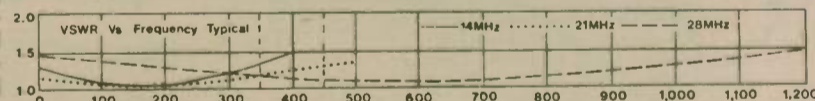
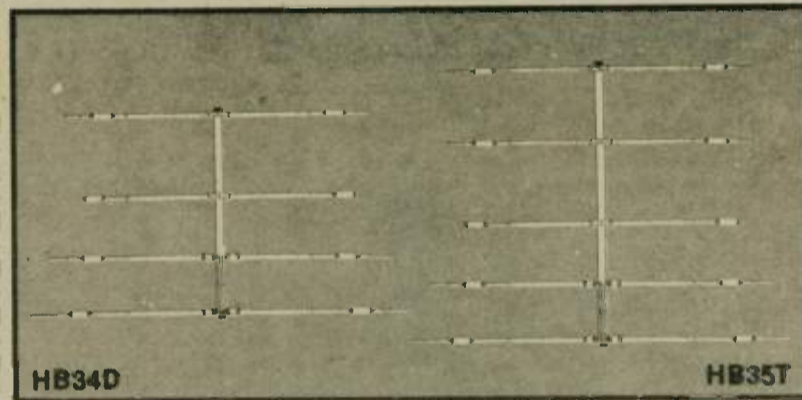
### Silent Key

Rose Ellen Bills, N2RE

Joseph D. Welch, K3CT passed away 7 December 1981.

Joe grew up in Boston, Massachusetts, and graduated from Boston English High

## DUAL-DRIVE TRIBANDERS BROAD BANDWIDTH



4 Models to Choose from:

|                           | HB35T        | HB43sp   | HB34D    | HB33sp   |
|---------------------------|--------------|----------|----------|----------|
| Band                      | 10/15/20     | 10/15/20 | 10/15/20 | 10/15/20 |
| Element/Band              | 5/5/4        | 4/4/4    | 4/4/3    | 3/3/3    |
| Max Pwr PEP               | 3KW          | 3KW      | 3KW      | 3KW      |
| VSWR                      | 1.5          | 1.5      | 1.5      | 1.5      |
| Impedance                 | 50           | 50       | 50       | 50       |
| Ohms                      | 27           | 27       | 27       | 27       |
| Max Et Length             | 24' 7"       | 19' 8"   | 16' 5"   | 13' 2"   |
| Boom Length               | 18' 10"      | 16' 9"   | 15' 10"  | 15       |
| Turn Radius               | 7' 8"        | 6' 2"    | 6' 0"    | 4' 7"    |
| Wind Area Ft <sup>2</sup> | 180          | 132      | 121      | 102      |
| Wind Load (lb.) @ 80mph   | 2"           | 2"       | 2"       | 2"       |
| Boom Diameter             | 1 1/2"       | 1 1/2"   | 1 1/2"   | 1 1/2"   |
| Max Size                  | 50           | 38       | 34       | 27       |
| Weight Lbs                | 100          | 100      | 100      | 100      |
| Max Wind MPH              | Yes          | Yes      | Yes      | Yes      |
| Furnished                 | Yes          | Yes      | Yes      | Yes      |
| Gain dBd                  | CALL FACTORY |          |          |          |
| F/B Ratio                 | CALL FACTORY |          |          |          |
| Price                     | \$329.95     | \$239.95 | \$209.95 | \$174.95 |

SEND STAMP OR LEGAL SIZE S.A.S.E. FOR OUR COLOR CATALOG DESCRIBING MORE THAN 60 PRODUCTS DESIGNED EXCLUSIVELY FOR THE DISCRIMINATING AMATEUR. TET OFFERS A WIDE RANGE OF DUAL DRIVE BEAMS AND SWISS QUADS COVERING FROM HF THROUGH 70CM, ROOF MOUNTED TOWERS AND ACCESSORIES FOR LIMITED SPACE APPLICATIONS, AND THE POPULAR KR500 ELEVATION ROTATOR.



## WE'VE MOVED!

NOW SERVING YOU FROM OUR NEW ESCONDIDO CA, FACILITIES

1309 SIMPSON WAY, SUITE F ESCONDIDO, CA 92025

ORDER DIRECT

# 800-854-1953

CALIFORNIA RESIDENTS CALL: (714) 743-7025

## TET ANTENNA SYSTEMS

# Friends fulfill dying amateur's wish

School and Boston Radio School. At age 20, he entered the Air Force as a Tech. Sgt.-Bomb Squadron-Tail Gunner and served in the South Pacific during WW II. His first job was with Station WBZ in Boston — beginning at 5:00 a.m. daily. It was not long before he had employment with the FCC in Boston and accepted a transfer to Philadelphia. Joe served as FCC Engineer in Charge for a total of 28 years.

A true amateur, Joe had his station set up in the basement of his home in Boston as a young boy. In order to make life easier for his mother, Joe fixed up an intercom throughout the house so she could call to him: "Joe, dinner is ready." Mealtime was about the only time he left the rig.

Most of the amateurs in this area who took their exam in the last 28 years got to know Joe very well because he did visit many of the local radio clubs to give talks and answer questions regarding the FCC. Besides electronics and radio, Joe was also very active with Boy Scouting where he played many leadership roles and received many awards.

Because of poor health, Joe was forced to take an early retirement in December 1979. Since that time, he had been fighting the battle of cancer. He will be missed by all his Amateur Radio and scout friends. □

## Jane Johnson, K3RIH

Joe Welch, K3CT — retired FCC examiner in Philadelphia — spoke wistfully from his hospital bed about reactivating the Secane Amateur Club, of which he was one of the founders. Close friends, aware that Joe would soon lose his battle to cancer, responded. They met with Joe in the hospital, drew up plans, made lists of former members and made him part of the activity.

Joe died in December, but he was pleased to know that the club was in operation once again.

Like Joe Welch, the Secane Amateur Club is unique. The club was started in the early '60s and soon became known as SAC. The 6-meter radio frequency chosen back then was 51 Mcs and the club membership was held to 51 members.

The club met weekly on Sundays from 11:00 a.m. to 1:00 p.m. It was purely social — no officers, no minutes, no resolutions. The important club matters were decided by five founders. They were Joe Welch (whose call was then W3UQV); Elwood Wright, K3HSD; Jack Calter, K3NUB; Frank Webb, K3PWY; and Koe Molino, K3ITD. Popularity spread and very quickly the club had a waiting list. The Secane location could accommodate no more, so new members had to wait for



Joe Welch, K3CT, was head FCC examiner in the Philadelphia FCC Office for 25 years. He died of cancer on 7 December 1981.

openings when someone left the area.

The chemistry was right: the informali-

ty, the time and place, and the club and friendships flourished. The menu consisted of a coffeepot, fresh donuts and a can on the table for a small contribution toward the next week's refreshments.

In that casual atmosphere, things happened. An idle comment asking, "Why don't we raise funds for radio gear for the Overbrook School For The Blind?" turned into a thriving venture. Operation Ham Shack was a happening. Money was raised and letters written to companies resulted in gear donations. The school responded by providing a complete radio room and the school was soon on the air. The suggestion that there is no handicap behind a mike seems to strike a chord in amateurs, and over the years, it has not been unusual to run into an amateur on the air who confides that he got his start at the school.

The late '60s dealt severe blows to the club. Illnesses and accidents took the lives of three of the five founders. Ed Wright, who provided the meeting place, was one of them. On the heels of this

(please turn to page 8)

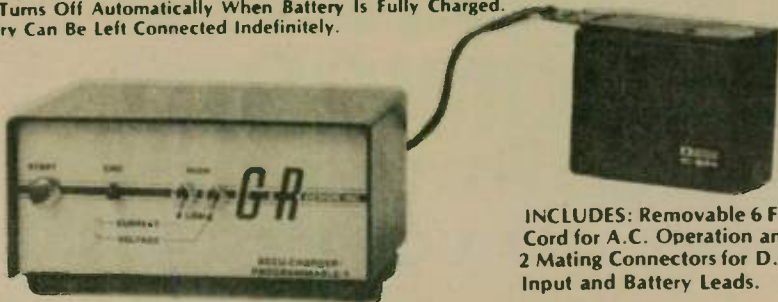
## NEW FAST CHARGE For Your Battery Packs

RECHARGE YOUR HAND HELD RADIO BATTERY PACKS TO FULL CAPACITY IN AS LITTLE AS 45 min. EXAMPLE—Fully Charge ICOM BP3 in 30-45 Minutes.

SEPERATE FUSES PROVIDED INTERNALLY FOR A.C. AND D.C. OPERATION. —BUILT IN REVERSE POLARITY PROTECTION.

### All Solid State

Precision Components Used Throughout. In A Unique Circuit Allows Fast Changing Without Any Perceptible Heating Of Cells. Charger Measures Remaining Charge In Cells Constantly And Turns Off Automatically When Battery Is Fully Charged. Battery Can Be Left Connected Indefinitely.



INCLUDES: Removable 6 Ft. Cord for A.C. Operation and 2 Mating Connectors for D.C. Input and Battery Leads.

FEATURES: High Quality, Custom Designed Heavy Gauge Aluminum Cabinet.

FULL 1 YR. WARRANTY ON PARTS AND WORKMANSHIP

**INTRODUCTORY PRICE \$65.00**

ACCESSORY CONNECTOR TO FIT ICOM BATTERY PACKS, BP-2, BP3, BP4, BP5, \$3  
PRE-PAID ORDERS INCLUDE \$3 SHIPPING & HANDLING

CALIF. RESIDENTS  
INCLUDE 6% TAX

PHONE ORDERS—CALL [209] 928-3608 or [209] 586-7059

MAIL PRE-PAID ORDERS TO:

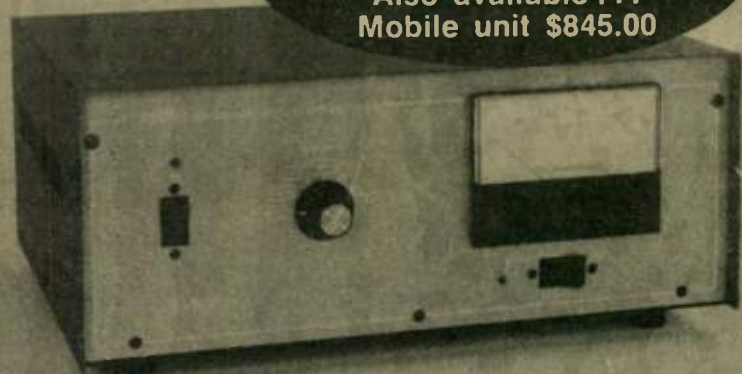
**GR** DESIGN INC

P.O. BOX 4463 SONORA, CALIF. 95370

DEALER INQUIRIES INVITED

**BASE STATION  
No. A1000: \$1345.00**

Also available . . .  
Mobile unit \$845.00



Ideal base station amplifier for your solid state transceiver...the all solid state kilowatt linear  
**METRON® No. A1000**

No tuning or adjustment whatever over 160, 80, 40, 20 and 15 meters

Built-in 115/230V AC power supply . . . low voltage operation

- Easily interfaced . . . either local or full remote control.
- Switch from one band to another instantly . . . no lost time in tuning.
- Heatsink convection-cooled, with additional forced-air cooling, thermostatically controlled.
- 8 power transistors of latest stripline RF linear devices; rated for operation at infinite VSWR.
- Meets all applicable specifications.

Power input . . . . . 115/230V AC, 60/50Hz  
Power output . . . . . 600W PEP typical  
Harmonics . . . . . -50dB all amateur bands  
Drive level . . . . . 60W 50 ohms

Technology-proven through over 3 years of rugged professional applications around the world.

Available from stock. Dealer inquiries invited.

**MAGNUS**

ELECTRONICS CORPORATION

3500 Devon Avenue, Chicago, Illinois 60659, U.S.A. • (312) 679-6070  
Tlx: 253503 MAGNUS CGO; 4330047 MAGN UI

Eastern Representative: J. W. Miller & Associates, 703 978-4020  
Western Representative: Comm Marketing Corp., 213 359-1834

## Radio Club honors W5AE

The Radio Club of America, at its 72nd Annual Awards Banquet held in New York City recently, presented communications executive, Jerry S. Stover, W5AE, with one of the club's highest awards — The Sarnoff Citation. The award was made for Stover's "outstanding service to the radio communications industry."

Stover, who began his career as an Amateur Radio operator at the age of 13, is an electrical engineering graduate from Southern Methodist University. During World War II, he received the Bronze Star Medal for establishing communications on Omaha Beach on the second day of the invasion of Europe. Following the war, Stover and another former communications officer — Tom McMullin — founded Communications Industries (CI), Inc. with an initial capitalization of \$1,400. The company is now publicly held and has net equity of \$25 million with annual sales of \$50 million. CI operates mobile telephone and pocket paging networks across six southern states and manufactures equipment for industrial and public safety radio systems.

Upon his retirement as Chairman of the Board of Communications Industries in



**Jerry Stover, W5AE (right) is presented the prestigious Sarnoff Citation by Radio Club of America President Fred Link, W2ALU during the Club's 72nd Annual Awards Banquet in New York.**

1980, Stover joined the staff of SMU's School of Engineering and Applied Science as a volunteer. In addition to serving as guest lecturer, he has assisted in the development of the School's Graduate Program in Telecommunications Management. A Registered Professional Engineer, Stover continues to serve on the Board of CI and other companies. He is a Fellow and Director of the Radio Club of America, a member of IEEE (Institute of Electrical and Electronics Engineers), and former Director of the American Electronics Association.

The Radio Club of America, founded in 1909, was the world's first radio communications society. □

## Columnist honored

Home News columnist Bob McGarvey, WB2EVF has been honored by the Metuchen Amateur Radio Club for his work in behalf of the Amateur Radio community. McGarvey's "Calling CQ" column has been a regular feature for a number of years in *The Sunday Home News*.

A plaque, presented by George Russell, W2SJK of Metuchen, trustee of the club radio station K2YNT, states:

"Metuchen Amateur Radio Club-K2YNT appreciates and acknowledges the support to Amateur Radio by Bob McGarvey, WB2EVF." Russell is also adult adviser of the club, which meets on Tuesdays at 7:30 p.m. in Metuchen High School.

The club's amateur training program and equipment are also housed in the high school. Speaking for the members, Russell and Battist V. Bruno, WA2AET — a former president of the club — said, "Bob McGarvey is one of our founding members. He has called to public attention the many emergency services of Amateur Radio and has been instrumental in getting many new amateurs started in radio. We of the Metuchen Amateur Radio Club feel his 'Calling CQ' column has greatly helped our club enjoy continuing success."

McGarvey retired in September 1981 from full-time employment by *The Home News*, but has continued to write his radio column each week.

— *New Brunswick, NJ* □

## WANE Award rules

Remember how hard it was to get the New England states for your WAS award? No! Well then, try this one on for size. Work All New England (Counties). It'll keep you up nights for a while.

1. Sponsor — Port City Amateur Radio Club, P.O. Box 622, Portsmouth, NH 03801.

2. Open to all radio amateurs.  
3. Applicant must show proof of having conducted two-way radio communications with another Amateur Radio station in at least 50 counties comprising New England.

4. Phone or CW or a combination of both modes on any frequency are acceptable.

5. Contacts with mobile stations are not valid. Stations must be permanent or portable. Repeater contacts are not valid.

6. U.S. contacts must be made from the same county. Contacts from outside the USA shall be made from the same country.

7. All six New England states must be represented.

8. QSL cards or other confirmations will be accepted as evidence of this achievement.

9. Stickers to be attached to the certificate will be awarded for contacts with 62 and all 67 counties.

10. There is no cost for the certificate; however, return postage for QSL cards submitted by an applicant must accompany QSLs.

— *The Ground Wave, St. Paul RC, MN* □

## Friends fulfill

(continued from page 7)

several others died in tragic ways.

The meetings ceased.

A small group kept in touch, but about this time 2 meters became popular, and those who did not get any new gear were left behind and out of touch.

A few years later, several members had a SAC reunion and it was well attended. Several amateurs brought their new 2-meter handi-talkies and caused a stir of interest. Friendships continued, more amateurs got new gear, and the new meeting place became 146.400.

Joe was never able to leave the hospital to attend the club he rejuvenated, but he took a keen interest in its activities. The new meeting place is at the home of Marge Kennedy, K3FXP. Because of limited space, the membership is limited to 40 this time around.

New founders were named. They are the original K2ITD; Jack Kennedy, K3OWY; Pierce Batty, K3ROQ; and Nat Sander, W3BSG. Following Joe's death, Walt Johnson, K3SSB was named as his successor.

The club will continue to be a living memorial to an amateur who gave tests to literally thousands of amateurs in the Philadelphia area. □

**THE PROFESSIONAL TOUCH TONE ENCODER**

An ultra high quality encoder for professional application. Absolute reliability and function makes the difference. There's a Pipo encoder for every system and application. Totally serviceable, easy to operate and install. Call or write for free catalog and information! (213) 852-1515 or P.O. Box 3435, Hollywood, CA 90028.

PATENTED • AT&T

**Pipo Communications**  
Emphasis is on Quality & Reliability

*Quality \* Service \* Integrity*

# QUEMMENT ELECTRONICS

Serving area amateurs for over 40 years

Providing a complete line of amateur equipment and accessories

Call or come in for quotes on all your amateur needs

**We will be pleased to assist you!**

1000 SO. BASCOM AVE.  
SAN JOSE, CA 95128  
408-998-5900  
P.O. BOX 6000, SAN JOSE, CA 95150



# U.S. QSL Service, Inc.

Laryl Myers, KM7Z (ex-N7BMY)

Greetings once more from USQS — the domestic QSL service. We hope you have been reading our articles which appear monthly. If you have, you know that we are a non-profit, free QSL bureau. This bureau is independent, run by Laryl Myers, KM7Z. You can send any QSLs that you need to get out to USA amateurs — NO CHARGE! We ask that the QSLs you send via the bureau be pre-sorted first into areas 0-9, with each group sorted alphabetically by suffix. Please, no DX cards. The QSLs that come to USQS are filed to be sent to the amateurs, hopefully in SASEs. We ask everyone to keep self-addressed stamped envelopes on file to claim cards that come in.

The bureau continues to grow daily, as do the hours needed to handle it! This column is being written in the very end of December and we wish to thank everyone who has made this last year enjoyable.

We have mailed out several hundred envelopes of cards as a complimentary mailing during the past few months. We feel that in view of the very limited funds, mailing out cards along with flyers is the best way to serve those who are using the system, and at the same time we are getting direct advertising to active amateurs. The donations we receive are used in this way and we really appreciate any donations or extra stamps that we receive!

We would like to know what means of advertising you feel would be best to look into, and if anyone can help us by spreading our flyer through club meetings or newsletters, please do!! We need each of you to help spread the word, and if you would like to really help, we welcome any extra stamps (blank SASEs) that we could use to continue our complimentary mailing/advertising.

USQS is a free service available to everyone. We receive no monetary compensation for our work, not even gas money for the daily trips to the post office. Whatever donations we receive go directly to forwarding QSLs, printing flyers and placing ads. Please support us! We take great pleasure in the many notes each week — especially the notes of thanks! It makes the many hours of work worth the effort.

We hope you will remember to thank Worldradio for their willingness to print the list of calls for your convenience. The following calls represent some of the unclaimed cards as of this writing. We try not to reprint calls; however, if your call is listed after you have sent an SASE, remember that this list is compiled a couple months ahead of printing. Please state if you want your SASE returned with whatever is on file or if you wish us to hold it until it is full or a contains a certain number of QSLs. Also, please send extra SASE to be kept on file, and give your past calls also!!

Please note: If you had the pleasure of working Larry Strain, N7DF/VY1 or John Strain, K0HGW/VY1 while they were in the Yukon (16-23 November) and you have not claimed your QSL, send an SASE to USQS... we have them!

We would also like to explain that the omission of N7BMY from the 1982 Callbook was an error, and we are the first to be sorry about it. USQS is listed under N7BMY in the 1981 book and is listed under the new call KM7Z in the 1982 book. We apologize for any inconvenience this may cause. From now on, KM7Z will be listed in connection with USQS; of course, if your contact has 1981 book,

refer them to N7BMY.

Anyone wishing to tell their contacts to QSL via KM7Z, via N7BMY or via USQS, P.O. Box 814 Mulino, OR 97042 is more than welcome to do so; that is why the service is here. We hope to help make QSLing easier, less expensive and more enjoyable for everyone.

Until next month, 73 and thank you for your support. The following calls have cards on file to be claimed. Send SASEs to: USQS, P.O. Box 814, Mulino, OR 97042.

|        |        |        |        |
|--------|--------|--------|--------|
| W1AHP  | WB1CHY | WB1DDT | WB1FTI |
| N1AVA  | WB1CNM | KC1E   | K1GDM  |
| N1BHC  | WB1CTV | KG1E   | K1GE   |
| N1BHM  | WB1CXJ | W1FCH  | W1GFH  |
| WB1CCO | K1DD   | K1FPJ  | W1GNR  |

|        |        |        |        |        |        |        |        |
|--------|--------|--------|--------|--------|--------|--------|--------|
| KA1GTR | N2AA   | WB2LXL | WB3CFD | KG4AH  | K4HAV  | KD4RH  | KW4Y   |
| K1GW   | WB2AIW | N2MM   | K3CQ   | N4AOE  | NQ4I   | K4SGQ  | N4YM   |
| W1HNZ  | NP2AM  | K2OZI  | KA3DUR | KB4AP  | WB4IUX | WA4SN1 | W4ZC   |
| KA1HO  | KA2BRQ | K2PF   | WA3EOQ | KS4B   | K4JII  | WA4SSU | K4ZGK  |
| KA1HTC | K2HXG  | WA2PXR | N3GB   | N4BU   | K4JYQ  | WA4SVO | KN6A   |
| KA1HWV | N2CVL  | W2RUK  | KA3GCE | NQ4C   | AA4K   | WD4TCA | N5ACP  |
| KA1HXM | N2CW   | KB2SE  | W3GRF  | KV4CI  | N4KG   | N4TO   | KB5AS  |
| AB1J   | WB2DHY | K2SWP  | KA3HUR | WA4CXI | W4KJU  | KA4TQV | N5BKA  |
| W1IBC  | W2DUN  | K2SWP  | KA3IEA | WD4DGF | WA4KPU | WB4TWB | N5BLB  |
| KA1NF  | K2EK   | AE2T   | KA3IFG | N4DMR  | K4KQ   | N4TX   | N5BRJ  |
| K1ANN  | KB2FD  | WB2TSY | KA3IFH | KE4DQ  | KA4MGH | N4UL   | K5BZU  |
| W1OER  | KC2FI  | W2VTX  | AK3J   | N4DTW  | KA4MMC | K4UP   | N5CFU  |
| K1PAD  | WB2FUE | WD2WNL | WB3LJK | N4DXJ  | W4MYA  | WA4UTI | W5CJE  |
| W1PL   | KM2H   | W2WSS  | W3MZE  | NR4E   | WB4NVH | KA4UVM | K5CTG  |
| A1IS   | WA2HZC | KQ2X   | W3NBC  | N4EA   | KA4NWK | WB4VMB | WA5CUJ |
| W1SVU  | KA2IEU | K2XA   | KF3P   | N4EF   | W40BB  | KD4VN  | WD5DHS |
| WA1TMZ | W2IQD  | K2YGM  | WA3QNT | KA4EQE | KA40OU | N4VS   | N5DJU  |
| KB1U   | KD2J   | W2YV   | WA3RWP | N4EUO  | WD4PFR | KA4WJC | N5DSA  |
| KA1VC  | WB2JAY | W3AJS  | K3TUJ  | N4EUV  | WA4PGM | K4XG   | N5DUY  |
| WA1WET | KA2JCH | W3BAN  | K3USN  | N4FH   | KA4PMU | KC4XR  | N5DYU  |
| KA1WU  | KB2JM  | W3BGN  | W3YI   | KV4FZ  | WB4PRU | K4XS   | KA5EDX |
| K1XM   | KA2JWB | N3BMK  | WA3YZW | K4GNP  | WA4PSF | K4XU   | KA5FSG |
| W1XX   | W2KHT  | N3BQS  | W3ZX   | WB4GUH | K4QE   |        |        |
| KK2A   | KA2LJO | WB3CDE | KC4AA  | KB4GX  | KA4REG |        |        |

## In the proud tradition of the S/Line and KWM-2: Collins KWM-380.

What is "tradition"? Fifty years of HF communications experience and a high technology base that makes us an industry leader. Plus added value like the KWM-380 12-month warranty and 24-hour factory "burn-in" followed by individual testing and calibration of each transceiver.

The Collins KWM-380 gives you "tradition" in one box. Microprocessor control provides operation from the front panel or optional remote interface connector. Plug-in read-only-memory I.C. allows the addition

of WARC band changes. Built-in AC/DC power supply lets you operate almost anywhere.

Rate selectable tuning to 10 Hz with frequency memory and split VFO provide excellent operational flexibility.

The Collins KWM-380. A sound investment that offers excellent resale value. See it at your authorized dealer. Collins Telecommunications Products Division, Rockwell International, Cedar Rapids, Iowa 52498. Phone 319/395-5963. Telex 464-435.



Rockwell International

...where science gets down to business





Bill Grenfell,  
W4GF

## HIGHLIGHTS

Several Amateur Radio items were in the FCC rulemaking "pipeline" for action in 1982 as the new year began. The first Commission meeting for rulemaking purposes was scheduled for mid-January, after a month-long hiatus. Announcement of the purpose of and the schedule of consideration of the items is usually made public only a few days before each meeting. According to *HR Report* of 12/31/81, some of these "pipeline" items for consideration may be proposals for: expansion of U.S. phone bands; 200 MHz phone for Novices; some power limit changes (including development "... of new power-specifying techniques").

Budget cuts are forcing a reduction of FCC's activity in 1982 and 1983. As this was written, the Commission and its staff were busy trying to plan for operation under a quite severe budget cut which will be imposed on them in fiscal year 1983, which began 1 October 1982.

FCC's exam schedule for the first half of 1982 is significantly reduced from 1981. Using the Southeast Region as a sample, FCC Office exams there are reduced by about 10 percent and those scheduled at the locations in that region are reduced by about 50 percent. Some of the smaller offices have been closed — Silver Spring, Maryland; Savannah, Georgia; and Casper, Wyoming, for example. This is due to the reduction in personnel and travel expense necessary to stay within the reduced budget for '82. FCC's Field Operations Bureau recently determined that approximately six man-years of its personnel were being used for administering Amateur Radio operator examinations and 14 for Commercial operator examinations, under the former schedule.

FCC Field Operations Bureau personnel reduction in '82 and '83 may be severe. For Fiscal Year 1980 (1 October 1979 to 30 September 1980), the personnel in the Field Offices, Monitoring Stations and Washington Headquarters totaled 484. For Fiscal Year 1981, the total was 455. While numbers for '82 and '83 are not yet public, they may be in the lower 400's and in the upper 300's, respectively. Interestingly, the Bureau's personnel numbers have not changed much during the past 35 years. In 1947, the total in the Field

Offices and Monitoring Stations was 488. While it varied some over the years from approximately 400 in the mid-'50s to a high of 499 in '78 and 512 in '79, the average has been around 480 for most of the period.

As the New Year arrived, the day of beginning 10 MHz band operation for U.S. amateurs remained remote. While there was considerable last-minute pressure on FCC to open 10.10 — 10.15 MHz to U.S. amateur use on 1 January, apparently they were not convinced it was feasible or desirable to temporarily bypass regular rulemaking and other routine procedures. FCC's 14 October

1980 news release predicted a "slow and easy transition" involving "... a draft allocation table, which will assign new frequencies to the fixed services now using the 10, 18 and 24 MHz bands."

28, 50, 144, 220 and 420 MHz band beacon frequencies were proposed by FCC in its Notice of Proposed Rulemaking released 9 December 1981. Original comments were due 15 March and reply comments by 15 April 1982. The emissions and frequency bands proposed for automatically controlled beacon stations are: Type A0, A1, F0 or F1 (less than 900 Hz); on 28.08-28.10, 50.06-50.08, 144.05-144.06, 220.05-220.06, 222.05-222.06 and 432.06-432.08 MHz.

Use of all amateur bands above 450 MHz is provided using the emissions authorized in those bands for other purposes. Transmitter power in output of not more than 100 watts, and once-per-minute identification with a beacon identifier following the call sign would be required. Not more than one frequency in the same band at the same location would be permitted. The Commission would reserve the right to terminate any beacon operation it deems improper.

The effective date for the use of high frequency facsimile and Slow Scan TV had not been determined as of mid-January. See the February Highlights column. Editorial problems were cited as the cause for delay.

Imposition of the penalty for Gerald Morin, W1GM and Leonard Boucher, K4MME for willful and malicious interference was expected in late January or early February. Both Boucher and Morin had withdrawn their requests for a hearing and submitted statements. These statements were to be considered by FCC before deciding whether to suspend and cancel their amateur licenses. A decision of the related case concerning net member Richard Eastman, N5FX was still pending as this was written.

The licenses of Marc Chappelle, KA3ARF were revoked and suspended last November for using profane language, transmitting a false Mayday, playing music, and for willful and malicious interference to some amateur nets.

The origin of false commands redirecting U.S. Air Force bombers on SAC (Strategic Air Command) frequencies has been traced by FCC to an amateur in upstate New York. The FCC was not ready to reveal his identity at the time this was written.

The hearings for Henry Armstrong, WA6CGI and Robert Frizzell, W6UCB for transmitting obscenities and malicious interference were scheduled for 24 and 22 February, respectively. Revocation and suspension of their amateur licenses were proposed by FCC.

FCC has proposed to suspend the licenses of David Dayyan, WA6SUD, and Richard Burton, WB6JAC for malicious interference.

Current "trouble spots" for lots of complaints of deliberate interference on 2 meters are Phoenix, Arizona and upstate Massachusetts, according to FCC's Field Operations Bureau.

There was no change in the status of the H.R. 5008 legislation during the congressional year-end holiday, according to the Office of the House Subcommittee for Telecommunications. This bill is a combination of parts of S. 929 proposed by Senator Goldwater and H.R. 2203 proposed by Congressman Dannemeyer. H.R. 5008 was proposed by Congressman Tim Wirth.

Clubs that recently lost their long-held call signs for failure to renew on time would get a one-time open season to regain them if FCC accedes to a request made by the ARRL.

Among the petitions dismissed by FCC during December 1981 were: RM-3458 which would have greatly expanded Technician privileges; RM-3751 which proposed a CW sub-band on 160; RM-3867 which proposed an operator privilege expansion; and RM-3977 which would have opened up more of 10 meters to both Novices and Technicians. (Thanks, *HR Report* 12/18/81).

Best Wishes to Joe Schroeder, W9JUV who has retired from editing *HR Report* and to Bill Pasternak, WA6ITF, the new editor — from W4GF. □

### WORLD TIME WATCH

the first microprocessor watch made especially for hams



24 hr. timer  
microprocessor  
water resistant  
solar assist  
New Low Price  
—\$59.95

The HAM-1 functions include local time, world time, (G.M.T. too) count-up and count down chronometer, day, month, date, alarm and hourly chime. It's ideal for log-keeping, DX time conversion and 10 minute I.D. timing. The HAM-1 features a high contrast Seiko display and solar cell battery assist. Battery life is better than 4 years. The HAM-1 is water resistant to 20 meters, the case is 100% solid stainless steel and the crystal is scratch resistant mineral glass. The HAM-1 is rugged and durable and has a 1 year warranty.

### 2 METER AMPLIFIER \$39.95



• 2 Watts In, 10 Watts Out • V.S.W.R. Protected • Can be Used for F.M. & S.S. B. • Led Status Indicators • Low Loss SO-239 Connectors • Current Drain Less Than 2.5A at 13.6 V.D.C. • Massive Heat Sink • Built In T/R Switch

### TEMPO S-1 UPGRADE KITS \$39.95

Upgrade your early Tempo S-1 to current Production Specifications, kits include: • 450 M.A.H. Battery Pack • New Case Assembly • All New Enclosures • Spkr./Mic. Jack w/Dust Cap • New Earphone & Jack • P.C.B. and Parts for Easy Installation • Detailed Instruction Manual • For Radios With & Without T.T. Pad.

Other Accessories Available:  
Spkr./Mic. Designed for S-1's... \$24.95  
Heavy Duty Belt Clip... 7.50  
Flex Antenna... 6.00

To Order Call or Write to:

ADVANCED COMMUNICATIONS INTERNATIONAL  
2411 Lincoln Avenue  
Belmont, CA. 94002 U.S.A.  
(415) 595-3949

Add \$3.00 per order for shipping & handling. California residents add 6% sales tax. Visa, Master Charge accepted.

Share your knowledge with your fellow amateur and Worldradio reader...

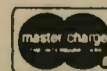
## ANTECK, INC. Route 1 Box 415 Hansen, Idaho 83334

Introducing the: Model MT-1RT hydraulic operated antenna (remote tuned) Model MT-1RTR retro-fit (all MT-1's) hydraulic operated

The Model MT-1RT mobile antenna, tunes 3.2 to 30 MHz inclusive. 750 watts CW, 1500 watts PEP for hams, military, MARS, CAP, and commercial service. Center loaded for high efficiency. Enables tuning to exact resonance to wanted frequency. Allows full output from solid state finals. No worry about reduced output from shut down circuits. Output is unaffected by moisture and the elements. Tuned by a control box at the operator's position. Mast section contains a double action hydraulic cylinder driven by two miniature hydraulic pumps and 12 volt DC motors for positive control. No creeping during operation or mobile motion. Can be removed up to 500 ft. from antenna.

See at your local dealer or order direct if none in your area.

|                                             |                           |
|---------------------------------------------|---------------------------|
| MT-1RT amateur net \$240.00                 | 9.00 UPS shipping in U.S. |
| MT-1RTR (retro kit for all MT-1's) \$118.00 | 7.00 UPS in U.S.          |
| MT-1 amateur net 129.95                     | 7.00 UPS in U.S.          |
| MT-1A (marine) stainless steel 179.95       | 7.00 UPS in U.S.          |



208-423-4100



STAINLESS STEEL WHIP — FIBERGLASS LOADING COIL  
— PATENT APPLIED. NO COILS TO CHANGE  
— LESS THAN 1.5 VSWR (ENTIRE TUNING RANGE)

TUNE 3.2 TO 30 MHz FROM THE OPERATORS POSITION  
— FAST AND SLOW SCAN RATES

# ...important notice

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

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.

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.

## Tell us something:

So we may better serve you, this space is for your comments, suggestions and even criticisms. If you have any news and information, you are invited to share it. Tell us and we tell the world.

Tell us of your interests and what type of news, articles, features and columns you would like to see. Tell us of your activities. The more we know about you, the better we can tailor this publication to serve you.

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.

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

[ ] [ ] [ ] [ ] 3  
(59-60)

Name \_\_\_\_\_

Call \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

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

- |                              |                                  |                               |
|------------------------------|----------------------------------|-------------------------------|
| <input type="checkbox"/> NEW | <input type="checkbox"/> Renewal | <input type="checkbox"/> Gift |
| 12 issues                    | (75¢ per issue)                  | \$9.00                        |
| 24 issues                    | (71¢ per issue • save \$1)       | \$17.00                       |
| 36 issues                    | (67¢ per issue • save \$3)       | \$24.00                       |
| Lifetime                     | (Be a WR super booster)          | \$90.00                       |

Overseas Readers! Prices quoted are U.S. funds. Please include \$2.00 extra/year for surface mail delivery outside the U.S.

- Check enclosed     BankAmericard     Master Charge     Visa

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

Signature \_\_\_\_\_

Please clip and mail to . . .

**Worldradio™**  
2120 28th Street • Sacramento, CA 95818

Thank you!

## USQS

(continued from page 9)

|        |        |        |        |
|--------|--------|--------|--------|
| KM5G   | AE5W   | KA600Y | W7EEJ  |
| K5GB   | K5WGO  | KA6PYP | KB7EO  |
| N5GE   | K5WSC  | K6QEH  | W7PRO  |
| K5HGE  | KC7WZ  | KA6RHZ | KA7GAZ |
| KB5HU  | W5XZ   | KA6RKW | KB7GJ  |
| K5IC   | KC5ZN  | K6RR   | W7GRX  |
| K5IM   | K6AA   | W6RXV  | K7IO   |
| WD5IOM | N6AW   | W6SSC  | KL7IQF |
| N5IR   | KD8AW  | WB6SVE | KA7IWX |
| KA5IJY | W6AYV  | W6SWM  | W7JPG  |
| KA5IYZ | N6BK   | W6SZN  | KK7K   |
| W5JML  | KA6BLH | W6TAX  | KC7KA  |
| W5JW   | KA6BUM | K6THH  | KA7LLV |
| K5JY   | WD6BWR | W6TKS  | KA7LOR |
| KA5KFE | K6CKH  | W6UE   | WA7NIN |
| K6KLA  | N6CW   | W6VYM  | WB7PNK |
| KA5KOH | N6DFY  | AD6W   | WA7PVL |
| KA5KSK | W6EBZ  | KA6WW  | WA7PWZ |
| KA5LAD | N6EBZ  | W6XJ   | KB7QK  |
| WB5LFV | N6EJG  | K6XT   | W7QR   |
| K5LKT  | K6ELX  | KB6ZA  | WB7RYC |
| WA5LQP | N6FAY  | WL7AQL | W7SE   |
| KA5LUM | N6FKG  | N7AYF  | K7SFN  |
| KF5M   | WD6FFF | A17B   | WA7SHW |
| KA5MGE | W6GO   | KA7BBN | W7SR   |
| KA5MMB | KA6HG  | KA7BEI | W7TK   |
| KA5MSL | AH6K   | N7BUT  | WA7UEC |
| K5NE   | K6FKC  | N7CAE  | WB7UYF |
| WA5PFJ | K6HNZ  | KA7CAI | KB7VE  |
| K6PZ   | WB6HTC | AL7CQ  | WA7VGT |
| W5QOT  | KA6JHM | WA7CQW | WB7VJI |
| W5RRR  | WB6JVQ | N7CFZ  | W7WG   |
| KB5UQ  | W6LH   | WB7DDQ | W7WHB  |
| K5SV   | KN6M   | W7DKV  | W7WJ   |
| W5VNZ  | N6NF   | WL7E   | WA7WOW |

|        |        |        |        |
|--------|--------|--------|--------|
| KL7Y   | AD8R   | W9YB   | K0IJL  |
| KN7Y   | W8RC   | WA9ZBV | W0IO   |
| K7YLM  | WD8RJG | W9ZEN  | WB0ISW |
| KC8A   | WA8RUJ | KF0AB  | KA0IXL |
| KK8A   | K8SIA  | N0AIT  | W0IYF  |
| W8AH   | K8SS   | N0AIV  | K10J   |
| N8AXJ  | W8TJQ  | KA0APC | W0KCL  |
| WA8AZX | W8TNG  | KC0AT  | KA0KDN |
| W8BSH  | W9AEB  | W0AXE  | KC0KE  |
| N8BXI  | N9AUZ  | KA0BAW | W0KYI  |
| KA8CUH | KA9BOW | WA0BVR | KK0L   |
| N8DBB  | KA9BZU | KC0BK  | WA0LKL |
| N8DIF  | KC9CC  | N0BVP  | KA0LPX |
| KA8HDF | KA9DHL | WA0CGV | K0LWZ  |
| K8ICE  | WA9DNL | N0CIB  | KA0MBA |
| K8IQ   | WA9EEH | N0CMK  | W0MJ   |
| WD8IWQ | KA9FFE | N0CTE  | W0OZJ  |
| WB8JBM | KA9GTC | N0CWJ  | KB0PX  |
| K8JQ   | KA9HTF | KJ0D   | KA0Q   |
| KA8LEJ | WA9JCO | KC0DB  | KB0QA  |
| KA8LVW | KA9KFN | K0DI   | KK0Q   |
| KA8MN  | KA9LFB | W0DVZ  | KN0RKY |
| WD8NHN | KA9LLJ | N0EGC  | W0ROE  |
| KA8NID | WA9MWA | KA0EGJ | W0RR   |
| KA8NXV | WB9NCE | KC0ES  | W0RSR  |
| WD8OBX | W00EH  | K10F   | W0SA   |
| KA8OEG | WB9QCY | K0FA   | W0SEV  |
| WD8OHC | W9RNV  | WA0FAA | AF0V   |
| KA8OJL | KB9RO  | KB0FP  | WA0VKF |
| WB8OTH | AG9S   | K0FRE  | K0VXV  |
| W8PC   | KB9SI  | K0GJX  | W0WNW  |
| WB8PJP | WA9SQN | KA0GWV | AB0X   |
| KC8Q   | W9TP   | WD0HID | K10X   |
| WD8QJB |        |        | WA0ZDQ |

Check your license expiration date.

## THE AMATEUR RADIO CALL SIGNS DID NOT ARRIVE IN TIME FOR THE MARCH ISSUE.

### YL becomes pageant finalist

Carlyn Dugan, KA5KHK, 17 years old, was recently selected to be a finalist in the 1982 Miss Southern Texas National Teenager Pageant, which will be held at San Antonio College in San Antonio during the weekend of 7-9 May.

" . . . to my knowledge, [Carlyn] is the only amateur operator ever involved in this competition in the 11 years since its start," writes Pat Dugan, KA5GKO, president of the Border Amateur Radio Society.

Carlyn has held a Novice Class license for almost two years and plans to upgrade immediately after the pageant. She is also the present secretary of the Border Amateur Radio Society — an organization of over 50 members centralized in southern Texas and Coahuila, Mexico.

She is the youngest person and the first female elected to this post. □

**LINEAR** ★

**PLANBOOK**

14 Different Models

2 to 400 MHZ

★ ★ ★ 15 to 1000 WATT

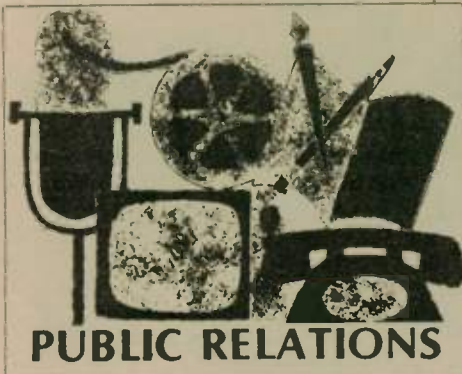
96 pgs    \$11.95

**A.P. Systems**

Box 263 WR

Newport, RI 02840

(401) 846-5627



## MetroPlex brings joy to children

**Hank Goldman, WA2OVG**

The MetroPlex Amateur Radio Club, one of the largest repeater associations in the United States, held its "Operation Santa" again in 1981.

The president of MetroPlex — Burt Grebin, M.D., K2KLN — and seven club members brought a special joy to hospital shut-ins on 20 December 1981. They went to Babies Hospital of Columbia Presbyterian Medical Center, New York City, New York with their 2-meter hand-talkies and allowed the children to speak to Santa at the North Pole. Santa was Michael Dimond, WA2JKG.



**Burt Grebin, M.D., K2KLN, president of MetroPlex, brings Santa's voice to child at Babies Hospital of Columbia Presbyterian Medical Center in New York City.**

On-site participants were: Claire Rosenbaum, W2KQL; Marilyn Grebin, WA2IIN; Blake Gigli, N2CGH; Bernie, KQ2T; Bob Seidel, WA2AXD; Sam Rosa, WA2JZN; and Fred, KK2T. Santa's helpers at a fixed location were Hank Goldman, WA2OVG and David, RG8U.

Send your news to Worldradio at the same time you send it to other amateur publications and see who prints it first. We get the news out before anyone else.

## Santa chats via Amateur Radio

**Joe Moell, K0OV**

Santa Claus' 1981 visits to hospitals in Orange County, California were just as exciting as in years past. On 16 December, "Santa-Vision" at St. Jude Hospital and Rehabilitation Center in Fullerton featured perennial favorite Jack Lemaster, WB6ECB, sitting in his North Pole office in full attire, as radio amateurs visited rooms in the pediatric and rehabilitation units for two-way chats. The two-hour program on the hospital's TV system was complete with the sounds of Santa's workshop and the cold winter night.

There's no doubt that this year's program got its highest "ratings" ever. When one rehabilitation patient commented on the radio link that one of Santa's remarks was "weird," laughter could be heard coming from almost every room on the floor.

Santa and the crew also visited Children's Hospital of Orange County

## SEC speaks

Recently-appointed Section Emergency Coordinator, John Walsh, N6UK was the featured speaker at the January meeting of the Los Angeles (California) Area Council of Amateur Radio Clubs.

He was introduced by the Section Communications Manager of the huge Los Angeles ARRL section, Stan Brokl, N2YQ, who also presented the Section Traffic Manager, Tom Eavenson, K5DY. Stan made a strong appeal that clubs encourage their members to volunteer for Amateur Radio Emergency Service or National Traffic System.

John outlined recent developments in relations with city officials and plans for disaster communications. He explained his belief that Amateur Radio drills should be devised to provide interesting sessions ("fun") to maintain a high interest level by participants, and at the same time develop operating skills and discipline.

At the same meeting, new officers were elected. George Morris, W6ABW takes over the gavel from Tom McInnis, WB6ZEB; Paul Weisz, K6YQ becomes vice chairman, (post formerly held by W6ABW). Rosemary Willis, XYL of Archie Willis, W6LBJ, continues as secretary/treasurer as well as editor of *The Common Ground*.

The next meeting of the Council will be the first Tuesday of March, 7:30 p.m., at the Department of Water & Power Building, 111 N. Hope Street, Los Angeles. All amateurs are welcome to attend these vital sessions. □



**Youngsters of all ages enjoy a radio chat with Santa Claus. April Moell, WA6OPS holds the mike as others look on.**

(CHOC) on 21 December for radio-only visits, since there are no TV origination facilities there. CHOC, like many other children's hospitals, is cutting back on the number of outside entertainers

brought in at Christmas time. But according to the CHOC Recreational Therapy staff, a slot is always saved for the amateurs, because their visit is one of the most enjoyable for the patients. □

## Maryland Emergency Phone Net

**Clarence Reaver Jr., W3DQI**

The Maryland Emergency Phone Net (MEPN) meets daily at 1800 local time, on 3920 kHz. Net manager is George Aranow, WB3GZU.

By definition, the purpose of the MEPN is "...to form a statewide Amateur Radio telephone net to provide — in time of emergency — efficient, coordinated radio communications facilities..." Every night, stations from within and without the state check in, handle traffic, and communicate with each other. In the event of an emergency, the MEPN is confident it will be efficient and coordinated. A very important by-product of this activity is the discipline and training in net procedures that is learned, usually by participation (osmosis), ordinarily by formal exchange (chastisement). Another by-product is the information passed by the official relay stations giving latest bulletins from the ARRL and other sources pertinent to Amateur Radio, such as reports from the Foundation for Amateur Radio (FAR).

Those of us who complain, periodically, of the noise and racket on some of the

bands, should enjoy the relative calm, control and efficiency of the traffic nets that meet around supper time on the 75-meter band. Those of you who would like to experience this (for a change?) are cordially invited to participate in our net and enjoy a facet of Amateur Radio you may only dream about. Education is a continuing function, even for Extra Class amateurs who enjoy honor roll status.

The Maryland Slow Net (MDSN) meets on Monday, Wednesday and Friday on 3735 kHz at 1930 local. On Tuesday and Thursday, the Diamond State Slow Net (Delaware) meets same time, same frequency. Saturday is a free day. On Sunday, the net is active at 1800 local, same frequency.

This is a slow-speed, CW net. Everyone is invited to join in and see how CW nets differ from and/or conform with phone nets. The speed of the net is dictated by that of the slowest check-in, and there is no need to be ashamed of being slow. Accuracy is the key. Hope to see you there soon.

— Auto-Call □

# Radio World

**CENTRAL NEW YORK'S MOST COMPLETE HAM DEALER**

ROBOT 800

ICOM IC-720

KENWOOD TS830S

DRAKE TR7-DR7

YAESU FT707

Featuring Kenwood, Yaesu, Icom, Drake, Ten-Tec, Swan, Dentron, Alpha, Robot, MFJ, Tempo, Astron, KLM, Hy Gain, Mosley, Larsen, Cushcraft, Hustler, Mini Products, Bird, Mirage, Vibroplex, Bencher, Info-Tech, Universal Towers, Callbook, ARRL, Astatic, Shure. *We service everything we sell!*

Write or call for quote. **You Won't Be Disappointed.**

We are just a few minutes off the NYS Thruway (I-90) Exit 32

**OUT OF STATE CALL TOLL FREE 800-448-9338**

ONEIDA COUNTY AIRPORT TERMINAL BUILDING  
ORISKANY, NEW YORK 13424  
N.Y. Res. Call (315) 337-0203 or 736-0470

Warren — K2IXN  
Bob — WA2MSH

## QSL And Matching Eyeball Card

P. O. BOX 7575

KANSAS CITY, MISSOURI 64116

MIKE O'LAUGHLIN

MIKE O'LAUGHLIN  
1409 Murray North Kansas City, Mo 64116

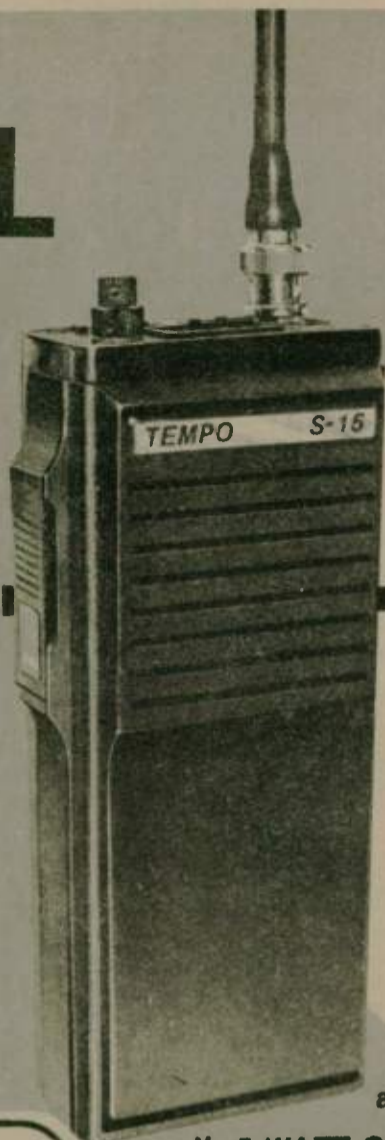
**QSL**  
200 Cards  
**\$18.00**  
\$4.00 each additional 100

**Eyeball**  
200 Cards  
**\$16.00**  
\$4.00 each additional 100

ORDER No. 402  
Printed on 12 pt white glossy card stock — globe, blue and silver with black call letters — report form on reverse side of QSL cards only.

Mail Check or Money Order to:  
Box 7575 North Kansas City, Mo. 64116  
**Rusprint**

# the ALL NEW tempo S-15.



## more radio ...less money

TEMPO'S ALL NEW S-15 SYNTHESIZED HAND HELD OFFERS IMPORTANT FEATURES AT A PRICE THAT DEFIES COMPARISON.

Compare these features with any other hand held available... the S-15 is the obvious choice

### Tempo S-2

Enables you to use 220 MHz repeaters throughout the U.S.. The S-2 is thoroughly field tested and offers a long life of dependable service. A good way to get into 220 MHz operation if you're not on yet and with the addition of a Tempo power amplifier you can build a small base station or a powerful mobile rig.

\$289

S-2T...\$319

*NEW REDUCED PRICES!*

### Tempo S-4

The first 440 MHz hand held and still a winner... offers the perfect way to get into an uncrowded band. Check one out at your local Tempo dealer or write Henry Radio. \$289

S-4T...\$319

Boost the power of your hand held or mobile unit with a Tempo solid state power amplifier. A broad range of power outputs available at very affordable prices. Please write for literature.

### Tempo M1

Tempo does it again! This time with the world's first and only ALL CHANNEL synthesized hand held marine transceiver. The Tempo M1 operates on all marine channels...both U.S. and international, plus four weather channels. This is a real working tool and a hobby rig with hundreds of uses. It is skillfully engineered and built to provide endless hours of hard use. 1 watt low power—2½ watts high power positions. And the price...LESS THAN \$500.

- \* 5 WATT OUTPUT (1 watt low power switchable)
- \* "EASY REMOVE" BATTERY PACK
- \* 1 HOUR QUICK CHARGE BATTERY SUPPLIED (450 ma/HR)
- \* BNC ANTENNA CONNECTOR & FLEX ANTENNA
- \* EXTREMELY EASY TO OPERATE
- \* PLUG FOR DIRECT 13.8 VOLT OPERATION
- \* 3 CHANNEL MEMORY. (1 channel permits non-standard repeater offsets. 200 micro amp memory maintenance (standby)).
- \* VERY SMALL AND LIGHT WEIGHT (only 17 ounces)
- \* 10 MHz FREQUENCY COVERAGE: 140-150 MHz (150-160 for export customers)
- \* AMPLE SPACE FOR PROGRAMMABLE ENCODER
- \* SPEAKER/MICROPHONE CONNECTOR
- \* ELECTRICALLY TUNED STAGES (receiving sensitivity and output power are constant over entire operating range)
- \* LOW PRICE...\$289

S-15 with touch tone pad... \$319

#### SUPPLIED ACCESSORIES:

Rubber antenna • Standard charger • Ear phone • Instruction manual • 450 ma/HR battery (quick charge type)

#### OPTIONAL ACCESSORIES:

1 hour quick charger (ACH 15) • 16 button touch tone pad (S15T) • DC cord • Solid state power amplifiers (S-30 & S-80) • Holster (CC15) • Speaker/mike (HM 15)

Available from Tempo dealers and

# Henry Radio



2050 S. Bundy Dr., Los Angeles, CA 90025  
931 N. Euclid, Anaheim, CA 92801  
Butler, Missouri 64730

(213) 820-1234  
(714) 772-9200  
(816) 679-3127

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



## Books needed in Katmandu

(Re "Father Moran visits the States", February Worldradio, page 1)

Father Moran, 9N1MM stayed with me for five days, 6-10 November 1981. I was one of the radio amateurs who raised money for his trip to the United States (1 October to 15 December 1981.) Bud Whitney, 9V1OI of Singapore; John Vidas, WD0BFT of Denver, Colorado; and Ed Konop, W3WGS of Pittsburgh, Pennsylvania were the other amateurs who also helped raise money for the trip to the United States.

This was Father Moran's fifth trip to the United States in 51 years. I'm now collecting used Christmas cards to be sent to the boys in Father Moran's school in Nepal — St. Xavier in Katmandu. Father Moran uses these as prizes and awards for winners of athletic contests and other competitions. All we ask for is a fair donation to pay for the postage to Nepal.

Father Moran is interested in having people send him any kinds of books — new or worn, for students in 1st grade through high school. If you have such materials, send them to St. Xavier's Boys School, c/o Rev. Marshall P. Moran S.J., GPO Box 50, Katmandu, NEPAL. Books can be sent via parcel post if weight is under 5 lbs. Mark package "Books" to obtain parcel post book rate.

Thank you.

FRANK A. NAGY, N8BIB  
New Boston, Michigan

## Help needed

I have a VHS video cassette player and would like to know where I can purchase cassette courses in Novice and General theory to pass my FCC exam.

Hope you can help me or suggest someone who can.

Sincerely,  
ROBERT GALLERY  
9214 Weathervane Place  
Gaithersburg, Maryland 20879

●●●  
The arm of Amateur Radio reaches around the world; Worldradio is out to reach you.

| MINIATURE ELECTROLYTICS        |            |             |
|--------------------------------|------------|-------------|
| 20 ALL DIFFERENT               |            |             |
| 2200 @ 6.3 R                   | 47 @ 16 R  | 4.7 @ 25 R  |
| 2.2 @ 35 R                     | 33 @ 35 R  | 1000 @ 35 R |
| .47 @ 50 R                     | 220 @ 50 R | 330 @ 50 R  |
| 1000 @ 16 A                    | 25 @ 25 A  | 1000 @ 25 A |
| 1 @ 50 A                       | 2.2 @ 50 A | 4.7 @ 50 A  |
| 33 @ 63 A                      | 330 @ 63 A | 75 @ 75 A   |
| 2.2 @ 100 A                    |            | 3.3 @ 250 A |
| R RADIAL                       | A AXIAL    |             |
| <b>\$9.95/pkg.</b>             |            |             |
| TERMS: CWO/UPS COD             |            |             |
| FOB, GARNERVILLE, NY 10923     |            |             |
| NORFOLK ELECTRONICS            |            |             |
| P.O. Box 91 • 55 Railroad Ave. |            |             |

## Appreciates 2-way communication

I continue to be impressed with the quality of your journal. You really do a fine job of fulfilling your mission of two-way communication.

I am especially interested in the intersection of Amateur Radio and computer hobbyists. I enjoy both hobbies and find them very complementary. Any additional emphasis on this area in Worldradio would be welcomed.

I am the SYSOP (system operator) of the HAMNET special interest group on the Compuserve Information Service. Our goal is identical to yours — fostering two-way communication among amateurs.

SCOTT LOFTESNESS, W3VS  
Gaithersburg, Maryland

## Address info net

I would like to know what readers — amateurs and traffic-handlers — think of an idea of nationwide call sign/address information nets, which amateurs could check into one day with queries about addresses for calls needed, and the following day, check in again and receive the addresses needed.

I think the price of Callbooks has gone up so high now that many amateurs just can't afford to keep up-to-date Callbooks — especially the low-income senior citizens on fixed incomes and the handicapped. Seems like this kind of a net would appeal to the handicapped, shut-ins and senior citizens in Amateur Radio who are looking for something worthwhile to do.

I would like to get a net started in this area, but as I am on a very small Social Security income — am senior citizen handicapped — I am not able to buy the necessary up-to-date Callbook (U.S. Canada and Foreign) and supplements. I think this kind of net could become very active and very busy, and would need plenty of help.

I wrote the ARRL. They think it's a great idea, but would need plenty of help to operate the nets. These nets would be a great help to the Novices just getting started, as I think they might also be on low budget.

I would be glad to answer any radiograms or mail. Please send SASEs with letters to Kenneth Hand, WB2EUF, P.O. Box 708, Senior Citizen Trailer Park, East Hampton, NY 11937.

Thanks, & 73s,  
KEN HAND, WB2EUF

## GO MOBILE WITH YOUR H.T.!

ICOM Available Guaranteed!

New for FT-207R & TR-2500  
"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!  
Model I—Icom IC-2A/T, K—TR-2400  
Y—FT-207R, T—Simple mod for Temp  
\$24.95 PPD in USA. CA add \$1.50

HANDI-TEK  
P.O. BOX 2205, LA PUENTE, CA 91746  
Icom—slides on bottom of radio  
Yaesu—fits into battery compartment  
Kenwood—powered thru battery plug

## Issue brings back memories

Recently, I received a complimentary copy of Worldradio. I really appreciated it because right across the front page was an article written by one of my very early contacts after getting into Amateur Radio.

Then in reading your antique QSL report, I met another old friend, the Halli-crafter HT-18 VFO. (See page 25, January Worldradio.) Now I suppose you are trying to make some connection between the two articles. So . . .

During the summer of 1948, I was on Guam with a Navy squadron of typhoon trackers. If you didn't drink, the only amusement was the movies, the hobby shop or the ham shack. One evening, my friend W.J. "Bill" D'Aoust, a W6 who got me interested in Amateur Radio, and I contacted Lenore Jensen, W6NAZ on 20 meters. Bill was on the mike and we had a lot of static from the guys in the background, so Bill suggested they switch to CW, and after Lenore's approval he asked how fast. Lenore came right back with "make it easy on you."

Bill was, and is, an excellent CW man, having been both a shipboard and A/C radio operator for years. Well, after they passed 20 wpm, I was lost. I feel sure it went on up around 30 wpm before they broke off.

Through the rest of my Navy career, I contacted or heard Lenore from many places. The last contact I remember was from KL7AWR in Kodiak, Alaska. She was mobile in — of all things — a VW. That was back in 1960.

The connection — oh — we were at KG6DI and using a new HT-18 VFO and one of the old military transmitters, the night we originally contacted Lenore. I liked the unit so much that I bought one when we came home to San Diego.

Yes, I still have it. It is in almost mint condition and is wrapped in a plastic bag, sitting on a shelf above my old Viking II rig. Anyone for an AM contact? (Ex-operator at: W6ZSC, KH6AHQ, KG6DI, KA2CC, KL7AWR, W4DZD and several others.)

73,  
ELLIS HALL, W6HFX  
1613 Benton Street  
Alameda, California 94501

Please  
send NEWS and PICTURES to  
Worldradio

### AMATEUR RADIO MISSIONARY SERVICE

Upholding the Arms of the Missionary through Amateur Radio

The Arms motto  
" . . . let us do good unto all men especially unto them who are of the household of faith."

| ARMS nets  | Galatians 6:10  |        |
|------------|-----------------|--------|
|            | Local Time      |        |
| Eastern    | M,W,F 7:00 am   | 3.907  |
| Mid-West   | Sat 8:30 am     | 3.907  |
| Rocky Mtn. | Sat 8:00 am     | 3.907  |
| South-East | Sat 7:30 am     | 3.907  |
| South-West | Tues. 10:00 am  | 7.227  |
| Transcon   | M-Sat 1600 Z ST | 14.307 |
|            | 1500 Z DT       | 14.307 |

Every amateur welcome to check in.

For additional information write:  
K7AQ, Charlie Cox  
325 Hillview Drive  
Grants Pass, OR 97526

## Club info needed

ED: We recently received the following letter from one of our subscribers. Perhaps one of you reading this will be able to help Mr. Nutis by sending him names and/or a list of clubs in the St. Louis, Missouri area. We would also be interested in hearing from any of you who may have encountered this same problem and how you dealt with it.

Help! I'm a relatively new ham and I have been trying to locate a good radio club in the St. Louis area. I've been a subscriber to Worldradio for over a year and I've checked the "Clubs" section of each edition, but I have never seen an article regarding a club in this area.

I would like to receive a listing of the clubs in the area, when and where they meet, and their specialties. Since I'm fairly new in the game, I would not be interested in joining a club for old-timers or Extras. Perhaps you could put something in the paper regarding the dilemma of finding a club and how to decide which club is best for a person's needs or interests.

Regards,  
ANDRE J. NUTIS, KA0IGX  
12 Hagers Mill Ct.  
Ballwin, MO 63011

## New Extra Class couple

Just to let you know that both of us are now Extras. You can add us to the list. I received my Extra on 6 June 1980, and my husband had had his for a year or so before that. He is William (Bill) A. Strattan, W2KBH and I am Elizabeth (Betty) G. Strattan, W2PVS. We are both "old-timers" and belong to QCWA. I also belong to QCWW. We are active in New York State Army MARS.

Another piece of information: there is a fairly new YL group here in the 2nd Call Area — Second Area Young Ladies Amateur Radio Club or SAYLARC. We have about 50 members, and as of now, two nets. Friday mornings we meet on 3945 at 9:00 a.m. Eastern Time.\* As of 1 January 1982, we have a beautiful certificate for anyone working 15 members, and sending log to Billie, WB2FNF (Wilda R. Robinson, 270 Palmer Rd., Churchville, NY 14428) along with \$2 to cover expenses. The certificate has been designed by Billie and will be hand-painted by her.

(\*Saturday mornings at 9:00 a.m. Eastern Time, we meet on or about 7245. This frequency and time may change in the near future.)

73,  
MRS. WM. A. STRATTAN, W2PVS  
Lagrangeville, New York

## Don't lower standards

One strong comment: I am opposed to any lowering of standards for Amateur tests. The code test serves to weed out those who don't have the determination and self-discipline to conduct themselves properly on the air.

Yes, we will have poor ops in spite of testing, but lowering standards would make it much, much worse.

MILTON JACKOWSKI, KB2GR  
Mattituck, New York

## Aiding Liberia

After almost 60 years of trying to be a radio op (Amateur and U.S. Navy), I find myself reading your Worldradio mag with great interest to try to keep up to date. So I have renewed my subscription for another three years. (I enjoyed 5 meters and 80-meter portable operations with homebrewed gear for pre-war years, but later when I tried 6 meters, I wiped out TV Channels 2 through 13, so I am back on 40 meters where I started, although the SSB QRM is terrific.)

Today I am interested in the efforts of Brother Donard, Steffes, C.S.C. in the Republic of Liberia. He is EL2AL, and teaches high school there. He needs ham gear for natives who want to be ham ops. I thought that maybe if you would print parts of his two letters, possibly some of your readers may like to donate used ham gear to the Liberia Amateur Radio Association, and their prospective new members. (Send it to him, NOT to me!) His address is: Brother Donard, Steffes, C.S.C., St. Patrick High School, P.O. Box 1005, Monrovia, LIBERIA, AFRICA.

This letter exchange started when my XYL (Helen, W6HRO) and I donated \$50 to the ARRL Project Goodwill prior to WARC-79, for a solid-state 20-meter receiver kit and a QRP 20-meter CW transmitter kit to be sent to "some beginner overseas." This year, IARU informed us that our two kits were sent to Monrovia to Bro. Donard. I wrote asking "Hw Nw?"

When I received his first letter, I thought it was so interesting that you might like to print it. So I wrote back for his permission to send it to you. I also wrote that he might get QRM on his pet frequencies, letters, or help like donated gear. I mentioned that I do not desire any publicity for myself. His second letter is a reply to my second. Therein he gives permission to send it to you.

73,  
DONALD L. HYDE, W6KBH  
Escondido, California

16 September 1981

Dear Mr. Hyde:

First let me introduce myself. I am a Brother of Holy Cross with headquarters at Notre Dame, Indiana. We operate schools in many places, including California. I teach physics and chemistry here in Monrovia (Liberia) and taught electronics in Akron, Ohio just prior to coming here. In Akron I taught radio classes in the evening, acting as an official instructor for ARRL.

When I came over here I decided to do what I could for the people here in Liberia, so as soon as I was able to make the necessary contacts and obtain some materials with which to work, I began the radio class here. I had sent two crates of materials from the States, which included lab supplies and radio parts and equipment. Those crates are lost and have not arrived here. They were shipped almost a year ago to this date. I am therefore extremely handicapped in my effort to teach a radio class. I wrote to ARRL and they sent me the books that I requested, free of charge.

The radio kits, of which you speak, are here and as near as I can tell they are in excellent condition. Presently they are being processed through customs. They have been in process about three weeks. One learns patience over here, and we have every hope of getting them.

Now let me tell you how I hope to use them. When the people in the class are licensed I will try to pick those who are most in need and who will benefit most by

the use of these radios. If I can, I will build them all myself because I think they are too valuable to put into the hands of someone totally lacking experience in building. When I give them out, I will request the one receiving it to turn it back to me if and when he is able to get better equipment so that I can give it to someone else.

None of the natives in my radio class will have a radio to use when they get their call letters. We, the Liberia Radio Amateur Association, are trying to collect some used radios and set up club stations in strategic areas so that all these people will have access to a radio. We have one such station which we hope to have in operation shortly.

I hold an amateur license (Liberian call EL2AL), and I am on the air every day between 21.350 and 21.365 MHz at 1300Z. I would like to talk to you on the air and California is easy to reach from here but

this hour is a bit out of the question for you. If you get a message to me some way I will gladly adjust to another time in order to make a contact.

Sincerely yours,  
BRO. DONARD, STEFFES, C.S.C.

14 October 1981

Dear Helen and Don Hyde,

This is in response to your letter of 2 October.

You may quote my letter either in whole or in part, as you wish, and if it will help to promote our cause, all the better. We need all the help that we can get. The people here are poor in the extreme and any help in any form is welcome. We are in the process of giving call letters to seven out of my class right now, but none of these will have access to a radio unless

we provide something for them. I think I mentioned in my last letter what we have in mind. We want to set up a club station in many strategic areas, and that should be a great help.

Brother David, who is a ham and who is my principal, has contacted a radio club in the western part of the United States and they are shipping us a complete station. It is used but that has advantages. It is not so difficult to get it into the country. When that arrives we hope to set up a club station here at the school which will serve anyone who is able to get here whether they are one of our students or not. We have a space available and we have a place for an antenna, so we will get something up and get some of them on the air. I will get a couple of the new hams to help and put up a dipole and tune it. That will be good experience for them. I

(please turn to page 20)

**It's Time!**

**THE NEW SANTEC ST-144/μP,**  
2-METER, CAP, MARS HANDHELD

**A Handheld So Advanced — It Puts All The Competition To Shame**

**Only \$319.00**

INCLUDES RUBBER DUCK  
WALL CHARGER, HAND STRAP  
EARPHONE & 500 MAH NICADS!

Limited Supplies — So Hurry!

ADD \$3.00 UPS SHIPPING PREPAID ORDERS  
ADD \$5.00 FOR C.O.D. ORDERS UPS SHIPPING  
PRICES SUBJECT TO CHANGE WITHOUT NOTICE  
NORTH CAROLINA RESIDENTS ADD 4% SALES TAX.

DISCOUNT ACCESSORY PRICES TO CUSTOMERS!

440 MHZ VERSION - SAME FEATURES ONLY \$359.00

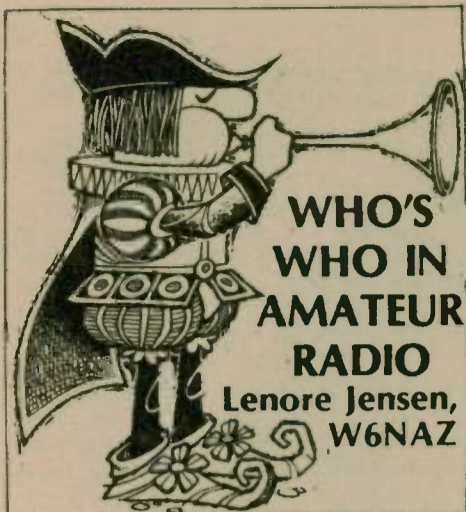
**Order Yours Today**  
Space Age Technology At 1981 Prices

Santec Info Line 6 to 10 P.M. EST Only

**WILLIAMS RADIO SALES**

**WAYNE C. WILLIAMS, K4MOB**  
600 LAKEDALE RD · COLFAX, NC  
(919) 993-5881 Alt. 5:00 PM **27235**

(See Encomm Ads For More Specs & Details)



You'll find the exciting life of Frank Borsody, K4EC summarized in *Who's Who In America* as well as here. At 81, he can look back on an enormous contribution to our country, radio-wise, and herewith is again complimented, adding to his medals and honors.

If Frank could find time to write an autobiography, it would be crammed with adventures. Such as the time in Iran when he was challenged to a duel.

Picture the scene: a meeting of the highest generals of the Iranian military forces along with the High Commission of the National Police. Most of the talk was in Farsi with "UN-type" interpreters.

Frank was there, in our Foreign Service, to negotiate a contract for 200 two-way radio police cars to be used in Teheran. However, he discovered that the Colonel in charge had set up a dummy corporation for the obvious purpose of graft ("baksheesh").

"I refused to sign, considering the contract fraudulent," he explained. "The Colonel contended I had called him a liar and demanded a duel!"

There was consternation, everyone talking at once. "I managed to ask the chairman if dueling was legal in Iran. He said yes, in the military, and added that the Colonel was a Heidelberg graduate. The usual weapons were either rapiers or sabers."

Frank thought fast and was able to point out that the challengee traditionally was entitled to name the weapon. Then he proposed, "General, I would like to use Army caliber .45 automatic pistols." More consternation. Why?

He had to think fast, considering his own career in the Foreign Service as well as his life were in instant jeopardy. So he decided to "lay it on a bit thick."

"You see, General," he explained, "I once was Commanding Officer of a Navy station on Guam. After VJ Day we had plenty of ammo left over, so I asked the Marine Corps pistol champ to train me.

I'd shoot 500 rounds on weekdays and 300 on holidays until the champion said I was as good a marksman as he."

While the chairman and the Colonel considered the situation, Frank continued, "I still can drive a nail with a .45 at 25 meters. So, if the Colonel wants to commit suicide, it's up to him! But I will not sign that dishonest contract!"

To Frank's relief, the Colonel immediately announced he "accepted the apology" (which had not been given). Within the week he was forced to resign from the Iranian Army, for cowardice.

(Later, Frank felt sorry for him and gave a reference which got him a good job when Motorola opened an agency in Teheran, because he did understand business in his own country.)

Less dramatic, but of tremendous importance to our own nation, were Frank Borsody's many years of service through communications to our many agencies across the globe, including a long time as Chief Radio Engineer for the U.S. Air Force.

And it had all started with Amateur Radio in 1911, when he was not yet a teenager, in mid-town Manhattan, New York. For a call he used his own initials: B.B.

But World War I forced him and all other experimenters to close down their stations as it was thought "German spies" were also using radio to contact submarines.

Though underage, Frank enlisted and soon found himself in France in the AEF (American Expeditionary Force), helping — by radio — to direct 75mm fire into German lines.

Out of uniform and home again, his skills as a wireless operator got him jobs at sea as "sparks" and on shore as a Morse operator with Western Union, Postal Telegraph and Associated Press wire services.

As 2AYN (later W2AYN), he enjoyed belonging to a happy group of those early New York days — the Flatbush Transmitting Club. It was a time of both serious and joyful experimentation by radio, of



B. Frank Borsody, K4EC

good fellowship along with electronic progress.

Frank laughs, "We never succeeded in changing the title to Flatbush Amateur Radio Transmitting Society so QST wouldn't abbreviate our name; but seriously, in those earliest days, the amateurs were vastly outnumbered by all the BCLs (broadcast listeners) so "Radio" would have been a title the listeners already were using."

By 1926 he was "working DX" commercially as a transoceanic operator for RCA.

When the great Chicago World's Fair opened in 1933, he was promoted to manage that company's far-sighted and fascinating Communications Exhibit which highlighted so much of what was to come.

Frank always seemed to gravitate to dramatic situations. His years with the New York City Fire Department (1936-42), as Engineer/Manager of its new radio department, saw him survey the huge area for which he was responsible. It included the entire Port of New York as well as much of New Jersey and Connecticut — and the city itself. Frank supervised

the installation, operation and maintenance of all New York City fire radio gear — no minor undertaking! He designed and wrote the specs for the mighty effort.

There were times of high adventure, such as the fierce fires on ships *Morro Castle* and *Normandie*. He was required to be present at such disasters, as he was on all conflagrations of 3-alarm or higher.

WNYF, "the voice of the New York Fire Department," was popular with BCLs (it being on 1630 kc.). Frank convinced Mayor La Guardia that QSLs should be printed and made available in gratitude for signal reports. "Hizzoner," remembers Frank, "agreed, but only to New York state voters!"

The fireboats operated on 35.6 mc and frequently were involved in dramatic rescues. During the 1983 hurricane, when winds whipped the teeming city at more than 100 mph, Frank's radio system saved many lives and 10 times its cost in property.

Then Frank changed locale from the sophisticated city to the jungles and mountains of South America and the Caribbean area as World War II developed. His expertise was sorely needed by the U.S. War Department, particularly for the Signal and Army Air Corps.

He became Chief Engineer for design and construction of 200 stations in Trinidad, British, French and Dutch Guiana, Dutch West Indies, Venezuela, Brazil, etc., as well as 22 major airfields in Curacao, Aruba, St. Lucia and the like.

Frank found that linking jungle airfields and bases by VHF-FM could conserve much time, equipment — and money.

That accomplished and with the war expanding, the Navy claimed Frank with the rank, at first, of Lt. Commander, dubbing him Chief of Shore Electronics and assigning him to the Third Naval District in New York City. His heavy responsibility included the entire engineering umbrella for all its communications and electronic gear.

However, once again, city life was not to last. He was transferred to the Far

## MFJ Dual Tunable SSB/CW Filter

lets you zero in SSB/CW signal and notch out interfering signal at the same time. Primary Filter has tunable peak, notch, lowpass, highpass. Auxiliary Filter has peak, notch. Noise limiters for SSB, CW.

Adjust primary filter for optimum readability. Use auxiliary filter to eliminate interference.



# \$89<sup>95</sup>

### RIG TROUBLES GOT YOU DOWN?

- YOU COULD SHIP YOUR RIG TO THE FACTORY FOR REPAIR.
- YOU COULD SHIP IT TO RQ SERVICE CENTER FOR REPAIR.
- BUT YOU STAND A GOOD CHANCE OF FIXING IT YOURSELF WITH HELP FROM YOUR OWN COPY OF "OWNER REPAIR OF RADIO EQUIPMENT"
- THIS BOOK WILL BE SHIPPED POSTPAID FROM K6RQ FOR \$8.95

RQ SERVICE CENTER  
14910 LG Blvd.  
Los Gatos, CA 95030

The MFJ-752B Signal Enhancer dual tunable active filter system gives you signal processing performance and flexibility that others can't match.

For example, select optimum Primary Filter mode for SSB signal, zero in with frequency control and adjust bandwidth for best response. Then with the Auxiliary Filter notch out an interfering heterodyne . . . or peak the desired signal.

For CW, peak both Primary and Auxiliary Filters for narrow bandwidth to give skirt selectivity that others can't touch. Or use Auxiliary Filter to notch out a nearby QSO.

The Primary Filter lets you peak, notch, lowpass, or highpass signals with double tuned filter for extra steep skirts. The Auxiliary Filter lets you notch a signal to 70 db. Or peak one with a bandwidth down to 40 Hz.

Tune both Primary and Auxiliary Filters from 300 to 3000 Hz. Vary the bandwidth from 40 Hz to almost flat. Notch depth to 70 db.

MFJ has solved problems that plague other tunable filters to give you a constant output as bandwidth is varied. And a linear frequency control. And a more effective notch filter.

Works with any rig. Plugs into phone jack. 2 watts for speaker. Inputs for 2 rigs. LED for power. Switchable noise limiter for impulse noise; trough clipper removes background noise.

Simulated stereo feature for CW lets ears and brain reject ORM. Yet hear off frequency calls.

Speaker and phone jacks. Speaker is disabled by phones. OFF bypass filter. 10x2x6 ins. 9-18 VDC or 110 VAC with optional AC adapter, \$7.95. Every single unit is tested for performance and

inspected for quality. Solid American construction.

Order from MFJ and try it — no obligation. If not delighted, return it within 30 days for refund (less shipping). One year unconditional guarantee.

Order today. Call toll free 800-647-1800. Charge VISA, MC or mail check, money order for \$89.95 plus \$4.00 shipping/handling for MFJ 752B.

Don't wait any longer to tune out interfering signals, order now. Call MFJ or see dealer.

CALL TOLL FREE . . . 800-647-1800

Call 601-323-5869 for technical information, order/repair status. Also call 601-323-5869 outside continental USA and in Mississippi.

**MFJ ENTERPRISES, INCORPORATED**  
Box 494, Mississippi State, MS 39762



East where he would be with Admiral Nimitz, the Commander-in-Chief. The drama of those perilous months has been well-documented, of course. Near the end of the war he was assigned to command the important station on Guam, NPN. Hence his opportunity to master the automatic pistol which was to save his life so many years later; "even though I hadn't had a pistol in my hand for more than 10 years — it turned out luckily for me. Hi."

Peace brought him home to a couple of years of research for the Micamold Radio Corporation. But again, the government needed the talent and experience of Frank Borsody — this time at the Pentagon.

By 1952 he assumed an awesome assignment for the Air Force: Chief Radio Engineer in the Airways and Air Communications Service (AACS), as a civilian. As such, Frank bore complete responsibility for USAF worldwide air navigational aids and communications.

Eight hundred fields and bases were part of his task, not only in the USA but worldwide "from Thule to Tachikawa to Dhahran." Later, he was to receive the highest civilian cash and honorary award for designing the new USAF Standard Control Tower, so familiar now to countless pilots.

He personally engineered this six-sided tower (but only after extensive investigation of the varied four- to 20-sided towers then in use). He came up with the present highly successful design. It saved, through standardization, millions of dollars and greatly improved air traffic control. (One of his souvenirs is a certificate from the CAA/FAA Air Traffic Controller School in Oklahoma.)

His official USAF Manual 88-16 became an important part of our national defense effort. In Washington, his office included 10 engineers with a thousand more scattered around the world — to whom he insists much credit is due.

The location and selection of Vandenberg Air Force Base was one of his earlier responsibilities as he did a survey of California. He negotiated with the 6th Army at the Presidio of San Francisco to turn over the inactivated Camp Cooke to the USAF to become Vandenberg AFB.

Overseas drama came again into his life when he was next sent to Iran for the aforementioned Foreign Service, as Chief Advisor to the Minister of Communications and to the National Police, mainly helping in radio. (Both gentlemen were executed in the revolution.)

In Greece, he did similar work. One can imagine the exciting opportunities as he moved on to Paris and Interpol. (Frank is quick to set us straight about the latter, pointing out it's not an international police force but rather an organization to promote the widest possible mutual assistance between all criminal police authorities.)

Again packing his bags, he was sent once more to the Far East, this time to advise the Korean National Police and Minister of Communications. The mission took three years, 1961-64.

(While in Iran, he had obtained permission to operate his ham station as EP5X. A few years later, he sent out QSLs as 6N5X and HL5X in Seoul, Korea; in Saigon, XV5X. Other calls held have been EQ5X and EQ2AT.)

In '64 and '65 Frank assisted the Minister of Communications of the Republic of Vietnam and, at the same time, saved our own government \$13,000,000 through astute advice on a microwave project. He was highly commended for encouraging the self-help capability of that country as well as Korea.

By that time, he yearned to be stateside and formed a consulting firm, Borsody and Bairey, in the nation's capital. But he

was not to be permitted much time on dry land.

"Early in the Vietnam conflict," Frank says, "I received an urgent request from the Radio Officers Union to board a munitions ship from the East Coast to 'nam.' There was a serious shortage of seagoing operators.

"My Amateur Radio code experience was largely responsible for my being able to handle the job. Incidentally, I also operated as W2AYN/MM during this session."

It turned out to be a three-year session ('66-'68) with many a night of being fired upon by the Viet Cong.

At last, basking in the Florida sun with many souvenirs of a full and exciting career, Frank now has time for K4EC. His

awards include the DeForest Audion Award (and gold medal) which honors him for a half century of dedicated service and achievements in the field of radio communications. Another gold medal is from the Shah of Iran for four years of assistance in that country. His files are full of commendations and certificates for work "well done!"

Frank's family includes 25 grandchildren and a half-dozen great-grands. Thus, Frank and his Mary have a busy life keeping in touch with them all. His children are doctors and lawyers; sometimes he muses, "Where did I go wrong?" Hi.

He's not only a devotee of good poetry but a philosopher at heart. His entry in *Who's Who In America* carries some of his convictions:

1. Not *Who's right* but *What's right!*
2. Nothing is uninteresting. There are only people who are not interested.
3. (Freely cribbed from the Bible:) "Whatever thou turnest thy hand to, do it with thy might, for there is no returning from the grave."
4. The human body itself is a machine. Treat yours and others' at least as well as you treat other machines: automobiles, typewriters, etc.
5. Work at what is interesting. If that isn't possible, try to be interested in what you have to work at."

Therefore, K4EC should be a most memorable contact if you're lucky enough to QSO! And just think, that remarkable career started because of *Amateur Radio*.

## DIAL - YOUR - DEAL

**TRADE IN**  
**TRADE YOUR EQUIPMENT ON**  
**NEW or USED**

# CALL TOLL-FREE

# 1-800-325-3636

**FOR THE BEST DEAL ON:**

|         |           |         |
|---------|-----------|---------|
| YAESU   | ICOM      | HAL     |
| KENWOOD | SWAN      | DRAKE   |
| TEN-TEC | INFO-TECH | COLLINS |

**HAM RADIO CENTER**  
8340-42 Olive Blvd. • P.O. Box 28271 • St. Louis, MO 63132

# Base Your VHF/UHF Station on ICOM



Enjoy local contacts and have the lure of far off DX on a band that is capable of worldwide communications on just a few watts. The **ICOM IC-551** (10W) and **IC-551D** (80W) series transceivers provide full 6 meter coverage in a multimode package. Talk to your ICOM dealer concerning options.

ICOM's 2 meter multimode transceiver, the **IC-251A**, provides the latest technology in communications on one of ham radio's most active bands. Have fun ragchewing with your friends, coordinate events or use the **IC-251A's** sideband capability as an Oscar link. Simplex SSB on 2 meter is growing - be there.



The **IC-451A** provides space age technology for space communications. Satellites, EME and local modes of communications are available by basing a system on ICOM's full featured 432 MHz transceiver.



2112 116th N.E., Bellevue, WA 98004 / 3331 Towerwood Drive, Dallas, TX 75234

All stated specifications are approximate and subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions.



**ICOM**

...Simply the Best

# ICOM IC-490A

## Space Age Communications



The IC-490A transceiver provides many desirable base station features in a mobile package. This compact, high performance multimode radio features FM, SSB and CW (CW monitor included) to satisfy your needs in the 430-440 MHz region.

The IC-490A provides rapid QSY and accurate frequency selection in the 430 MHz band with tuning rates of 25, 5 and 1 KHz in FM; 5, 1 and 0.1 KHz in the other modes. Duplex offsets are adjustable in 100 KHz increments.

Two VFO's, priority call frequency, 1 MHz up button and 4 memories mean convenience in quickly selecting important frequencies.

Scanning features include full band scan, programmable band scan (scans between memory 1 and 2) or memory scan.

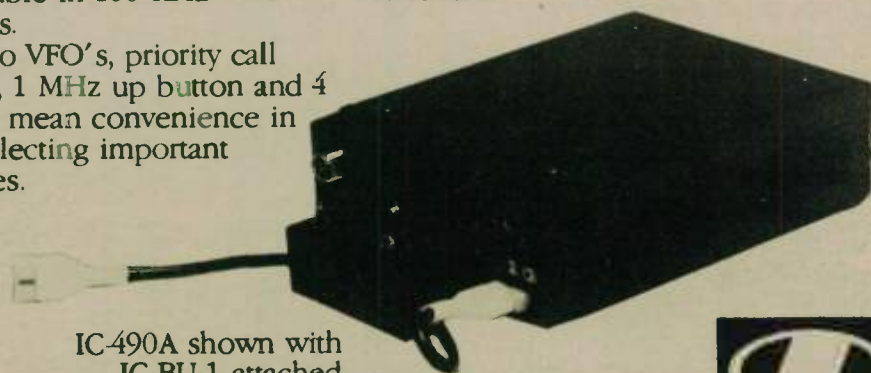
Using internal switches, the IC-490A will resume scan after an adjustable time delay, resume scan after carrier drop, sense busy or empty channels, and control scan speed.

Use the call button to automatically select a frequency designated as the primary channel overriding other transceiver functions.

The IC-490A has a highly visible green LED readout for use over a wide range of ambient light conditions. Also, there are LED annunciators for receive, send, priority, call and duplex, as well as an LED meter. For receive on SSB, AGC speed and noise blanker are controlled from the front panel. Memory backup is available with the optional IC-BU-1 memory backup unit.

With 10 watts output in a 6 11/16" wide x 2 1/2" high x 8 5/8" deep package, the very compact IC-490A gives you multi-featured operation for your entry into the 70 cm band.

Included with the IC-490A is the new IC-HM11 microphone for remote up/down frequency control. See the new IC-490A at your dealer today.



IC-490A shown with IC-BU-1 attached



# ICOM

## The World System

2112-116th Avenue NE, Bellevue, Washington 98004 / 3331 Towerwood Drive, Suite 307, Dallas, Texas 75234  
All stated specifications are approximate and subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions.

# Off the Air

(continued from page 15)

made my longest contact with a dipole unning barefoot with an SB-103.

It is just great that you are so understanding about the difficulty we are having in getting in the radios of which we were writing earlier. They are still in Customs, but we have great hopes to have them in use by the time you get this letter. I spoke to the president of the Liberia Radio Club today and he feels sure he can get them out within a matter of days.

The radio class is going well. I hope to pass another half dozen or so before the end of school, which will be next month. After that the formal classes will stop until school starts in February. I hope, however, to take these people who have passed their Novice Class, and put them in a special advanced class to get their General. Next year, if we have a few club stations around we should find a lot more students and other people who will be willing to make the effort to get their license, and the government of Liberia will be very happy when that happens because they really do not like the idea of having more foreign people in their country with licenses than they have of their own. They just do not like the data sheet as it looks right now.

Thank you for your interest and help.

Sincerely,  
BRO. DONARD, STEFFES, C.S.C.  
Monrovia, REPUBLIC OF LIBERIA  
AFRICA

## UK tips from one who's been there

I noticed in the January issue (page 2) of Worldradio that KF7S was, it seems, put out at the procedure in obtaining a UK license. You might like to note the info shown below, which was taken from the FCC Part 97 and a UK publication.

### UK

"... The Home Office requests that applications should be submitted 30 days in advance of the license being required.

"Customs formalities — Anyone wishing to import into the UK (temporarily or permanently) equipment which covers 26.1 to 29.7 MHz (whether for use or not) must obtain a permit in advance from the Home Office. Note that this includes most multi-band HF transceivers. The importation of 'Citizens Band' equipment is NOT permitted. In addition, anyone importing a hand-held or other small rig which might appear to be CB equipment, is very strongly advised to carry evidence to convince non-technical Customs Officers that the equipment is not subject to the above restrictions. Applications for the permit, which is issued free of charge, should be sent to the Home Office..."

### USA

"The FCC requires that the application should reach them 60 days before the license is required but applicants would be well advised to allow as much time as possible since the FCC have been very slow at processing the applications (and

at supplying the 610-A in the first place)."

You will note that the FCC requires 60 days advance notice where the UK Home Office only requires 30 days. In fact, a UK license can be obtained in person in about half an hour. I was in London with Lance Lyman, K8IXZ last June and I went to renew my G3 license. K8IXZ filled out an application at the same time and was issued G5DYY on the spot. The FCC can't claim this sort of speed.

The requirement for a customs document is a simple thing, as in the past there has been a lot of illegal CB equipment coming into the UK. Thus the requirement — everyone has to have a per-

mit. The same can happen with the U.S. Customs if they feel the equipment will not be properly used. If KF7S's equipment was detained by the UK customs, it would be released once he obtained a permit.

I have gone this route when entering the UK at Heathrow and have first-hand experience.

Hope the above will be passed on to any person who intends to operate outside of his own country.

Best regards,  
JOHN R. VAN LEAR, VE7IR/W4  
Melbourne, Florida

## Pre-war memories of AC4YN

(ED: Some time back, DX World columnist John Minke, N6JM mentioned that he had received a note from Leonard Dansby, W5VE requesting information on the pre-WWII activities of Reg Fox, AC4YN of Tibet. AC4YN was the top DX subject of the day in the late 1930s. John asked the old-timers who read his column to dig back in their memories of 40 years ago, which prompted the following letter, sent to us recently.)

As a member of the Royal Corps of Signals, stationed in Jubbulpore, Indian, I worked Reg Fox, AC4YN regularly every day, passing political traffic between the British Foreign Office in Delhi and Lhasa. Tibet on 31 meters.

In 1939, Reg Fox became ill and there was no one to relieve him, so GHQ Indian called me into the office and said, "We are giving you 24 hours leave to consider volunteering to go to Lhasa, Tibet to man the wireless station there."

After 24 hours of various officers telling me how thrilled I should be to have the opportunity of going to the Forbidden City, I said, "OK, I'll go."

Several days later, I received a telegram from GHQ Delhi (which I still have) stating that I would have to be medically examined by three doctors to see if I was fit; then I would be discharged from the service and proceed to Calcutta, India to meet Reg Fox, who had been brought to the Tropical School of Medicine with a swelling on his heart and elephantiasis of the legs.

After I was pronounced fit, I received my orders from GHQ. I would be paid 400

## BASSETT HELIUM TRAP ANTENNAS



## BASSETT HELIUM MOBILE ANTENNAS

NEW!



Heavy duty inductors with transparent tube covers.

The result of nearly two years of continuous development and nearly fifty years of amateur and commercial antenna design and manufacture Bassett helium filled antennas are for the amateur who demands the very best in American made automatic bandchange systems and mobile antennas that are compatible with all transceivers including the new "no tune" units. Trap systems are fundamental dipoles on each band and do not require antenna tuners.

- Helium filled traps impervious to all weather
- Maintains precise resonance and efficiency
- Systems easily handle legal amateur power
- Multiband amateur and MARS with one coax
- Fully compatible with "no tune" transceivers
- Short enough to fit on a small 50' by 100' lot
- Rugged white traps only 1" diameter, 5" long
- Uses your RG-8 or RG-58 coax in any length
- Center "isolator" equipped to accept a PL-259
- Solid Copperweld, stainless, nylon end lines

- Helium filled for a lifetime of high efficiency
- Completely adjustable to precise resonance
- Power handling capability to 750 watts PEP
- Beautiful white 32" Fiberglass lower section
- Stainless 38" 17-7 tapered top whip section
- Very low weight. VAC-20 weighs 6.5 ounces
- Low wind drag. Holds vertical at high speed
- All chrome plated polished brass hardware
- Models for all bands with a 2 meter collinear
- Mates with any standard 3/8-24 mobil mount

### MULTIBAND BROADSIDE DIPOLES

|                    |                       |                              |
|--------------------|-----------------------|------------------------------|
| VAC-40/75--\$69.50 | VAC-20/40/75--\$89.50 | VAC-10/15/20/40-----\$119.50 |
| VAC-20/40--\$69.50 | VAC-15/20/40--\$89.50 | VAC-15/20/40/75-----\$119.50 |
| VAC-15/20--\$69.50 | VAC-10/15/20--\$89.50 | VAC-10/15/20/40/75--\$149.50 |

### SINGLE-BAND MOBILES

|                                                        |
|--------------------------------------------------------|
| VAC-2 collinear for 2 meter mobile---\$39.50           |
| VAC-6, VAC-10, VAC-15, VAC-20 ---\$39.50               |
| VAC-40---\$44.50                      VAC-75---\$49.50 |

NEW! VAC-10m/18m/24m-----\$89.50  
For the 3 new amateur bands

Postpaid to 48 States. Florida residents add 4% Fla. sales tax.  
Prices and specs subject to change without notice or obligation.  
Special systems available for any use. Write for price quotes.



## REX BASSETT ELECTRONICS, INC.

1633 N.E. 14th AVENUE, FORT LAUDERDALE, FLORIDA 33305 TEL: 305-561-1400

would go from Sikkim, staying acclimatize to the day at the British days, my luggage van to Lhasa, and

a village down in the valley, and said, "Tomorrow morning you go down to that village, order enough mules to carry your baggage, and one riding mule for yourself, and then start on your 21-day journey to Lhasa."

That journey is another hair-raising story.

I arrived in Lhasa and moved into Reggie's home — a living room, bathroom and radio room upstairs, and downstairs a very large diesel engine, generator and a load of batteries.

After seven months of running the radio, one morning some runners came to say that Fox Sahib was returning and was two days away from Lhasa. No one had told me a thing, so two days later, Reg Fox arrived to die, strapped on a mule. He didn't want me to stay, saying he could manage, so I did the 21-day mule trip back to Gangtok, Sikkim, where it was decided I would open up wireless communication between Lhasa, Gangtok and India, and I became the original AC3SS.

Reg and myself opened up a broadcasting station in Tibetan, using 300 watts. This proved to be a very interesting job, until I left Gangtok for six months leave in England, to be relieved by Bob Ford, AC4RF, who was later captured.

The king of Sikkim, who was AC3PT, is now under house arrest in Gangtok, and I hope to have news of him shortly from his sister, Princess Coo Coo La, who escaped the Chinese invasion of Tibet and is now living in India.

Since those days, I have been G3EBL, VQ4HGB, K2UOU and W1DKG, and for the past five years have been employed by two very well-known amateurs — Dorothy and Carl Evans, W1FTJ and W1BFT. (Since writing this letter, Dorothy Evans has joined the Silent Keys.)

Sincerely,  
HENRY G. BAKER, W1DKG  
Allenstown, New Hampshire

# Novice sails solo to Japan

Harry Hinz, WB6LNZ

In last year's grueling, long-distance endurance test across the Pacific, from California to Japan, Amateur Radio provided the only link with the outside world for 11 solo sailors for about two months. All were radio amateurs.

The only U.S. and woman entry — Linda Rettie of Alameda, California, had to study for her Novice license during her pre-race preparations. It was not until about one week out of San Francisco that Linda learned her call sign was KA6PZY. (Linda set sail from San Francisco on 5 June 1981.)

Before the race, Linda had commissioned another Alamedan — Harry Braun, WB6QRO — as her official state-side communicator. Harry — who, when not on the air, is an atomic scientist and sailmaker — was in daily CW skeds with Linda as her homebase manager, comforting, cajoling, pushing, guiding, and above all, helping this lonesome solo sailor travel non-stop across the Pacific.

Another local ham and sailmaker — Peter Sutter, N6DQN of Sausalito, California, who exels at CW at 35 wpm — gave Linda daily, on-the-air code lessons. When her signal became too weak to copy after passing the Hawaiian latitudes, another amateur — Sel Carson, KA6ERF of Napa, California — came to the rescue by enlisting the help of his longtime friend Margaret, VK2DQU of Coff Harbour, near Sidney, Australia, who served many years in the Australian Coast Guard as a communicator. She proved to be the main pillar of communications. Her succinctly chosen words, her assuring, comforting and confident voice, and above all, her outstanding signals were a pleasure to listen to. Frequently,

Margaret had to effectively clear the frequency from being taken over by breaking stations. Margaret's phone privileges in our 15-meter Novice CW segment of the band proved to be especially valuable during the touch-and-go situations of the trip.

Linda received not only encouragement and guidance from homebase and Australia, but also medical assistance when she had a seven-day bout with debilitating fever. Over-the-air practical assistance from Harry came in handy when her diesel engine, needed to keep her battery happy, went on an unscheduled strike.

Harry also played a small role in the rescue of another racer who spoke no English, when his boat began sinking.

Thanks to Joe Knowles, K6KEW and many others, the sailor was rescued. The keel bolts had loosened and the boat was taking on water fast. The racer called homebase in Japan, who in turn called Joe, who then contacted the Coast Guard. It was a classic Mayday situation with him ending up on the coach roof with his rig and battery when the Coast Guard rescued him from his sinking vessel.

With her 6th place finish, Linda made an excellent showing in this grueling event. She attributed her success to Amateur Radio, a sound boat, her desire to win, and many helping friends. John Hill, N6CRA of Montara had loaned Linda his Kenwood TS-120.

Of the 11 who entered, only nine finished this 6,300-mile solo race across the Pacific. Just finishing alone was an accomplishment. Linda did it in 52 days and was celebrated as a star upon her arrival in Kobe, Japan. □



DON'T FORGET . . .  
Include first and last names with call signs.

you  
number  
first  
SO?

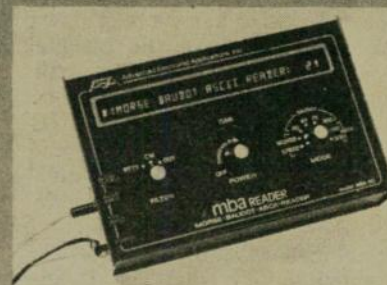


person sure does! His exciting first contact was the new world for him — a world without restrictions supported by the Courage HANDI-HAM System. The HANDI-HAM System is an organized group of able-bodied licensed hams, who help individuals with handicaps become involved with Amateur Radio. HANDI-HAM member, Mike's travel adventures have been aided by his wheelchair. If you'd like to help HANDI-HAM members travel the airways and discover the thrill of the first QSO, contact the address below.

**COURAGE HANDI-HAM® SYSTEM**  
Center, 3915 Golden Valley Road  
Golden Valley, Minnesota 55422 WAØQWE

## THE LAST WORD IN READERS

THE NEW  
**AEA**  
MBA-RO



### FEATURES:

- 32 CHARACTERS FOR EASY HIGH SPEED COPY OF MORSE
- ASCII and BAUDOT RTTY
- NO RECEIVER MODIFICATION NECESSARY
- INSTANT SPEED TRACKING FOR MORSE CODE OVER WIDE SPEED RANGE FROM 2 TO 99 WPM
- OPERATES FROM 12 V.D.C.

For AEA Readers or other AEA Products, call or visit:

**AEA**  
Brings you the Breakthrough!

**G & K Amateur Supply**  
2920 East 9th Street  
Des Moines, Iowa 50316  
515-262-1745



### CLAMMARO

In the December time Mobile call the new chair Bill Hines, KA new CLAMMARO correct, as Mr. a member of C

The correct chairman of C man Smithey California. M original found MARO.

CLAMMARO ments regarding tion to report tions, CLAM techniques to s ators in the id call signs," strong, W6EL "Amateur R terested in hel MARO should Smithey."

One addition handful of ma Class frequen sign — fellow who comuniti stations opera proper license It is just as ill license to wo amateur as it without the maritime nets Thanks, Ran record straight

Coax cable c Maritime n frequency and

RTTY

LIST OF W IN FREQU Over 2,000 quency, ca details are agency sta listed. A li tions from only accurate station info

WORLD PR AND MANU A compreh ing — cont how to rec news and p ing. All list of transmi all parts of UNIVER

000 or so.  
 people, make  
 the advantages  
 of it to a  
 ah! you knew  
 you?).  
 ch too com-  
 this column,  
 is necessary,  
 think your  
 e much time,

S

208R packs a  
 the FT-706R  
 power for 1 watt  
 the FT-708R,

med from the  
 favorite channel

MEMORY SCAN

memories (or a  
 e and restart

dual tone pad  
 -708R.

standard ( $\pm 5$  MHz  
 odd splits of up  
 med from the  
 memory/dial mode  
 ng on unusual

e synthesized  
 all 32 common  
 ation.

you to disable  
 nting inadver-

sories is avail-  
 of the FT-208R

282

633-4007  
 874-3100

IO, March 1982 35



**American  
 Radio  
 Relay  
 League**

**J.A. "Doc" Gmelin,  
 W6ZRJ**

Past Director, Pacific Division  
 ARRL Honorary Vice-President

As reported in this column recently, the ARRL Board of Directors — at their September meeting — voted to accept the Phase II Report of the Long-Range Planning Committee (LRPC).

This acceptance, in effect, starts the ball rolling toward possible major changes in the League's structure, particularly in regards to the Communications Department (CD).

An article appearing in *QCD*, Winter 1982, gives a very good summary of what the changes will mean within the Communications Department structure. *QCD* is the major quarterly bulletin of the CD.

The article points out that the purpose of the changes is to bring about greater membership participation in League affairs, since at the present time CD work is shared by relatively few members of the ARRL.

Part of the problem attacked by the LRPC was an apparently disjointed structure of activities brought about, in part, by the fact that in recent years, new areas of interest in operational activities have developed within the ARRL.

In particular, many members see an area of conflict between the offices of Director and Section Communications Manager (SCM).

As the *QCD* article points out, the Director has the overall responsibility for all phases of policy-making within the League, including the activities of the Communications Department. But according to the writer, the perceptions held by the League members do not reflect reality. Under the present organizational structure of the League, there should be no conflict between the activities of Directors and SCMs. Each office serves a different function.

The office of Director has evolved slowly through the years since the League became a membership organization with elected representatives. Originally, there were only six Directors, but as the ARRL expanded, the six original divisions were subdivided until now there are 15 divisions in the United States and one in Canada.

The original idea was that the Directors would establish policy, and the Headquarters and field organization would put the policy into effect. The Directors still set the overall policy of the League and determine the general direction of the organization.

The field organization, according to the structure that has been in effect during the past 50 or so years, operates under the direction of the Communications Manager (CM) at ARRL Headquarters. The elected managers — SCMs — supervise smaller jurisdictions.

At one time there were city managers, but eventually the local jurisdictions became the ARRL Sections; 73 are now active.

The SCMs who head these field operations are elected by the League membership of each Section, just as the Directors are elected by the members of their own divisions. The SCMs are active only in such areas of amateur operational ac-

tivities as traffic, emergency communications, DX and contests.

Why, then, is there an apparent conflict? Well, in my own experience as SCM and Director, there are areas of conflicting interest at the present time. A look at the historical development of both offices will show how this conflict has developed over the years.

Originally, the League Directors were not as heavily involved with membership contact as they are now. Their expenses for travel and membership contact have

increased rapidly in recent years. Part of this increase can be linked to inflation, but a good part is due to the fact that Directors can now visit more clubs and amateur events than ever before.

After all, the Directors are elected, making the office more political in nature. Good membership contact can lead to satisfied members who are likely to vote for the incumbent who is giving them good service. As a matter of fact, League members have come to expect this kind of service from their elected officials. Many

members turn to League-related pro and operation.

However, since involved with policy for service in the a be turned over to operational manag

Often, this is r sometimes take directly to the bypassing the SC problems are even

# New Drake TR5 Transceiver



far above average!

COMING SOON  
 RV75 Synthesizer  
 featuring the Drake  
 • Frequency Synthesized for stability • VRTD (Variable Rate Tuning) adjusts tuning rate as function of frequency • Resolution to 10 Hz • Three preset frequencies for MARS, etc. • Operation with main transceiver

With the new TR5 versatility and value are spelled D-R-A

**DYNAMIC RANGE**

The dynamic range of the TR5 is unexcelled by any transceiver in its class. A greater than 0 dBm third order intercept point (85 dB two-tone dynamic range) at 1 kHz spacing can be achieved only by the use of a passive diode-ring mixer. Drake was the first to bring this technology to the Amateur Radio market with a high-level mixer in the TR7.

**RELIABLE SERVICE**

When you purchase a TR5, or any Drake product, you acquire a product produced with production techniques, which provide reliable performance. Yet with a product as sophisticated as one of today's transceivers, service is a must. Ask any Drake owner. Our Customer Service Department has a reputation second to none.

**ACCESSORIES**

Drake is the only Amateur Radio manufacturer who offers a full complement of accessories to satisfy almost every desire the HF Amateur may have. This selection allows any operator to assemble a station which meets his needs. It assures compatible interfacing and styling instead of a desk full of mismatched equipment and a variety of styling and poor operation as a system.

**KILOWATT AMPLIFIER**

Everyone wants to be heard! The accessory L75 and its 3-500Z (1200W input) and a decent antenna will do the trick. This rugged self-contained power supply will put the TR5 on an even footing with the best of the breed.

**ENGINEERING**

The TR5 and all Drake Transceivers, are backed by the best in engineering. This is the result of an extensive engineering effort, combining proven concepts and ideas with new state of the art concepts. As a result, the TR5 will not be superseded by a new model ever. It represents a true radio communications value that will provide many years of operating enjoyment.

See your Drake dealer or write for additional information.

**R. L. DRAKE COMPANY**



540 Richard St., Milford, MA  
 Phone: (513) 866-2

Features, availability and prices subject to change

Board meetings, if resolution cannot be found at the Headquarters level.

The reverse situation is sometimes true of the SCM office. League members expect service from their elected SCM, and thus, policy matters are sometimes brought to the SCM instead of to the Division Director. This is especially true if an SCM and Director are politically opposed.

In some divisions, the SCMs work closely with the Director in making policy decisions; often the elected SCMs in a

division are appointed Assistant Directors by the Director. In these instances, the SCMs work under the direction of both the Communications Manager and the Division Director.

In recent years, the office of SCM has also included areas that are not directly involved with the traditional operating areas of traffic, emergency communications, DX and contests. For example, the SCMs are now specifically involved with organizing clubs. At one time, the ARRL-

affiliated club program was part of the CD.

Several years ago, the Board established a separate ARRL Club and Training Division. While the affiliated club program was part of the CD, the SCMs were not involved directly with clubs. However, now that the affiliated club program is not part of the CD, the SCMs are involved.

For reasons such as these, the LRPC is looking into possible changes in the League's organizational structure.

One reason members sometimes bypass the SCM and go directly to the Division Director is that SCMs sometimes fail to function, or at best, function at a minimal level. When this happens, the Directors often hesitate to act since the SCMs are elected, and by rights, the members should be the ones to remove an SCM from office if they are dissatisfied with the SCM's performance. But this can turn into a two-year process, since that is the length of tenure of office for the SCM. It is no wonder members go to the Division Director in such cases.

In fact, in the minds of many, the office of SCM is subordinate to that of Division Director — a "chain of command," in essence.

The LRPC report proposes to set up a system where the SCMs would report to the Director instead of the CM. In this way, we may be able to minimize these types of problems.

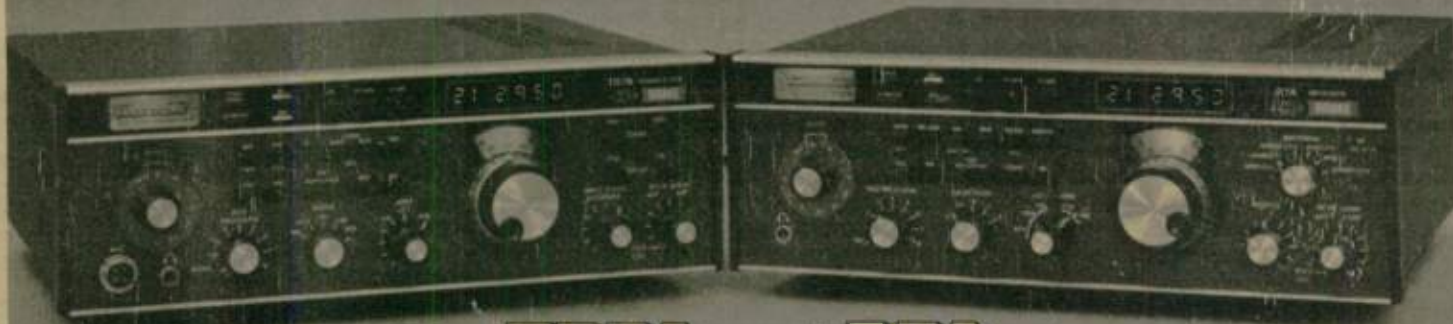
But wouldn't the Director then have to report to the CM? Not likely; thus, one wonders if the office of CM would be completely bypassed if such a change in command structure is established.

The fact that SCMs are elected is another problem, since the Director would not have any choice in who would be working for him as SCM. Would the Director be able to summarily remove an SCM? Not if the SCM is elected — this ability would lie in the hands of League members.

Just how these problems in the new structure will be worked out remains to be seen, but we should at least acknowledge that the League is trying to update and smooth out organizational areas.

If you have any ideas on how to best organize League structure, contact your Director or SCM. Also, read the December QST for more details. □

## The ultimate team...the new Drake "Twins"



The **TR7A** and **R7A**  
offer performance and versatility  
for those who demand the ultimate!

### TR7A Transceiver

- CONTINUOUS FREQUENCY COVERAGE — 1.5 to 30 MHz full receive coverage. The optional AUX7 provides 0 to 1.5 MHz receive plus transmit coverage of 1.8 to 30 MHz, for future Amateur bands, MARS, Embassy, Government or Commercial frequencies (proper authorization required).

- Full Passband Tuning (PBT) enhances use of high rejection 8-pole crystal filters.

New! Both 2.3 kHz ssb and 500 Hz cw crystal filters, and 9 kHz a-m selectivity are standard, plus provisions for two additional filters. These 8-pole crystal filters in conjunction with careful mechanical/electrical design result in realizable ultimate rejection in excess of 100 dB.

New! The very effective NB7 Noise Blanker is now standard.

New! Built in lightning protection avoids damage to solid-state components from lightning induced transients.

New! Mic audio available on rear panel to facilitate phone patch connection.

- State-of-the-art design combining solid-state PA, up-conversion, high-level double balanced 1st mixer and frequency synthesis provided a no tune-up, broadband, high dynamic range transceiver.

### R7A Receiver

- CONTINUOUS NO COMPROMISE 0 to 30 MHz frequency coverage.

- Full passband tuning (PBT).

New! NB7A Noise Blanker supplied as standard.

- State-of-the-Art features of the TR7A, plus added flexibility with a low noise 10 dB rf amplifier.

New! Standard ultimate selectivity choices include the supplied 2.3 kHz ssb and 500 Hz cw crystal filters, and 9 kHz a-m selectivity. Capability for three accessory crystal filters plus the two supplied, including 300 Hz, 1.8 kHz, 4 kHz, and 6 kHz. The 4 kHz filter, when used with the R7A's Synchro-Phase a-m detector, provides a-m reception with greater frequency response within a narrower bandwidth than conventional a-m detection, and sideband selection to minimize interference potential.

- Front panel pushbutton control of rf preamp, a-m/ssb detector, speaker ON/OFF switch, i-f notch filter, reference-derived calibrator signal, three agc release times (plus AGC OFF), integral 150 MHz frequency counter/digital readout for external use, and Receiver Incremental Tuning (RIT).

### The "Twins" System

- FREQUENCY FLEXIBILITY. The TR7A/R7A combination offers the operator, particularly the DX'er or Contester, frequency control agility not available in any other system. The "Twins" offer the only system capable of no-compromise DSR (Dual Simultaneous Receive). Most transceivers allow some external receiver control, but the "Twins" provide instant transfer of transmit frequency control to the R7A VFO. The operator can listen to either or both receiver's audio, and instantly determine his transmitting frequency by

appropriate use of the TR7A's RCT control (Receiver Controlled Transmit). DSR is implemented by mixing the two audio signals in the R7A.

- ALTERNATE ANTENNA CAPABILITY. The R7A's Antenna Power Splitter enhances the DSR feature by allowing the use of an additional antenna (ALTERNATE) besides the MAIN antenna connected to the TR7A (the transmitting antenna). A possible split between the two antennas and the two system receivers are possible.

Specifications, availability and prices subject to change without notice or obligation.

See your Drake dealer or write  
for additional information.

**DRAKE**



COMING SOON: New RV75 Synthesized VFO  
Compatible with TR5 and 7-Line Xcvrs/Rcvrs

- Frequency Synthesized for crystal-controlled stability
- VRTO (Variable Rate Tuning Oscillator\*) adjusts tuning rate as function of tuning speed.
- Resolution to 10 Hz
- Three programmable fixed frequencies for MARS, etc.
- Split or Transceive operation with main transceiver PTO or RV75

R. L. DRAKE COMPANY • 540 Richard Street, Miamisburg, Ohio 45342 • Phone (513) 866-2421 • Telex 288-017 • Patent pending



Judge Paul Abbate, KG6RN is very active on Amateur Radio in Guam these days. Nick Hauck, K6QPE reports that he has run several phone patches to the judge's son in the Fresno, California area.



Eric T. Hansen, K2AIQ sits at station with Boy Scouts from Troop 26, at Winnebago Scout Camp in northern New Jersey. The photo was taken last summer. K2AIQ and the Scouts had contacted Ramon Valley, WP4AJD of Puerto Rico and J. Rathbone, G3KZY of Cheshire, England while using a 15-meter dipole and an SB-101.

Let Worldradio know what you do in Amateur Radio; many others will be interested in your experiences.



# DX WORLD

John F.W. Minke III, N6JM  
6230 Rio Bonito Drive Carmichael, CA 95608

## Activities calendar

|             |                                           |
|-------------|-------------------------------------------|
| 06-07 March | ARRL International DX Contest (Phone)     |
| 20-21 March | YL ISSB QSO Party (CW)                    |
| 27-28 March | CQ Worldwide WPX Contest (SSB)            |
| 03-04 April | SP DX Contest (SSB)                       |
| 07-08 April | DX YL to North America YL Contest (CW)    |
| 14-15 April | DX YL to North America YL Contest (Phone) |
| 16-18 April | Visalia International DX Convention       |
| 24-25 April | YL ISSB QSO Party (SSB)                   |

## DXpedition calendar

|                          |                 |                |
|--------------------------|-----------------|----------------|
| East Kiribati            | 11 Feb - 16 Feb | T32 by PA0GMM  |
| Antigua                  | 14 Feb - 24 Feb | V2AMK by K9MK  |
| Central African Republic | 16 Feb - 02 Mar | TL8 by K4YT    |
| Anguilla                 | 19 Feb - 05 Mar | VP2E by WA8CZS |
| Montserrat               | 24 Feb - 28 Feb | VP2M by K9MK   |
| Cocos (Keeling)          | 27 Feb - 13 Mar | VK9Y by VK3OT  |
| Grenada                  | 01 Mar - 10 Mar | J3 by W8UVZ    |
| Zaire                    | 03 Mar - 17 Mar | 9Q5 by K4YT    |
| Christmas Island         | 14 Mar          | VK9X by VK3OT  |
| Kenya                    | 18 Mar - 01 Apr | SZ4 by K4YT    |
| British Virgin Islands   | 14 Mar - 25 Apr | VP2VHV by K9BJ |
| Heard Island             | March           | VK0 by VK9NS   |
| Seychelles               | 02 Apr - 08 Apr | S79 by K4YT    |
| Ithiopia                 | 09 Apr - 17 Apr | ET3 by K4YT    |

## W-100-N

Four applicants for Worldradio's "Worked 100 Nations Award" were processed during this past period 15 December through 14 January. Congratulations go to the following amateurs:

|             |                   |
|-------------|-------------------|
| 155. W9BM   | Edward H. Nadolny |
| 156. KA2F   | John P. King      |
| 157. WB6SRK | James T. Painter  |
| 158. VE3JPJ | Steven Bamber     |

John, KA2F worked all his required contacts on CW. John's former call was WB2HDJ. Steve, VE3JPJ and Ed, W9BM made use of all five bands for obtaining their contacts. Ed's contacts were mixed mode, while Steve remained on SSB for his. Steve is the third Canadian to apply for this award — all three have been from Eastern Canada.

## Campbell Island (ZL/A)

ZL3AFH/A can be found near 14.005 MHz after 0730 UTC on most days along with ZL4OY/A on 14.210 MHz from 1000 UTC. With these two stations on, it

should give you the opportunity of working the island on both modes.

ZL4OY/A has also been reported on 15 meters on 21.155 MHz at 1215 UTC. This frequency, unfortunately, is out of the American phone band, although the Novice stations may get a shot at him. Most likely, the band would be dead here at that time.

A few issues ago we listed ZL4PO/C on Campbell Island. We should have said Chatham Island. All New Zealand stations operating on Chatham Island sign with the 'C' following their call. With the letter 'A' would indicate they are operating from Campbell Island, (A for Auckland Island, which counts the same as Campbell Island).

## Guatemala (TG9)

Need Guatemala on 75 meters? Look for Frank Capuano, N4FKZ, who operates as TG9NX in Guatemala. Frank can be found with a strong signal below 3.800 MHz.

## Bouvet Island (3Y0)

It has been reported that the proposed Bouvet Island DXpedition has been postponed for one year. They had needed at least \$36,000 in advance, but this requirement was never fulfilled.

## SMOM (1A0KM)

As the Sovereign Military Order of Malta is a new DXCC country, the "country's" only Amateur Radio station, 1A0KM is busy on the bands. This station has been worked near 3.513 MHz from 0200 UTC and near 7.009 MHz from 0400 UTC.

## Cyprus (ZC4/5B4)

ZC4DY, who is a broadcast engineer on the island of Cyprus, is on daily near 28.515 MHz at 1500 UTC. In addition to this station, two club stations will be active on both modes and all bands, signing ZC4EPI and ZC4ESB.

Other active stations on Cyprus include 5B4AC, who has been worked on 3.799 MHz at 0500 UTC, and 5B4JE who has been reported at the low end of 20 meters SSB near 14.210 MHz from 1500 UTC.

The ZC4 stations are British subjects assigned to the island, whose calls have been allocated by the British Military Authorities. The 5B4 calls are issued by the Cyprus government.

## Pacific Island DXpeditions

It looks like the Europeans still need contacts with the Pacific as Guido vd Berg, PA0GMM, and Karl-Heinz Hille, DL1VU are off on separate DXpeditions. Guido was to have operated from KX6ZX in the Marshall Islands, YJ8 (Vanuatu), C21NI at Nauru, T2 (Tuvalu), T30 (West



Ron Plant, G5CP (left) and Jack Walthall, W4HW relax together. The combined years of Amateur Radio experience between the two men equal 120 years.

Kiribati), and T32 (East Kiribati). Some of these should be active right now, (see the DXpedition Calendar).

Karl plans to operate from various locations with the calls FK0VU, YJ0VU, 3D2VU, FW0VU, 5W1DC, ZM7VU, DL1VU/KH8, ZK1XG, (also North Cook Islands), ZK2VU, A35VU, and perhaps others. Karl's preference is CW on 40 and 80 meters.

## 120 years of Amateur Radio!

The two gentlemen in the photograph combine a total of 120 years in Amateur Radio. Ron Plant, G5CP and Jack Walthall, W4HW relax together for John Parrott, W4FRU, who submitted the photo.

Ron used to be a maritime radio operator back in the late 1920s, and signed XNU7EFF on the amateur bands. To show you what conditions were like, we have included the comments off one QSL from NU6HM, Carmel, California to XNU7EFF (now G5CP), on 28 December 1928.

"Was glad to get you at last, on Dec 9, — OM. And sorry I had to go to San Francisco just at that time. Dec 13 hrd you cly at sked time, 13.30 GMT, but sigs too faint to read here. We had set a bad time, for at this season sigs fm the Orient not much good until 14.30 till 15.30. Hrd and old you number of times since.

"Dec 9 was first time I had hrd you. Was getting fed up with everybody on our west coast working you while I hadn't even hrd you. Hi. No doubt because usually QRW with skeds.

"To me your note is just a kind of hissing sound, with only occasionally a trace of 500 cycle. And very broad. Also very

unsteady. If all the kick cud be concentrated on one wave ought to make quite a commotion here. Nevertheless easy to read when not too much QRN.

"Imagine fm gradual weakening of ur sigs lately that you are now on way home. So hardly expect to hear you agn until next rip. 73, OM. CF"

The operator of NU6HM was Clair Foster, who may later have become W7AFO, but that is uncertain. Notice the honesty of the reports in those days. Would you give a DX station a lousy report? Bet not! Not if you want his QSL card.

## Qatar (A71)

Mike Smedal, A71AD keeps the troops happy near 21.280 MHz from 1645 UTC daily. Mike has also been reported on 14.214 MHz from 1400 UTC and 3.795 MHz at 0300 UTC.

Other stations on Qatar include A71AA who has been reported on 28.514 MHz at 1400 UTC, and A71AE who hangs about 7.005 MHz. He has been worked there at 0200, 0300 and 1400 UTC.

## Swaziland (3D6)

If you need this one from Africa, look for 3D6AD, who has been worked near 21.300 MHz from 1800 UTC.

Actually, there are several stations active there. From the various DX bulletins, we have gleaned the following (frequencies in MHz and times in UTC):

|          |        |      |
|----------|--------|------|
| 3D6AO    | 21.268 | 1900 |
| 3D6BP    | 21.374 | 1900 |
| 3D6BS    | 14.204 | 0400 |
| W6YB/3D6 | 14.024 | 0400 |
| W6YB/3D6 | 21.295 | 1900 |

## Crozet Island (FB8)

FB8WG, the station on Crozet Island,

## 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

**TRANSELECTRO-AMERICA**  
ATT: Helen  
2301 Canehill Avenue  
Long Beach, CA 90815 U.S.A.

- 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 \$7.00 each (3 or more \$5.00 each)



**NEW! IIX EQUIPMENT**

PO BOX 9 • OAK LAWN, IL (312) 423-0605 60454

**GP-81 GINPOLE**

- Fits all popular towers 1" O.D. to 1 1/2" O.D. legs
- Strong welded steel construction
- Not dipped plated
- Dead Mt tested at 120 lbs.
- Will last a lifetime

Consists of 3 major parts:

- Pulley Assembly
- Aluminum Pole Assembly 10 ft long 2" O.D. E.M.T. or equiv.
- Clamp Assembly

Two methods of purchasing the IIX Equipment GINPOLE are available:

Method (1) Purchase GP 81-Kit GINPOLE Includes pulley and clamp assemblies which can easily be shipped U.P.S.

The customer purchases the pipe locally to save shipping cost. Recommended pipe is aluminum 1 1/2" O.D. electrical mechanical tubing also referred to as 1 1/2" E.M.T. however, a suitable substitute may be used.

GP 81-Kit \$129.50 U.P.S. included

Method (2) Purchase GP 81-1 GINPOLE Assembly Entire GINPOLE shipped Motor Freight F.O.B. Oak Lawn, IL \$159.50



now has a VFO and plans to work split frequency. The latest report received here is that he is now offering CW contacts on 14.065 and 21.065 MHz daily from 0400 to 0500 UTC.

### Senegambia

This is a new country that was formed at the first of the year. Senegambia was formed from the union of The Gambia and Senegal. Most likely, the new union will continue to use the '6W8' prefix of the former Senegal.

As for DXCC purposes, we can only guess that Senegambia will become a new addition to the DXCC country list, with The Gambia (C5, ZD3) and Senegal (6W8) being added to the deleted list. Of course, if you have already worked the two former countries and work Senegambia, you will get credit for three for the price of two. That is almost as good as the addition of East and West Germanys — three for the price of one!

### The Colvins

Lloyd, W6KG and Iris Colvin W6QL, concluded their Trinidad operation the early part of December by making 9,000 contacts with amateurs in 141 DXCC countries, half CW and half SSB. While on Trinidad they used the call 9Y4KG.

Trinidad is a very difficult country to get your equipment in and out again. It took the Colvins eight days from the time of arrival until they could get their equipment released from customs. They had anticipated no problems as the Trinidad Radio Club and their president, A.H. Percival, 9Y4NP — had their license waiting for them upon arrival. Unfortunately, they still had to post a bond, obtain revenue stamps and engage the services of a customs broker. One positive note about the country is that gasoline is only 40 cents per gallon.

All QSL cards for the Colvins should be sent to the Yasme Foundation at P.O.

Box 2025, Castro Valley, CA 94546.

### Heard Island (VK0)

A group of Amateur Radio operators — headed by Jim Smith, VK9NS — is expected to be on Heard Island during the month of March. They plan to work at least 50,000 contacts over a period of 10 to 14 days. The total basic costs are estimated at \$150,000, which includes food, fuel, clothing, equipment, medicine and transportation between Perth and Heard Island. Each of the operators is expected to contribute about \$2,000 towards expenses.

They intend to charter a suitable vessel which would be available for the round trip since there are no commercial ship-pings routes in the area. The vessel is to stand off Heard Island for the duration of the stay on the island, which will add considerably to the safety aspects and also to the cost of the charter. All contributions are welcome and may be sent to the Heard Island DX Association, P.O. Box 90, Norfolk Island, SOUTH PACIFIC 2899.

### Visalia

The 1982 International DX Convention is set for mid-April at the Holiday Inn in Visalia, California. This is the usual annual get-together where the bulk of the DXers are members of the Northern and Southern California DX Clubs. Start making plans now for this one which begins on Friday evening, 16 April and runs through to Sunday morning.

Larry Brockman, N6AR is the chairman this year and is a member of the Southern California DX Club, which is responsible for the convention this year. The responsibility alternates each year between the two clubs.

To make reservations at the Holiday Inn for lodging, call (209) 733-9000.

### DXCC Notes

We have a report that we incorrectly stated that future special mode QSL cards must indicate two-way contacts. This is in reference to the Phone and CW-only DXCC certificates. According to the Southern California DX Club bulletin, Don Search, W1AZD at ARRL headquarters says this is not true. They must *not*, however, indicate cross-mode contacts.

What's the difference! It looks as if there is no change at all. One could still work an SSB station while on CW and count it as a CW contact. The QSL card would be valid just as long as cross-mode is not indicated, and most likely, it wouldn't be anyway. Someone is confused with something here.

### 160 meters

Never fail to check the top band for possible DX. There is DX to be found there, such as the following, with frequencies in kilohertz and times UTC:

|           |      |      |
|-----------|------|------|
| V3MS      | 1827 | 0200 |
| VP2MFZ    | 1825 | 0200 |
| KP4KK/DU2 | 1822 | 2045 |
| UH8EAA    | 1876 | 1800 |
| UL7BBT    | 1876 | 2130 |
| RC2LAG    | 1876 | 2145 |
| RQ2GGI    | 1875 | 2030 |
| VP8ANT    | 1802 | 0300 |
| HI8DAF    | 1803 | 0700 |
| JA6LCJ    | 1908 | 2215 |
| LU9EIE    | 1805 | 0715 |
| VK6HD     | 1801 | 2100 |
| OA4AWD    | 1803 | 0400 |
| UA2FBR    | 1880 | 2200 |
| FC9VN     | 1826 | 2200 |
| LZ3RF     | 1825 | 2115 |
| UM8MAZ    | 1852 | 0015 |
| 4X4NJ     | 1833 | 0215 |
| 8P8GG     | 1801 | 0015 |
| RB5ZAT    | 1883 | 0030 |

Be aware of the DX Window that is reserved for the DX stations. This is a gentleman's agreement on this band where all contacts are made split.

If you need Peru on the top band, look for OA4AWD, who is reported to be there transmitting on 1803 kHz on Friday and Saturday from 0400 UTC.

### 30 meters

Already DX is being reported on the new 10 MHz amateur band. Calls of stations worked on this band include 4X4VE/5N8, OY2J, ZD8TC and 4U1ITU. J.D. Forward, G3HTA reports in Geoff Watts' *DX News Sheet* that he has already worked the following prefixes: DL, F, G, GI, GM, GW, HB, LA, OE, OY, OZ, VK, YU, ZD8, ZL, 4U and 5N, and has heard LX and SM.

### Diploma Islas Canarias

This award is offered for contacting

Canary Island stations after 29 April 1971. All bands and modes count. Depending on where you live in the world, the required number of Canary Island stations (EA8) are as follows:

|                             |    |
|-----------------------------|----|
| Spain, Portugal and Madeira | 60 |
| Rest of Europe and Morocco  | 40 |
| South and Central America   | 30 |
| Mexico and the Caribbean    | 30 |
| USA, Canada and Africa      | 20 |
| Asia and Oceania            | 10 |

QSL cards are not required. To apply for this award, have your list of contacts with the required number of different Canary Island stations certified by two licensed radio amateurs, and send it with a fee of 10 IRCs to: Diploma Islas Canarias, P.O. Box 860, Las Palmas de Gran Canaria, CANARY ISLANDS (SPAIN).

### Cracovia Award

The Polish Amateur Radio Union (PZK), District Cracow, issues this award to commemorate the great international task of the restoration of Cracow's ancient monuments under the auspices of UNESCO. All contacts after 1 January 1979 are valid. Each "KR" station counts 1 point, and contacts made via OSCAR count 3 points. To qualify for this award you must accumulate 3 points (European stations need 6 points). Send your certified list with 10 IRCs to: Polski Zwiqzek Krotkofalowcow, Zarzqd Oddziatu Woj., skr 606, 30-960 Krakow 1, POLAND.

Donations to the restoration fund are also accepted and should be sent to Bank Polsk Kasa Opieki SA, Oddziat w Krakowie, Przekroj 327874-600 008. Until the problems in Poland are settled, we suggest you hold off on the above mailings.

Active SP9 stations in "KR" include SP9ADU, ADV, AKO, AKY, ASS, ATE, BCH, BCV, BDH, BLF, BPE, BQG, BRP, CUU, CVE, DH, DTH, EVP, FLY, FR, GKM, ICA, IZV, JRA, JBE, KAD, KBY, KGC, KR, KZ, PDJ, PKR, PKZ, YP, ZAS, ZCJ, SP5GRM/9 and SP8HRA/9.

### Lists

The recent letter from Carl Henson, WB4ZNH regarding the value of contacts made through the use of the so-called DX nets and lists has started a ball rolling. Some DXers — mostly those with the super stations — have felt that any contact made via this method should be of no value towards DXCC. It is the belief that

## DIRECTION FINDERS

If you're serious about direction finding, you want the best, most dependable and proven equipment for a fast find, whether it's for a downed aircraft or a repeater jammer.

If your needs are in the 100-300 MHz range, think of L-TRONICS for ground, air, or marine DF. We even have units that give dual capability, such as search & rescue/amateur radio, 146/220 amateur, and air/marine SAR.

Over 2,000 of our units are in the field being used to save lives by people representing the full spectrum of SAR: USAF, FAA, USCG, State Departments of Aeronautics, CAP, USCG Auxiliary, sheriff's air and ground resources, mountain rescue teams, and amateur radio operators. They're also being used to catch jammers, find instrument packages, track vehicles.

Prices start at about \$200, and all equipment is factory-built, complete, ready to use. They are backed by warranty, a money-back guarantee, factory service, and assistance from the experienced L-Tronics staff. Write today for a free brochure and price list.

L-TRONICS  
5546 Cathedral Oaks Rd., Attn. W5GUX  
Santa Barbara, CA 93111

30 day Free Trial  
**GUARANTEE**  
Your money refunded  
if not completely  
satisfied

## Display 240 QSL Cards in the QSL Organizer™

This handsome Album **FREE**  
with every 40 pages ordered.

No more cluttering walls or stuffing QSL's into boxes or drawers. Organize, preserve, and display your cards in roomy 4 x 6 pockets. Each crystal clear heavy duty vinyl page holds 6 cards, back to back. With every 40 pages (min), receive a handsome, richly padded 3-ring album **FREE!**

Great as gifts, prizes, or for DX contests. Join thousands of delighted hams around the globe. Fill in the handy mail form below... send for yours today!

Size: 9" x 14"

**HANDY MAIL FORM**

|                                                                                                                                                                                                                                                                                                          |                                                                                                                                      |                                                         |                                                           |                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <p>Please send:</p> <p><input type="checkbox"/> 1 FREE Album and 40 pages (min) at 50¢ ea.</p> <p><input type="checkbox"/> 2 FREE Albums and 80 pages at 40¢ ea.</p> <p><input type="checkbox"/> 3 FREE Albums and 120 pages at 46¢ ea.</p>                                                              | <p>PRICE</p> <p>20.00</p> <p>38.40</p> <p>55.20</p>                                                                                  | <p>U.S. Postage</p> <p>2.20</p> <p>3.85</p> <p>5.20</p> | <p>TOTAL</p> <p>\$22.20</p> <p>\$42.25</p> <p>\$60.40</p> | <p>Pages in pkg. of 40 only</p> <p>POSTAGE &amp; Handling</p> <p>Foreign/Canada/Mexico</p> <p>\$5.50 ea. Album &amp; 40 pages</p> |
| <p>Please Print</p> <p><input type="checkbox"/> Check      <input type="checkbox"/> Mastercharge # _____ Exp. _____</p> <p><input type="checkbox"/> Money Order    <input type="checkbox"/> Visa      Signature _____</p> <p>Name _____</p> <p>Address _____</p> <p>City _____ State _____ Zip _____</p> | <p>TOTAL \$ _____</p> <p>(CA residents add 6% tax)</p> <p>MIL INDUSTRIES Dept W<br/>P. O. Box #44457<br/>Panorama City, CA 91402</p> |                                                         |                                                           |                                                                                                                                   |

list operations detract from the competitive spirit of DXing.

This is indeed very unfortunate. What originally started out as an aid to an unexperienced DX operator in a big pileup has now become a can of worms. Lists are now ego-builders for list masters or many so-called DXers who don't even want to take a chance at competition. Just the other day I came by a listing being taken for a DX station. Who was the DX station? All that fuss over an 'AH' on Guam! But to disqualify such a contact for DXCC purposes will create greater problems at Newington than forged QSL cards.

Bob Baird, W9NN — a former member of the ARRL DX Advisory Committee — suggests that any station applying for DXCC that worked all his contacts via

this method should insist the list manager's name be added to their certificate. They sure didn't accomplish the feat by themselves. Back in the 1970s Bob had tried to express his feelings about the future problems of the lists. Bob was on the original DXAC for five years.

Perhaps what is more frustrating is trying to get on a list. Often the DX station is better copy than that of the list master. And what about the times that the list master is only interested in his friends?

Then there is the case where the DX station will only work from lists. Would that make any contacts made with him invalid for DXCC purposes? This doesn't make sense. Here again, the original intent of aiding a DX station that has been inundated in a pileup has become an

abused situation. Personally, I don't necessarily work from lists, but if there is one in there that I need, I will attempt to get on the list.

The negative attitude toward lists also includes the DX nets. The YL International SSBers (ISSB) has often been considered in the above group. This, of course, is far from the truth. This fine organization has been around since 1963 — long before the idea of lists and DX nets came about.

Whatever your feelings regarding the lists, your DXAC wishes to know how you feel. Write to your committee and let them know. You may either write directly to the DXAC manager in Newington, or your call area representative.

Manager, Communications Department  
John F. Lindholm, W1XX  
225 Main Street  
Newington, CT 06111

Board Liaison  
John C. Kanode, N4MM  
RFD 1, Box 73-A  
Boyce, VA 22620  
Anthony C. Berg, W1OT  
7 Conant Dr.  
Stow, MA 01775  
Edward J. Kuebert, K3KA  
3369 Tanterra Circle  
Brookeville, MD 20729  
James T. Rafferty, N6RJ  
178 Paseo Robles  
Anaheim, CA 92807  
Daryl H. Kiebler, WB8EUN  
517 Farmstead Ln.  
Lansing, MI 48917  
James L. Spencer, W0SR  
3712 Tanager Dr., N.E.  
Cedar Rapids, IA 52402

Chairman  
Sanford E. Hutson, K5YY  
P.O. Box 5299  
Little Rock, AR 72215  
David Beckwith, W2QM  
151 Whitney Ave.  
Pompton Lakes, NJ 07442  
David Novoa, KP4AM  
P.O. Box 50073  
Levittown, PUERTO RICO 00950  
Robert W. Hudson, K7LAY  
29826 24th Pl. S.  
Federal Way, WA 98003  
Norman E. Meyers, N9MM  
R.R. 1, Box 490  
Rossville, IN 46065  
Harold E. Parsons, VE3QA  
R.R. 3  
Metcalf, Ontario  
CANADA K0A 2P0

## Propagation

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

The numbers listed in each column are the Maximum Usable Frequency (in MegaHertz) 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 both high and low angle antennas, Maximum Usable Frequency (MUF) and Frequency of Optimum Transmission (FOT). Requests should be sent to W6LS, 2814 Empire, Burbank, CA 91504. Each request should be accompanied by a self-addressed stamped (28¢) envelope at least 9" x 11½".

APRIL 1982

| UTC  | AFRI | ASIA | OCEA | EURO | SO AM |
|------|------|------|------|------|-------|
| 0100 | 28.3 | 32.2 | 40.5 | 16.8 | 28.4  |
| 0200 | 24.5 | 31.4 | 39.6 | 15.7 | 29.2  |
| 0300 | 21.3 | 29.6 | 37.3 | 14.6 | 26.7  |
| 0400 | 21.2 | 26.7 | 34.7 | 14.3 | 24.5  |
| 0500 | 18.9 | 23.6 | 32.2 | 15.0 | 23.5  |
| 0600 | 17.2 | 21.4 | 30.4 | 16.3 | 23.0  |
| 0700 | 15.8 | 20.1 | 29.4 | 16.8 | 20.2  |
| 0800 | 14.6 | 19.4 | 28.5 | 16.2 | 15.1  |
| 0900 | 13.6 | 19.0 | 27.3 | 15.3 | 14.6  |
| 1000 | 13.1 | 18.5 | 25.5 | 14.9 | 20.0  |
| 1100 | 13.4 | 17.7 | 23.7 | 14.8 | 18.9  |
| 1200 | 14.6 | 16.8 | 21.4 | 15.4 | 19.2  |
| 1300 | 16.7 | 16.8 | 19.7 | 17.3 | 21.8  |
| 1400 | 19.0 | 18.5 | 20.7 | 20.0 | 25.5  |
| 1500 | 20.9 | 21.3 | 22.7 | 22.5 | 28.1  |
| 1600 | 22.1 | 21.3 | 22.1 | 24.1 | 29.4  |
| 1700 | 23.1 | 21.2 | 19.9 | 25.3 | 30.6  |
| 1800 | 24.3 | 20.8 | 18.1 | 25.6 | 32.7  |
| 1900 | 25.5 | 21.6 | 19.8 | 24.4 | 34.6  |
| 2000 | 26.4 | 25.2 | 25.7 | 22.7 | 33.8  |
| 2100 | 27.0 | 30.2 | 33.3 | 20.9 | 32.5  |
| 2200 | 27.8 | 32.9 | 30.7 | 19.4 | 31.2  |
| 2300 | 28.7 | 32.8 | 40.8 | 18.3 | 29.9  |
| 2400 | 29.1 | 32.5 | 40.8 | 17.6 | 28.6  |

# World's No. 1 YAESU Specialist

Home of the ONE-YEAR warranty

(Wholesale cost of parts charged after 90 days)

Best price, best warranty, fast service

As some special items have a limited warranty all invoices must be presented for warranty work

We are pleased to announce the

## GRAND OPENING

of our new

# RENO Store

460 East Plumb Lane, Ste. 107

Reno, NV 89502

We now carry **ICOM's** complete line

TO ORDER, CALL TOLL-FREE

**800-648-3962**

from outside Nevada

In NEVADA call (702) 786-2349

*Special Price... ALL ITEMS*

Super Special...

FT720 RVH • 2m 25w  
Reg. \$429 **SALE \$269**

FT720 RU • 450 MHz  
Reg. \$449 **SALE \$289**

ICOM repair done  
at Culver City store.

Culver City Store Hours Mon-Sat 9-6; Tues 9-8

Questions?  
Call our Culver City  
store.

# JUN'S ELECTRONICS

3919 Sepulveda Blvd.  
Culver City, CA 90230  
(213) 390-8003

7352 University Ave.  
La Mesa, CA 92041  
(714) 463-1886

Sales Manager: THURMAN BEACH, W6OOX

### Lazy DXers

A lot of operators, unfortunately, are becoming net-only operators, letting someone else find the DX and bring it to them instead of seeking it themselves, or actually calling CQ. Some operators admit they work nets only. Perhaps this is the undoing of DXing in general and the escalation of sloppy operating techniques, which goes hand in hand with the lethargic attitude — "You find it and I will work it."

As a net controller on a couple of bands, I feel that nets have their place on the bands, but don't depend on them to work all your new ones that way. You will have more fun and feel a sense of achievement by working the rare ones on your own. If you doubt your own capabilities, don't, and try practicing different approaches in DX contests; you will, I am sure, be surprised at the results.

Those are the words of Ken McLachlan, VK3AH, DX Editor of *Amateur Radio* the journal of the Wireless Institute of Australia. Many a DXer agrees with Ken here. Lazy DXer is a good term, and it looks like they are getting almost as bad as that County Hunter group on the high end of 20 meters. Ever listen in? All they do is sit there and wait for mobile stations to come to them. That's county hunting? Real county hunting, like DX, is to go out and search for them. If any of you county hunters are irritated by my remarks, let me inform you I have the USA-CA with the 1,000 county sticker, and I used no mobiles nor did I sit by waiting for them to come to me.

### When last heard . . .

"When last heard you were . . ." How many times have you heard that remark over the air? I guess the statement kind of goes against the grain with me, and I offer the following translations:

- I can't copy you now; hope you can copy me.
- I haven't been paying attention to the reports that have been given.
- I can't think of an intelligent statement.
- All of the above.

The phrase "when last heard you were" is very popular with list operations!

### Antique QSL Department

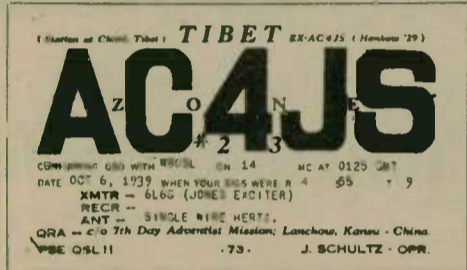
For the last three years we have printed old-time QSL cards in this column, with some dating back to the 1920s. As there are many new readers of *Worldradio* who may not have seen some of these old cards, we will re-run some of the oldies.

The card shown below is submitted by Al Miller, VE7KC for a contact made on 22 September 1938 with ES5C in Estonia. Al was signing VE5KC that year as that was the prefix for British Columbia. The contact was made on 14.0 MHz CW. The operator, R.W. Paide, indicates that his total countries was 73. He had also worked 47 states, (out of 48, of course)



and 32 Zones. We don't know what the term "zones" meant as *CQ Magazine* was still seven years away. Whatever became of the operator of ES5C we don't know. In the August 1979 issue we ran the card for ES5D. The 'ES' prefix is still a valid prefix for Estonia.

The next card was submitted by Jules Wenglar, W6YO for a contact with AC4JS in Tibet. This was a 20-meter CW contact made on 6 October 1939. J. Schultz was the operator with the mailing address as the Seventh Day Adventist Mission, Lanchow, Kansu, CHINA. Jules was signing W8OSL at the time. In the October 1979 issue we ran a QSL card from AC4RF in Tibet for the year 1949. The present AC4JS and AC4RF are not in Tibet.



Owen Twiner, W3HFO submitted the last card for a contact he made with C1DK in Shanghai, China. The date of the contact was 4 November 1947 on 28 MHz PHONE, (that's not SSB). The operator, Gil D.C. Kung, formerly signed XU8WR. We have run several of the mainland China QSL cards in the past, mostly the ones from the 1930s with the old 'XU' prefix. Al Miller, VE7KC also submitted a QSL card for this station for a contact made earlier in the same year.



**QSL information**  
Via the *Long Island DX Bulletin*, C.

Tom Neill, K4XG reports that he is the QSL manager for C6AES, EL2FD and KA6AD. He does not handle QSL chores for C5AES or EL5D.

Saul Slonim, W2PD is offering his services as QSL manager for additional DX stations. Saul presently handles QSL duties for P29CC and 6W81K.

There is no QSL bureau on Montserrat. Alex Kasevich, VP2MM writes on behalf of the Montserrat Amateur Radio Society to inform us that there is no QSL bureau nor is there one planned. One was formed a few years ago by a visiting amateur and when he left the island, there was no one available to maintain the bureau.

It is suggested that any amateur wishing to visit and operate from Montserrat make the necessary QSL provisions prior to coming to the island. What I can gather from Alex's letter, they don't particularly like IRCs there. I don't think Alex cares much for QSL cards either, as I have been informed by Rick Casey, AB1U that he now handles the QSL chores for VP2MM.

Alex also states that Errol Martin, VP2MO is not a QSL manager for any station. Errol, who is the society president, is not the licensing officer on Montserrat. This is another piece of misunderstanding.

### QSL routes

|       |         |           |              |
|-------|---------|-----------|--------------|
| A4XIX | -G3ZOX  | JT0LAJ    | -UA6AKT      |
| A4XJO | -WB3JRU | K3ZO/HK3  | -HK3LR       |
| A6XTH | -PE1AGR | K8CWC6A   | -K8AV        |
| A35EL | -OE2DYL | KWZZO/PJ7 | -K8TCR       |
| A35XX | -OE2DYL | KA4P/KI14 | -KH6SP       |
| AH0A  | -K4AVU  | KA7HRK/   |              |
| C5AEG | -N6BPM  | KH8       | -ZK1CG       |
| C21IB | -ZL1AHT | KF1V/PJ7  | -WB1HJF      |
| C21NI | -OE2DYL | KV4AD/PJ6 | -KV4AD       |
|       |         | N3BLS/HP2 | -WA4TWS      |
|       |         | N6BT/AH0  | -N6BT        |
|       |         | N6KT/HK0  | -N6KT        |
|       |         | NP2AF     | -WP2ACL      |
|       |         |           | (See Note 3) |
|       |         | NP2AI     | -WP2ACL      |
|       |         |           | (See Note 3) |
|       |         | OH1AR/OH0 | -OH1MA       |
|       |         | OH0AL     | -OH2AL       |
|       |         | OH0XX     | -OH2BBM      |
|       |         | P47A      | -WB1HFJ      |
|       |         | SM0GMG/   |              |
|       |         | H80       | -SM0DJZ      |
|       |         | T30AT     | -G3XZF       |
|       |         | TG9NX     | -WA4RZL      |
|       |         | TJ1GH     | -DJ6SI       |
|       |         | TL8RC     | -P6EZV       |
|       |         | TU2JQ     | -TU2CI       |
|       |         | U2R       | -UR2RGN      |

|           |              |        |                                                              |
|-----------|--------------|--------|--------------------------------------------------------------|
| V2AAW     | -N6NK        | ZF2AG  | -N8AG                                                        |
| V3AW      | -W0UN        | ZF2FF  | -WB3JWJ                                                      |
| V3MS      | -W0CP        | ZK1BM  | -ZK1CG                                                       |
| VO3MEA    | -VO1HP       |        | (See Note 4)                                                 |
| VP2ETW    | -K2QIE       | ZK1BR  | -DJ8FX                                                       |
| VP2MEV    | -AJ6V        | ZK2EL  | -OE2DYL                                                      |
| VP2MM     | -AB1U        | ZK2TA  | -OE2DYL                                                      |
| VP2VGF    | -WP2ACL      | ZL4POC | -ZL4KI                                                       |
|           | (See Note 3) | ZL4ADZ | -KB0COJ                                                      |
| VP5GCM    | -WP2ACL      | ZY4OZ  | -PY4AA                                                       |
|           | (See Note 3) | 3C1AB  | -EA1QF                                                       |
| VP8AJM    | -K0JW        | 3D2JD  | -KB0COJ                                                      |
| VS5DD     | -G4FFE       | 4A2Q   | -XE2AQ                                                       |
| VS6BZ     | -JA7AYE      | 4C5NKP | -XE1DU                                                       |
| VS6FX     | -DL7HM       | 4N7NS  | -YU7BPQ                                                      |
| VS6GZ     | -OH1HGC      | 5T5ZZ  | -W4FRU                                                       |
| W3ATE/8R1 | -VE6CKG      | 5W1DD  | -OE2DYL                                                      |
| W3BTX/PJ7 | -W3BTX       | 5W1DE  | -OE2DYL                                                      |
| W4UY/PJ7  | -W4UY        | 5W1DJ  | -ZK1CG                                                       |
| W5NUT/PJ7 | -W5NUT       |        | (See Note 4)                                                 |
| WA6VEF/   |              | 5W1DO  | -OE2DYL                                                      |
| PJ7       | -WA6VEF      | 5Z4CS  | -J11VLV                                                      |
| WB0MKR/   |              | 6J6J   | -XF1J                                                        |
| KH3       | -KB2RV       | 6W8JU  | -F6CGS                                                       |
| WP2ABZ    | -WP2ACL      | 8Q7CC  | -DJ6QT                                                       |
|           | (See Note 3) | 8R1Y   | -8R1B                                                        |
| YT0R      | -YU7BCD      | 9H4L   | -W3HNN                                                       |
| YU0ITU    | -YU1EXY      | 9K2BE  | -G4GIR                                                       |
| YZ9HDE    | -YU2HDE      | 9K2DX  | -N6TR                                                        |
| Z21DL     | -WB0YRN      | 9N1BMK | (See Note 5)                                                 |
| ZD8DM     | -G4HJM       | 9Y4MM  | -K1MM                                                        |
| A22DC     |              |        | -Douglas Cressman, Private Bag 10, Serowe, BOTSWANA          |
| CT2YG     |              |        | -P.O. Box 5, Lagoa 9560, St. Miguel, Azore Islands, PORTUGAL |
| EA9KS     |              |        | -P.O. Box 100, Mellilla, North Africa, via SPAIN             |
| HI3AMP    |              |        | -P.O. Box 100, Salcedo, DOMINICAN REPUBLIC                   |
| HK3CKH    |              |        | -P.O. Box 18003, Calle, COLOMBIA                             |
| KB71J/KH2 |              |        | -R.A. Blaney, P.O. Box 78, PPO San Francisco, CA 96637       |
| KG4H      |              |        | -Mike Waldrop, P.O. Box 73, FBPO Norfolk, VA 23593           |
| KX6QC     |              |        | -P.O. Box 65, APO San Francisco, CA 96555                    |
| LA2EX/9L  |              |        | -P.O. Box 558, Freetown, SIERRA LEONE                        |
| NF4B      |              |        | -P.O. Box 21065, Kennedy Space Center, FL 32915              |
| P29EJ     |              |        | -P.O. Box 1486, Lae, PAPUA NEW GUINEA                        |
| S42A      |              |        | -P.O. Box 462, Port Elizabeth 6000, REPUBLIC OF SOUTH AFRICA |
| S81WJJ    |              |        | -P.O. Box 821, Yumtato, REPUBLIC OF TRANSKEI                 |
| SV1NA/5   |              |        | -P.O. Box 49, New Ionis, Athens, GREECE                      |
| TA1CT     |              |        | -P.O. Box 902, Istanbul, Turkey (See Note 6)                 |
| TJ1AA     |              |        | -P.O. Box 73, Pascarosse, 40600 FRANCE                       |
| YJ8DX     |              |        | -P.O. Box 208, Ringwood, AUSTRALIA 3134                      |
| ZP5MJV    |              |        | -P.O. Box 916, Ascension, PARAGUAY                           |
| ZS2DK     |              |        | -P.O. Box 10050, Port Elizabeth, REPUBLIC OF SOUTH AFRICA    |
| 5H3PA     |              |        | -P.O. Box 20104, Dar es Salaam, TANZANIA                     |
| 5H3TM     |              |        | -P.O. Box 429, Meys, TANZANIA                                |
| 6W8DS     |              |        | -P.O. Box 6, Dakar, SENEGAL                                  |

- Notes
- This applies for contacts made 19-23 September 1981 only.
  - For the operation by N4NW on 15 December, QSL via AK3F, P.O. Box 573, Gettysburg, PA 17325.
  - All QSL cards to WP2ACL should go via P.O. Box 1003, Fairfield, CT 06430.
  - There is a new address for ZK1CG: Vic Rivera, P.O. Box 618, Rarotonga, COOK ISLANDS.
  - All contacts made with 9N1BMK during the period 26 July to 3 August should go via JH3LPT; contacts made before 26 July 1981 go to JA8GYQ.
  - As for all QSL cards routed to Turkey, be sure to omit all references to *Amateur Radio* on the envelope.

The following have contributed to this month's column: KA1GOF, AB1U, W2HFO, W2PD, W4FRU, W6KG, W6QL, W6OMR, AJ6V, W6YO, KB7TW, W9LNQ, W9NN, K9VGE, VE7KC, TG9DX, DJ9ZB, OE2DYL, NP2AI, FO8DP, ZK1CG, VP2MM, Northern California DX Club, Southern California DX Club, Lynx DX Group, *Amateur Radio*, *The DX Bulletin*, *The Long Island DX Bulletin* and *DX News Sheet*.

During the next two months, there are several DX contests to play around with. If you are a list operator or DX net type, why not plunge in and have some fun. Who knows, you might just make a contact all by yourself without a lid master saying "Over" for you, or "That's a roger contact." Good luck and DX to you, de John, N6JM.

## COMPUTERIZED GREAT CIRCLE MAPS

SCALE OF GREAT CIRCLE FROM CENTER

- Great Circle Map Projection •
- Centered on your exact QTH •
- Calculated and drawn by computer •
- 11 x 14 inches • Personalized with your call sign • \$12.95 ppd. • (Air Mail add \$2.00) • Beam Heading Printout with bearings to 640 locations, \$9.95 • Great gift idea, too!

**Bill Johnston, N5KR**  
Dept. W  
1808 Pomona Drive  
Las Cruces, New Mexico 88001

### ELECTROKIT DX-QSL SERVICE

P.O. BOX 568, MILFORD, MA. 01757

Our professional service will mail your DX QSL Cards First Class to any DX-QSL Bureau, QSL Manager or direct, if neither is available.

1-15 Cards — 10¢ each;  
16 or more — .07¢ each.

get ... The DX EDGE

**DX EDGE BULLETIN**  
Now in use on all continents.

The DX EDGE is an operating aid you will use every day. It is a slide rule type device that gives you instant visual answers to many operating problems.

- Accurate sunrise and sunset times, and areas of daylight and darkness.
- Most likely times for Gray Line and long path openings.
- Best times for daylight paths on 10 and 15 meters.
- When to look for that DXpedition on 40, 80 and 160 meters.

\*Good for any QTH in the world. \*No calculations to make. \*Never outdated. \*Durable plastic. \*Map has all zones and selected prefixes. \*Map case size 11 3/4" x 4 3/4". \*12 slides, 6 1/2" x 4 3/4" each.

Introductory price: \$14.95 ppd. in U.S., Canada, Mexico, N.Y. residents add tax. Other countries add \$2.00 surface or \$4.00 air mail. Please make check or m.o. payable to The DX EDGE and mail to:  
The DX EDGE, P.O. Box 834, Madison Square Stn., New York, N.Y. 10159

An information flyer is available free of charge. A product of Xantek, Inc. © Xantek, Inc. 1982

# NEW

# Small talk.



## Processor, IF shift, N/W switch, affordable

### TS-130SE

An incredibly compact, full-featured, reasonably priced, all solid-state HF SSB/CW transceiver for both mobile and fixed operation. It covers 3.5 to 29.7 MHz (including the three new Amateur bands) and features digital display, IF shift, speech processor, and narrow/wide filter selection on both SSB and CW.

#### TS-130SE FEATURES:

- **80-10 meters, including three new bands**  
Covers all Amateur bands from 3.5 to 29.7 MHz, including the new 10, 18, and 24-MHz bands. Receives WWV on 10 MHz. VFO covers more than 50 kHz above and below each 500-kHz band.
- **Two power versions...easy operation**  
TS-130SE runs 200 W PEP/160 W DC on 80-15 meters, and 160 W PEP/140 W DC on 12 and 10 meters. TS-130V runs 25 W PEP/20 W DC input on all bands. Solid-state, wideband final amplifier eliminates transmitter tuning; receiver wideband RF amplifiers eliminate preselector peaking.
- **Digital display built-in**  
Six-digit green fluorescent tube display indicates operating frequency to 100 Hz, external VFO or fixed-channel frequency, RIT shift, and CW transmit-receive shifts. Analog subdial back-up.
- **Built-in Speech Processor**  
Increases audio punch and average SSB output power.

#### Matching accessories for fixed station operation:

- PS-30 base station power supply (remotely switchable ON or OFF with TS-130SE power switch).
- SP-120 external speaker
- VFO-120 remote VFO
- MC-50 50k $\Omega$ /500 $\Omega$  desk microphone
- FA-4 fan unit for TS-130SE
- PS-20 base station power supply for TS-130V
- PC-1 phone patch
- YK-88C (500 Hz) and YK-88CN (270 Hz) CW filters
- HC-10 world digital clock
- YK-88SN (1.8 kHz) narrow SSB filter
- MC-30S and MC-35S noise cancelling hand microphones
- AT-130 compact antenna tuner (80-10 meters, including 3 new bands)
- MC-60 deluxe desk microphone
- MB-100 mobile mounting brackets
- SP-40 compact mobile speaker
- KPS-21 base station power supply (also for TS-130SE)
- HS-4, HS-5, and HS-6 headphones
- TL-922A linear amplifier

#### Other accessories not shown:

- **IF shift circuit**  
Very effective in eliminating interfering signals, by placing them outside the IF passband.
- **CW narrow/wide selection**  
"N-W" switch allows selection of wide or narrow bandwidths. Wide CW and SSB bandwidths are the same. Optional YK-88C (500 Hz) or YK-88CN (270 Hz) filter may be installed for narrow CW.
- **SSB narrow selection**  
"N-W" switch allows selection of narrow SSB bandwidth to eliminate QRM, when optional YK-88SN (1.8 kHz) filter is installed. (CW filter may still be selected in CW mode.)
- **Sideband mode selected automatically**  
LSB on 40 meters and below; USB on 30 meters and above. SSB REVERSE position on MODE switch.
- **RF Attenuator, built-in**  
Allows optimum rejection of IM distortion.
- **Single conversion PLL system**  
Provides improved stability and spurious characteristics.
- **Protection circuit for final amplifier:**  
For maximum reliability, the final amplifier is protected by circuitry that monitors VSWR and temperature. (TS-130V, VSWR only.) Output power is reduced when abnormal operating conditions occur. If especially severe operation is anticipated, optional cooling fan, model FA-4, may be added. Model TS-130S, with FA-4 installed, is also available.

- **Effective noise blanker**  
Eliminates pulse-type noise.
- **Compact and lightweight**  
Only 3-3/4 H x 9-1/2 W x 11-9/16 D (inches); weight 12.3 lbs.
- **Other important features include:**  
VOX for SSB, CW semi break-in with sidetone, one fixed channel, and 25 kHz marker.



#### Optional DFC-230 Digital Frequency Controller

Allows frequency control in 20-Hz steps with UP/DOWN microphone (supplied with DFC-230). Includes four memories (handy for split-frequency operation) and digital display. Covers 100 kHz above and below each 500-kHz band. Very compact.

More information on the TS-130 Series is available from all authorized dealers of Trio-Kenwood Communications  
1111 West Walnut Street  
Compton, California 90220.

**KENWOOD**  
...pacesetter in amateur radio



Specifications and prices are subject to change without notice or obligation.

# TR-2500

**BIG performance, small size, smaller price!**

The TR-2500 is a compact 2 meter FM handheld transceiver featuring an LCD readout, 10 channel memory, lithium battery memory back-up, memory scan, programmable automatic band-scan, Hi/Lo power switch and built-in sub-tone encoder.

### TR-2500 FEATURES:

- Extremely compact size and light weight 66 (2-5/8) W x 168 (6-5/8) H x 40 (1-5/8) D, mm (inches), 540 g, (1.2 lbs) with Ni-Cd pack.
- LCD digital frequency readout, with memory channel and function indication.
- Ten channel memory, includes "M0" memory for non-standard split frequencies.
- Lithium battery memory back-up, built-in, (estimated 5 year life) saves memory when Ni-Cd pack discharged.
- Memory scan, stops on busy channels, skips channels in which no data is stored.
- UP/DOWN manual scan in 5 KHz steps.
- Repeater reverse operation.

### CONVENIENT TOP CONTROLS



- 2.5 W or 300 mW RF output. (HI/LOW power switch.)
- Programmable automatic band scan allows upper and lower frequency limits and scan steps of 5 KHz and larger (5, 10, 15, 20, 30 KHz... etc) to be programmed.
- Built-in tuneable (with variable resistor) sub-tone encoder.
- Built-in 16 key autopatch encoder.
- Slide-lock battery pack.
- Keyboard frequency selection across full range.
- Extended frequency coverage; 143.900 to 148.995 MHz in 5 KHz steps.
- Optional power source, MS-1 mobile or ST-2 AC charger/



power supply allows operation while charging. (Automatic drop-in connections.)

- High impact plastic case.
- Battery status indicator.
- Two lock switches for keyboard and transmit.

### STANDARD ACCESSORIES:

- Flexible rubberized antenna with BNC connector.
- 400 mA heavy-duty Ni-Cd battery pack.
- AC charger.

### OPTIONAL ACCESSORIES:

- ST-2 Base station power supply and quick charger (approx. 1 hr.).
- MS-1 13.8 VDC mobile stand/charger/power supply.
- TU-1 Programmable "DIP switch" (CTCSS) encoder.
- SMC-25 Speaker microphone.
- LH-2 Deluxe top grain cowhide leather case.
- PB-25 Extra Ni-Cd battery pack, 400 mA, heavy-duty.
- BT-1 Battery case for AA manganese or alkaline cells (not Ni-Cd).
- VB-2530 RF power amplifier.
- BH-2 Belt hook.
- WS-1 Wrist strap.
- EP-1 Earphone.

# TR-7850

**40 W, 15 memories/offset recall, scan, priority, autopatch (DTMF)**

Kenwood's remarkable TR-7850 2-meter FM mobile transceiver provides all the features you could desire, including a powerful 40 watts output. A 25 watt version, the TR-7800 is also available.

### TR-7850 FEATURES:

- 40 watts output, with selectable high or low power operation.
- 15 multifunction memory channels, easily selectable with a rotary control, M1-M13 ... memorize frequency and offset ( $\pm 600$  KHz or simplex)

M14 ... memorize transmit and receive frequencies independently for non-standard offset. MC ... priority channel, with simplex  $\pm 600$  KHz or non-standard offset operation.

- Internal battery back-up for memories. Requires four AA Ni-Cd batteries, (not supplied)

- Extended frequency coverage, 143.900-148.995 MHz in 5 or 10 KHz steps
- Priority alert. Beep alerts operator when signal appears on priority channel.
- Built-in autopatch encoder (DTMF). All 12 plus four additional DTMF signaling tones. (With simultaneous push of REV switch.)
- Autoscan of memories and entire band. Scan resumes automatically.
- Front panel keyboard.
- Compact size.

- UP/DOWN manual scan of entire band and memories, using UP/DOWN microphone (supplied).
- Repeater reverse switch.
- Separate digital displays for frequency and memory channel.
- LED S/RF bar meter.
- Tone switch.

### Matching accessories for fixed station operation:

- KPS-12 power supply (for TR-7850)
- KPS-7 power supply (for TR-7800)



# SP-40

Compact mobile speaker  
Only 2-11/16 W x 2-1/2 H x 2-1/8 D (inches)  
Handles 3 watts of audio



**KENWOOD**  
TRIO-KENWOOD COMMUNICATIONS  
1111 West Walnut, Compton, California 90220



## AMSAT gets royal boost

King Hussein of Jordan, JY1 — in a telephone call from his Los Angeles hotel suite to AMSAT President Tom Clark, W3IWI — pledged his enthusiastic support of the Amateur Space Program. The king had earlier been in Washington, D.C. on an official state visit, and visited in Los Angeles the weekend of 7-8 November.

His Highness has been an active amateur for many years. Recently, he had expressed particular interest in Amateur Radio satellites. This interest had been conveyed to AMSAT through aides to the king.

Although the Sunday evening, 8 November call was not a total surprise, the king's degree of support was a very pleasant surprise. His Highness expressed his sharing of immense pride in seeing such ambitious projects brought to fruition. He went on to explain his plans for establishing his own Amateur Radio satellite ground stations in Jordan. And, as a token of support, the king indicated a modest donation would be made to AMSAT. An aide later indicated that in royal terms, a modest token was \$10,000.

Dr. Clark remarked that he had been alerted by the king's aide that, if official schedules last week had allowed, His Highness would have received AMSAT representatives at Blair House, the official VIP guest house across from the White House. Tom added that he understood that His Highness's schedule had been very tight, so the meeting was not possible, but left open an invitation to visit the AMSAT Lab "where the satellites are built." The king responded in return with an invitation to visit him at the palace in Ahmann if Tom were in the neighborhood. Tom graciously accepted and concluded by saying that in anticipation of the possible meeting in Washington, AMSAT had prepared an Honorary Life Membership for JY1. His Highness graciously acknowledged the honor and Tom added that the king's aide would carry the Life Member Certificate to him.

Tom thanked the king for his support and interest on behalf of all AMSAT members.

— AMSAT Satellite Report □

## UOSAT talks

On 6 November, UOSAT OSCAR 9 continued to expand its operations and for the first time exercised its Digitalker speech synthesizer. It went through its entire lexicon including numbers, alphabet and special words. Although the deviation on the FM signal appeared to be set low (well below 5 kHz), the signals were clearly audible spoken English.

This marks the first use of a speech synthesizer in a spacecraft and offers educators a unique opportunity to inspire young scientists. Whereas with prior OSCARs the telemetry was there, the obstacle of having to copy Morse CW often proved overwhelming. But with UO-9's Digitalker, the telemetry values are virtually announced for logging on audio tape and later analysis.

Digitalker is an integrated circuit speech synthesizer built by National Semiconductor.

— AMSAT Satellite Report □

## Phase III progress report

AMSAT's Engineering Vice President Jan King, W3GEY returned recently from a trip to Marburg, West Germany where he consulted with the AMSAT DL (Deutschland) team collaborating on Phase III. Jan reports that excellent progress is being made.

Major efforts are now committed to completing the fabrication and testing of the liquid fuel tanks and the associated plumbing. Two tanks were recently tested to demonstrate burst strength. The tanks were filled with water and then pressurized to 1200 psi (pounds per square inch) at which time they exploded as expected. The object of the test was to determine the burst pressure. The second tank failed within a small percent of the first demonstrating consistency in fabrication to the ESA (European Space Agency). The tanks are fabricated from a very special high-strength stainless steel. The tanks must endure, in addition to very high pressure, the corrosive effects of the fuel (UMDH) and oxidizer (nitrogen tetroxide). The 1200 psi burst strength is well above the minimum required.

Jan further reported that our turn in line for launch is holding reasonably stable with October 1982 still the best bet. We continue to be manifested for the ride with ECS 1, the European Communications Satellite. Jan also reported that the next test launch of *Ariane*, LO4, will take place between 20 and 23 December 1981. A maritime communications satellite called MARECS A will be aboard LO4.

On the return trip to the United States, Jan stopped over at UOSAT HQ at the University of Surrey to confer with UOSAT Program Director Martin Sweeting, G3YJO. Progress in furthering

the Engineering and Evaluation phase of UOSAT OSCAR 9 was being made in good order. For example, the motion of the satellite has now become well-understood. The motion is apparently quite complex though not beyond control. It appears the spin axis lies in or near the plane of the ecliptic. Also, the rate of precession and nutation are also now well-understood. With the motion of the satellite thus described in detail, efforts

can begin to stabilize the spacecraft in the desired attitude with the end result being better signals on the ground. When the spin is at the desired rate and the precession and nutation motions have been dampened, the gravity gradient boom can begin to be deployed. This will further dampen undesirable motions and allow the HF beacon experiment to commence.

— AMSAT Satellite Report □

## Guide important for this cassette

A North Florida Amateur Radio Society member received his cassette tape on the Japanese words and phrases to *The Radio Amateur's Conversation Guide* from Nao Akiyama, JH1VRQ recently. He was very impressed with the quality of the

tape and translations, but realized he would need the guide to make it work right, since the tape is just about solid-copy Japanese with very little English.

— No. Florida ARS □

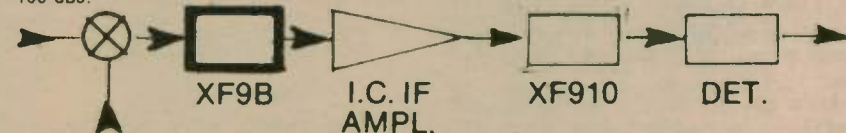
State of the art



by  
K.V.G.

Reduce QRM with Improved IF selectivity

The XF-9B crystal filter is the heart of good, modern receiver (and transceiver) designs. It is used between the mixer stage and the IC IF amplifier stage to suppress adjacent channel interference by over 100 dBs.



The XF-9B can also be used to upgrade older receiver designs which use vacuum tube or discrete transistor IF amplifier stages. PRICE \$68.60 plus shipping.

Specification XF-9B

Centre Frequency  
Bandwidth  
Passband Ripple  
Insertion Loss

9.0 MHz  
2.4 KHz  
≤2.0 dB  
≤3.5 dB

Shape Factor 6:60dB  
6:80dB  
Ultimate Attenuation  
Terminations:

1.8  
2.2  
100 dB  
500 ohms  
30 pF

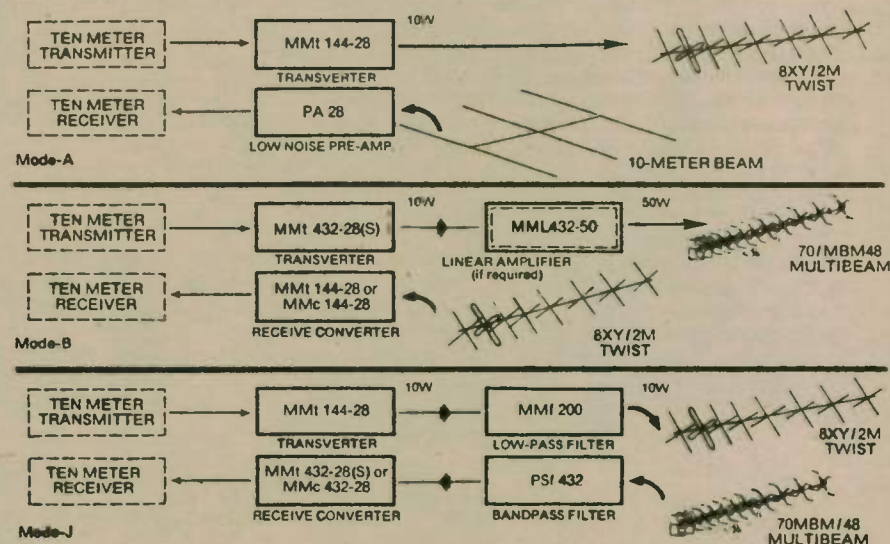
Export Inquiries Invited

## TRANSVERTERS FOR ATV OSCARs 7, 8 and Phase III



Transverters by Microwave Modules and other manufacturers can convert your existing low band rig to operate on the VHF and UHF bands. Models also available for 2M to 70cm and for ATV operators from Ch2/Ch3 to 70cm. Each transverter contains both a Tx up-converter and a Rx down-converter. Write for details of the largest selection available. Prices start at \$199.95 plus \$3.50 shipping.

Attention: owners of the original MMt432-28 transverters — update your transverter to operate OSCAR-8 and Phase III by adding the 434 to 436 MHz range. Mod kit including full instructions \$26.50 plus \$1.50 shipping.



Send 30¢ (2 stamps) for full line catalogue of KVG crystal products, J-Beam antennas, plus detailed specs and application notes on all your VHF & UHF equipment requirements.

|                        |                 |                  |                     |
|------------------------|-----------------|------------------|---------------------|
| Oscillator Crystals    | Crystal Filters | SSB Transverters | FM Transverters     |
| Crystal Discriminators | J-Beam Antennas | M.M. Converters  | Varactor Triplers   |
| Pre-Selector Filters   | Pre-Amplifiers  | Digital Counters | Digital Pre-Scalers |

PLUS a full front end service for 1296 MHz

TAIMD READS MORSE DIRECTLY FROM A SPEAKER TO MY COMPUTER

NOW MY PRINTER GIVES A HARD COPY OF 'CW' USING TAIMD

I CONNECT TAIMD TO A DISPLAY VIA A LOOK-UP (ROM) TABLE

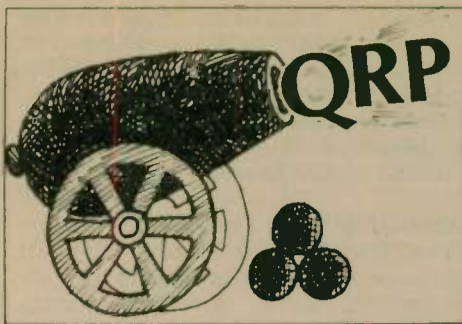


\$199 to \$139...  
WITH REBATES

TELECRAFT LABS, BOX 1185 EAST DENNIS, MASS. 02641

si

Spectrum  
International, Inc.  
Post Office Box 1084 W  
Concord, Mass. 01742, USA



Let's open up a field of discussion. Many amateurs have used the OX oscillator circuit boards as the starting stage of their QRP rigs. Some have added on the amplifier board.

Others have even used the little OX oscillator alone to make contacts. Now, here comes the forum. What modifications have you made to the International Crystal boards to improve performance? Since the company must have sold many thousands of the boards by now, your comments will have a wide audience.

Have you ever built a receiver using their mixer, oscillator, or RF amplifier stages? The use of their "building blocks" opens up a wide area to talk about. Send in your diagrams and parts values.

You know, QRP offers one particular gambit that others can't do. If someone at a hamfest or club meeting asks you what kind of a transmitter you run, you can reach in your shirt pocket and show it to him.

So, let's get something going on the topic of the teeny transmitters.

## DX QRPpp

Sam Weise, W6LXR

Frank Crowe, WB6UNH (Santa Barbara Research Center) has now Worked All Continents — on 250 milliwatts! He says 10 watts on SSB (his normal "QRO" DX power) was too easy, so he started on the lower power.

When he got a signal report from C5ACA in The Gambia on 1/4 watt, the QRPpp WAC was done. Now he's waiting for QSL cards.

Frank is also working on DXCC at 10 watts (83 countries worked so far but not all confirmed) and WAS at 1 watt (40 states so far).

His station consists of a Yaesu FT-301-SD (20-watt version of the FT-301) and a two-element quad at 40 feet. Power is monitored with a low-power wattmeter which has been calibrated at 1 watt using a dummy load and high frequency oscilloscope to measure the peak-to-peak voltage. For power levels less than 1 watt, the 1-watt level is attenuated by dialing in some Hewlett-Packard 355 attenuators to achieve the desired output level. His record so far is WB9LTY in Indianapolis, Indiana on 0.0001 watts (1 watt + 40dB).

He claims it is not masochism, but it does take a lot of patience and you don't necessarily work all the stations you hear. — Hughes El Segundo RC, CA

.....

Check your license expiration date.

## Changes in QRP ARCI

Fred Bonavita, W5QJM

QRP Amateur Radio Club International (QRP ARCI) members have voted overwhelmingly to abolish a so-called "power pledge" as a condition of membership, the club's officers and directors have announced.

The board also announced election of a new awards manager for the club's assortment of low-power operating citations and certificates.

Club President Thom Davis, K8IF said members voted more than 2-to-1 to drop the years-old requirement that QRP ARCI members promise not to run more than 50 watts output on CW or 100 watts output PEP on sideband as a condition of belonging to the organization. The board of directors ratified that vote.

"The old pledge was a sticking point for many prospective members who refused to join because of it," Davis said. "Others refused to renew their memberships, so we put the issue to the club in a referendum late last year, and they voted it out."

However, QRP ARCI will continue to apply the low-power definition (5 watts output on CW and 10 watts output PEP on SSB) to all its contests and operating awards, Davis continued. The club celebrated its 20th anniversary in 1981.

Davis also said William Harding,

K4AHK of 10923 Carters Oak Way, Burke, VA 22015, has been elected awards manager for QRP ARCI, succeeding Doug Crittendon, WB1ESN, who resigned.

Harding will process applications for the club's collection of certificates for achievements in low-power operating.

.....

Where the elite meet to peep.  
3.560 7.030 14.060 21.060 28.060

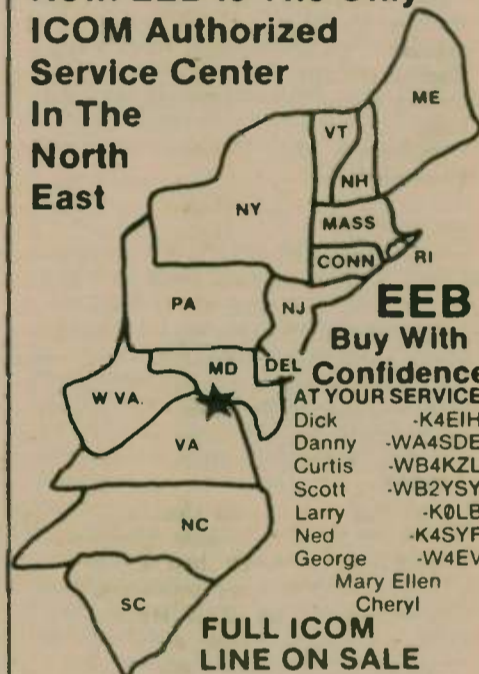
Microphones gather at  
3.690 7.290 14.285 21.285 28.885



# ICOM

## SALE

Now! EEB Is The Only  
ICOM Authorized  
Service Center  
In The  
North  
East



**EEB**  
Buy With  
Confidence

AT YOUR SERVICE  
Dick -K4EIH  
Danny -WA4SDE  
Curtis -WB4KZL  
Scott -WB2YSY  
Larry -K0LB  
Ned -K4SYF  
George -W4EV  
Mary Ellen  
Cheryl

**FULL ICOM  
LINE ON SALE**

| ICOM       | NET       | SALE      |
|------------|-----------|-----------|
| IC 2AT     | \$ 269.50 | \$242.55  |
| IC 3AT/4AT | \$ 299.50 | \$269.55  |
| IC 25A     | \$ 349    | \$314.00  |
| IC 730DC   | \$ 829    | \$739.00  |
| IC 720ADC  | \$1349    | \$1199.00 |
| IC 251A    | \$ 749    | \$669.00  |
| IC 290A    | \$ 549    | \$489.00  |
| IC 451A    | \$ 899    | \$779.00  |

**FULL YAESU LINE ON SALE**

|             |           |           |
|-------------|-----------|-----------|
| FT 208R     | \$ 359.95 | \$323.00  |
| FT 708R     | \$ 359.95 | \$323.00  |
| FT 707      | \$ 810    | \$729.00  |
| FT 101MKIII | \$ 925    | \$799.00  |
| FT 290R     | \$ 399    | \$359.00  |
| FR 7700     | \$ 549    | \$479.00  |
| FT 902DM    | \$ 535    | \$1379.00 |

Becoming your #1 Amateur Store.  
Visit us on your next trip to  
Washington, DC

Call our order desk toll  
free for quote

**(800) 336-8473**

prices subject to change



Tue-Sat

10am-4pm EST



Technical information,

VA orders (703) 938-3350

Store opens 10am Tues-Sat

Close 5pm Tues, Wed, Fri,

Close 9pm Thurs, 4pm Sat

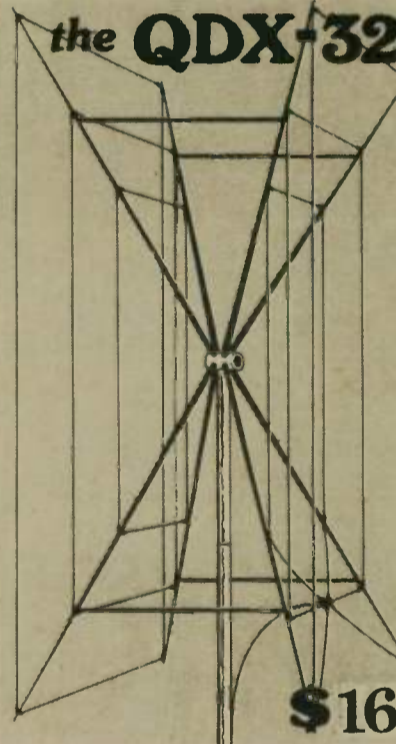


516 Mill Street, N.W.  
Vienna, Virginia 22180

**OUR 10th YEAR  
SAME LOCATION**

Tough New Tri-Band QUAD  
for 10, 15 and 20 meters

the **QDX-32**



**\$169**

- ★ Complete - nothing else to buy!
- ★ Lexan boom for high strength
- ★ No stubs or tuning coils
- ★ UV Impervious fiberglass arms
- ★ Optimum spacing on all bands
- ★ Full legal power on SSB and CW
- ★ Outperforms most tri-band yagis
- ★ Gain: 7dbd — F/B 20-25 db
- ★ Low SWR on all bands

**HI-RELI, INC.**

1738 N. Greenville Avenue

Richardson, Texas 75081

(214) 234-3600

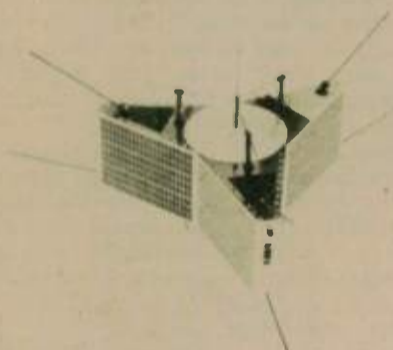


# AMSAT

Radio Amateur Satellite Corp.

P.O. Box 27, Washington, DC 20044

Telephone: 301-589-6062



Dear Fellow Radio Amateur:

Do you know that the AMSAT Phase III Program is designed to bring you a new world wide DX/local Amateur band via communications satellite? This new band will be scarcely affected by the ionosphere, so that unlike the current hf bands or the three new bands we gained at WARC-79, propagation via this band will be 100 percent predictable. For the first time, the technology used to provide the reliability, predictability and ease of use of a two-meter repeater will be applied to provide world wide coverage. The AMSAT Phase III satellite will be capable of providing repeater quality contacts to all stations within its range, be they local to you or DX up to half way around the world. There will be no skip zones in this new satellite communications band: for example, stations in New York, New Jersey, London, Paris, Tel Aviv, Moscow and Tokyo will be able to hold a round table QSO. The potential for nets, Jamboree-on-the-air, RTTY, computer, emergency, and public service communications is tremendous.

You owe it to yourself to be informed about this new band. The new band almost happened last May, but the launch vehicle malfunctioned and the Phase IIIA satellite did not achieve orbit. Our replacement Phase IIIB satellite is a million dollar undertaking. We are going full steam ahead secure in the knowledge that we can do our part to make the new band happen following the successful launch of Phase IIIB. Why don't you join the AMSAT Team and receive regular news as to the status of the Phase IIIB Program.

73,

The AMSAT Team

P.S. We still have one working communications satellite in orbit, AMSAT-OSCAR's 8, and are building a satellite for Science, UoSAT, due for launch in the Fall of 1981. It will contain scientific experiments as well as a slow-scan television (SSTV) camera. This satellite will be ideal for use in classrooms all over the world for live demonstrations of various aspects of space research.

Yes, I want to be a member of the AMSAT Team and receive ORBIT Magazine. Enclosed are my dues of \$16 (\$20 overseas) for 1981 (\$200 for Life Membership).

New Member  Renewal  Life Member  Donation (tax deductible)

Name \_\_\_\_\_ Call \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



### Club officers

Why is one club successful and growing, while another stagnates and folds? The usual answer is "activities." True, but activities don't just happen by themselves. Someone has to think them up, plan them, organize them and see them through to a successful conclusion. And that "someone" is the club officer.

I like to think of club officers as unpaid executives. Good club officers, if paid what they are worth, would cost their club thousands of dollars each year. This is the kind of officer every club would like to have, but unfortunately, many clubs are short-changed.

A good club officer is a club officer every day of the month, not just on meeting nights. He is constantly thinking of ways to improve club operations, and doesn't hesitate to do things to make his ideas successful.

### Nominations

It's election night at the club meeting, and nominations are being made from the floor. Joe Blow is nominated and elected. But is Joe really the best man for the job? Wouldn't it be better to have a nominating committee, consisting of past presidents and others who are seriously concerned with the welfare of the club, to study the membership rolls and decide who would be the most competent officers?

The nominating committee should take into account the member's capabilities, and — most importantly — the member's willingness to serve. Not just a willingness to come to the club meeting and sit at the head table for the evening, but a

willingness to plan and organize club activities on the days between the meetings.

The nominating committee should interview each prospective officer and point out to the member that the club needs his or her particular abilities. They should never minimize the job by saying "It won't take much of your time." Instead, they should get a serious commitment that if elected, the member — as an officer — will be deeply involved with the club office for the duration of the term of office.

Hopefully, the committee will be able to come up with two nominees for each office. In real life, this is seldom possible. However, they should try to get two nominees for president, and one for each

of the remaining offices. Then, if the club constitution permits, vote only on the president before closing nominations on the remaining offices. The unsuccessful candidate for president can then be nominated for vice president, etc.

In future columns, I'd like to cover some of the specifics for each of the club offices. I'd be glad to hear from you if you have some thoughts to offer.

### Attention club treasurers

In future columns, I plan to cover details of each club officer's responsibilities. The job of treasurer has me in a tizzy. I happen to be the treasurer of two radio clubs, and the books are kept differently in each. How are your treasurer's books kept? What figures do you record and where? I'd like to hear from you treasurers, with samples of your worksheets, etc.

### In memoriam

While we're on the subject of people who get things done in your club, let's shed a tear for Someone Else. Here is an article, originally written by Jerry Smith in LIMARC (Long Island Mobile Amateur Radio Club), which I found in the *NARC Newsette* of Nittany Amateur Radio Club, State College, Pennsylvania.

### Someone Else

The radio fraternity was saddened to learn of the death of one of our club's most valuable members — Someone Else.

Someone's passing creates a vacancy that will be difficult to fill. Else has been with us for many years and for every one of those years, Someone did far more than a normal person's share of the work. Whenever leadership was mentioned, this wonderful person was looked to for inspiration as well as results: "Someone Else can work with that group." Whenever there was a meeting to attend, one name was on everyone's list — "Let Someone Else do it."

It was common knowledge that Someone Else was always the one who was happy to see the unfortunate person with an inoperative radio. Whenever the Society was called upon to support a community service project, everyone assumed Someone Else would do it.

Someone Else was a wonderful person — sometimes appearing super-human; but a person can do only so much. Everyone expected too much of Someone

Else. Now he's gone ...! We wonder what we are going to do. Someone Else was a wonderful example to follow, but WHO is going to follow it? Who is going to do the things Someone Else did?

When you have a chance to participate, REMEMBER — we can't depend on Someone Else anymore!

### Can any club top this?

The North Hills Radio Club of Sacramento, California boasts an all-amateur family, all of whom are club members. They are the Cotter family, of Citrus Heights, California. Bill Cotter, KA6JG and his wife Leni, KA6SJB are the proud parents of six daughters — and five of the six are licensed.

Diane Cotter, KA6NEM (Never Enough Money) is 18 and a freshman at Walla Walla College, Walla Walla, Washington. She is determined to graduate as an electrical engineer, just as her dad did from the same college a few years ago. Of course, she keeps in touch with home by radio, which no doubt helps on the telephone bills.

Donna Cotter, KA6NEN is 16 and a junior at the Sacramento Union Academy. (See December 1981 *Worldradio*, page 36, where we ran her picture.) Next comes Deborah Cotter, KA6SJC, who is 13 and in the 7th grade at the Academy. Rachel Cotter, age 10, has passed her Novice test and at the time we're writing this, is awaiting her license. She's in the 4th grade at the Academy. Her younger sister — Sarah Cotter, age 8 — just received her Novice license KA6SMK. She is in the 3rd grade. That leaves the baby, Rebekah, who is 4 years old. Bill and Leni say the only reason she hasn't taken the test is that she hasn't yet learned to multiply figures or to write very well. She's having no problems with the code. She can recite some of the letters verbally, and always sounds off when she hears "CQ."

How did all this get started? Bill and Leni give credit to the North Hills Radio Club Field Day, three years ago. Bill says, "We always like to do things together as a family, so when we heard about Field Day, we all drove to the site in the Sierra foothills. We were just going to look around and see what was going on and come home in a couple of hours."

The older girls operated on the air under the supervision of the licensed amateurs in charge. They became so en-

## EAST COAST #1 GOES NATIONAL THE ANTENNA BANK is East Coast's #1 supplier of ANTENNAS — TOWERS ACCESSORIES

### CUSHCRAFT:

|                                       |          |
|---------------------------------------|----------|
| A3 New Element Triband Beam           | \$165.00 |
| A4 New 4 Element Triband Beam         | \$204.00 |
| AV3 New 3 Band Vertical 10-20m        | \$ 40.00 |
| AV4 New 4 Band Vertical 10-40m        | \$ 81.00 |
| AV5 New 5 Band Vertical 10-80m        | \$ 87.00 |
| R3 20-15-10m Motor Tuned Vertical     | \$202.00 |
| 32-19 19 Element 2m Boomer DX Beam    | \$ 74.00 |
| 214B 14 Element 2m Jr. Boomer 144-146 | \$ 60.00 |
| A147-11 11 Element 2m                 | \$ 33.00 |
| ARX2B 2m "Ringo Ranger" II            | \$ 33.00 |

— COMPLETE LINE ON SALE —

|                            |          |
|----------------------------|----------|
| MINI QUAD HQ-1 6-10-15-20m | \$129.00 |
|----------------------------|----------|

### HY-GAIN:

|                                   |          |
|-----------------------------------|----------|
| V2 New 2m Vertical                | \$ 33.50 |
| TH3JR 3 Element Triband Beam      | \$133.00 |
| TH3MK3 3 Element Triband Beam     | \$175.00 |
| TH5DX New 5 Element Triband Beam  | \$195.00 |
| TH6DXX 6 Element Triband Beam     | \$235.00 |
| 105BA 5 Element 10m "Long John"   | \$ 95.00 |
| 155BA 5 Element 15m "Long John"   | \$145.00 |
| 205BA 5 Element 20m "Long John"   | \$235.00 |
| 14AVO 4 Band Vertical 10-40m      | \$ 48.00 |
| 18AVT 5 Band 10-80m Trap Vertical | \$ 78.00 |

— COMPLETE LINE ANTENNAS ONLY ON SALE —

### ROTORS & CABLES:

|                                                                                        |                |
|----------------------------------------------------------------------------------------|----------------|
| CODE HAM IV/CD45II                                                                     | \$165.00/94.00 |
| Alliance HD73/U100                                                                     | \$92.00/42.00  |
| RGB/U Foam 95% Shield                                                                  | 24¢/ft.        |
| RG213 Mil Spec                                                                         | 28¢/ft.        |
| Mini-8                                                                                 | 12¢/ft.        |
| 8 Wire Rotor Cable                                                                     | 16¢/ft.        |
| Philly Stran Guy Cable in stock — for price & delivery information call (703) 569-1200 |                |

### #1 ROHN TOWER DISTRIBUTOR SALE:

|                                                                                  |          |
|----------------------------------------------------------------------------------|----------|
| 20G 10' Tower Section                                                            | \$ 29.50 |
| 25G 10' Tower Section                                                            | \$ 39.50 |
| 45G 10' Tower Section                                                            | \$ 87.50 |
| HDBX 48' Free Standing Tower                                                     | \$320.00 |
| FR2548 48' 25G Fold-over Tower                                                   | \$695.00 |
| (Freight prepaid on Fold-over Towers Prices 10% higher west of Rocky Mountains)  |          |
| We Stock Rohn Accessories — for price & delivery information call (703) 569-1200 |          |

### HUSTLER SPECIAL COMPLETE LINE:

|                                |                   |
|--------------------------------|-------------------|
| 4BTV 5BTV 4 or 5 Band Vertical | \$74.00/92.00     |
| MO-1 MO-2 HF Mobile Mast       | \$ 17.50          |
| HF MOB RES STD 4kw SLUPER 20kw |                   |
| 10 or 15m                      | \$ 8.00 - \$14.00 |
| 20m                            | \$11.00 - \$15.00 |
| 40m                            | \$13.00 - \$18.00 |
| 75m                            | \$14.00 - \$28.00 |
| SF2 2m 5/8 Whip                | \$ 9.00           |
| HOT "Hustleoff" Mount          | \$ 14.00          |
| BM-1 Bumper Mount with Ball    | \$ 13.00          |

|                             |          |
|-----------------------------|----------|
| AVANTI AP151 3G Glass Mount | \$ 27.95 |
|-----------------------------|----------|

|                         |                   |          |
|-------------------------|-------------------|----------|
| W2AU Balun              | \$17.55 List/Sale | \$ 13.35 |
| Traps 10, 15, 20 or 40m | \$24.95 List/Sale | \$ 18.79 |

### VAN GORDON:

|                            |                   |         |
|----------------------------|-------------------|---------|
| PD 8010 10-80m Wire Dipole | \$ 28.80          |         |
| PD 4010 10-40m Wire Dipole | \$ 25.20          |         |
| PD 8040 40-80m Wire Dipole | \$26.40           |         |
| SD 40 40m Short Dipole     | \$ 21.60          |         |
| SD 80 80m Short Dipole     | \$ 22.80          |         |
| HiQ Balun                  | \$10.95 List/Sale | \$ 7.95 |
| HiQ Center                 | \$ 5.95 List/Sale | \$ 4.95 |

### ORDERS ONLY (800) 336-8473

ALL OTHER CALLS (703) 569-1200  
Shipping cost not included — Prices subject to change  
ALLOW 2 WEEKS FOR DELIVERY  
No COD — We ship UPS  
We reserve the right to limit quantities

THE ANTENNA BANK  
6460 General Green Way  
Alexandria, VA 22312  
(703) 569-1200



## ALL NEW ALL BAND ANTENNA TUNER PRESELECTOR



### Signal/Match

Now - match your antenna to your receiver at any frequency in the 10 KHz - 30 MHz range.

- Low cost
- Fully guaranteed



FREE CATALOG  
For more information write:  
GROVE ENTERPRISES  
Department G  
Brasstown, N.C. 28902

## RADIO STORE

VISIT YOUR LOCAL

**The Radio Place**  
2964 Freeport Blvd.  
Sacramento, CA 95818  
(916) 441-7388

**Ham Radio Outlet**  
2620 W. La Palma  
Anaheim, CA 92801

**Henry Radio**  
931 N. Euclid  
Anaheim, CA 92801

**Ham Radio Outlet**  
999 Howard Avenue  
Burlingame, CA 94010

**Jun's Electronics**  
3919 Sepulveda Blvd.  
Culver City, CA 90230

**Jun's Electronics**  
7352 University Ave.  
La Mesa, CA 92041

**Henry Radio**  
2050 S. Bundy Dr.  
Los Angeles, CA 90025  
(213) 820-1234

**Ham Radio Outlet**  
2811 Telegraph Ave.  
Oakland, CA 94609

**MASSACHUSETTS**  
TEL-COM Communications  
675 Great Road  
Littleton, MA 01460  
(617) 486-3400 or 486-3040

**NEW YORK**  
Radio World, Inc.  
Oneida Cnty. Airport Terminal Bldg.  
Oriskany, NY 13424  
(315) 337-0203  
(800) 448-9338/out-of-state

**MISSOURI**  
Henry Radio  
211 N. Main Street  
Butler, MO 64730

**OHIO**  
Universal Amateur Radio, Inc.  
1280 Aida Drive  
Reynoldsburg, OH 43068  
(614) 866-4267

**TEXAS**  
Appliance & Equipment Company  
2317 Vance Jackson Rd.  
San Antonio, TX 78213  
(512) 734-7793 or (800) 531-5405 out of state

**ILLINOIS**  
Aureus Electronics Inc.  
1415 N. Eagle  
Naperville, IL 60540

**ILLINOIS**  
Aureus Electronics Inc.  
1415 N. Eagle  
Naperville, IL 60540

**ILLINOIS**  
Aureus Electronics Inc.  
1415 N. Eagle  
Naperville, IL 60540



thrilled with the activity, they stayed and operated all night long. Since they hadn't originally intended to stay, they didn't bring coats or sleeping bags, etc. As it turned out, Bill and Leni just about froze while trying to sleep in their car in the mountains that night.

When the girls got home, they started to study for their licenses immediately. And as you can see, they have been remarkably successful.

Bill Cotter is on the electronics staff at the University of California at Davis, California. His is a technical support group, with audio visual equipment, etc. Leni is the manager of a dental office. Both of these fine people are to be congratulated for raising such an outstanding family.

(At press time, we learned that Rachel Cotter received her Novice license, KA6SNN. □



Some years ago, the Washington, D.C. chapter of QCWA sponsored an "Old-Timers" banquet in the vicinity of our nation's capital. In more recent years, the newly formed Northern Virginia group co-sponsored this unusual event.

These "Old-Timers" get-togethers are unique for a number of reasons. QCWA members and guests come from New York down to the Carolinas and out to

western Pennsylvania (and beyond) to be with us. A number of FCC personnel are also in attendance together with some of the ARRL staff and their field personnel. Many other prominent people show up from year to year as part of the group of approximately 250 Amateur Radio operators and friends of Amateur Radio.

This year, as a special event, the "Old-Timers" meeting will be bigger and better because the officers and directors of QCWA will be in attendance. This will provide fellow QCWA members from a number of chapters to meet with each other, discuss QCWA today and tomorrow, as well as exchange ideas on a number of topics.

27 March 1982 is the date to remember. Gaithersburg, Maryland is the place to remember. The big day starts out with a morning closed board meeting followed in the afternoon by an open board meeting and forum which will include an update and report on our organization. Those in attendance will have the opportunity to

make suggestions to the board as well as ask questions. General Manager Ted Heithecker, W5EJ will be on hand to discuss headquarters activities. An early evening attitude adjustment party will be followed by a sumptuous banquet with a prominent speaker. The officers, board members and our General Manager will meet with the FCC Commissioner and staff the day before.

For further details, drop a note to Ted Heithecker, W5EJ at QCWA headquarters, 1409 Cooper Drive, Irving, TX 75061. (You need not be a member of QCWA to attend.)

Next month, Director Leo Meyerson, W0GFQ will update you on our scholarship program. □

Worldradio will trade a paper for a copy of your monthly bulletin or newsletter.

Send us the name of your editor. In exchange for your monthly bulletin, your editor will receive a monthly issue of Worldradio.

## VISIT YOUR LOCAL RADIO CLUB

For information on how to get your club listed in this column, plus receive many other benefits, write to Dave Tykol, WA6RVZ, Club Liaison, Worldradio, 2120-28th Street, Sacramento, CA 95818.

- ALASKA**  
**EIELSON/NORTH POLE ARC**  
 Eielson AFB, Alaska 99702  
 North Pole Jr./Sr. High School  
 3rd Friday/monthly — 7:00 p.m.
- ARIZONA**  
**Metropolitan Amateur Radio Club**  
 J.C. Penny Restaurant, El Con  
 Tucson, AZ 85726  
 Call in on 34/94 K7CC/R  
 Every Saturday morning — 8:00 a.m.
- Tucson Repeater Association**  
 P.O. Box 40371, Tucson, AZ 85719  
 2nd Sat/monthly — 7:30 p.m., Pima Co. Bldg.  
 Net Thurs 7:30 p.m. 146.22/82 (146.28/88 & 147.69/09)  
 (602) 747-8903 or 899-4776
- CALIFORNIA**  
**ARALB (Assoc. Radio Amateurs of Long Beach)**  
 1708 E Hill St. Signal Hill, CA 90806  
 Meets: Signal Hill Comm. Center  
 1st Friday/monthly
- East Bay Amateur Radio Club**  
 P.O. Box 6017, Albany CA 94706  
 Salvation Army Bldg., 36th & Rheem,  
 Richmond (415) 525-6200  
 2nd Friday/monthly — 7:30 p.m.
- 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. W6TO/R 146.34/94
- Marin Amateur Radio Club (Founded 1933)**  
 Coop Meeting Room  
 71 Tamal Vista Blvd.  
 Corte Madera, CA 94925  
 1st Friday/monthly — 8:00 p.m.
- North Hills Radio Club**  
 P.O. Box 41635, Sacramento, CA 95841  
 Meets: Gethsemane Lutheran Church  
 4706 Arden Way, Carmichael, CA 95608  
 3rd Tuesday/monthly
- Satellite ARC, Inc.**  
 Bldg. 21160  
 Vandenberg AFB, CA 93437  
 1st Thursday/monthly — 8:00 p.m.
- Sonoma County Radio Amateurs, Inc.**  
 Box 116, Santa Rosa, CA 95402  
 For information: W6DTV 823-7885  
 1st Wednesday/monthly — 8 p.m.
- S.C.A.T.S./WB6LRU**  
 S. CA Amateur Transmitting Society  
 P.O. Box 1770, Covina, CA 91722  
 Cortez Park Rec. Hall  
 1st Monday/monthly — 7:00 p.m.
- Stockton Amateur Radio Club**  
 U. of Pacific, Rm. 122  
 Kensington & Mendocino Sts.  
 2nd Wednesday / monthly — 7:30 p.m.  
 Rptr. roll call: Wed. 8 p.m. — 147.165/765

- Tri-County Amateur Radio Association**  
 Pomona First Federal Savings and Loan  
 399 N. Garey Ave., Pomona  
 Talk-in 146.625/025 For info. call (714) 985-8184  
 2nd Monday/monthly — 7:30 p.m.
- CONNECTICUT**  
**Tri-City ARC, Inc.**  
 P.O. Box 686, Groton, CT 06340  
 Meets: Groton Public Library  
 Rt. 117, Groton, CT  
 2nd Tuesday/monthly — 7:30 p.m.
- FLORIDA**  
**Indian River Amateur Radio Club**  
 P.O. Box Five, Cocoa, FL 32922  
 1st National Bank, Merritt Island  
 Cor. SR 3 and SR 520, Merritt Island  
 4th Tuesday/monthly — 7:30 p.m.
- GEORGIA**  
**Atlanta Radio Club**  
 Box 77171 Atlanta, GA 30357  
 1st Thursday/monthly — 7:30 p.m.  
 Community Rm./Perimeter Mall Shopping Center  
 Call (404) 971-HAMS Net Sun. 9:00 p.m. 146.22/82
- ILLINOIS**  
**Fox River Radio League**  
 McCullough Park Dist. Bldg. Rm. 101  
 Rt. 31 & Illinois Ave., Aurora, IL  
 (312) 898-2779 for more information  
 2nd Tuesday/monthly — 7:30 p.m.
- Radio Amateur Megacycle Society**  
 Irvingwood Acacia Church  
 3000 N. Plainfield, Chicago, IL 60634  
 (312) 625-2879  
 3rd Friday/monthly — 8:00 p.m.
- Tri-Town Radio Amateur Club**  
 P.O. Box 302, Hazelcrest, IL 60429  
 Above Hazelcrest Police Station  
 Net every Wed. 8 p.m./146.49 MHz  
 1st & 3rd Friday/monthly — 8 p.m. (except July & Aug)
- Wheaton Community Radio Amateurs (WCRA)**  
 College of DuPage, Room 2061  
 Glen Ellyn, IL 60137  
 1st Friday/monthly — 7:30 p.m.
- INDIANA**  
**Allen Co. Amateur Radio Tech 1 Society, Inc.**  
 P.O. Box 10342, Ft. Wayne, IN 46851  
 Allen-Wells Chapter House • Amer. Red Cross  
 1212 E. California Rd., Ft. Wayne, IN 46825  
 3rd Tuesday/monthly — 7:30 p.m.
- Fort Wayne Radio Club**  
 Ron Koczor, K9TUS  
 2512 Glenwood Ave., Fort Wayne, IN 46805  
 The Salem Church  
 3rd Friday/monthly — 7:30 p.m.
- IOWA**  
**Muscatine Amateur Radio Club**  
 Info: Bruce Dagel, WB0GAG (319) 264-3320  
 Meets: Basement Meet. Rm., Public Safety Bldg.  
 Muscatine, IA  
 1st Monday/monthly — 7:30 p.m.

- MASSACHUSETTS**  
**Billerica Amateur Radio Society (BARS)**  
 Honeywell Systems Division  
 300 Concord Road  
 Billerica, MA 01821  
 1st Wednesday / monthly — 7:30 p.m.
- Q.R.A. (Quannapowitt Radio Assoc.)**  
 Masonic Hall — Salem Street  
 Wakefield, MA 01880  
 2nd Friday/monthly — 8:00 p.m.
- MICHIGAN**  
**The Eastern Mich. ARC (EMARC)**  
 St. Clair County Comm. College  
 Student Center Building (Cafeteria)  
 Port Huron, MI (313) 364-9640  
 1st Tuesday/monthly — 7:30 p.m.
- MISSOURI**  
**Heart of America Radio Club**  
 3521 Broadway  
 Kansas City, MO  
 3rd Tuesday/monthly
- NEW JERSEY**  
**Old Bridge Radio Assoc. (OBRA)**  
 Cheesequake Firehouse — Route 34  
 Old Bridge Township, NJ  
 Daily 8 p.m. Net on 147.72.12 MHz  
 3rd Thursday/alternate (odd) months 8 p.m.
- NEW YORK**  
**Genesee Radio Amateurs, Inc. (GRAM)**  
 PO Box 572, Batavia, NY 14020  
 State Civil Defense Center, Batavia  
 (behind NYS School for the Blind)  
 3rd Friday/monthly — 7:30 p.m.
- Long Island Mobile Amateur Radio Club (LIMARC)**  
 146.25/85, 147.975/375, 223.22/224.82, 444.125/449.125  
 Membership: Jerry Kamen, K2QXH, 44 Robin Lane, Levittown, 11756 Net every Mon. 8:30 p.m. 146.25/85  
 Meets 1st Tues / 8 p.m., H.B. Thompson, JHS, Syosset
- Staten Is. Amateur Radio Comm. (SIARC)**  
 Northfield Savings Bank (side entrance)  
 Richmond and Castleman Avenues  
 Call KA2CUS (698-2006) or WA2KQN (981-0372)  
 3rd Thursday/monthly — 8:00 p.m.
- OHIO**  
**Ashtabula County ARC**  
 Ken Stenback, A1BS (964-7316)  
 County Justice Center  
 Jefferson, OH  
 3rd Tuesday/monthly — 7:30 p.m.
- 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 147.075/675 MHz

- Champaign-Logan A.R.C., W8EBG/R**  
 Joe Palmer, KS8M, President  
 2 Meter Net, 147.60-100, Tuesdays, 8:30 p.m.  
 Dinner Meeting, 1st Thursday / monthly  
 Dajolees Restaurant, West Liberty, OH, 7 p.m.
- Findlay Radio Club**  
 1333 W. Sandusky St./Box 587  
 Findlay, OH 45840  
 Repeater 147.75/15  
 1st and 3rd Thursdays/monthly — 7:30 p.m.
- NOARS (Northern Ohio ARS, Inc.)**  
 P.O. Box 354, Lorain, OH 44052  
 K8US (216) 988-2345/near OH T.P. Exit 8  
 3rd Monday/monthly — 7:30 p.m.  
 K8KRG/R 146.10/70 -144.55/145.15 -449.8/444 8
- OREGON**  
**Clatskanie Amateur Radio Club**  
 Route 2, Box 553  
 Clatskanie, OR 97016  
 Clatskanie Grade School Library  
 2nd Tuesday/monthly — 7:00 p.m.
- SOUTH CAROLINA**  
**Keowee-Toxaway A.R.C. (Seneca/Walhalla)**  
 147.87/147.27 W4AJR/JR  
 Seneca Police Dept. Bldg.  
 Call Hum Walker, S/T, KD4WL (803/882-0471)  
 3rd. Tuesday/monthly — 7:30 p.m.
- TENNESSEE**  
**Lakeway Amateur Radio Club**  
 Roy A. Zeigler, Activities Mgr.  
 Rt. 11 Box 61, Morristown, TN 37814  
 State Area Vocational School  
 Last Thursday/monthly — 7:30 p.m.
- Oak Ridge Amateur Radio Club**  
 Dick Church, N4ARO (615) 482-9054  
 Oak Ridge Civic Center  
 W4SKH/R 146.28/88  
 2nd and 4th Monday/monthly — 7:30 p.m.
- Radio Amateur Club of Knoxville (RACK)**  
 PO Box 124, Knoxville, IL 37901  
 Fire Training Center  
 Prosser Road, Talk in 147.90/30  
 3rd Thursday/monthly — 7:30 p.m.
- TEXAS**  
**Garland Amateur Radio Club (GARC)**  
 146.775/146.175 K5QHD/R (info Net Mon. 8 p.m.)  
 Garland Women's Activity Building  
 713 Austin Street, Garland  
 4th Monday/monthly — 7:30 p.m.
- VIRGINIA**  
**Southern Peninsula Amateur Radio Klub (SPARK)**  
 P.O. Box 9029, Hampton, VA 23670  
 Call Steve Silsby, WA4BRL (804) 599-6877  
 VEPCO Bldg. (Pembroke and G St.)  
 1st and 3rd Wednesday/monthly
- WEST VIRGINIA**  
**Jackson County Amateur Radio Club, Inc.**  
 First National Bank of Ripley, WV  
 1st Thursday/monthly — 7:30 p.m.

# The ART of Contesting

Randy Thompson, K5ZD

March is the heart of the spring contest season. With two excellent phone DX contests in the same month, there will be a lot of sore throats showing up for work on Monday mornings. The ARRL International DX Competition runs 6 and 7 March GMT followed by CQ Magazine's prefix extravaganza, the WPX, on 20 and 21 March GMT. Both contests last 48 hours, so add bloodshot eyes to the sore throats! DX contests are the marathons of Amateur Radio and therefore require preparation (and stamina) to insure success.

The ARRL DX contest is pure DXcitement for the W/VE entrant since only stations outside the USA and Canada can be contacted for points. (Note: KL7 and KH6 count as DX.) The rest of the world can only work W/VE. It makes for quite a change having the DX looking for us! Complete rules can be found in the January issue of QST. Let us take a look at some simple strategy to help maximize your contest effort.

The place to start is the weekend before the contest. Try to listen on each band at different times of the day with emphasis on sunrise and sunset. Look for unusual openings, time of the first Europe or JA signal, and DX stations who say they are going to be active in the contest. Conditions will change during the week but the major openings should follow a consistent pattern. A DX contest requires a good knowledge of propagation. Listening during the week prior to the contest provides current band condition information.

Try to get your station prepared, logs out, antennas tuned, and amplifier settings premarked. Since the contest begins early Friday evening, there isn't much time to get prepared at the last minute. The more time available to listen just before the contest will insure that you can

adjust to the band conditions and choose the correct band to start on.

The bands are most crowded at the beginning of the contest. If you have an above average station, pick the band which is most open to a DX population area and call CQ. If, on the other hand, you have a small station, pick the least crowded band which has workable DX signals. After the initial rush is over on the hot bands, you can QSY and do much better. The mass bedlam and confusion at the start can be very frustrating, so don't be disappointed if things start out slow.

Most of the DX will also be active the second evening — begging for QSOs! If you can't get anything going by calling CQ, it is a good time to tune up the band working what you can. After one or two passes, change bands and repeat the process. All bands can be covered very quickly with many good multipliers as a result.

Beyond this point, it is almost impossible to detail a band plan for everyone. Your strategy will depend on your station, location, effort and propagation. Planning is of utmost importance in a contest, but the plan should not be inflexible. Go with propagation and take what you can get, because what happens the first day may be totally different than what happens on the second. Listening on the bands before the contest should minimize surprises.

One thing to keep in mind during the contest is the sunrise and sunset times of active DX areas. On the low bands, sunrise time of the eastern QTH determines when conditions should be best. For example, prime time on 80M to Europe is between 0500 and 0800 GMT, since that is their sunrise window. On the high bands, the western QTH's sunrise signals the openings. Ten meters is open to the east at sunrise in North America. A helpful device for tracking sunrise and sunset times is the DX EDGE by Xantek, Inc. (P.O. Box 834, Madison Square Station, New York, NY 10159). It is a simple device which shows which areas of the earth are in darkness or light at any given moment.

Forty and 80 meters pose special problems for the phone DX contest operator. On 40, most of the DX outside North and

South America must transmit below 7100 kHz and listen up into the broadcast-filled American phone band. The Canadians have some relief from the problem since they are permitted to work below 7100 kHz. This causes quite a mess since they cause tremendous QRM on top of the weaker DX stations. Still, 40M can be very productive for multipliers to the persevering caller. While much DX can be worked on 75M transceive, several countries do not share common phone bands with the USA. Russians, for example, can be found transmitting between 3600 and 3650 kHz. All Europeans must transmit below 3800 kHz, so an Extra Class license is very beneficial.

There are several crucial times to be on certain bands. Most of the activity appears on 160 meters around 0600 GMT. On both 160 and 80, it is important to spend as much time as possible there on the first night since activity is not usually as good on the second.

Sunrise has to be the most exciting time of the contest. All bands are open with the low bands favoring the west and high bands to the east. On the East Coast, stay on the low bands until just before sunrise and then move up to 10 and 15 meters. Try to be on 10 meters just as it cracks open to Europe. In the central and western areas, stay on the low bands and work JAs until after sunrise, then move up toward 10 M band by band. Be sure and check 20M long-path about an hour after sunrise. It is a multiplier bonanza of deep Asians and the Middle East. Check 40M during the last 30 minutes of the contest, as it often has a few easy European and South American QSOs at that time.

Don't spend an excessive amount of time calling a particular DX station (unless you need it for a new country!). Write down his frequency and come back later when conditions improve or the pileup recedes.

In a 750 QSO log with 250 multipliers, each multiplier is equal to only three QSOs. Don't spend more time calling a multiplier than it is worth.

The only similarity between the ARRL

DX Contest and the CQ WPX is they both are DX contests! The WPX is truly an international event, since any station in the world can work any other for contest credit. QSOs count for different point values depending on whether the two stations are in different continents (3 points), same continent (2 points for North America), or same country (0 points). While USA to USA contacts count for 0 points, they are still allowed for multiplier value. With the tremendous number of American prefixes, it is very productive to work them.

The WPX is a DX contest because if you work only USA stations and have a great multiplier but 0 QSO points, your score will be 0! Try to work as much DX as possible and pick up the American prefixes as you can. The points made concerning the ARRL contest are just as applicable here. The WPX gives double point value for contacts on 160, 80 and 40, so it pays to work the low bands.

A good multiplier checklist is most important during the contest to insure that no easy prefixes are missed. I use a piece of paper with a grid on each side. On the front side, I put numbers 0-9 across the top and letters A-Z down the side. When I work a DL1, I put DL1 in grid D-1. A Y23 would go in Y-3, and so on. This makes it very easy and fast to check if the call is a new prefix. On the back, I do the same thing for all the USA prefixes.

The WPX has another rule which makes it a challenging contest. Single operator stations may only operate 30 of the 48 hours. The 18 hours off must be taken in not more than five periods. This leaves plenty of time for sleep, but the time off should be taken carefully. The best off-times seem to be during late night and on Sunday afternoon. Part of the fun is trying to guess exactly when to quit and when to come back on.

A whole book could be written on how to work both of these contests. The only way to really "learn" contesting is to operate. But don't stop reading! Set a goal for yourself before the contest and go after it. □

## TRS-80\* Owners-SEND AND RECEIVE MORSE CODE

- SEND UP TO 40 WPM
- COPY OVER 100 WPM
- STORE MESSAGES
- SIMPLE CONNECTIONS TO CASSETTE PLUGS

Your Model I or III becomes a programmable keyboard keyer that can send morse from the keyboard or from stored messages. Keying is done either by the relay or by the audio output. Received morse is decoded, displayed, stored and printed. The cassette earphone plug connects to the receiver speaker to copy off the air. No hardware except patch cords is required for many setups.

—satisfaction guaranteed—

Cassette with instruction booklet only \$19.95 postpaid. Model I or III, LEVEL II, with at least 16k required.

To order or for more information write:

**ROGO Computer Products**  
4752 DeBeers Drive  
El Paso, Texas 79924

\*Trademark of TANDY Corp.

Have trouble finding time to study for upgrading?  
Do it on your vacation at the . . .  
**OAK HILL ACADEMY  
AMATEUR RADIO  
SESSION**  
JULY 31-AUG. 13, 1982



Two weeks of intensive code and theory starting at your level. Classes from Novice thru Amateur Extra.

- Expert instructors
  - Friendly surroundings
  - Excellent accommodations
- 23 Years of successful teaching

C.L. PETERS, K4DNJ, Director  
Oak Hill Academy Amateur Radio Session  
Mouth of Wilson, Virginia 24363

Name \_\_\_\_\_ Call \_\_\_\_\_  
Address \_\_\_\_\_  
City/State/Zip \_\_\_\_\_

## TRS-80\* I, III OWNERS:

Send and receive CW with MFJ's new CW transceive program and interface. Just plug-in interface, load program and operate. Gives you Tri-Split screen, 3295 character buffer, 10 memories, "Fist Fixer."

All you need to send and receive CW.

**\$99.95**

\*TRS 80 is a registered trademark of Tandy Corporation



TRS-80 Models I and III CW Transceive program and interface lets you send and receive CW. No modifications to rig or computer.

Tri-Split screen for receive, transmit, message index. On screen transmit/receive "LEDs", transmit speed indicator, "Fist Fixer."

**TRANSMIT:** 3295 character (or more) buffer. Preload buffer while receiving. Transmit when ready. Ten 199 character memories. Repeat/link memories. Erase character, buffer, screen. 12-55 WPM. Store 2200 characters for group practice.

**RECEIVE:** Adjustable "Fist Fixer" helps to copy poorly sent CW. Self-adjusting to 100 WPM. Returns to receive when transmit buffer is empty. Store up to 5 screens of received CW.

**HARDWARE INTERFACE:** Plugs between rig and computer. Noise limiter, 4 pole active band-pass filter, post detection filter, tracking comparator. Keys tube or solid state rigs. Tuning, transmit, ON LEDs. 6x1 1/4x3 inches. Aluminum cabinet.

RF shielded. 9-18 VDC or 110 VAC with optional MFJ-1312 AC adapter, \$9.95.

Requires TRS-80 Model I or III with at least 16K. Program supplied on cassette tape.

Order from MFJ — no obligation. If not delighted, return within 30 days for refund (less shipping). One year unconditional hardware guarantee.

Order today. Call toll free 800-647-1800. Charge VISA, MC or mail check, money order for \$99.95 plus \$4.00 shipping and handling. Order MFJ 1210 for TRS 80 Model I or MFJ-1212 for Model III. Enjoy CW. See dealer or call MFJ today.

**CALL TOLL FREE . . . 800-647-1800**

Call 601-323-5869 for technical information, order/repair status. Also call 601-323-5869 outside continental USA and in Mississippi.

**MFJ ENTERPRISES, INCORPORATED**  
Box 494, Mississippi State, MS 39762



meters! How 'bout leaving it to the HANDI-HAM System?

And here's something even more frightful. Many, many widows don't know the value of the equipment owned by their husbands. As soon as word gets around of your croaking, the scalpers swoop down and offer your pretty bride \$250 for the whole shootin' match. Not bad if it's junk — but what if you had \$2,000 worth of communicating stuff there? Your little lady just got took.

There are some steps you can take to

prevent this. The first, and most important, is to *inventory* your equipment — all of it. Make a list with the estimated values of the stuff. And make sure the list is in the hands of someone who's going to be responsible enough to bring it up after the wake. Second, make a will. It doesn't take much time or money. See a lawyer to make sure the thing is done right. Also, you might very well want to involve someone at your bank (look under "Trust Dept." for the right place) if your total assets look like they're

going to be more than \$50,000. When you talk to these people, make sure they explain in detail the steps to your estate of giving a portion to your estate of giving a portion to a charitable organization (ah, I'd get us in there, didn't you?). Estate planning is much more complicated to be dealt with in a will, but suffice it to say that 1) it's no matter how small your estate is; 2) it doesn't take

(please turn to page 39)

## NO CUT CORNERS!

**FT-208R - 2 Meter**  
**FT-708R - 70 CM**



### LIQUID CRYSTAL DISPLAY

The LCD frequency readout provides high readability night and day, along with very low current drain.

### KEYBOARD FREQUENCY ENTRY

All operating frequencies are entered from the front panel keyboard. Unusual repeater splits, scanning, and memory programming are all controlled via the keyboard.

### UP/DOWN MANUAL SCAN

The FT-208R scans in either 5 kHz or 10 kHz steps, while the FT-708R steps are 25 kHz and 50 kHz. Automatic halting on a busy or clear channel is provided, with automatic pause and restart feature. Scan either the band or the memories.

### LIMITED BAND SCAN

You can program upper and lower frequency limits, then command the transceiver to scan that segment or exclude that segment.

### TEN MEMORY CHANNELS

The memories may be used for either simplex or repeater operation. No need to throw a "5 UP" switch for those 15 kHz channels, either!

### LONG-LIFE MEMORY BACKUP

A Lithium cell provides the memory backup function. Now you won't dump memory when switching battery packs.

### LOW CURRENT DRAIN

Typical standby current drain is 20 mA, for long battery life.

### 450 mA H BATTERY PACK

With more capacity than competing packs, the FNB-2 battery pack gives you those precious extra minutes of operating time that might prove critical in an emergency!

### HI/LOW POWER SWITCH

In the high power position, the FT-208R will wallop at 2.5 watts output, while the FT-708R output is 1 watt. Switch to low power for output on the FT-208R, 200 mW or less for even greater battery life.

### PRIORITY CHANNEL

A priority channel may be programmed from the keyboard, allowing you to check a frequency while operating on another.

### AUTOMATIC BAND AND MEMORY SCAN

Automatic scanning of the band or memories (with pause or restart segment of the band) with pause and restart feature.

### 16 BUTTON DTMF PAD

For autopatch operation, a 16 button DTMF keypad is built into every FT-208R and FT-708R.

### PROGRAMMABLE SPLITS

The popular  $\pm 600$  kHz shift is standard on the FT-708R (and can be programmed on the FT-208R). Up to 4 MHz may easily be programmed from the keyboard. Additionally, a split memory feature provides a third method of operating on a band.

### OPTIONAL 32 TONE CTCSS

Easy interface is provided to the SSY-32 CTCSS Encoder, providing 32 subaudible tones for repeater operation.

### LOCK SWITCH

The keyboard lock switch allows you to prevent entry from the keyboard, thus preventing frequent frequency change.

### FULL LINE OF ACCESSORIES

A Yaesu tradition, a full line of accessories is available to maximize your enjoyment of the FT-208R and FT-708R.

For more than a quarter of a century, Yaesu has produced reliable, high-performance communications equipment for the Amateur and Land Mobile services. Contact us today for full information on our cost-effective line of HF, VHF and UHF transceivers — at Yaesu we want you to get your message across!

**YAESU**  
*The radio.*

Price And Specifications Subject To  
Change Without Notice Or Obligation

YAESU ELECTRONICS CORP. 6851 Walthall Way, Paramount, CA 90723 • (213)  
Eastern Service Ctr., 9812 Princeton-Glendale Rd., Cincinnati, OH 45246 • (513)

### Planning for the inevitable

Face it... one of these days you're going to make that *permanent* QSY! At that time, you'll spring free of those pileups on 20 forever! All of the contests and certificates you've garnered won't make a whit of difference. You'll be in euphoria (we hope!). But what about those you leave behind?

Will you have made some provisions to make sure your loved ones can live out the rest of their dreams with little disruption, albeit without you? Will you have made out a *will*, in other words? Don't have enough of an estate to worry about, you say? That's the cry of a true *lid*. Let's take a look at your estate — you might be surprised at what you've got to leave behind.

First of all — insurance. It's not at all uncommon these days for a worker to be insured through his employer, as well as taking out some individual life insurance as well. What with double indemnity clauses, escalation paragraphs and such, it's not out of the question for a person to be carrying more than \$100,000 worth of insurance alone.

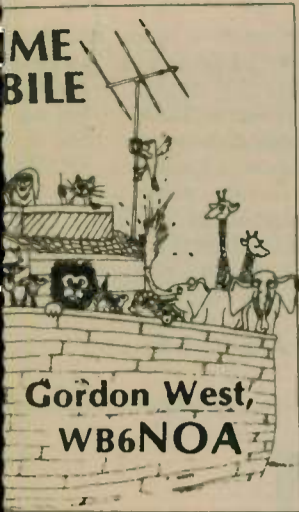
Let's take a look at personal property. You own a house? That's a tremendous amount of money in today's market. Own any other real estate — lake home, hunting blind, shoreline? All of this becomes a part of your estate when you die.

Savings — tough to do these days, but it really adds up. Many people put a little away now and then to make it easier in the years to come.

**Independent Retirement Account**... all the rage these days. This is the investment which *everyone* is saying *everyone* should get into. If you put \$2,000 a year into an IRA beginning at age 25 — by the time you're 65 you'll have over \$1 million.

Still think you don't have an estate? Wrong! Even if the bottom drops out of your personal and business life, you still have possessions that are distributed to your family and your interests *should* be of *prime* importance to you *right now*. The day after your funeral is too late. Financial planners say that if you don't decide how your estate is to be divided, the government will do it for you. And believe me, their idea of an equitable distribution is probably far different from yours!

So what has this to do with Amateur Radio and the Courage HANDI-HAM System? Just this: part of your estate will be Amateur Radio gear. Unless members of your family are amateurs themselves, chances are pretty good that your gear will be sold to some klutz who doesn't respect the love you've put into those knobs and dials. Imagine — that Sooper Sniffer-1000 transceiver that got you 7-Band DXCC is going to rust in the basement of someone who won't take it off 75



equipment requires good grounding and good antenna characteristics. Over the last few months we have stressed the importance of a good ground system for high frequency operation. Remember, a good high frequency ground system offers a large surface area to the water. A small wire from the back of your tuner to the engine is one of the worst grounds around. More about grounds in upcoming months.

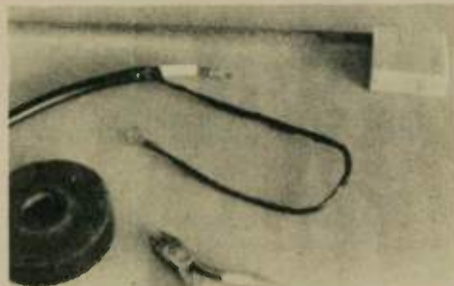
This month, let's take a look at coaxial cable characteristics. Not all coax is the same — and some coax is downright un-recommended for marine installations.

Coaxial cable contains a center conductor, a dielectric, a shield and a jacket.

The center conductor is usually solid or stranded copper wire which carries the signal.

which offer more insulating value than a solid dielectric. Foam has an overall lower loss when new. Mariners are cautioned that foam dielectric will slowly absorb moisture and, after a few years, foam dielectric may actually have a higher loss characteristic than a solid dielectric.

If you plan to change your coax cable aboard the boat every other year, foam is fine. However, if you plan to run coaxial cable down the mast, stay away from foam. Through capillary action, the mast-run foam coax may actually absorb water! This is not good.



Make good coax connections to keep out moisture!

#### Shield

The shield is a foil or copper braid that covers the dielectric and center conductor. The shield prevents pickup of un-

wanted signal or noise by the center conductor.

Braided shield may have coverage anywhere from 50 to 90 percent. If you purchase bargain CB coaxial cable, chances are the braid coverage may only be about 60 to 80 percent. This is not good at any amateur frequency.

A good quality braid will offer at least 90 to 95 percent coverage. This is good coax. A foil shield will yield 100 percent coverage and is obtained by wrapping a flat continuous piece of foil around the dielectric. Foil shield is somewhat rare at 50Ω, and very expensive.

The coaxial cable jacket is the outer protective covering and is usually polyvinyl chloride (PVC). A good quality jacket with no nicks or cuts in it will keep out moisture fairly well in marine environments.

Coaxial cable is identified by U.S. government standards. The "R" stands for radio frequency, and the "G" stands for government. The "8" is a number assigned to specific government types of coax, and the "U" means a universal specification. If "A", "B" or "C" appears after the designation, it means a revision or modification to the original specifications.

Types not marked "RG" are primarily intended for use where application is not met by some government type. There are many other types of cables designed for specific applications for Amateur Radio

rupees per month Calcutta to Gang there three days altitude, and woul Residency. After th would go by camel I would go by plan

I left Jubbulpore with six pith hel round my neck an belongings, with or Great Eastern Ho would be met by a rived at the hotel several hours unti said I was acting su I had to meet a Ca said, "Oh, you mu have a room for you I went with every my topees, and the gone out to tennis later."

At about 2:00 a.m. produced the capt at me and said, "Y bone. You'll be c anywhere near Tib you back to Jubb GHQ, who told him proceeded to visit E hospital knew what except they said he Tibet. He then told ried a Tibetan girl in Lhasa, and wante to die.

A few days later rived in Gangtok, Sir Basil Gould at met the Sikkim doc captain's diagnosis survive the journe must have a man t no choice but to se

Several days we shell hit.

Sir Basil called said, "You have a do, and better mov my instructions a Basil, who after a tions, took me out

#### Correction

Number 1981 issue of the Mari column, I incorrectly stated name of CLAMMARO. Mr. N6HGU was listed as the CLAMMARO chairman. This was in error. Hines is reported not to be CLAMMARO.

Information is that the new CLAMMARO is Mr. Thurston N6QX of Chula Vista, California. Mr. Smithey was also the past chairman of CLAM-

Mr. Hines adds the following coming their activities: "In addition to net control station, CLAMMARO is devising new methods to assist the new control operation identification of questionable stations. Comments Ramsey Armstrong.

Mr. Hines adds the following coming their activities: "In addition to net control station, CLAMMARO is devising new methods to assist the new control operation identification of questionable stations. Comments Ramsey Armstrong.

Mr. Hines adds the following coming their activities: "In addition to net control station, CLAMMARO is devising new methods to assist the new control operation identification of questionable stations. Comments Ramsey Armstrong.

Mr. Hines adds the following coming their activities: "In addition to net control station, CLAMMARO is devising new methods to assist the new control operation identification of questionable stations. Comments Ramsey Armstrong.

Mr. Hines adds the following coming their activities: "In addition to net control station, CLAMMARO is devising new methods to assist the new control operation identification of questionable stations. Comments Ramsey Armstrong.

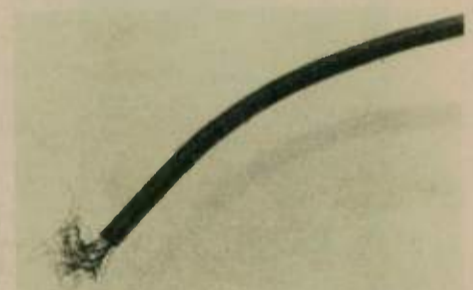
Mr. Hines adds the following coming their activities: "In addition to net control station, CLAMMARO is devising new methods to assist the new control operation identification of questionable stations. Comments Ramsey Armstrong.

Mr. Hines adds the following coming their activities: "In addition to net control station, CLAMMARO is devising new methods to assist the new control operation identification of questionable stations. Comments Ramsey Armstrong.

Mr. Hines adds the following coming their activities: "In addition to net control station, CLAMMARO is devising new methods to assist the new control operation identification of questionable stations. Comments Ramsey Armstrong.



Check your coax for moisture with a VOM (on Rx10,000 — not with 10V).



Bargain foam coax may absorb water.

The dielectric is an insulated barrier that prevents the loss of the signal from the center conductor. This insulation is made either of foam or polyethylene. Foam dielectric contains minute air holes,

### Still More Usable Antenna For Your Money... PLUS 30 Meters!

That's right, Butternut's new Model HF6V offers you more active radiator on more bands than any other vertical of comparable height at any price. The HF6V's exclusive Differential Reactance Tuning™ circuitry lets the entire 26-foot antenna work for you on 80/75, 40, 30, 20 and 10 meters, and a loss-free linear decoupler provides full quarter-wave unloaded performance on 15 meters. Better still, the HF6V can be modified—without surgery—for the remaining WARC bands when the time comes. Here are just a few of the features that make the HF6V the ideal WARC antenna for your new WARC station:

- ★ Completely automatic bandswitching 80 through 10 meters, including 30 meters (10.1—10.15 MHz), 160 through 10 meters with optional TBR-160 unit
- ★ Retrofit capability for 18 and 24 MHz bands
- ★ No lossy traps to rob you of power. The HF6V's three resonator circuits use rugged HV ceramic capacitors and large-diameter self-supporting inductors for unmatched circuit Q and efficiency
- ★ Eye-level adjustment for precise resonance in any segment of 80-75 meters, including MARS and CAP ranges. No need to lower the antenna to QSY between phone and c.w. bands
- ★ For ground-level, rooftop, tower installations; no guys required.

For complete information concerning the HF6V and other Butternut products, contact your dealer or write for our free catalog.

#### Suggested amateur net prices:

- Model HF6V (automatic bandswitching 80-10 meters) ..... \$159.00
- Model TBR-160 (160 meter base resonator) ..... 39.50
- Model 30MCK (30 meter conversion kit for HF5V-II/HF5V-III) ..... 29.50
- Model RMK-II (roof mounting kit with multiband radials) ..... 41.50



**BUTTERNUT ELECTRONICS CO.**

GARY AIRPORT BOX 356E Rte. 2  
SAN MARCOS, TX 78666

### RADIOTELETYPE FREQUENCY LISTS RTTY

WORLDWIDE RADIOTELETYPE STATIONS  
FREQUENCY ORDER (7th edition)

ORDER R  
\$12.00 U.S.P.P.

Frequencies of stations which have been logged in the last part of 1981. Frequent sign, name of the station, ITU country symbol, times of reception and transmission included. All types of stations are listed, including schedules of 82 news services on 641 frequencies. 178 special RTTY operation abbreviations are included. List of 208 GENTEX destination indicators is attached. Covers all RTTY stations from 3 MHz to 30 MHz, air, metro, government, military, diplomatic services. The latest RTTY list in existence. A must for the serious RTTY enthusiast — has full information.

NEWS SERVICES FREQUENCIES LIST  
GLOBAL (2nd edition)

ORDER P  
\$8.00 U.S.P.P.

Comprehensive manual completely covering the field of Radioteletype news monitoring. Contains all needed information on antennas, receivers, terminal units, monitors, transmitters, frequencies and times of transmission for most world radioteletype news services. Monitoring these news sources is fascinating shortwave listening. Contains three different master lists of times of transmission, frequencies used, plus the ITU list of over 50 different news services in the world.

WORLDWIDE ELECTRONICS, INC. • 1287 Alder Drive • Reynoldsburg OH 43068

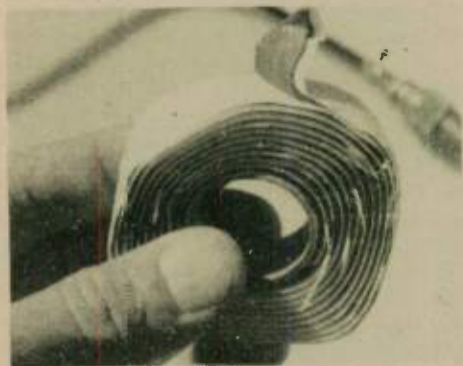
Do  
rem  
you  
O

Mike  
beginning  
— a wor  
The  
disabled  
with phy  
As a  
not been  
HAM stu  
making t

CC  
Coura  
Golde

use. These are identified in various ways by each individual manufacturer.

Most Amateur Radio installations will use 50 ohm type coaxial cable. This impedance will match the 50 ohm transmitter, and hopefully will match into a 50 ohm antenna. When all impedances are perfectly matched, the standing wave ratio — with the proper antenna load — will look flat.



Use a sealant to cover marine coax connectors.



The sealant will keep out moisture aboard.

The small coaxial cable, RG-58/U, is ideal for runs under 10 feet. It's perfect for small jumper cables on test equipment. It's fine to use for high frequency QRP mobile installations. Its low loss, small size and flexibility makes it easy to work with.

RG-58/U will usually vary in construction from a solid or stranded conductor. The center conductor is usually 20 AWG.

RG-58/U may be purchased in either foam or a poly-dielectric. Choose the poly-dielectric to keep out the moisture.

When choosing the coax, look for at least 90 to 95 percent braid. The 95 percent braid is the best you can do.

The next size up of 50 ohm coaxial cable is called "miniature 8" coax. It's a great deal smaller than the large RG-8/U, but only a little bit larger than the small RG-58/U. It has very low losses compared to RG-58/U.

Berk-Tek has a trademark of "RG8X". They claim it reduces the size by 40 percent of RG-8/U while maintaining comparable attenuation. Saxton calls this relatively new type of coaxial cable "#8315".

This small type of RG-8/U is preferred for marine installations when you can't run the larger cable. One hundred feet at 150 MHz offers only a 4dB loss. It's easy to use and mates with all PL-259 connectors using a UG-176 insert. Remember, use the next size up insert for this type of cable.

The center conductor is usually 19 strands of copper that will not fatigue with repeated flexing.

#### RG-8/U

The large coaxial cable that we are all familiar with is typically called RG-8/U. It offers extremely low loss, low noise, and will handle heavy powers.

When you are out buying this type of cable, you will probably find many different varieties. Generally speaking, the

more money you spend, the lower the losses.

Take, for instance, 100 feet of RG-8/U coaxial cable. If you buy it at a local CB store, it could have a 100-foot loss as high as 2½dB at 100 MHz. However, if you buy it at an Amateur Radio store carrying top quality coaxial cable, you may find that the loss can be as low as 1½dB per 100 feet at 100 MHz. At VHF frequencies, that 1dB can make a big difference.

An example of the different types of RG-8/U is from Saxton Company. Saxton #1582 is their regular everyday coaxial cable. Saxton #8282 offers a dramatic increase in performance and at least a 1dB

decrease per 100 feet at 100 MHz of attenuation.

What I'm trying to say is don't buy your coax from a CB radio store. That coax is generally thinly shielded, small center conductor, and may be considered "bargain coax." Buy your coaxial cable at a reputable Amateur Radio dealer, and check out the attenuation figures.

Stay away from foam coax. Although the attenuation looks slightly less when you buy it new, the attenuation will generally be slightly more after a year or so in operation.

Choose quality coax for a quality marine installation!

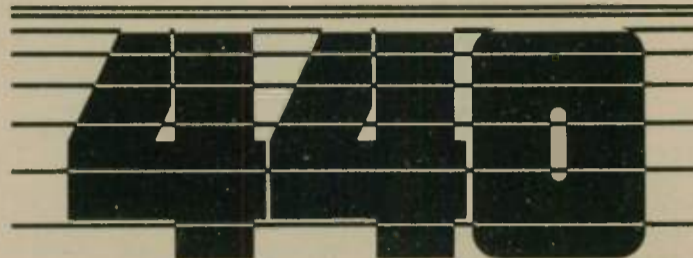
NEXT MONTH, lithium batteries for your HT board.

## VHF radiation

There is a radiation emission from antennas of walkie-talkies that can cause serious problems. The emission is known as non-ionizing radiation, which is a form of energy heat that is absorbed by the body. The human eye, and particularly the lenses of the eye, cannot relieve itself of the heat transmitted and this can lead to cataract problems and other eye diseases. All users of these radios are being advised to hold the unit at least 3 inches from the face and to avoid contact with the antenna and the eyes.

—New Jersey Masonic RC

Check your license expiration date.



## SANTEC'S ST-7/T

SANTEC•NOLOGY breaks into the 440 band with style! The new ST-7/T synthesizes the entire band in 5 kHz steps, works both up and down repeater splits and does it all right from your hand, with versatile power options of 3 watts, 1 watt or even 150 milliwatts (all nominal), to reach out to where you want. The high power mode of 3 watts radiates on 440 like 5 watts on 2 meters ... and that's a handful!

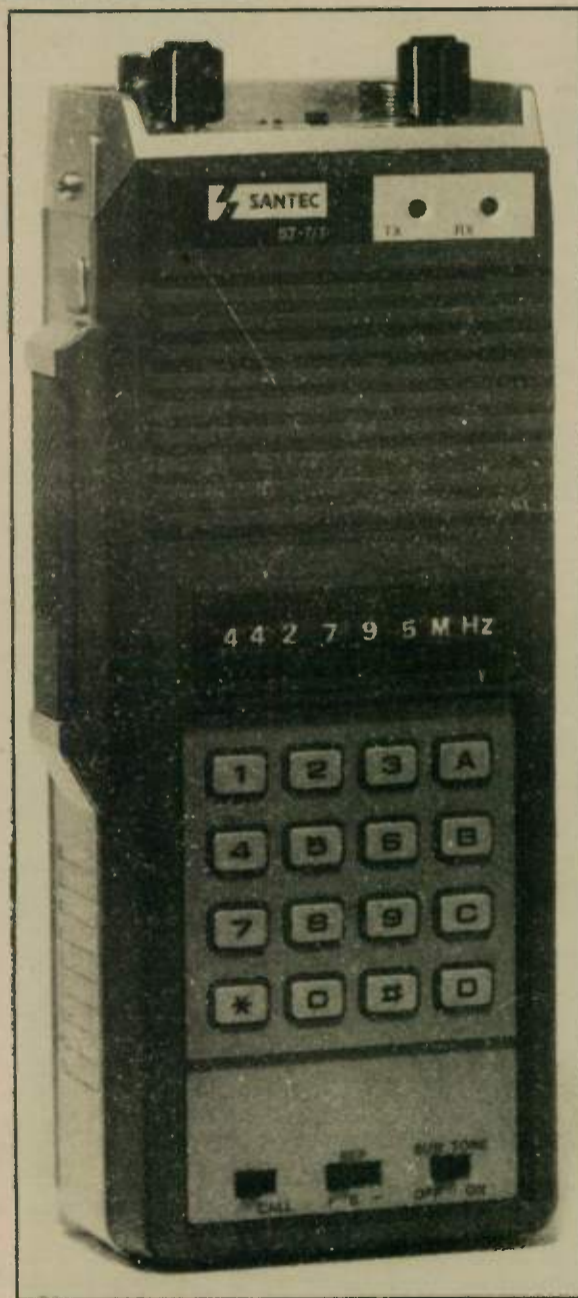
Tones? This one has them ... tones and subtones! The 16 button tone pad is a SANTEC Standard at no extra cost, and the ST-7/T's optional synthesized subtone encoder is controlled by the radio's front panel switch.

All the regular SANTEC accessories used with your HT-1200 fit the ST-7/T as well, meaning that you can enjoy both bands fully with a smaller cash investment. Grab the new SANTEC ST-7/T and join the fun on 440 MHz.



Accessories for SANTEC Handheld Radios clockwise from upper left:

- Leather Case (ST-LC)
- Base Charger & Power Supply (ST-5BC)
- Remote Speaker (MS-50S)
- Mobile Charger (ST-MC)
- Speaker Microphone (SM-1)



©1982, Encomm, Inc.  
2000 Avenue G, Suite 800, Plano, Texas 75074  
Phone (214) 423-0024 • TLX 79-4783 ENCOMM DAL  
Repairs, Parts & Service Available...

Encomm, Inc. 2000 Avenue G, Suite 800, Plano TX 75074

Please send me more information about  The ST-7/T  Authorized SANTEC Dealers

NAME \_\_\_\_\_ CALL \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

YOU MAY SEND A DUPLICATE OF THIS FORM.

# AWARDS

Scott R. Douglas Jr., KB7SB  
P.O. Box 9990  
Glendale, CA 91206-0990

In this month's column I would like to deviate from our normal display of awards and information to present a topic of interest to all award enthusiasts and DXers.

During these last few months, Carl D. Henson, WB4ZNH has launched a campaign against net and list operations with a goal of changing the ARRL's DXCC criteria regarding Rule 12.

Carl proposes that the ARRL disallow contacts made on nets and lists from credit toward the DXCC award program. He suggests a change of wording regarding DXCC Rule 12 to state that the taking of lists and the solicitation of DX stations to operate from a list or DX net be considered poor operating ethics.

In his letter, which is printed in its entirety below, Carl states (in paragraph 2) that he feels DX nets and lists are a major contributor to problems he feels we amateurs and himself have encountered. He fails, however, to state what kind of problems they are.

In paragraph 3, he talks about unethical list-takers but fails to state that there are those in our hobby who act in an unethical manner in other areas of the hobby, including pileups and "Big Gun" DXers antics, which are experienced continually by those of us less fortunate with equipment.

In paragraph 6, he states that he is not one to sit idly by and watch DX become a liability to Amateur Radio, and by previous statements leaves the entire burden on DX nets and lists. He has forgotten to discuss the poor operating

decorum that many U.S. amateurs exhibit when in pileups that have actually promoted DX net and list operations to the level they are today.

Dear Fellow DXer,

Something has been bothering me in recent months. I am sure you have been equally distressed at the growing problem of intentional QRM and poor operating ethics today. There are many reasons for this, but few solutions. I recognize the problems outlined here are not the only ones.

While Martha and I were operating /5X in Uganda in 1980, several stations asked us to either let them take a "list" or check-in to their "DX net." However, we feel "lists" and "DX nets" are overall the most significant and major contributors to our problems.

DXCC Rule 12 covers "Operating Ethics." Why can't we use it to stop unethical list-takers and DX net controls? The reason is we have no way to prove that the list-taker or net control is taking calls on the phone or that he is listening for his friends only. I have been the victim of a list-taker's selective hearing and you have been, too. Even if you know what he is doing, there is no way you can prove it. Some frustrated DXers are doing something about it, but what they are doing is very harmful to our hobby. I want you to do something constructive. Write letters to change Rule 12.

I propose the Awards Committee of the ARRL modify Rule 12 by adding a new paragraph (d). I suggest appropriate wording should be: "For (a) and (b) above, the taking of 'lists' and the solicitation of DX stations to operate from a 'list' or 'DX net' is poor operating ethics."

Already this year the ARRL changed Rule 12 to correct another problem by defining "confirmation procedures" (QSL'ing) as "operating." I understand the change was based on less than 140 letters. Surely we can rid our bands of this problem with a few hundred letters. I suggest one to your representative on the DXAC and above all to John Lindholm, W1XX at ARRL. There will be a small but very vocal minority opposing such a move. Therefore, it is very important that each of you write letters!

I am not one to sit idly by and watch DX'ing become a liability to Amateur Radio and an embarrassment to you. I hope you are similarly concerned and will write today expressing YOUR opinion.

Very 73 and good DX,  
CARL HENSON, WB4ZNH  
Jonesboro, Georgia

International Mission  
Radio Association Inc.

**IMRA**  
People Helping People

**SERVICE TO MISSIONERS**  
(all denominations)

|                         |                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------|
| <b>MISSIONARY NET —</b> | 14.280 MHz, Mon. thru Sat.<br>2:00-3:00 Eastern Time<br>Annually 11,000 check-ins,<br>5,000 traffic |
| <b>MEMBERSHIP —</b>     | 450 amateurs — 40 countries; Directory & bi-monthly newsletter.                                     |

All welcome to join.  
For further information, contact  
**Br. Bernard Frey, OFM, WA2IPM**  
1 Pryer Manor Road • Larchmont, NY 10538

It is apparent that Carl is not a fan of list-type operations and because of his feelings, has presented a completely biased point of view without regard for the many other factors involved, thereby contributing to poor operating ethics.

Jack Bock, K7ZR of the Western Washington DX Club stated in the club's last newsletter that he could not help noticing the similarity between banning DX nets and lists to the slashing of welfare and social programs. Per K7ZR, it amounts to "supply side DX'ing" and the "little pistols" get it in the neck again.

Supply side DX'ing appeals to the "Big Guns" who are usually on the sunny side of 300 countries. It certainly is convenient when you can wander into pileups and be assured of making the contact on the first, second or third try. But how frustrating for the "Big Gun" to have to wait on the list like thousands of us with only a tabletop kilowatt and a tri-bander at 50 feet — or even 100 watts and a vertical.

Supply side DX'ing can work if the DX operators are crackerjack operators. Those guys can work the pileups down to the barefoot and verticals in short order. But there are the others — who are in the majority — with less moxie or only limited time to spend satisfying the endless W/K demands, and because they inevitably get smothered under non-stop pileups, many need and actively seek nets and encourage lists to make the most productive use of their limited operating time.

If the idea is to let most amateurs contact the rare and not-so-rare DX (even if they only get very short contacts), then lists and DX nets make sense. If the idea is for "Big Guns" to monopolize the DX until it naturally trickles down, then supply side DX'ing makes sense. Your position will be directly related to your operating conditions, in many cases. Of course, there are exceptions on both sides.

Outlawing DX nets and list operations would be like throwing out the baby with the bath water.

Thanks, Jack, for your brilliant thoughts and comments.

When will it come to pass that John

Doe Amateur will acknowledge the right of his fellows to enjoy the hobby in their own way so long as they respect the laws governing their licenses and those of common courtesy, without demanding that they abide by his value system and demanding that his way is the only right way???

I, for one, am tired of those who would tell us how we must/should enjoy our hobby. I believe it is about time that we acknowledge the right of each amateur, (regardless of class of license), to "do their own thing" and set their own values, so long as they adhere to proper operating practice as set forth by the FCC and not self-appointed guardians of whatever. We need to return to just being Amateur Radio operators enjoying that which this wonderful hobby has to offer, each in his own way. After all, would it not be boring to tune the bands and find out that the exact same conversation or activity was on each frequency we listened to? Variety is the spice of life, and it is this variety that has made Amateur Radio keep its appeal in my house all these years.

Please write to the ARRL, Attention DXCC Desk, Don Search, 225 Main Street, Newington, CT 06111, stating your opinion. Be heard!

Oh yes, I can tell all of you that it has been my experience that most net controls play the games fair and have the interest of all amateurs at heart. Yes, I am sure that upon occasion some poor operation is displayed, but for the most part, DX net controllers give of themselves and enjoy being of service to the amateur community in general. And believe me, it's a lot of work.

Now back to awards.

## The Cheshire Award

The Cheshire Award is available for contacts with amateurs of Cheshire County, ENGLAND, in three categories: Gold for a total of 50 points; Silver for a total of 30 points; and Bronze for a total of 15 points.

Stateside stations acquire points as follows: CW-SSB-AM contacts count for 5 points each. FM contacts count for 10

## MFJ SPEECH PROCESSOR

Punch thru QRM with up to 400% more RF power



**\$59<sup>95</sup>**

MFJ Super Logarithmic Speech Processor plugs between your microphone and transmitter to give you up to 400% more RF power.

IC logarithmic amplifier strengthens weak valleys, reduces peaks of speech. Active filter concentrates power, gives clean audio for maximum punch. RF filtered. 9 V battery.

Two models. LSP-520BX II (pictured) \$59.95. 4x2x6 inches, deluxe cabinet. LSP-520 BX (not shown) \$49.95, standard MFJ cabinet, 2x3x4 inches. One year unconditional guarantee.

Try it. If not delighted, return within 30 days for refund (less shipping). Order today. Call toll free 800-647-1800. Charge VISA, MC. Or mail check, money order. \$3.00 shipping.

**CALL TOLL FREE ... 800-647-1800**

For technical information, order/repair status, in Miss. outside continental USA, call 601-323-5869

**MFJ ENTERPRISES, INC.**  
BOX 494, MISSISSIPPI STATE, MS 39762



## IS YOUR LICENSE on DISPLAY???

### 101 - 101P

This custom made call letter display is made from your choice of one piece select hardwood. Each letter is 1 1/2" square (6 letter max.), gold eagle and brass handle plate included. Pse include your handle and year of license issue. Avail. with gold pen mounted on right side (101P), a very nice gift or club award. 101 - \$20.00 101P - \$23.75

### 104 - 104RL

Our license shield is made from quality hardwood of your choice. Approx. 12" x 12" x 1" thick, 2" engraved call letters (6 letters max.), plexiglass cover for your ticket, brass handle plate included. Pse include your handle and year of license issue. Avail. with 1 1/2" raised letters (104RL). This shield is our number one club award. A quality display! 104 - \$14.50 104RL - \$20.00

INFORMATION ON REQUEST

PSE ADD \$2.50 POSTAGE  
NYS RES. ADD SALES TAX

ALL WORK GUARANTEED

## A&M WOODCRAFT

AI, WB2GJQ

We specialize in quality hardwood...

- CLUB AWARDS 15% Discount
- Custom Made AWARDS, PLAQUES, SIGNS, DISPLAYS
- CHOICE OF HARDWOODS  
OAK, CHERRY, MAPLE, BLACK WALNUT, MAHOGANY, ASH, BUTTERNUT, AND MANY MORE HARDWOODS AVAILABLE

**A & M WOODCRAFT**  
PO Box 243  
Rome, NY 13440  
(315) 337-5642

"AL" WB2GJQ

points and contacts via SSTV-RTTY-OSCAR count as 15 points. Send your log extract (GCR), along with \$3 or 10 IRCs, to: Award Manager, G4EJA, J. Maynard, 10 Churchfields, Widnes, WA8 9RP, Cheshire, ENGLAND.

## the Cheshire Award

presented to

Scott R Douglas, KB7SB

Cheshire is an historic county in England's north west which has been an important communications route since Roman times, 2,000 years ago. Now a modern, high technology county, Cheshire is home to many industries which are at the forefront of modern science. The world's largest reversible radio telescope at Jodrell Bank and other Cheshire based research centres are steadily pushing back the frontiers of civilisation's knowledge and achievements.

*Scott R Douglas*  
Jodrell Bank, G4EJA  
Award Manager

Award No Sample

Endorsed by  
IARS  
CHC

Classified  
**GOLD  
AWARD**

issued by the Radio Society of Zambia to licensed amateurs and SWLs for confirmed contact with stations in Zambia on a point system as follows. Contacts on 7, 14, 21 and 28 MHz count as 1 point. Contacts on 1.8 and 3.5 MHz count for 2 points each. Stateside stations require a total of 10 points to qualify for this award.

Endorsements for CW, AM and SSB will be applied if requested at the time of your application. Send your log extract (GCR) along with \$3 or 10 IRCs to: RSZ Awards Manager, Box 332, Kitwe, ZAMBIA, AFRICA.



### Mississippi Valley RC Iowa Award

This award is issued to any amateur who has worked at least 19 counties in the state of Iowa.

Send your log extract (QSLs not required) along with \$1 to: Mississippi Valley Radio Club, 3518 Columbia, Davenport, IA 52804.

### 1982 IARS Directory of Awards

If you have not yet requested your copy of the Directory, now's the time. Partly revised for '82, the Directory contains over 200 information-packed pages for the DXer and award hunter. Such things as ITU and CQ zones listings, complete USA county listings, also complete lists of Oblasts, Japan Guns and much, much more.

To obtain a copy for yourself, send \$12.95 plus \$3 for first class postage to: IARS, P.O. Box IARS, Glendale, CA 91206-7609. You'll be glad you did.

Till next month, best 73s and don't forget to write to the ARRL with your comments on nets and their operation. □

### St. Louis Award

The St. Louis Award is issued for contact with 10 stations in the City of St. Louis and/or St. Louis County, Missouri.

Send your log extract (GCR), along with 50 cents to: Radio Club of St. Louis, Arthur A. Jablonsky, W0BK, 1022 N. Rockhill Road, St. Louis, MD 63119.



### Worked All Zambia

The Worked All Zambia Award is

### WORKED ZAMBIA AWARD



This is to Certify that  
**SAMPLE**  
has demonstrated the efficiency of his station by making contacts with amateur radio stations in the Republic of Zambia, using the (hand) (Whd).

Certificate No. **D.E. SOKO**  
Award No. **97235**  
**RADIO SOCIETY OF ZAMBIA**

### TV ham writes

Gregg Tyler, KA0MKU of 412 North Wilson, Oberlin, KS 67749 writes to tell us he works at KOMC-TV, which is part of the Kansas State Network. He hopes to hear from some of you readers who may be interested in the network. □

### Pass it on . . . WORLDRADIO

this is called) helps a whole bunch of people. Obviously, it would help the Courage HANDI-HAM System provide services to handicapped people. We depend entirely upon private support for all of our services. What finer way to be remembered than through a perpetual gift from your estate — your "final thanks" for a hobby well experienced.

And, of course, such a remembrance can greatly benefit your survivors — the extent depending upon a lot of things, but mainly depending upon your planning right now! If you would like some help, simply drop me a note, and I'll be glad to send you some materials. My address is: Courage Center, 3915 Golden Valley Rd., Golden Valley, MN 55422. □

## HANDI-HAMS

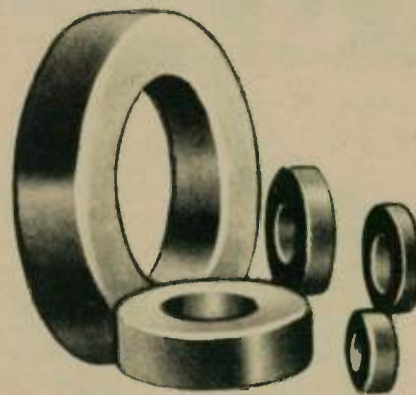
(continued from page 35)

money or effort to put things in good order.

Naturally, when you discuss this with your estate planner, we'd like you to mention the Courage HANDI-HAM System. In fact, we have a number of aids and informational pamphlets (complete with details) which could aid you in your discussion of charitable deferred giving with a lawyer or banker. We'd be happy to send these things to you at your request.

Deferred giving (which is what a lot of

# Toroid Cores



- All the popular sizes and mixes.
- Fast Service. Same day shipment via first class mail or air.

### IRON POWDER TOROIDS:

| CORE SIZE | MIX 2<br>.5-30<br>MHz<br>u = 10 | MIX 6<br>10-90<br>MHz<br>u = 8.5 | MIX 12<br>60-200<br>MHz<br>u = 4 | SIZE<br>OD<br>(in.) | PRICE<br>USA<br>\$ |
|-----------|---------------------------------|----------------------------------|----------------------------------|---------------------|--------------------|
| T-200     | 120                             |                                  |                                  | 2.00                | 4.25               |
| T-106     | 135                             |                                  |                                  | 1.06                | 1.75               |
| T-80      | 55                              | 45                               |                                  | .80                 | 1.05               |
| T-68      | 57                              | 47                               | 21                               | .68                 | .95                |
| T-50      | 51                              | 40                               | 18                               | .50                 | .70                |
| T-37      | 42                              | 30                               | 15                               | .37                 | .60                |
| T-25      | 34                              | 27                               | 12                               | .25                 | .45                |

### RF FERRITE TOROIDS:

| CORE SIZE | MIX Q1<br>u = 125<br>.1-70<br>MHz | MIX Q2<br>u = 40<br>10-150<br>MHz | MIX H<br>u = 850<br>to 10 MHz | SIZE<br>OD<br>\$ | PRICE<br>USA |
|-----------|-----------------------------------|-----------------------------------|-------------------------------|------------------|--------------|
| F-240     | 1300                              |                                   |                               | 2.40             | 9.00         |
| F-114     | 1500                              |                                   |                               | 1.14             | 2.50         |
| F-87      | 900                               | 300                               |                               | .87              | 1.25         |
| F-50      | 750                               | 250                               | 5000                          | .50              | .80          |
| F-37      | 550                               | 200                               | 4000                          | .37              | .60          |
| F-23      | 250                               | 100                               | 1500                          | .23              | .50          |

Chart shows uH per 100 turns

#### Ferrite Beads slip over #18 wire

FB-1 for 50-200 MHz \$2/dozen

FB-2 for 50 MHz & below  
\$2/dozen

#### Jumbo Beads slip over #12 wire

FB-3 for 50 MHz & below  
\$3/dozen

#### Ferrite Rod:

Q1 material, 1/2" dia. x 7.5" length \$3.00

#### 30 amp. Filament Choke Kit:

1/2" dia. x 7.5" Ferrite Rod and #10 wire \$5.00

### EXPERIMENTERS KITS

#### Iron Powder Toroids

Includes:

- 1 ea. T25-12, T37-2, T80-2, T106-2.
- 2 ea. T25-6, T37-6, T50-2, T50-6.
- 3 ea. T68-2.

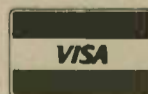
Price \$10.00

#### RF Ferrite Toroids

Includes:

- 1 ea. F50-Q2, F114-Q1.
- 2 ea. F23-Q1, F23-Q2, F37-Q1, F37-Q2, F50-Q1, F87-Q1.

Price \$10.00



Minimum Credit Card  
Order: \$5.00

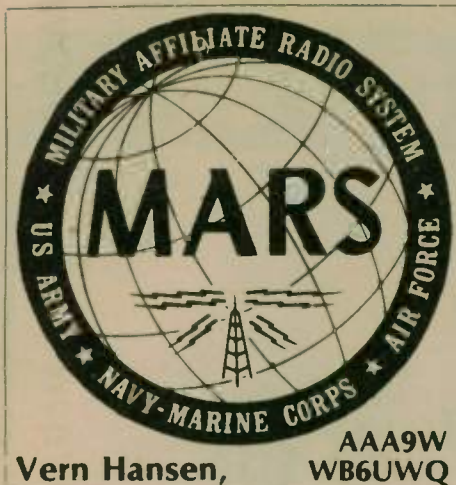


TO ORDER: Specify both core size and mix for toroids. Add \$1.50 per order for shipping and handling in USA and Canada. Californians add 6% sales tax.

Fast service. Free brochure and winding chart on request.

# Palomar Engineers

1924 · FW. Mission Rd., Escondido CA 92025 · Phone: (714) 747-3349



The following article entitled "News from Northern California" was submitted by Norm Brooks, AAR9NI/K6FO, the Northern California MARS editor. This article is a reprint from the September 1981 edition of the Western Area Army MARS Bulletin.

**Norm Brooks, AAR9NI/K6FO**  
Meet your tube bank coordinator — Ed Heuer, AAR9PL/W6EQQ.

Ed has been an Amateur Radio operator for 35 years and an Army MARS member 11 years. He is a member of QCWA (Quarter Century Wireless Association) — a group of old-time amateurs with 25 years or more experience.

He is Net Control Station for AAR9PL/A net which meets on the Red Bluff repeater each Monday at 8:00 p.m. local time (0401Z Tuesdays.) The net boasts 15 members, with most of them reporting in weekly. Ed is also active on HF on 7311 kHz SSB at noon daily, on the AAA9CN/C net, and on the auxiliary net at 3:30 p.m. local time.

Two years ago he helped start the Alaska net on 7313.5 kHz SSB ALM7USA/H which meets weekdays at 9:00 p.m. local time, as well as ALM7USA/D at 7:30 p.m. Saturdays and Sundays. Ed says that traffic volumes go up and down, based on what other outlets are available. Last Mother's Day, he took

62 messages out of Alaska and had a ball delivering them.

Ed has become a sort of legend on the Alaska net. He reads them the WAR and WAMD broadcasts weekly, as well as handling whatever traffic they send him. He has scarcely missed a net since he started with them, only occasionally being kept out by poor propagation or interference from Mexico.

Ed was a painting contractor before WWII. After that, he became an x-ray technician in hospitals in Humboldt and Shasta Counties. He is now retired from the x-ray business and spends his time helping people with the telephone, Amateur Radio and Army MARS. He

lives alone, but is in constant contact with people through telephone-calling chains. He says he is now down to calling two people daily, ages 93 and 84. Sometimes they chat at length, just like ragchewing on Amateur Radio. At other times it may be a quick hello to be sure that all is well. On one of his calls he sang Happy Birthday in his best "singing telegram" style. He was quickly branded the John McCormack of the telephone lines. He has been secretary of the Retired Public Employees' Association for many years, and is active in Masonic organizations.

Ed plans to be around for a long while, as longevity runs in his family. He has an

uncle in Cedar Rapids, Iowa who is 95 and still holds a driver's license and drives himself to town daily.

I asked Ed if he had any advice for other MARS members. It's this: Don't be afraid to take a message for delivery, even if it's not in your free calling area. Night telephone rates are very low. Figure the best time to call, and say it all in one minute. You'll be surprised how little it costs. Ed delivered those Mother's Day messages from Oregon to Fresno, California, and the calls were seldom over 25 cents. That's hardly more than the cost of a stamp today, and you make people very happy. To Ed this is important, because he is a "people" man. □

## MFJ KEYERS

Uses Curtis 8044 IC. Iambic operation, dot-dash memories, weight control, solid state keying. RF proof.



\$79<sup>95</sup>

The MFJ-408 Deluxe Electronic Keyer sends iambic, automatic, semi-automatic, manual. Use squeeze, single lever or straight key.

Speedmeter lets you read speed to 100 WPM. Socket for external Curtis memory, random code generator, keyboard. Optional cable, \$4.95.

Iambic operation with squeeze key. Dot-dash insertion. Semi-automatic "bug" operation provides automatic dots and manual dashes.

Dot-dash memory, self-completing dots and dashes, jam-proof spacing, instant start. RF proof.

Solid-state keying: grid block, solid state xmtrs. Front panel controls: linear speed, weight, tone, volume, function switch. 8 to 50 WPM.

Weight control adjusts dot-dash space ratio; makes your signal distinctive to penetrate QRM. Tone control. Speaker. Ideal for classroom.

Function switch selects off, on, semi-automatic/manual, tune. Tune keys transmitter for tuning. Uses 4 C-cells. 2.5 mm jack for power (6-9 VDC). Optional AC adapter MFJ-1305, \$9.95.

Eggshell white, walnut sides. 8x2x6 inches. MFJ-406, \$69.95, like 408 less speedmeter.



\$49<sup>95</sup>

New MFJ-401 Econo Keyer II gives you a reliable, full feature economy keyer for squeeze, single lever or straight key.

Has sidetone, speaker, volume, speed, internal weight and tone controls. Sends iambic, automatic, semi-automatic, manual. Tune function. Dot-dash memories. 8 50 WPM. "On" LED. Use 9V battery, 6.9 VDC, or 110 VAC with optional AC adapter, MFJ-1305, \$9.95. 4x2x3 1/2".

Reliable solid state keying. Keys virtually all solid state or tube type transmitters.



\$64<sup>95</sup>

MFJ-405 Econo Keyer II. Same as MFJ-401 but has built-in single paddle with adjustable travel. Also jack for external paddle. 4x2x3 1/2".

Optional: Bencher Iambic Paddle, \$42.95. 110VAC adapter, MFJ-1305, \$9.95. Free catalog.

Order from MFJ and try it. If not delighted, return within 30 days for refund (less shipping).

One year unconditional guarantee.

Order yours today. Call toll free 800-647-1800. Charge VISA, MC. Or mail check, money order. Add \$4.00 each for shipping and handling.

CALL TOLL FREE ... 800-647-1800

Cal 601-323-5869 for technical information, or de/repa status. Also call 601-323-5869 outside continental USA and in Mississippi.

**MFJ ENTERPRISES, INCORPORATED**  
Box 494, Mississippi State, MS 39762

## TS-120S owners

Del Popwell, K4NBN reports that Kenwood has a free modification kit for the TS-120S. This kit consists of a few diodes and will correct the problem of the meter needle pegging when in the transmit position. Del sent his TS-120S (before he learned of this free mod kit) to a well-

known large Amateur Radio Company in Orlando to correct the "meter pegging" problem where he was quoted an estimate of \$35 to repair his TS-120S. The other day UPS delivered his TS-120S with a collect bill for \$125.55. Needless to say, Del refused to accept the TS-120S.

— No. Florida ARS □

When you're operating mobile, DON'T STOP to change antenna coils when you change bands—

## The Spider Antenna™ or The Spider Adapter™

give you the choice of 3 or 4 bands while you're driving!

The modern multi-band mobile antenna for today's all solid state transceivers. Switch to 10, 15, 20 or 40 meters without changing resonators. Just switch bands—the antenna takes care of itself!

The Spider\* Adapter converts any mono-band antenna with a 1/2" mast into a modern four-band antenna with all the features of the regular Spider. It gives you the latest convenience at a modest price.

### Features of the Spider\* Antenna and Spider\* Adapter

- The 4-Band Spider\* Antenna is six feet high — the 3-Band five feet. The mast is made of 1/2" aluminum. The radial 10, 15 and 20 meter resonators project out from the mast 11 to 22 inches, and are 1/2" in diameter. They are wound on fiber glass. The vertical 40 meter resonator is 20" high and 3/4" in diameter, and is wound on polycarbonate plastic.

- Each resonator is tuned to the desired portion of the band by a tuning sleeve which slides from end to end over the outside of the resonator. Use an SWR bridge to tune to the chosen resonant frequency, tuning for minimum SWR. If desired an antenna noise bridge may be used for tuning. Each resonator has a logging scale to provide resetability.

- SWR is approximately 1:1 at the selected resonant frequency, with generous band widths before the SWR exceeds 1.5:1. The typical band widths are about 500 kHz on 10 meters, 200 kHz on 15 and 20 meters, 60 kHz on 40 meters.

- Base impedance is approximately 50 ohms, requiring no matching network. Any reasonable length of 50 ohm coax may be used.

- Slim profile, low height and light weight offer little wind resistance and eliminate the need for a spring mount.

- Ideal for use in mobile home parks, apartments and condominiums. Also on motor homes, travel trailers, vans and campers.

- Guaranteed for 90 days against defects in workmanship and material.

**The Spider\* 4-Band Antenna . . . . . \$110.00**

Four foot aluminum mast and 10, 15, 20 and 40 meter resonators. Weight 2 lbs.

**The Spider\* 3-Band Antenna. . . . . \$85.00**

Four foot aluminum mast and 10, 15 and 20 meter resonators. Weight 1 1/4 lbs.

**The Spider\* Adapter. . . . . \$65.00**

Mounting collar to fit 1/2" round mast and 10, 15 and 20 meter resonators. Wt. 3/4 lb.

Prices include surface shipping by UPS in the 48 contiguous United States. \*Trade Mark California residents include applicable sales tax.

LEN—W6FHU For further information write to FRED—K6AQI

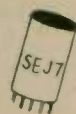
**MULTI-BAND ANTENNAS**  
7131 DWENSMOUTH AVENUE, SUITE 163C, CANOGA PARK, CALIF. 91303  
TELEPHONE: (213) 341-5460

## Solid State Tubes

All of the advantages of solid state technology can now directly replace vacuum tubes in your Drake T-4X, R-4, and Collins Radio 75A-4.

### FEATURES

- IMPROVED RECEIVER SENSITIVITY
- REDUCED HEAT FOR IMPROVED FREQUENCY STABILITY
- HIGH RELIABILITY
- GREATER DYNAMIC RANGE
- FULLY INCAPSULATED FOR RUGGED MECHANICAL AND ELECTRICAL PERFORMANCE



### T-4X (A-B-C)

6AU6 (MIXER)

6EJ7

6HS6

12BA6

### R-4 (A-B-C)

6BE6-A B

6BE6-C

6EJ7

6HS6

Your Choice — \$18.50 each ppd.

### Collins Radio 75A-4

6BA7 — — — \$21.00 each ppd.

### ALSO

R-4 (A-B-C) Improvement Kit (73 June 1979) — \$23.00 ppd.

R-4 (A-B-C) Solid State AF Kit (Ham Radio, April 1979) — \$26.00 ppd.

AF SSB low pass filter — \$25.00 ppd.

Your order (plus 5% Texas tax) to:

SARTORI ASSOCIATES, W5DA

P.O. Box 2085

Richardson, Texas 75080

(214) 494-3091



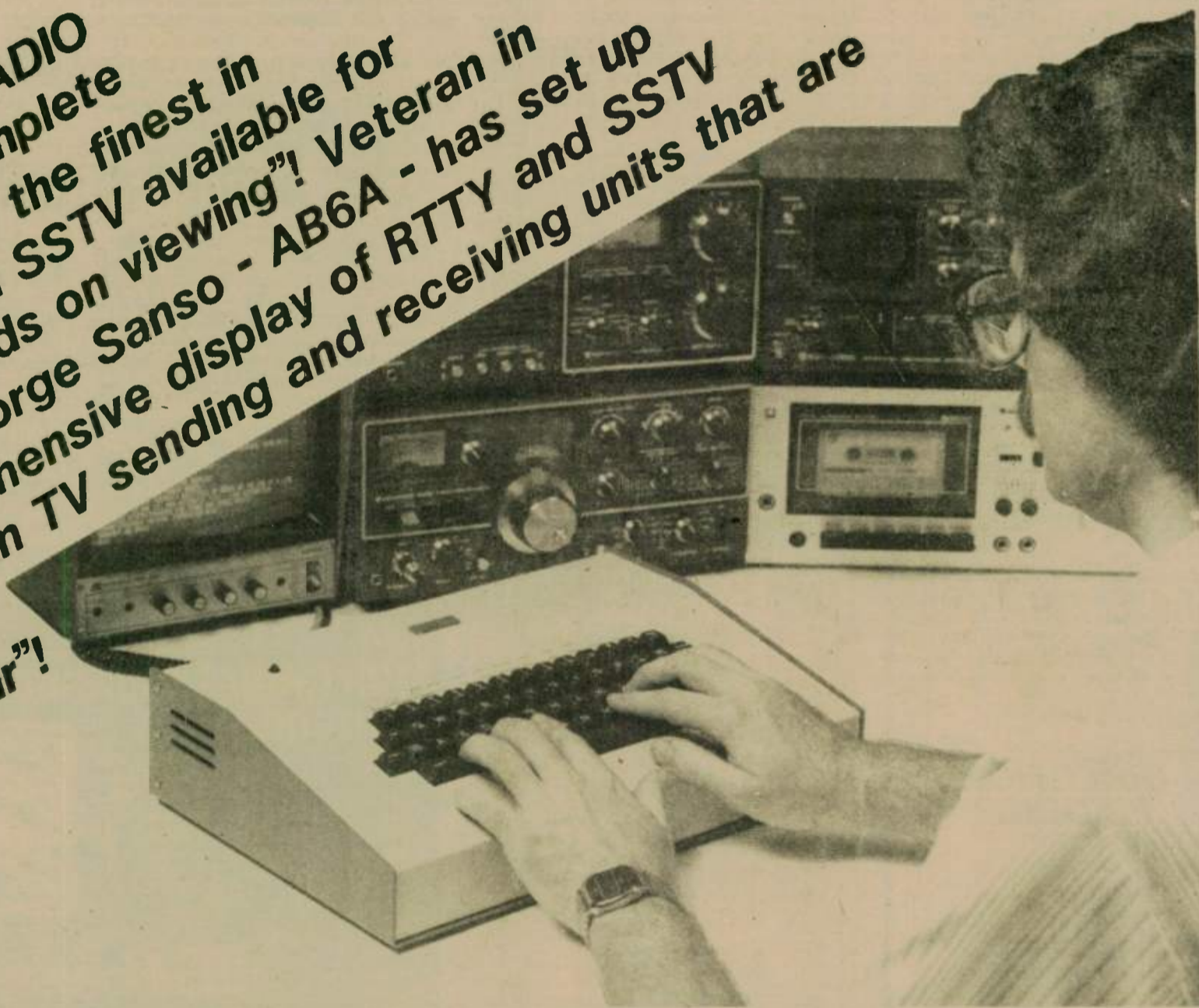


# HENRY RADIO

*CELEBRATES ANOTHER*

# FIRST!

Now HENRY RADIO has a complete display of the finest in RTTY and SSTV available for your "hands on viewing"! Veteran in RTTY George Sanso - AB6A - has set up a comprehensive display of RTTY and SSTV Slow-Scan TV sending and receiving units that are actually "on the air"!



**HENRY** 2050 S. BUNDY DRIVE  
LOS ANGELES, CA 90025  
**RADIO** (213) 820-1234  
toll free outside CA (800) 421-6631

931 N. EUCLID  
ANAHEIM, CA 92801  
(714) 772-9200

*Call or Write!*

DS3100ASR, CT2100, DS2050KSR, ESM914, TR930, MPI88G, ST6000, ST5000 ROBOT - 800 Superterminal, SSTV Scan

MACROTRONICS - M80, M83, Terminal, M800, M830, Ritty Riter, CA650, TA650, A6500, FSD1, M65, M650, CM650, TM650



# Happy Flyers

HAMS & PILOTS

"THERE IS NO LIMIT TO WHAT YOU CAN DO - IF YOU DON'T CARE WHO GETS THE CREDIT"

INTERNATIONAL COMMANDER, **Hart Postlethwaite, WB6CQW**

1811 Hillman Ave., Belmont, California 94002 (415) 341-4000

International Vice Commander, Paul Hower, WA6GDC

Box 2323, La Mesa, California 92041 - (714) 465-5288

## Post-operation news

This is the first column I have been able to write since my surgery on 13 October 1981. I waited a long time for the insurance company to make up its mind to allow the operation first recommended by Dr. David Cook, N6EHM back in 1978.

I would not bring this up in our column, except that so many of you write and phone me wondering about my health. We met so many of you during those four years of voluntary traveling with the free DF seminars. This should answer your questions and bring you up to date.

I was injured a number of years ago when a semi-truck and trailer I was asked to move out of the way, rolled over due to overheight and overload. I was smashed against the door, and my wallet was driven into my spinal column. To make a long story short, pain increased over the years, the body grew bone to repair the cracked areas, nerves were pinched off, feeling began to leave my legs, and the left leg shrank about 1½ inches in diameter.

Dr. Cook was at one of the DF seminars as a member of the Orange County Sheriff's Air Squadron. He observed that I tilted more to the right, the longer I talked. He came up after the seminar and asked what was the problem. It was one of the luckiest breaks of my life. After a period of attempts in the San Francisco area to find the cause of my constant pain, I flew down to Long Beach in 1978 and he did a hospital examination and located the problem area. It took well over three years to get approval, but well worth it.

Dr. Cook traded in his old W7 call for one of those new ones and I have given him phonetics that describe his skills. N6EHM equals N6 Extraordinary Hospital Medicalman. I found him to be one of the best-liked surgeons in the hospital — by staff and patients alike. He

does extraordinary work! Two of the nearly four hours of operating time were spent chipping bone away from nerve roots.

I just returned home from my three-month check up. I am happy to report that he has finally admitted what I have suspected all along. The operation appears to be a success. Except for one small area, all of the remaining pain and discomfort seems to be muscle-related and a very heavy period of physical rehabilitation is to start immediately. I have high hopes to be nearly pain-free by summer. I wish to thank Dr. Cook for being the dedicated physician he is, and for having such skill in diagnosing and fixing problems. My thanks also to each of you readers and friends for your prayers and interest.

## Direction-finding news

While nearly confined to bed these last three months, I have had time for much reading and reflecting. I note with interest that a number of new companies have appeared on the DF scene. Most of them are using the electronically rotated, four-element adcock-type arrays. Due to my condition I have not had the opportunity to correspond with them, nor to test their equipment. What I have to share with you this month has nothing to do with any of these new units, nor the older established DF units of any brand.

Ever since the HAPPY FLYERS took an active part in the DF field (for Search and Rescue [SAR] and jammer hunting), our interest has always been centered around achieving RESULTS. We do not

care who, or how the survivors of a plane crash are located — just that they are found in time to save their lives. With the saving of lives as our primary goal, we have been able to approach our research from a slightly different angle than those who develop a product to market. All we wanted were effective answers. This is not to imply that those who developed DF devices did not also have the same motivation, since we know a number of those who were involved in the design of presently available DF equipment.



Simple field strength measuring devices are often better than expensive, complicated DF units — depending on the circumstances. Hart uses the \$5 surplus government VHF tuneable field strength unit in the center to pinpoint the actual plane on an airport that is transmitting a non-emergency ELT signal. It has also been used to identify the exact part of the house where a jamming signal on 2 meters is coming from.

Many of you have seen the free loaner slide/sound shows on DF and the RF environment, which were produced and donated to SAR by the HAPPY FLYERS. We also donated a 63-page book on DF that the ARRL recently sent a copy of to each of their clubs in the United States. Many SAR groups have made copies of our booklet. The main theme of this book could be summed up as "the realities of the RF environment." We have found that most of the problems involving VHF direction-finding stem from not taking into consideration the realities of what is actually happening.

This lack of consideration as to what is really happening turns out to be a problem at the design phase of DF, as well as with the end user. It is not limited to just the SAR community, nor to the Amateur Radio community. It has not been limited to just the United States. Because so many people are familiar with Automatic Direction Finding (ADF) equipment used in navigation, they feel we should be able to do the same thing on VHF.

It is true that RF is RF. The major difference between LF, HF, VHF, UHF, etc. could be over-simply stated to be the difference in the wavelength. For instance, one wavelength at 650 kc is about 1,500 feet, while one wavelength at the VHF 121.5 Mgc emergency locator transmitter frequency is about 8 feet. Even though this is nearly a 200 to 1 difference in length, the real difference is in the way this difference affects RF propagation.

Most people think of the major difference as the distance you can communicate. For instance, we know that the chances of talking halfway around the world are far better on 20 meters than on 2 meters. This, of course, is very true. However, there is a reason for this phenomenon, and it is directly related to the physical length of the waves.

One could again oversimplify by saying that basically the same things happen to RF waves, except that their length affects the distance it takes for a given result. Most pilots think of ADF bearings as very usable, since the ones they use are usually on strong signals and on clear channels (that is to say the government has not placed other beacons within a range expected to overlap coverage). The end result is that, usually, we either get a relatively true reading or none at all! However if one tunes to broadcast frequencies on the high end of the band, and at high altitudes, more than one station can often be gotten on the same frequency on the same frequency. The result is that the ADF needle tends to wander around until one of the stations is strong enough to cause the ADF to point in its direction. This may or may not be the station one was aiming for.

## DIRECTION FINDING?



New Technology (patent pending) converts any VHF FM receiver into a modern Doppler Radio Direction Finder. No receiver mods required. See June 1981 issue of 73 for technical description. Kits available from \$270. Write for full details and prices.

**DOPPLER SYSTEMS**  
5540 E. Charter Oak  
Scottsdale, Arizona 85254  
(602) 998-1151

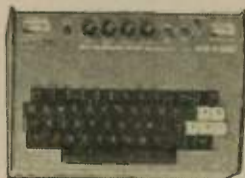
## Not a cheap keyer \$39.95



from CURTIS

- K5 or K5B "Lil' Bugger" (see Dec. QST ad) ..... \$39.95 (add \$3.05 for U.S. Postage and Handling)
- 8044 IC (see ARRL Hdbk. & W6SAI Hdbk. 77-81) 14.95
- 8044M (above plus speedmeter function) ..... 19.95
- \*8044B Keyer-On-A-Chip IC, Type "B" (p/p w/8044) 14.95
- \*8044BM (above plus speedmeter function) ..... 19.95
- 8045 Morse Keyboard-On-A-Chip ..... 59.95
- 8046 Instructokeyer-On-A-Chip ..... 49.95
- 8047 Morse Message Memory-On-A-Chip ..... 39.95

Add \$1.75 on the above for U.S. postage and handling.  
\* Release squeeze during dah; dit follows, and vice versa. (Same as AEA, Ten-Tec, Nye, Heath, Accu-keyer and others) See Nov., 1981 73 Magazine, page 169 for details.



## KB-4900 5-MODE KEYBOARD

Sends Morse, Baudot and ASCII from keys or Morse from paddle. Random CW with lists for practice. Meters for speed and 256 key buffer, 256 key message memory in four soft sections. Editing and all US and European prosigns, 110 Baud ASCII, 45 Baud Baudot. Continuous control of speed, weight, pitch and volume. PTT, KOS control. Automatic serial number and time. (See Sept. 81 QST Review)

KB-4900 Morse, ASCII and Baudot Keyboard ... FOB \$399.95 Write for information on quality kits, keyboards and keyers.

CURTIS ELECTRO DEVICES, Inc.  
4151 864-3846  
Box 4090, Mountain View, CA 94040

## VAL-DUCKIE™

## Portable Communications Antennas

For amateur and commercial services, the Val-Duckie communication antennas boast 48 different models, from 144 to 512 MHz. Encapsulated in high gloss PVC plastic for weather resistance, all Val-Duckie antennas are 100% factory tuned for minimum VSWR and have a power rating of 35 watts at 50 ohms.



## VALOR HT POWER-CHARGER™



Valor's New HT POWER-CHARGER™ allows mobile amateurs to operate and recharge their hand-held radios from the vehicle electrical system.

The HT POWER-CHARGER™ is not just a dropping resistor and diode—but a pair of silicon transistors in a variable current regulator that is self adjusting, depending on the battery charge state.

- Model TR: For Kenwood TR-2400
- Model FT: For Yaesu FT-207R
- Model IC: For Icom IC-2A
- Model TP: For Tempo S1, S2, S4, S5
- Model SA: For Santec HT-1200
- Model WL: For Wilson MI-II, MK-IV

**valor**  
185 W. Hamilton St., West Milton, OH 45383  
PH: (513) 698-4194, Outside Ohio: 1-800-543-2197, Telex 724-389 ATT.: Valor

Also, electrical activity affects an airplane's ADF, and has often been used in the past to detect impending storm activity. In other words, even though great reliance is placed on ADF units in airplanes (including ADF instrument approaches), they too are subject to great errors and confusion under the proper circumstances.

Most knowledgeable individuals in the DF field will admit to the fact that VHF does, in fact, bounce all over and that multi-path exists. However, their actions indicate they do not truly grasp what this means. Yes, the same things happen to VHF as happen to HF, except it all takes place in a much smaller area. It also means that VHF multi-path is the rule rather than the exception — the opposite of the conditions at HF. As the infamous Murphy might say: "Whenever VHF can bounce and reflect, it will."

#### What about a true VHF ADF?

The point of all the foregoing is to address the question: "Is true ADF possible at VHF?" The logical answer lies in the realization that in most cases (at VHF), more than one signal can arrive at the DF unit site. (The actual transmitted signal and whatever reflected signals can also arrive.) I might also add that in some cases, obstructions block any possibility of a direct path and the only signal path is via a reflection.

The foregoing information (and practical experience) indicates that except in flat desert conditions, more than one signal can be expected at the DF device. If we are to consider ADF in terms of the type commonly used for navigation (on lower frequencies), we are talking about a single answer. This means that a pointer, or single line of bearing (LOB), is indicated on some device. Logic makes it clear that if more than one path of RF is arriving, the single answer is some sort of compromise between the information the device has received. In voltage-averaging types, it is usually the average of all information present. Interestingly, if no direct path exists to the DF device, the average of all incorrect information displayed — and the actual crashed airplane — may be in a completely different direction.

Many of the phase-type, like the Micro Electronics and the HAPPY FLYERS, will show each path of RF it observes as the two-element array passes it. This method forces the DFER to make his own conclusions based on what he sees. In the case of all reflected paths, with no direct path, the characteristics of the signal provides clues to the fact all are reflected. Also, since one can look at the physical characteristics of the areas the signals appear to be coming from, one can often deduce where the real signal might be.

The bottom line! We strongly believe that ADF at VHF is only possible if the display contains each and every path of RF arriving at the DF antennas. This means that the device would have to be a CRT capable of multiple tracings from the center. A number of very expensive DF units (as high as \$18,000) have been available for some time with CRT or diode line displays. However, all of the units I have seen still display only one line (LOB) at a time. Some display the average value of information available at each clock pulse, while others will show an instan-

taneous line each clock pulse. The operator must then move in the direction of the line that is there most of the time. This will work in many cases (especially on the desert), but experience has proven that great problems exist in metropolitan areas and in mountains.

We believe that accurate, rapid DF is possible with almost any type of DF equipment, as long as the operator understands the idiosyncrasies of the frequency in use and what his equipment at hand is able to tell him. Choosing the best possible equipment for the circumstances helps considerably. I do not believe there is ANY single device available for all circumstances today. I always try to have at

least three different methods with me at all times. When I have only one, I must do the best I can by having a total understanding of its limitations.

The best way to do this is by practicing on known targets. We are continually amazed how few hours have been spent by DFers (in SAR and Amateur Radio), looking for known targets. The more time spent looking for knowns, the more you will know about a particular DF unit and the characteristics of the frequency on your individual geographic surroundings. We know of no better method of proving out a DF installation and its operator. We still believe that no SAR personnel should try to save a life by DF without at least

two hours of practice on known targets with the specific DF unit they intend to use. (Three-quarters of all airplane DF installations I personally checked did not work properly.) Had people tried to find numerous known targets, they would have found out if the equipment was working — or if they needed help in operating.

In view of my health problems, I do prefer that those with questions contact me by phone in the evenings. It is still very difficult to sit and type letters. Squadron #1 plans a trip to Death Valley in April. Let us know if you would like to join us for the weekend. □

## BUTTERNUT ANTENNAS

|                            |          |
|----------------------------|----------|
| HF6V 10-80 + 30m. Vertical | \$113.79 |
| 2CMV 2 Meter Colinear      | 31.50    |
| TBR-160 160 Meter Kit      | 33.80    |

## CUSHCRAFT

|                                             |          |
|---------------------------------------------|----------|
| A3 10-15 and 20 MHz 3 Element               | \$168.38 |
| A4 10-15-20 Meter, 4 Element (NEW)          | 205.90   |
| A32-19 144-146 MHz 19 Element Antenna       | 75.50    |
| 32-SK Stack Harness & P.D. 2 Boomers        | 37.75    |
| AV4 40-20-15-10 Meter 1/4 Wave, Vertical    | 82.50    |
| AV-5 80-40-20-15-10 Meter 1/4 Wave Vertical | 89.25    |
| 20-4CD 14 MHz 4 Element Skywalker Beam      | 233.50   |
| 20-3CD 14 MHz 3 Element Skywalker Beam      | 181.20   |
| 15-4CD 21 MHz 4 Element Skywalker Beam      | 96.00    |
| 15-3CD 21 MHz 3 Element Skywalker Beam      | 89.20    |
| 10-4CD 28 MHz 4 Element Skywalker Beam      | 82.34    |
| 10-3CD 28 MHz 3 Element Skywalker Beam      | 68.60    |
| AMS-147 146-148 MHz Mobile Magnet Mount     | 24.00    |
| ATS-147 146-148 MHz Mobile Trunk Mount      | 24.00    |
| A147-4 146-148 MHz 4 Element FM             | 22.50    |
| A 147-11 Element FM; 146-148 MHz            | 34.25    |
| A147-20T 144 & 174 MHz 20 Element FM        | 54.80    |
| A220-7 220-225 MHz 7 Element                | 25.50    |
| A220-11 220-225 MHz; 11 Element FM          | 32.25    |
| A 449-11 449 MHz 11 Element FM              | 31.00    |
| ARX-2B 125-170 MHz Ringo Ranger FM          | 34.50    |
| A147-SK Stacking Kit for two A147-11        | 18.75    |
| A144-10T 145 MHz 10 Element Twist           | 41.25    |
| A144-20T 145 MHz 20 Element Twist           | 61.75    |
| A 432-20T 430-436 MHz 24 Element            | 41.15    |
| A50-3 50 MHz 3 Element Beam                 | 41.25    |
| A50-5 50 MHz 5 Element Beam                 | 54.95    |
| A50-6 50 MHz 6 Element Beam                 | 75.50    |
| A144-11 144MHz 11 Element                   | 34.40    |
| DX120 144 MHz 20 Element Colinear           | 54.95    |
| 214B 144-146 MHz 14 Element Boomer          | 61.75    |
| 214FB 144.5-148 MHz 14 Element Boomer       | 61.75    |

## ROTORS

|                                |        |
|--------------------------------|--------|
| HD-73 Alliance                 | 95.00  |
| U-100 Alliance                 | 37.25  |
| HDR-300 Hy-Gain Deluxe Digital | 377.95 |
| AR-40 Cornell-Dubilier (quiet) | 60.00  |
| AVR-1 Avanti Solid State       | 104.00 |

## MFJ PRODUCTS

|                                   |         |
|-----------------------------------|---------|
| LSP-520 BX Speech Processor       | \$43.70 |
| LSP 520 BXII Deluxe               | 52.50   |
| 102 12/24 Clock                   | 30.89   |
| 308 8 Band SWL Converter          | 78.70   |
| 401 Economy External Keyer        | 43.70   |
| 410 Random Code Generator         | 113.75  |
| 481 Grand Master Keyer            | 78.70   |
| 482 Grand Master Keyer            | 87.40   |
| 494 Super Keyboard, 50 Character  | 244.95  |
| 496 Super Keyboard, 256 Character | 297.45  |
| 624 Phone Patch                   | 56.85   |
| 725B SSB/CW Filter                | 78.70   |
| 982 3 KW Tuner 3 KW               | 210.00  |
| 1020 Active Antenna               | 69.95   |
| 1040 Receiver Preselector         | 87.50   |
| 16010 Random Wire Tuner           | 34.96   |
| 262 1 KW Dry Dummy Load           | 56.85   |



2317 Vance Jackson Rd. San Antonio TX 78213

## HUSTLER

|                                   |        |
|-----------------------------------|--------|
| 4BTV 10 Thru 40 Meter Vertical    | 72.60  |
| 5BTV 10 thru 80 Meter Vertical    | 90.75  |
| 3 TBA                             | 193.60 |
| G6-144B 2 Meter Base Colinear 60B | 66.55  |
| 2MB-5 5 Element 2 Meter Beam      | 30.25  |
| 2MB 11 11 Element 2 Meter Beam    | 42.35  |

(Complete Line of Hustler - Call for Prices)

## HY-GAIN

|                                     |          |
|-------------------------------------|----------|
| TH 3 Jr. Tri Band Beam, 750 W PEP   | \$139.68 |
| 64B 4 Element 6 Meter Beam          | 43.45    |
| 103 BA 3 Element 10 Meter Mono      | 49.75    |
| 155 BA Long John 5 Element 15 Meter | 149.00   |
| 205 BA Long John 5 Element 20 Meter | 248.40   |
| 204 BA 4 Element, 20 Meter          | 192.50   |
| 402 BA 2 Element 40 Meter           | 167.65   |
| TH3MK33 Element Thunderbird         | 180.00   |
| TH6DXX 6 Element Super Thunderbird  | 241.50   |
| TH5DX Thunderbird 5 Element         | 198.10   |
| TH7DX 7 Element (UPS)               | 310.50   |
| TH7 Kit for TH6DXX update           | 125.00   |
| 66B 6 Element 6 Meter               | 82.75    |

## TEMPO HANDHELD

|                                          |        |
|------------------------------------------|--------|
| S-1 2 Meter                              | 251.10 |
| S-1T 2 Meter with Touchtone Pad          | 278.10 |
| S-2 220MHz                               | 315.00 |
| S-2T 220MHz with Touchtone Pad           | 359.00 |
| S-4 440MHz                               | 314.10 |
| S-4-T12 440MHz w/12 Touchtone Pad        | 359.00 |
| S-4T16 440MHz w/16 Touchtone Pad         | 377.00 |
| S-15 2 Meter, 5 Watt                     | 260.50 |
| S-15T 2 Meter, 5 Watt with Touchtone Pad | 314.10 |
| PCS-3000 Azden 2 Meter Mobile            | 315.00 |
| PCS-300 Microcomputer H.H.               | 315.00 |

## MISCELLANEOUS

|                                            |         |
|--------------------------------------------|---------|
| CUBIC/SWAN 102BX TRANSCEIVER CLOSEOUT      | 895.00  |
| TEN-TEC OMNI C DIGITAL DISPLAY TRANSCEIVER | 1082.76 |
| TEN-TEC HERCULES 444 AMPLIFIER             | 1323.00 |
| TEN-TEC ARGONAUT 5W TRANSCEIVER SSB/CW     | 409.75  |
| TEN-TEC ARGOSY TRANSCEIVER 100/10W SSB/CW  | 479.65  |
| TEN-TEC DELTA TRANSCEIVER 200W SSB/CW      | 759.16  |

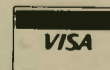
## MIRAGE AMPLIFIERS

|                              |        |
|------------------------------|--------|
| B-108 144-148 10 in 80 out   | 148.62 |
| B-1016 144-148 10 in 160 out | 231.22 |
| B3016 144-148 30 in 160 out  | 216.00 |
| B23 144-148 2 in 30 out      | 74.35  |
| D 1010 430-450 10 in 100 out | 264.26 |
| MP-1 HF Wattmeter            | 99.10  |
| MP 2 VHF Wattmeter           | 99.10  |

CALL FOR QUOTES ON OTHER RELATED PRODUCTS FOB ORIGIN

Hours: 9:30 a.m. to 6:00 p.m. Monday thru Friday  
9:00 a.m. to 2:00 p.m. Saturday - CST

Prices Subject to Change without notice.



Amateur Equipment,  
Accessories &  
Antennas.  
Export Anywhere

800-531-5405

(512) 734-7793 (TX)

## CODE TEACHERS!

Reprints of N6WR's method for teaching Morse Code are available for \$2.00.

Send to Code Course,  
c/o WORLDRADIO

Box 160568 • Sacramento, CA 95816



### Repeaters are public service machines

Few things have done more to change the complexion of Amateur Radio than the opening of so many repeaters during the past decade. Our VHF and UHF bands previously were the domain of a few experimenters who worked mostly with homebrew gear, and who rendered a valuable public service by showing that these frequencies are every bit as useful for serious communication as the lower bands that carried the bulk of amateur activity. They developed gear and techniques for using these frequencies and discovered important facts about the propagation of radio waves in these regions of the spectrum.

The advent of the repeater, and of the low-cost transceiver to work through the repeater, turned everything around almost overnight. Repeaters sprang up everywhere; there are few places in the United States and Canada — other than remote wilderness areas — where you are not within range of at least one machine. And it's quite likely that more amateur communication is taking place at any given time via VHF than on the low bands.

Users of the low bands may contest this statement, and it may be wrong — it's only a guess. But it doesn't seem that congestion has diminished on the low bands during the past decade; rather, it has become worse. Even the CW bands, which used to be relatively interference free, are now becoming crowded. But we must not

forget that our amateur population has increased noticeably during that time as well. Double the number of stations on the air, and you will notice the crowding immediately. It would be much worse, however, if so many amateurs had not taken the road to VHF.

### VHF — immediate help

Where VHF shines spectacularly as a means for providing public service is the fact that you can get on the air and be sure of finding someone near at hand, ready to help at almost any time. Sure, you can find somebody on the lower bands, but maybe a thousand miles away. Many amateurs leave their VHF stations on whenever they are nearby, even though they are otherwise occupied, so they can answer anyone who calls. Add to this the convenience of the autopatch found on many repeaters, and you have dependable emergency service 24 hours a day. Some machines are more dependable than others, of course, and even the best have their bad days; all of them break down occasionally. But it is rare that all of the repeaters within range of any given point fail at the same time.

### VHF — special communication service

There was a time not too long ago when 75 meters was the place to meet for public service, whether special event or emergency. But the opening of VHF has changed all that. Whether coordinating a parade, helping the police at a stake-out, searching for a lost child in the woods, or providing communication for a hospital whose telephone cable has been bulldozed, VHF is the way to go. Equipment is small, power is low, antenna requirements are minimal. In most cases, hand-held rigs and low-powered mobiles are all that are needed. Using VHF gives the telephone-like performance of modern FM gear, and its limited range greatly reduces the chances of either causing interference to others or experiencing interference from other users of the band. Low-banders, if you haven't tried VHF, you don't know what you're missing!

### Traffic handling on VHF

With so many amateurs active on VHF, it would seem that traffic handling should have an important place in VHF work. It does, but not as much as it could have.

One reason is the same as experienced on the lower bands — not all amateurs are interested in traffic handling. There's no law that says amateurs must handle traffic, and so these others have as much right as traffic handlers to use their stations as they prefer.

There is one additional reason on VHF, however, and that is when repeaters are involved. Some repeater licensees are not in favor of allowing their repeaters to be used for handling third-party traffic, and they are within their rights in this. The licensee of an amateur station — or of any other station, for that matter — is responsible for whatever is transmitted by that station, and so also has the right to decide what may or may not be transmitted.

Most repeater licensees, however, have no objections, as long as it is something that may legally be handled by Amateur Radio. And repeaters regularly provide an invaluable addition to Amateur Radio's traffic handling activities. Few section nets give anything near complete coverage of their area. There almost always seems to be a message destined for some place to which the net has no outlet. But in many cases these days someone will advise net control, "I can get it there on 2 meters." It's obvious how this can help improve our service.

Many repeater operators go farther than merely permitting the use of their machines for third-party traffic. They positively encourage it; some even consider it the primary function of a repeater, saying it's supposed to be a public service machine. There are several instances where repeater licensees have been able to negotiate the use of particularly choice locations by showing how the excellent coverage would help amateurs in their public service activities.

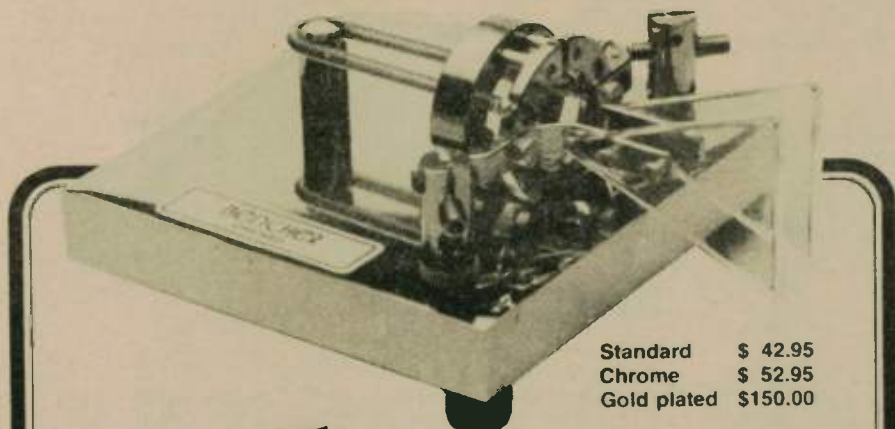
Such repeaters will usually sponsor a net — or several nets, in some cases — working much as nets do on the lower bands, with the exception that all the

business usually must be transacted on the net frequencies, unless two stations are able to contact each other on a simplex frequency. Such nets, called *local nets* in the National Traffic System organization plan, will have liaison with section nets so that amateurs who have only VHF facilities can put traffic into the system like any other amateur. Some of them go further and make use of special liaison directly between VHF nets meeting at the same time to speed traffic to its destination in a matter of minutes. It works like this: Stations in the net which are able to work other neighboring repeaters which also have nets at the same time, act as liaison between the nets. A message often is relayed through several nets in this way until it reaches its destination, with liaison stations jumping back and forth between the various nets. Some areas are well enough organized that they can move traffic several hundred miles with ease, and have traffic totals rivaling those of low-band nets — several hundred messages per month.

There is one other possibility, however, that has received little attention, and that is the use of CW for VHF traffic handling. CW's inherent effectiveness would enable most sections to be covered by section nets working without repeaters. But CW has never been a popular mode among the rank-and-file VHF gang, so it would probably be unrealistic to hope for many nets using this mode.

In the future, and the not-too-distant future at that, packet switching may provide the ultimate in VHF and UHF traffic work, where amateurs can type in their messages at their terminal, which will put it on the air under control of the repeater. The latter will then automatically forward it through the system with no further human intervention until it reaches the addressee's terminal. It will be possible to send traffic across town or across the country in a matter of seconds, 24 hours a day.

Could voice work the same? It certainly could, but will require a more sophisticated system, probably using



## the Ultimate IAMBIC PADDLE

WRITE FOR LITERATURE

**BENCHER, INC.**

333 W. Lake Street, Dept. H  
Chicago, Illinois 60606 • (312) 263-1808

|             |          |
|-------------|----------|
| Standard    | \$ 42.95 |
| Chrome      | \$ 52.95 |
| Gold plated | \$150.00 |

- Full range of adjustment in tension and contact spacing.
- Self-adjusting nylon and steel needle bearings.
- Gold plated solid silver contact points.
- Polished lucite paddles.
- Precision-machined, chrome plated brass frames.
- Standard model has black, textured finish base; deluxe model is chrome plated.
- Heavy steel base; non-skid feet.

At selected dealers or add \$2.00 handling. Quotation for overseas postage on request.

## MFJ RF NOISE BRIDGE

Lets you adjust your antenna quickly for maximum performance. Measure resonant frequency, radiation resistance and reactance. Exclusive range extender and expanded capacitance range gives you much extended measuring range.



- Exclusive range extender
- Expanded capacitance range
- Series Bridge

# \$59<sup>95</sup>

This MFJ-202 RF Noise Bridge lets you quickly adjust your single or multiband dipole, inverted Vee, beam, vertical, mobile whip or random system for maximum performance.

Tells resonant frequency and whether to shorten or lengthen your antenna for minimum SWR over any portion of a band.

MFJ's exclusive range extender, expanded capacitance range ( $\pm 150$  pf) gives unparalleled impedance measurements, 1 to 100 MHz. Simple to use. Comprehensive computer proven manual.

Works with any receiver or transceiver. SO-239 connectors. 2 x 3 x 4 inches. 9 volt battery.

Other uses: tune transmatch; adjust tuned circuits; measure inductance, RF impedance of amplifiers, baluns, transformers; electrical length, velocity factor, impedance of coax; synthesize RF impedances with transmatch and dummy load.

Order from MFJ and try it — no obligation. If not delighted, return it within 30 days for a refund (less shipping). This bridge is unconditionally guaranteed for one year.

To order, simply call us toll free 800-647-1800 and charge it on your VISA or MasterCard or mail us a check or money order for \$59.95 plus \$4.00 for shipping and handling for MFJ-202.

Put this MFJ Noise Bridge to work improving your antenna. Order from MFJ or see dealer.

**CALL TOLL FREE ... 800-647-1800**

Call 601-323-5869 for technical information or der/repair status. Also call 601-323-5869 outside continental USA and in Mississippi.

**MFJ ENTERPRISES, INCORPORATED**  
Box 494, Mississippi State, MS 39762

some form of pulse-code modulation. There's plenty of room in our microwave bands for that sort of thing too: the 10 GHz band, for which suitable gear is now available commercially, is wider than the entire spectrum from DC to the top of our 420 MHz band. It could accommodate all our amateur activities with plenty of room to spare. The only problem is, once this is all so automated, will amateurs lose interest because the challenge is gone? Or will the public appreciate our service less because it's all so mechanical, just like the commercial circuits?

I think one of the things people appreciate about a message handled by Amateur Radio is the fact that it has had personal attention all the way down the line, like telegrams used to receive in the days when operators pounded brass.

#### Delivery by VHF

One aspect of VHF operating that should receive more attention is the possibility of using mobiles instead of landline to deliver traffic personally. It might be a good idea to arrange an occasional drill along these lines, as it could be useful in a real emergency. Most communications emergencies these days are local in nature.

There is a single line connecting our telephone to the one exchange that services us. If either the line or the switching equipment is out of order, we have no telephone service. After our call reaches the exchange, however, there are so many alternate routings available, so many ways that a call can bypass a circuit that is not functioning, that widespread telephone failures are rare these days. And so our most valuable contribution to

public service can often be our ability to contact people in a hurry who can't be reached by telephone. Practicing it occasionally will enhance that ability.

#### International third-party traffic

Over the past year, your columnist has had some correspondence with Sven Milander, SM0IX and Kurt Franzen, SM5TK, concerning the possibility of establishing liaison between traffic nets in several European countries and the National Traffic System. Our present amateur regulations prohibit it by giving a restrictive interpretation to Article 41, Section 2 of the International Radio Regulations.

The International Radio Regulations forbid amateurs to handle third-party traffic, unless there is a special agreement between the countries concerned. And Section 97.3(v) of the FCC regulations defines third-party traffic as "Amateur Radio communication by or under the supervision of the control operator at an Amateur Radio station to another Amateur Radio station on behalf of someone other than the control operator."

Other countries are not so rigid on this point; they allow amateurs to relay messages from other amateurs to other amateurs. What is prohibited is handling messages for the general public, and in those countries it is prohibited even within the country as well as internationally.

As a result of the FCC's prohibition, it is not possible for us to accept the invitation at this time. But the Eastern Area Staff of the National Traffic System has been studying the issue and has appointed a committee to make some recom-

mendations. It may be possible to persuade the FCC to amend its rules on this point if there is sufficient support. But that's the question — is there the support? There should be, but it's only actual support that counts in the realm of

politics. Such liaison would serve to promote international good will in normal times and could be valuable in emergencies. Let's hope something comes of the proposal. □

## Wisconsin Groundhogs chow down again

Jim Romelfanger, K9ZZ

Watertown, Wisconsin was again host in 1981 to the annual reunion of this rare species — an event many Badger State radio amateurs look forward to with lots of anticipation.

As usual, the high spot of the evening came with the auctioning of the Groundhog good luck trophy. This organization has no treasury, and receipts from the auction are applied to mailing invitations and a few prizes for the next year.

Auctioneer this time was Harv Hamer, K9YHO, of Baraboo, Wisconsin. Harv has a knack for getting the bids raised, and this year, good luck will follow for Sherm Carr, W9NGT of Hartford, Wisconsin, as he was high bidder.

Last year, high bidder was Ken Ebnetter, K9EN, vice director of the ARRL's Central Division. In a statement for all to hear, he testified that, among other things, the trophy made it possible for him to go one full year without a cold (he usually has three a year), three raises in pay from his employers, and a tower man to do the high-altitude work while Ken supervised at ground level.



Sherm Carr, W9NGI (left) was 1981's high bidder for the good luck trophy; Harv Hamer, K9YHO (center) was the auctioneer extraordinaire; and last year's high bidder, Ken Ebnetter, K9EN, is on the right.

He also became Division director upon the resignation of the incumbent director, and was subsequently elected vice director again.

The entire event is arranged and hosted by Teen, W9LUB, and Bettie Norbury, K9GJC of Watertown. If you are a Wisconsin amateur and haven't been attending these reunions, why not? See you in October 1982, Moose Lodge, Watertown, Wisconsin! □

# HAMVENTION '82 DAYTON

- ★ Technical Forums
- ★ ARRL and FCC Forums
- ★ GIANT 3-Day Flea Market
- ★ New Products and Exhibits
- ★ Grand Banquet
- ★ Women's Activities
- ★ New! Home-Brew Equipment Forum
- ★ Special Group Meetings
- ★ YL Forum
- ★ New! Personal Computers Forum
- ★ Amateur of Year Award
- ★ Special Achievement Awards

April 23, 24, 25, 1982

Hara Arena and Exhibition Center — Dayton, Ohio

Meet your amateur radio friends from all over the world at the internationally famous Dayton HAMVENTION. Seating will be limited for Grand Banquet and Entertainment on Saturday evening so please make reservations early. Banquet speaker is Roy Neal, K6DUE, NBC News.

If you have registered within the last 3 years you will receive a brochure in late February. If not write Box 44, Dayton, OH 45401.

Nominations are requested for Radio Amateur of the Year and Special Achievement Awards. Nomination forms are available from Awards Chairman, Box 44, Dayton, OH 45401.

For special motel rates and reservations write to Hamvention Housing, 1406 Third National Bldg., Dayton, OH 45402. **NO RESERVATIONS WILL BE ACCEPTED BY TELEPHONE.**

All other inquiries write Box 44, Dayton, OH 45401 or phone (513) 849-1720.

**Rates for ALL 3 Days:** Admission: \$7 in advance, \$8 at door.  
 Banquet: \$14 in advance, \$16 at door.  
 Flea Market Space: \$15 in advance.

Make checks payable to Dayton HAMVENTION, Box 333, Dayton, OH 45405.

Bring your family and enjoy a great weekend in Dayton.

Sponsored by the Dayton Amateur Radio Association, Inc.

# Aerials



**Kurt N. Sterba**

I'd like to start off this month's column with a letter from an obviously astute person, which will then lead into a very helpful letter. First, from Bradley G. Manger, KB5QZ of Greenbelt, Maryland.

"Dear Kurt N.,

"Hey! I like your column! So much that I got a lifetime subscription, so you better keep writing!

"I am a young fellow (27) fresh out of college. I've got a few degrees in physics and have studied antennas and radiation in physics and Ph.D. level EE courses.

"I've worked my way up to being an Extra Class. All this work for naught. You sum it up beautifully: Current in the air radiates. It's amazing how this simple fact can get obscured in other literature. The recipe I've used for antennas is:

"1) Use a balanced antenna (grounding and groundplanes can be troublesome, lossy and, sometimes, impossible.)

"2) Use balanced open-line feeders (coax is lossy and expensive — who needs it?)

"3) Matching must be low loss (I use an old Johnson Match Box).

"4) Resonate (tune) antenna and feedlines (makes it easier to match).

"A 20-meter half-wave dipole fed by 16 feet (or so) of open feedline resonates on 10, 15, 20 and 40. It has gain on 10 and 15.

"Now I find myself in a second-floor (of four) apartment. Nothing to tie a wire to. I've loaded up everything in sight without success. (My wife's RF burns are healing up nicely — I guess she was just too reactive.) How about an article or two for us urban cliff dwellers?

"By the way, about your 12/81 article, you say the SWR at a multiple of a half-wave from the antenna is the same as at the antenna. How about line losses? Some people have almost 100 feet of RG-8 between the rig and the top of the tower. No wonder they think their three-element tri-band is flat across the whole 10-meter band! On 2 meters, forget it — 100 feet of RG-8, even unterminated, looks passable in the shack. Keep up the good work."

Right on cue, in comes Jerry Melson, KE1A of Fairfield, Connecticut, who — as you will see — has labored quite a bit on behalf of the "cliff dwellers."

## Limited space?

Here's the antenna for you.

Covers all ham bands (80 thru 10). Fully assembled and guaranteed.

**\$45.00**

Postpaid USA

Send for free brochure.

**Rudy Plak, W6TIK**

PO Box 966

San Marcos, CA 92069

"Living in an apartment I quickly purchased the book *The Handbook of Apartment Operation* by Dan Fox, W2IQD when I saw the ad for it. It is really quite good, though written and directed toward the beginner amateur.

"The text is paper-bound, 8 by 10 inches, and some 155 pages in length. Priced at under \$10, it certainly makes for interesting reading, even if you have had a great deal of experience in apartment and condo situations.

"If I have to be critical, it would have to be on the fact that the author Fox was very conservative in some of his suggestions concerning apartment and condo operation. For example, he states that one should never, but never use an amplifier. Well, I have been using my Alpha 76A for years with no problems, at least none that have come to my attention. The author also states that an indoor antenna in a brick and steel building will simply not work. Well, that is NOT true. Never could figure out why a lot of books say that about indoor antennas and steel and brick. True, you will lose a lot of your signal... at least I think you will. However, I am now in such a building and have my dipoles around the apartment (I am on the top floor, eight stories up) and have worked will over 100 countries with very high signal reports, etc. Even work RTTY and SSTV, etc., with no problems and of course, use an amplifier.

"If I had listened to the handbooks, various experts, etc... well, most of what I do is simply not supposed to work or work well. The building is less than 10 years old, has good wiring, but does not use cable TV.

"So, in any event, the Fox book is excellent, but you still have to experiment... does have many good suggestions for some very unusual types of antennas. He does state that no matter where you live, there is always an antenna situation you can use, and it will work. The author then goes on to show you how.

"So, Kurt, would recommend the book. At least it will encourage the condo and apartment types that there is always a way. There really is.

"Getting back to my station. I use counterpoise grounding which seems to work well. Of course, use a tuner and low-pass filters, etc. Use the latest in modern gear (maybe that helps, hihi), and have a heck of a time. My XYL is also a ham, so that explains the cooperation in my hanging up a slew of indoor antennas."

Thanks, Jerry, for a professional review.

A note to C.J.C. and others who may have been a bit baffled by my use of the term "barrel" in talking about the coax connector. I should have been more clear. The coax connector comes in two parts. One part plugs in and the other part tightens it on. The round, empty half is the "barrel." And I meant that 19 inches comes out the center and the other 19 inches is attached to the barrel, hanging down.

Onward. The laugh of the month. This IS a true story. An amateur called one of the major amateur equipment dealers and said he wanted to order four, 2-meter antennas and the stacking harness. The clerk told the caller that he had never heard of such a thing and asked the caller if he was a Cber. The caller, who has been in radio for about 50 years, asked to talk with someone else. The clerk briskly told the caller, "I know more than anyone else here!" The caller, believing that could well be the case, took his business elsewhere.

The latest edition of the *ARRL Handbook* has come out. While in most parts it is indeed a great job, there are some areas that need some work.

I guess the older I get the crankier I get, but I am really getting peeved at books (and the *ARRL* new beginner book does the same thing, too) that show the coax feedline just coming up to the dipole with the center to one side and the shield to the other side.

Possibly, that is why half the people who get licenses eventually become inactive. The rain ran into the opening and ruined everything. No one ever heard their signals from then on, causing them to lose interest.

The Handbook says, "The exposed end of the cable should be sealed against dirt and moisture," and leaves how to go about it up to you. Friction tape?

Some articles show cornball connectors with broken coke bottles, little plastic boxes, and all manners of things.

I recommend to anyone that they purchase a commercially made dipole connector such as those made by Palomar, Van Gorden, Budwig, etc. Do it right.

The Handbook talks about the sloping dipole and tells you that the higher the feedpoint, the lower the angle of radiation is. So far so good. But then they go on to say, "Excellent results can be had when the ground end of the antenna is only a few feet above the earth." "Excellent" compared to what? A garbage can lid? A sparkplug out the back of your tuner? "Excellent" seems a rather strong word to apply to a simple wire antenna. Fair or good would be more in line with what you can really expect.

Later in the chapter we're told this, regarding vertical antennas: "It is often possible to obtain excellent DX results with practically no ground system at all." In some ways that is true. It has to be the day at the absolute peak of the sunspot cycle, on a Sunday morning when all the other hams are in church and you live in a county in Wyoming where you are the only ham and the DX stations are county hunters with about 3,000 to their credit. You may even get a QSL card without sending one first. However, "excellent" is leading one to expect too much.

What the noted antenna expert Ryan Johns says about verticals without good ground systems cannot be repeated in a family newspaper.

(Kurt N. Sterba, as has been mentioned before, is a "cover" for an amateur who requests anonymity. That way he can go on the air without getting into arguments. It is only his great knowledge that allows him, on 20 meters with a 2-meter "rubber duckie" and a Dentron wire tuner, to get "excellent" results in the contests.) □

## MFJ DIGI-DIAL ADAPTER turns your frequency counter into a DIGITAL FREQ. READOUT

Calibrate control  
compensates for heterodyne  
errors and mode offsets.

**\$59<sup>95</sup>**



The MFJ Digi-Dial Adapter turns your frequency counter into an accurate digital frequency readout for your transceiver. Connects between external VFO jack and frequency counter.

Counter gives direct frequency readout to right of decimal for 7, 14, 21, 28 MHz bands. Mentally replace digits to left of decimal with MHz band as you do now with your analog dial. For the 3.5 and 28.5 MHz band ignore digits to left of decimal and mentally add 3.5 or 28.5 MHz, respectively, to counter reading.

Calibrate for each band and mode (CW, USB, LSB, AM) to compensate for heterodyne oscillator errors (does not read CW transmit offset).

Digital mixer inverts VFO frequency to give correct frequency readout. Normal/Reverse switch gives direct VFO frequency readout (for some rigs on some bands, like Drake TR-4).

RF buffer amplifier. Crystal reference oscillator. On/Off switch. "On" LED. Black, eggshell white al. cabinet. 3<sup>1</sup>/<sub>4</sub>x1<sup>1</sup>/<sub>4</sub>x3<sup>1</sup>/<sub>4</sub>". 9-18 VDC or 110 VAC

with optional MFJ-1312 AC adapter, \$9.95.

Order MFJ-210 for any rig with 5-5.5 MHz VFO (TS-520, S, SE; TR-3, 4; HW-100, 101; SB-101, 102; Tritons; etc.) Order MFJ-211 for Yaesu FT-101 series (8.7 to 9.2 MHz VFO).

Order from MFJ and try it — no obligation. If not delighted, return it within 30 days for refund (less shipping). One year unconditional guarantee.

Order today. Call toll free 800-647-1800. Charge VISA, MC or mail check, money order for \$59.95 plus \$4.00 shipping for MFJ-210 or MFJ-211.

Don't wait any longer to enjoy digital readout, order now. Call MFJ or see dealer.

**CALL TOLL FREE ... 800-647-1800**

Call 601-323-5869 for technical information, order/repair status. Also call 601-323-5869 outside continental USA and in Mississippi.

**MFJ ENTERPRISES, INCORPORATED**  
Box 494, Mississippi State, MS 39762



Milt Deever (left) president of Comtech Data Systems, Phoenix, Arizona, presented the initial talk on IEEE/LIMARC monthly Technical Net on 11 November 1981. Gene Trelewicz, president of Comtech Labs, Hauppauge, is at his side. The talk originated from the home of Ed Piller, W2KPQ, net director at Syosset, New York and covered Long Island, metropolitan New York and southern Connecticut with an aural teleconferencing circuit on "Satellite Earth Terminals." More than 40 stations and several listeners, calling in by telephone, participated in the walk which took place over the repeater facilities of the Long Island Mobile Amateur Radio Club on 147.375 MHz. (Photo by Ed Piller, W2KPQ)



**Chuck Clark, K4ZN**  
Assistant Director  
Roanoke Division, ARRL

**Fading signals: diversity reception**  
Can anything be done to keep HF signals from going up and down like a yo-yo? There is a technique for receiving fading signals that has been around for over half a century called diversity reception. It involves using several receivers and receiving antennas to take advantage of the fact that when the signal fades down at one location, it may be up at another spot a short distance away.

When we read of the ionosphere's D, E and F layers, we may picture them as layers of clouds, like stratus cloud decks. Actually, they are more like the boiling clouds of a thunderhead, with all kinds of vertical and horizontal winds blowing. So our signals are not reflected off a stationary mirror-like surface, but off one that is constantly shifting. Actually, reflection will usually be off several different surfaces in motion relative to one another. As a result, the signal will pass from transmitter to receiver over several paths of varying length, so the phases of the signals reaching the antenna will also vary. Sometimes they will all arrive nearly in phase, and the station will come in loud and clear. A few seconds later, the relative phases will have shifted and will more or less cancel one another out, and the signal drops down into the noise. A few hundred feet away, the signal will often be strong at the time it drops out of the first location. That's where diversity reception can improve receiving performance.

#### Long-wire antennas

When the size of an antenna is of the order of several wavelengths, it begins to exhibit diversity effects. The signal often fades at one end of the antenna at the same time it drops at the other, helping to reduce fading. But a long-wire is not the best solution because it can also happen that equal voltages are developed in each end, but out of phase with one another, giving a net output of zero. Nonetheless, a long-wire antenna often outperforms a beam with the same measured gain because of this diversity effect.

#### Commercial diversity receivers

You will look through many catalogs before you find a diversity receiver listed. Hamcrafters advertised one in QST back about 1940, and you will find a few available from time to time on the surplus market. But most diversity receiving systems are custom-made, as was the granddaddy of them all — RCA's receiving station at Riverhead, Long Island. Acres of rhombics and Beverage antennas — the latter looking more like a power line several miles in length — fed hundreds of receivers, row upon row of 6-foot racks.

It took close to 100 kilowatts just to heat the tubes in these receivers. Each unit was a triple receiver, three superheterodynes using a single oscillator. The amplifiers each fed a diode detector, with a load resistor common to all three detectors. The DC voltage developed across this load resistor acted as automatic volume control bias for the three receivers. For CW, this DC output also keyed an audio tone which was computed with the audio tones from other receivers and sent to the RCA office where the traffic was copied. The output

of the individual receiver sounded like a code-practice oscillator, but if you listened to the phone line without an audio filter it sounded like 40 meters during the sweepstakes. This installation has been closed, as satellites have taken over the international traffic now, providing many

more circuits with greater reliability and lower cost.

I don't know what became of the equipment, but I don't suppose many of us would want a receiver in a 6-foot rack with each circuit tuned individually (no ganging).

#### Space vs. polarization diversity

RCA's antennas were separated by about 10 wavelengths, space diversity. It has been found that for best results, separations on this order are needed. But smaller separations are still effective. In fact, some have obtained significant reduction of fading with antennas separated only a few feet by making one

of them vertical, the other horizontal, called polarization diversity. This takes advantage of the fact that often the vertically polarized component of the wave does not fade in step with the horizontal component. Notice how the words *often*, *usually* and the like occur. For diversity reception is not a cure-all. It works on the law of averages, makes fading less of a problem, but does not usually eliminate it entirely.

#### Using two receivers

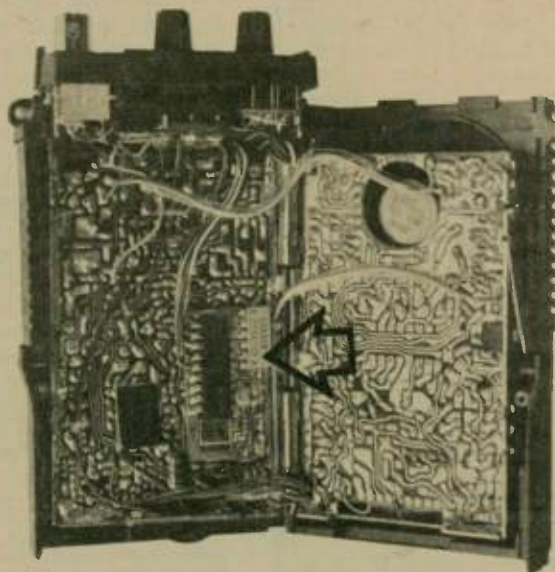
The simplest way to diversity reception for most of us is to use two receivers with separate antennas. If possible, the antennas should be several wavelengths apart,

## AT LAST, AT LAST, AT LAST...

### For all ICOM Handheld series radios!

- A 32-frequency sub-audible tone encoder
- Completely contained within radio case
- Easily programmable

Any of the 32 CTCSS tones may be generated by setting the appropriate DIP switches. No test equipment is required.



Kit with Instructions

\$ 34.20

Shipping 1.50

OR

Ship to us for installation  
ENCODER INSTALLED,  
TESTED & RETURNED  
Total Package .. \$56.50

California residents add 6% sales tax



## C & A ROBERTS INC.

22010 S. Wilmington Avenue, Suite 105

Carson, California 90745

(213) 834-5868

Open 10 a.m. to 4 p.m. Tuesday thru Saturday

REMEMBER WE SHIP  
(UPS Brown Continental USA)

81

but if that is impossible you can use polarization diversity — one antenna vertical, the other horizontal, as noted above. With a little practice, it's not hard to tune in a signal on one receiver, then bring the other to the same frequency, even if their calibration is not accurate.

For AM phone, you can simply connect the two audio outputs so that they are in phase with each other, and they will add together to give an output with less fading. It feels good to hear the sound coming from the speaker when the S meter on one of the receivers reads zero. In fact, there's no particular reason to limit the system to two receivers, as you can use three or four if you have suitable antennas, and get more improvement yet.

For CW, fsk, and SSB, the situation is a bit different. The phase of the received signal is carried through by the heterodyne process to the audio signal. And so if the receiver inputs are out of phase, the outputs will be too. As noted above, commercial users solved the problem for CW by using the DC output of diode detectors to key an audio tone. But that is not suitable for the amateur bands and provides no way to receive sideband. You can feed the output of the receivers to a pair of stereo headphones, however, and let your ears and brain do the addition. If you try it, you may find as I did that there is an additional bonus on both CW and SSB. As the signal fades on one or the other receiver, it seems to move from right to left and back again. All the other signals within the passband also seem to be coming from one or another direction, as their relative strengths in the two receivers vary. As a result, the desired signal seems to stand out from the others by its apparent direction, giving the equivalent of additional selectivity.

If you prefer to use speakers, you can get almost as good results, as long as you use separate speakers for each receiver. In addition, when using speakers, you are not limited to two channels; you can add more if you have more receivers and antennas. As mentioned above, you must use separate speakers if you are receiving CW or sideband. If you simply connect the outputs in parallel to the same speaker, you lose most of the advantages of diversity reception, as the phase differences at the antenna are carried through to the audio output. With separate speakers, the phase differences still exist, but our ears also have a diversity effect. They are far enough apart that when the sound is out of phase at one ear it may be in phase at the other. Again you will have the bonus of being able to sort out the desired signal from the interference by its apparent direction.

#### Frequency diversity

A third kind of diversity reception requires the signal to be transmitted on more than one frequency. By receiving on several frequencies, it is possible to overcome fading because when one frequency fades out, another may come booming in. Obviously this system is not economical of radio spectrum, so is not widely used. But you could use it, for instance, to receive W1AW on more than one band. It could make the difference between marginal and solid copy when conditions are poor. The same conditions apply here

as to space and polarization diversity: you can receive AM by simply connecting the audio outputs together, but CW and sideband pass the RF phase difference through to the output, so you have to keep the outputs separate.

#### A diversity preamplifier for CW

If you have two antennas and only one receiver, you can still have diversity reception on CW. The circuit of *Figure 1* is for a preamplifier which combines the inputs from two antennas, switching alternately between them, at a rate of about 130 hertz, greatly reducing the effect of fading in CW reception. In addition, you may find that it improves the performance of many receivers by providing additional selectivity and gain at the front end.

Q-1 and Q-2 are dual-gate field-effect transistors that act as RF amplifiers. Gate 2 on each transistor serves to enable or disable the amplifier, controlled by the multivibrator, transistors Q-3 and Q-4. The filters, C-4 and R-5, and C-5 and R-6, eliminate the RF component from the output of the multivibrator.

The prototype I built oscillated at about 130 hertz with the components shown in *Figure 1*. It was necessary to adjust the circuit slightly to get a symmetrical square wave output, indicated by equal voltages across R-3 and R-4, measured with a DC voltmeter. The easiest way to do this is to add a resistor of several megohms in parallel with R-7 or R-8 as needed, finding the correct value by trial. This balancing is not absolutely necessary, but it permits Q-1 and Q-2 to be open for equal lengths of time each cycle.

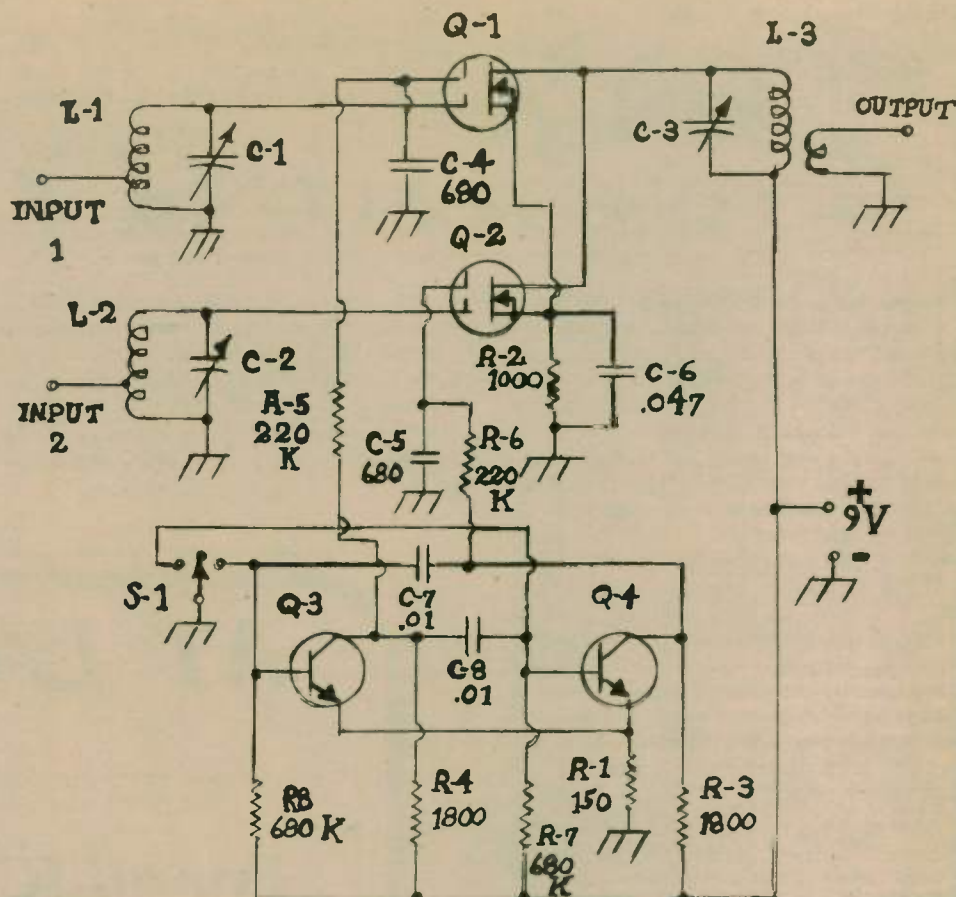


Figure 1

No values are given for C-1, C-2, C-3, or for the coils. They are picked to resonate at the desired frequency. Because of the high impedance of field-effect transistors, the circuit will work effectively over a wide range of inductance to capacitance ratio.

Switch S-1 permits switching to either antenna alone, or in the middle to both antennas in the diversity mode. You will note the modulation on CW signals when using this amplifier in the diversity mode. It comes from the multivibrator, so don't tell the other amateur there is hum on the signal.

I tried building this as an experiment, but prefer the two-receiver approach to diversity reception because it gives the added bonus of allowing one to tune one of them to another frequency while still keeping an ear on the original spot. It's helpful when working in nets to be able to tune off elsewhere and still keep in touch with what is happening on the net.

#### Diversity and RTTY

It would seem that the best way to use diversity reception with frequency-shift

keying would be to convert the mark and space signals into DC voltages in each receiver, and then combine them. But, as I have not tried it, I'm in no position to tell anyone else how to do it. Maybe some readers have some experience they would wish to share.

Actually, few amateurs use diversity reception, and 95 percent of the time you can get quite adequate reception without it. But it's a big help on those occasions when fading gets bad.

## Seeing double?

If you should receive duplicate issues some month, and one of them has only your name, call and address, and no computer number, you have been selected to pass the extra copy on to a ham who may be interested in seeing the paper. Pass it on.

### YAESU FT-207R OWNERS

AUTO SCAN MODULE AND BATTERY SAVER KIT



15 minutes to install; scan restarts when carrier drops off; busy switch controls automatic scan on-off; includes module and instructions.

Model AS-1  
\$25.00

new FT-207R BATTERY SAVER KIT  
MODEL BS-1 \$14.95

- No more dead batteries due to memory backup
- 30% less power drain when squelched
- Simple to install; step-by-step instructions and parts included
- 4 mA memory backup reduced to 500  $\mu$ A
- 45 mA memory backup reduced to 30 mA.
- Improved audio fidelity and loudness.

#### COMMENTS ON THE AS-1:

Enjoy hands-free automatic band scan with your FT-207R. The Model AS-1 provides true scan resume when the carrier drops off. The AS-1 fits in the bottom of the rig with plenty of room left for tone squelch boards. Hundreds of satisfied users say: "The AS-1 is a real winner! Exactly the missing feature needed. I use the auto-scan mode most of the time and get added enjoyment from my rig."

#### COMMENTS ON THE BS-1:

"I was just about to give my FT-207R away, when I decided to give it one last chance, and I ordered the BS-1 battery saver kit. Well, it made all the difference in the world. I can't believe it is the same rig. I used to carry around an extra battery pack all day, but now my batteries last about twice as long. I no longer have to worry about dead batteries. I used to worry about turning the memory off to conserve power, but with the BS-1 it doesn't matter any more. The audio has improved, and I really like my rig again."

### ENGINEERING CONSULTING SERVICE

P.O. BOX 3966  
Anaheim, CA 92803

### CRYSTALS

FOR ALL OF THE NEW BANDS  
10-18-24 MHz  
NOVICE: 3.577/2128 MHz  
SPECIAL FREQUENCIES 1.8 MHz  
THRU VHF/UHF  
WV CALIBRATED EQUIPMENT  
SAFE FOR BROCHURE

FT-243  
Type holder only

\$5 each  
or  
5/\$20

### E/T LABORATORIES

2921 LOYOLA DR. • DAVIS CA 95616  
(916) 756-7372

Aha, the SECRET of PC board success finally revealed. A perfectly balanced lighting tool combining magnification with cool fluorescence. Excellent for fine detail, component assembly, etc. Lens is precision ground and polished.

Model 1M-10-A

diameter 9"



Regularly \$104.95.

Now, over 30% discount  
(only \$65.00) to all licensed  
amateurs verified in Callbook.  
(Bulb included.)

PO Box 161723  
**Dana**

Sacramento, CA 95816

(916) 441-6321 • M-F 10:00 am-5:00 pm

Include \$4.00 U.S. postage, or \$5.00 in Canada. \$6.00 elsewhere.  
California residents include 6% sales tax.



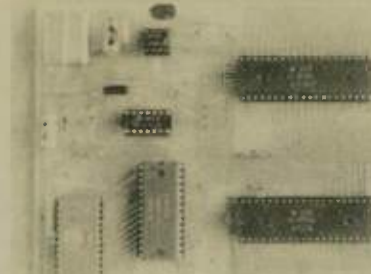


## Morse decoder

This operating aid automatically adapts to speeds from 2 to 80 wpm without any manual adjustments. "TAIMD" provides ASCII serial (110 baud) and parallel outputs, plus dash/dot ratio (from 2 to 6.3) as well as calculated speed. Other outputs are strobe, two format controls for video terminals and error signal.

NMOS microelectronic circuitry is compatible with low-power TTL, and requires only 5VDC at 3/10A. On-board PLL can be connected to receiver speaker terminals or ear-phone jack. Alternative input accepts contact-closure (key). Symbol set includes English alphabet plus foreign characters, digits, punctuation, and procedural symbols.

Delivery may take up to two months if the product is not in stock at the time we receive your order. Price is \$169 list, down to \$139



with rebates; stock.

Write to Telecraft Laboratories & Company, P.O. Box 1185, East Dennis, MA 02641.

## Originate/Answer Modem

MFJ Enterprises, Inc. introduces their new MFJ-1230 Originate/Answer Modem priced at \$129.95.

It looks and is used like an acoustic coupled modem, but it uses an innovative inductive coupling technique for receiving. This gives more reliable data transfer by eliminating errors caused by room noise, vibration and a host of other acoustic coupling problems.

This Bell 103 compatible modem operates 0 to 300 baud, features half and full duplex operation, and is crystal-controlled for very high stability. It provides TTL and CMOS inputs/outputs as well as RS-232 compatibility. This allows easy interfacing to nearly any computer with proper software.

## Ground Plane-One

Ground radials work! It's a well-known fact that a good radial system will greatly improve the efficiency of your vertical antenna. Unfortunately, a problem develops when one attempts to connect a large number of radials to the base of the antenna — until today!

Lance Johnson Engineering has developed a convenient 24-point buss that solves this problem in style. Using the GP-1, you can connect a large number of radials to the base of your antenna in a neat and efficient manner.

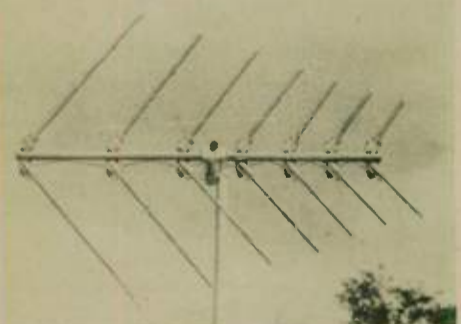
The GP-1 is made of 1/4-inch thick cast "alomaloy", mounted securely on masts up to 2 feet in diameter. The 24 large bolts will easily handle elaborate systems, and the large 10-inch diameter base will fit inside popular tower sections. There is also a convenient opening for feedline routing. The GP-1 is perfect for Field Day and portable operations, and is only \$24.95 postage paid.

For more information, write to Lance Johnson Engineering, P.O. Box 7363, Kansas City, MO 64116.

## Low-power wideband transceiver

Originally designed as a highly-directional base station receiving antenna, recent tests using low-power transceivers in combination with the "SCANNER BEAM" antenna have provided unexpected and remarkable results.

Forward RF signal radiation was increased up to six times that of transmitter input power (e.g. a 10-watt transceiver sounded like a 60-watt base station); average VSWR throughout the VHF/UHF bands was a low 1.6:1; because of its highly directional design, forward signal radiation was able to be "targeted" toward more distant repeater or base stations, thereby increasing the range of low-powered hand-held transceivers — and all of this without the use of auxiliary power or expensive preamplifiers.



Radio amateurs have discovered excellent transmit/receive performance on 144-148, 220-225 and 420-450 MHz (2, 1 1/4 and 3/4 meter bands).

Other potential users include rural fire and emergency rescue units, remote land-management patrols, extended range "high-country" land search and evaluation teams, and others who have a need to improve the communications capabilities of low-powered portable and mobile transceivers by incorporating a directional "plug-in" antenna for their use.

For additional information, write Grove Enterprises, Inc., Dept. G, Brasstown, NC 28902 or call 704-837-2216. The ANT-1 SCANNER BEAM antenna may be ordered direct by calling 1-800-438-8155.

## ANNUAL LAS VEGAS PRESTIGE CONVENTION

# SAROC™

## ALADDIN HOTEL, LAS VEGAS, NEVADA

### APRIL 1-2-3-4, 1982



Cocktail Party hosted by Ham Radio Magazine, Friday evening, for all **SAROC** exhibitors and **SAROC** paid registered guests. Ladies program Saturday, included with Ladies **SAROC** paid registration. Two Aladdin Hotel Breakfast/Brunches included with each **SAROC** paid registration, one on Saturday and one on Sunday. Technical sessions and exhibits Friday and Saturday for all **SAROC** registered guests. Friday and Saturday hourly awards, main drawing. Saturday afternoon. Must be present to win, ownership of award does not pass until picked up. **SAROC** advance registration is only \$17.00 per person if postmarked before March 1, 1982. After March 1, 1982 it is \$19.00 per person. Non-paying guests who only wish to visit **SAROC** exhibits will be issued an ID

badge good for admission to exhibit area at no charge. Coupon book and cellophane badge holder may be picked up at **SAROC** registration desk. Send check or money order to **SAROC**, P.O. Box 14217, Las Vegas, Nevada 89114. Refunds will be made after **SAROC** is over to those requesting same in writing and postmarked before April 1, 1982. Special **SAROC** Aladdin Hotel room rate is \$36.00, plus room tax, per night, single or double occupancy. Aladdin Hotel accommodations request card will be sent to all **SAROC** exhibitors and **SAROC** paid registered guests.

Coming **SAROC** conventions: January 13-16, 1983; January 12-15, 1984; January 10-13, 1985.

Enclosed is \$ \_\_\_\_\_ check or money order (no cash) for \_\_\_\_\_ **SAROC** advance registration @ \$17.00 each; after March 1, 1982 **SAROC** registration is \$19.00 each. Extra drawing tickets for main drawing are \$1.00 each, limit 10 for each **SAROC** paid registration.

OM \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_

YL \_\_\_\_\_ Call \_\_\_\_\_ Class \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_

State \_\_\_\_\_ ZIP \_\_\_\_\_ Telephone No./AC \_\_\_\_\_

I have attended **SAROC** \_\_\_\_\_ times. I plan to attend Friday Cocktail Party \_\_\_\_\_.

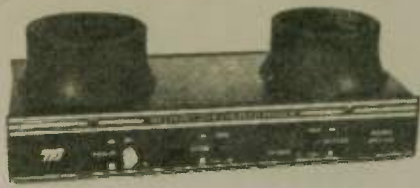
I am interested in: ARRL, Cocktail Party, CW, DX, FCC, FM, MARS, RTTY, TV, other \_\_\_\_\_.

I receive: CQ, Ham Radio Magazine, Hr Report, QCWA, QST, RTTY, Spark/Gap, 73, Worldradio, \_\_\_\_\_.

\_\_\_\_\_ publications. Please circle ones received.

# SAROC™

P.O. BOX 14217, LAS VEGAS, NEVADA 89114



Also, input/output ports for a cassette tape recorder lets you save your transmitted data and load it back to your computer or retransmit it later.

The black low-profile, all-aluminum cabinet measures 4 by 1-1/2 by 9-1/2 inches. It is simple to install and operate and is compatible with

nearly any standard data terminal or personal computer. It is made in the USA.

An Apple version (MFJ-1231) that plugs into the game port is available for \$139.95 and comes complete with software. No serial interface board is needed.

MFJ provides a 30-day money back trial period. If you are not satisfied, you may return it within 30 days for a full refund (less shipping). MFJ also provides a one-year limited warranty.

The MFJ-1230 and MFJ-1231 Inductive Coupled Modem is available from MFJ Enterprises, Inc. for \$129.95 and \$139.95, respectively, plus \$5 each for shipping and handling. To order, call toll-free 800-647-1800 and charge VISA or MasterCard, or mail order to MFJ Enterprises, Inc., 921 Louisville Road, Starkville, MS 39759. □

## Mike stand

Mobile radio operators who use their equipment in the base station mode will find their job made easier by the new Big Ben Mike Stand by Valor Enterprises, Inc.

The new mike stand allows the operator to convert his mobile microphone to a base station microphone.

Valor manufactures Big Ben microphone stands in both black (Model 221) and polished chrome (Model 221C).

The stand is part of a complete line of personal and amateur communications products and accessories offered by Valor Enterprises, Inc., West Milton, OH 45383. A complete catalog is available by calling (513) 698-4195. Residents outside Ohio can dial toll free 1-800-543-2197. □



## Hamtronics catalog

Hamtronics, Inc. announces publication of a new 1982 catalog crammed full of goodies for the VHF/UHF/OSCAR enthusiast and two-way shops.

The 40-page, two-color catalog features a new 5-channel, 10-watt VHF FM transceiver, new COR and CWID modules for repeater builders, and new accessories, such as RF tight enclosures for repeaters and power supplies. Also featured are a new R76 VHF FM Receiver and the T51 (VHF) and T451 (UHF) FM Exciter modules. Many new ranges of transmitting and receiving converters have been added, as well as a series of receiving converters to extend the frequency coverage of scanners to new military, satellite and commercial bands.

For your free copy of this attractive new catalog, call 716-392-9430 or write to Hamtronics, Inc., 65F Moul Rd., Hilton, NY 14468. (For overseas mailing, please send \$2 or four IRCs.) □



## Vehicle clocks

Radio Shack, a division of Tandy Corporation, now offers two new quartz-vehicle clocks with accurate quartz-controlled timekeeping, easy-to-read display and special additional features for convenient traveling.

The Micronta® Fluorescent Car Clock with Tachometer and Headlight Warning (63-837) is available for \$29.95 at Radio Shack stores and participating dealers. This clock offers a tachometer to monitor engine performance in 4-, 6- or 8-cylinder gasoline-powered vehicles; a warning light and buzzer to signal when headlights are inadvertently left on; and front panel controls for setting the time. This compact clock measures just 1 7/8 by 3 3/8 by 1 1/2 inches, and operates on 12VDC positive or negative ground.

The Micronta Fluorescent Car Clock with Alarm (63-834), available now for \$27.95 at Radio Shack stores and participating dealers offers a 24-hour alarm, and recessed time- and alarm-setting controls safeguard against unintentional "adjustments." This clock measures just 1 7/8 by 4 by 1 3/8 inches, and operates on 12VDC positive or negative ground.

Both car clocks feature automatic dimming for night driving and automatic display blanking when the ignition is off. They come with complete instructions and hardware for in-dash under-dash mounting in most vehicles.

## Organize your shack with a CLUTTERFREE MODULAR CONSOLE \$203.35

Being a ham or home computer operator is fun but not always easy. You work hard to save money to buy your equipment. You rearrange the house for set-up space. Before you know it, that converted desk on which your equipment is stacked looks pretty cluttered.

We're also ham operators, that's why we developed Clutterfree Modular Consoles to help organize your shack.

Each console has many extras that don't cost extra. Strong groove-construction to support your equipment, decorative Polycite™ wood grain pecan finish that resists stains, abrasions and cigarette burns and four generous easy access storage compartments.

Ideal for ham or computer equipment. Measuring 42" high x 57" wide x 29" deep each Clutterfree Console weighs 150 lbs. and can be easily assembled in minutes. At the \$203.35 basic price (FOB Tacoma, WA) you can't find a better buy with as many features.

This year's optional extras include the face plate and a one or three drawer system.

Don't put up with that cluttered desk any longer. Fill out and mail the coupon or call and we'll process your order immediately. Cash, check, money order, Bank America card, Visa or Master Charge accepted.



As a special introductory offer you can purchase one drawer for \$14.95 or a three drawer system for \$35.00.

## CLUTTERFREE MODULAR CONSOLES

P.O. Box 5103 Tacoma, WA 98405  
(206) 759-1611

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_

My  check  cash  money order is enclosed

Please charge my \_\_\_\_\_ card

Card No. \_\_\_\_\_

Expiration Date \_\_\_\_\_

Send me more information

\* Washington state residents add 5.1% sales tax.

## HF SWR/wattmeter

MFJ is introducing its new MFJ-816 low cost (\$29.95) HF SWR/wattmeter for the 1.8-30 MHz range.

It features a toroidal current pickup that gives uniform sensitivity over the entire HF frequency range.

It lets you read SWR, forward and reflected power in two ranges (30 and 300 watts) on a two-color meter scale.

The SWR set push-button switch doubles as the forward and reflected power switch, while the SWR sensitivity control doubles as the power range set control.

A black and eggshell-white aluminum cabinet measuring 4-1/2" W by 2-1/2" H by 2-3/4" D inches houses the unit. It has SO-239 coax connectors.



MFJ provides a 30-day money back trial period. If you are not satisfied, you may return it within 30 days for a full refund (less shipping). MFJ also provides a one-year unconditional guarantee.

The MFJ-816 HF SWR/wattmeter is available from MFJ Enterprises, Inc. for \$29.95 plus \$4 shipping and handling. To order, call toll free 800-647-1800 and charge VISA or Mastercharge, or mail order to MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762.

## 1982 Handbook

The best gets even better! Each year the *Radio Amateur's Handbook* is updated to reflect changes in the state of the art. The 1982 edition is no exception. More emphasis is placed on digital communications techniques than ever before. Also making an appearance for the first time are tables and charts covering the new WARC Amateur Radio bands.

Here is a chapter-by-chapter list (23 chapters) of the topics covered in the 640-page 1982 *Radio Amateur's Handbook*: Amateur Radio; Electrical Laws and Circuits; Radio Design Technique and Language; Solid-State Fundamentals; AC-Operated Power Supplies; HF Transmitting; VHF and UHF Transmitting; Receiving Systems; VHF and UHF Receiving Techniques; Mobile, Portable and Emergency Equipment; Code Transmission; Single Sideband; Frequency Modulation and Repeaters; Specialized Communications Systems; Interference with Other Services; Test Equipment and Measurements; Construction Practices and Data Tables; Wave Propagation; Transmission Lines; Antennas for High Frequency; VHF and UHF Antennas; Operating a Station; Vacuum Tubes and Semiconductors (Tables).

Despite the revision and expansion of the book, there has been no increase in price over the previous edition. The paper edition is \$10 in the United States, \$11 in Canada, and \$12.50 elsewhere; cloth edition is \$15.75 in United States, \$18 elsewhere.

The *Handbook* is available from the American Radio Relay League, Newington, CT 06111 (203-666-1541), or from your local radio store.

## WEST/COAST

AMATEUR RADIO SCHOOL

### VHF/UHF REPEATER LOG

ARIZONA SOUTHERN CALIFORNIA  
NEVADA MEXICO  
NORTHERN CALIFORNIA HAWAII

EDITED BY  
KARL PAGEL  
N6BVU

PUBLISHED BY  
GORDON WEST  
WB6NOA

## Compact antenna baluns

Palomar Engineers is introducing a new series of baluns, the Model PB. They feature low cost, small size, and a number of available matching ratios.

The balun series will match 50 ohm coaxial cable to 50, 75, 100, 150, 200, 250, 300, 375, 450, 600 or 800 ohm balanced antennas. They also can be used as matching transformers for various purposes.

The Model PB series work at power levels to 350 watts PEP, just right for most transceivers, and are only 1-1/2" by 3/4" by 3/4" inches in size. They operate from 1.7 to 30 MHz, are fully encapsulated to keep out moisture, and have stainless steel hardware for use in any

## VHF — UHF repeater directory

The new 20-page 1982 VHF-UHF repeater directory is available covering California, Mexico, Arizona, Nevada and Hawaii. Repeaters on 450 MHz, 2 meters, 6 meters, and 10 meters are listed numerically by frequency. The call letters and area of operation are also noted beside each repeater listing. There are also listings for special functions of each repeater.

Published by Gordon West and edited by Karl Pagel, this repeater directory is the most accurate and up-to-date available. The 8-1/2-by-11-inch format is easy to read and understand.

The repeater directory also includes a 2-meter band plan diagram. This gives an overview of where repeater and simplex stations operate.

Amateur Radio repeater control operators should also request the confidential PL guide available with this repeater listing.

Send \$2.50, which includes tax and postage, to the West/Coast Amateur Radio School, 2414 College Drive, Costa Mesa, CA 92626, ATTN: RPT.



## Colorado

The Grand Mesa Repeater Society will sponsor the 3rd annual Western Slope Swapfest on Saturday, 17 April 1982, from 10:00 a.m. to 4:00 p.m. at the Plumbers and Steam Fitters Union Hall, 2384 Hiway 6 & 50, Grand Junction, Colorado. Admission is free. Swap tables are \$5.

Attractions will include refreshments, auction and door prizes. Talk-in on 22/82. YLs and XYLs can spend what the OMs don't at Mesa Mall (one-half mile away).

For further information, send SASE to Dale Ellis, KD0M, 588 Starlight St., Grand Junction, CO 81501 or call 303-434-5981.

## Illinois

The Libertyville and Mundelein Amateur Radio Society (LAMARS) will hold their annual hamfest on 28 March 1982 at the Lake County Fairgrounds, intersection of Routes 120 and 45, Grayslake, Illinois.

Prizes, including a synthesized handi-talkie, will be awarded to a licensed amateur. Hot food and drink available. Big 9-foot tables available at \$5 each. Tickets are \$2 in advance or \$2.50 at the gate. Doors open 8:00 a.m.

For reservations or tickets, write Chariman Craig Pitcher, WA9HRN, LAMARS, P.O. Box 751, Libertyville, IL 60048. Include SASE.

## Massachusetts

The Wellesley Amateur Radio Society is conducting its annual auction on Saturday, 17 April 1982 at the Wellesley High School Cafeteria on Rice Street, Wellesley, Massachusetts.

Talk-in on 63-03, 04-64, and 52. Doors open at 10:00 a.m. Contact: Kevin P. Kelly, WA1YHV, 7 Lawnwood Place, Charlestown, MA 02129.

## Missouri

The Gateway Amateur Radio Association of St. Louis, Missouri announces its annual hamfest and official ARRL Convention — ARCH '82 — to be held 27-28 March at the Chase Park Plaza Hotel.

The event will be indoors, including a giant flea market. Major national exhibitors and dealers will be present. Also featured will be workshops, forums, ladies' activities, and a Saturday evening banquet with important speaker. Thousands of dollars in prizes will be given away. Special hotel accommodations will also be available. Advance tickets are \$3.

For more information, write to Gateway Amateur Radio Association, P.O. Box 8432, St. Louis, MO 63132; (314) 361-4965.

## Missouri

The PHD Amateur Radio Association, Inc. of Liberty, Missouri will sponsor the 1982



**SYNTHESIZED SIGNAL GENERATOR**

MODEL SG100D \$349.95 plus shipping

MADE IN USA

- Covers 100 to 185 MHz in 1 kHz steps with thumb-wheel dial
- Accuracy 1 part per 10 million at all frequencies
- Internal FM adjustable from 0 to 100 kHz at a 1 kHz rate
- Spurs and noise at least 60 dB below carrier
- RF output adjustable from 5-500 mV at 50 ohms
- Operates on 12 Vdc @ 1/2 Amp
- Available for immediate delivery • \$349.95 plus shipping
- Add-on Accessories available to extend freq. range, add infinite resolution, voice and sub-audible tones, AM, precision 120 dB calibrated attenuator
- Call for details • Dealers wanted worldwide.

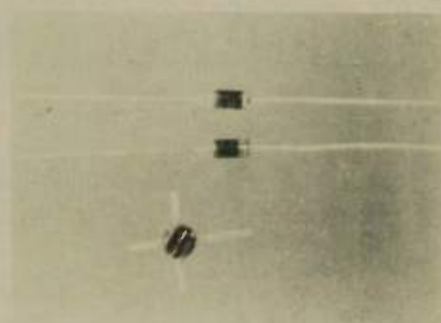
**VANGUARD LABS**  
196-23 Jamaica Ave., Hollis, NY 11423  
Phone: (212) 468-2720

## Microwave RF devices

Radio Shack, a division of Tandy Corporation, is adding two small signal microwave semiconductor devices to The Parts Place™.

The Archer® 5082-2835 microwave diode (276-1124) is available in packages of two for \$1.99 at Radio Shack stores and participating dealers. This Schottky barrier diode is ideal for UHF and microwave mixers, and has a maximum capacitance of 1pF.

The Archer MRF-901 (276-2044) is a Macro-X case NPN transistor for UHF and low microwave small-signal applications. It offers 300mW dissipation, and is available for \$2.99 at Radio Shack stores and participating dealers. Pin-out and specification data are included.



**NEW!** AVAILABLE NOW — IN STOCK

**AZDEN PCS-300** TWO-METER HANDHELD XCVR

Free shipping in U.S.A. for all XCVR orders

PCS-300 HT \$290.00  
PCS-3000 XCVR 285.00  
Remote cable 37.00  
Other acc. Call

also:

**KDK 2025A Mk II**  
Single knob tuning-10 mem.  
25W- scan -odd splits  
(w/TT mic.) \$285.00

**B. G. CARL ELECTRONICS**  
11128 Claire Ave.  
Northridge, Calif. 91326  
Call: (213) 363-1216 - anytime  
Bryan, AG6R

**WEST COAST VHFer**

NEWS OF 6-2-220-432-1296 AND ABOVE, AND PRINTED EXCLUSIVELY FOR THE VHF PERSON. \$9.00 PER YR FOR THE ONLY MONTHLY VHF BULLETIN.

**WEST COAST VHFer**  
560 W. YUCCA ST. OXNARD, CA. 93033

WA6IJZ  
Bob Cerasuolo

Missouri State ARRL Convention (13th annual Northwest Missouri Hamfest) on Saturday and Sunday, 3-4 April, in the Trade Mart Building at the downtown Kansas City, Missouri airport. There will be a complete program of forums, 65 commercial booths and 150 swap tables — all inside the 45,000 square foot one-level, air-conditioned building. Unlimited free parking, same level. RVs welcome (no hookups). Missouri-Kansas CW Contest. Over \$3,500 in prizes.

Doors open 10:00 a.m. to 5:30 p.m. both days. Commercial may set up Friday 8:00 to 10:00 p.m. or 7:00 to 10:00 a.m. Saturday; swappers 9:00 a.m. both days. Guard in building at night.

There will be a Saturday night banquet at the world-famous Gold Buffet. Guest speakers will be Ellen White, W1YL, DX editor of QST; Marge Tenney, WB1FSN, Convention Coordinator of ARRL; Paul Grauer, W0FIR,

Midwest Director of ARRL, and others.

Registration is \$4; banquet tickets \$10.25; swap tables \$10 (includes one registration for both days). Those desiring banquet tickets and swap tables are urged to preregister. All preregistrations will be held at the door.

Talk-in 146.34/94

For information write to PHD Amateur Radio Association, Inc., P.O. Box 11, Liberty MO 64068-0011, or phone 816-781-7313 or 816-452-9321.

## New Hampshire

The 2nd Annual Hamfest-Fleamarket, sponsored by the Great Bay Radio Association, will be held on Saturday, 17 April 1981 at the Somersworth Armory, Somersworth, New Hampshire, from 9:00 a.m. to 3:00 p.m.

Antique radios and computers will be on display. Door prizes every hour. Grand raffle for Radio Shack color computer and other prizes. Food and refreshments available. Free parking. Entrance fee \$1 per person (ticket counts toward door prizes).

For advance registrations and further information, call Dick Sedgewick, N1EX at (603) 742-3703, or write Great Bay Radio Association, Rt. 16, Dover, NH 03820.

## New Jersey

The Delaware Valley Radio Association will hold its annual flea market, Sunday, 28 March 1982, 8:00 a.m. to 4:00 p.m. at the New Jersey National Guard 112th Field Artillery Armory, Eggerts Crossing Road, Lawrence Township. Advance registration \$2.50, \$3 at the door. In-

door and outdoor flea market area, door prizes, raffles, refreshments, FCC examinations. Sellers bring own tables.

Talk-in on 146.52 and 146.07-67.

For further information, write: DVRA, P.O. Box 7024, West Trenton, NJ 08628.

## North Carolina

The 1982 ARRL Roanoke Division Convention will be held during the weekend of 20-21 March, in conjunction with the annual Charlotte Hamfest and Computerfair at the beautiful Charlotte Civic Center. With over 125 commercial booths and a tremendous flea market, you will be treated to the ultimate in indoor hamfest enjoyment and comfort. All major manufacturers of Amateur Radio and home computer equipment will have booth displays.

As in the past years, DXers will find an agenda featuring programs on the latest DX-peditions and operations from all over the globe. Charlotte is noted for its large DX-oriented format, and you will find it better than ever in 1982.

Forums covering all aspects of Amateur Radio and the home computer hobby will be conducted throughout Saturday and Sunday. Programs will also be conducted on various ARRL Communications Department activities. The Section Communications Managers (SCMs) of all Sections within the Roanoke Division will be on hand conducting programs and meeting with all of their appointees. Visit with Ian Black, WD4CNR (NC); Richard McAbee, W4MTK (SC); "Luck" Hurder, WA4STO (VA); and Karl Thompson, K8KT (WV) — your SCMs.

Our Roanoke Division Director, Gay Milius, W4UG, and Vice Director John Kanode, N4MM will also be at the ARRL Booth to meet you and discuss your League interests.

The Sheraton Center has been established as Convention Headquarters. Located at 55 South McDowell Street, just a few blocks from the Civic Center, they have reserved a block of rooms for Convention attendees. Get your reservations in now by calling (704) 372-4100 and ask for the special hamfest rates.

Other nearby hotels/motels include the Radisson Plaza which adjoins the Civic Center (704-377-0400), Quality Inn-Downtown (704-372-7550), Executive Inn (704-332-3121), Best Western-Downtown (704-373-0300), Rodeway Inn-Downtown (704-372-2300), and the Ramada Inn-Downtown (704-377-6800).

Registration for the Convention is \$4 in advance; \$5 at the door. Pre-registration must be received by 12 March; none will be honored after that date. The admission covers both days of the event. Flea market tables are \$5 each for the two-day event, and may be purchased in advance or at the door. A wide variety of prizes will be awarded throughout the Convention.

Convention doors will open at 9:00 a.m. Saturday and Sunday, and close at 5:00 p.m. Saturday and 3:00 p.m. Sunday. Persons requiring flea market tables will be admitted to set up in the flea market area only at 7:30 p.m. Saturday and 8:00 a.m. on Sunday. Dealers and exhibitors may set up their booths Friday evening and will be admitted to the Civic Center 7:00 a.m. on Saturday.

For more information or pre-registration write: Charlotte Hamfest, W4BFB, 2425 Park Road, Charlotte, NC 28203. Phone (704) 376-4162.

## Ohio

The Lake County Amateur Radio Association will present their Fourth Annual Lake County Hamfest on Sunday, 28 March 1982, Madison High School, Madison, Ohio.

Doors open for exhibitors at 6:00 a.m. and the public at 8:00 a.m., at this large indoor location. We'll close at 4:00 p.m. Admission \$2.50 advance, \$3.50 at the door. Table display space is \$5 for 6-foot table, \$6.50 for 8-foot table and advance reservations guaranteed until 10:00 a.m.

Plenty of free parking and all display space indoors at this location, 40 miles east of Cleveland.

Talk-in on 147.81/21, check-in on 146.52. Main prize drawings start at 3:00 p.m.

Information and reservations are available

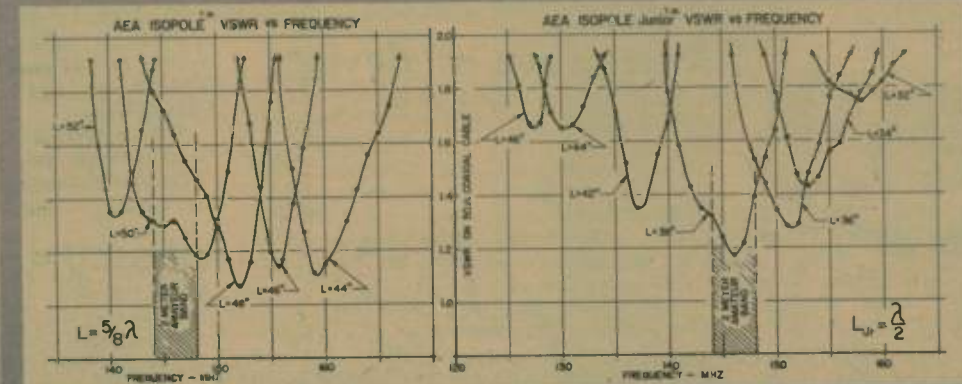
# MORE PERFORMANCE FOR YOUR DOLLAR! COMPETITORS KNOW ABOUT THE

# ISOPOLE™

## DO YOU? STUDY THE FACTS ...

The IsoPole antenna is building a strong reputation for quality in design and superior performance. Innovative IsoPole conical sleeve decouplers (pat. pend.) offer many new design advantages.

All IsoPole antennas yield the maximum gain attainable for their respective lengths and a zero degree angle of radiation. Exceptional decoupling results in simple tuning and a significant reduction in TVI potential. Cones offer greater efficiency over obsolete radials which radiate in the horizontal plane and present an unsightly bird's roost with an inevitable "fallout zone" below. 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.



Outstanding mechanical design makes the IsoPole the only logical choice for a VHF base station antenna. A standard Amphenol 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. All IsoPole antennas are D.C. grounded. The insulating material offers superb strength and dielectric properties, plus excellent long-term ultra-violet resistance. All mounting hardware is stainless steel. The decoupling cones and radiating elements are made of corrosion resistant aluminum alloys. The aerodynamic cones are the only appreciable wind load and are attached directly to the support (a standard TV mast which is **not supplied**).

IsoPole antennas have also become the new standard for repeater applications. They all offer low angle of radiation, low maintenance, easy installation, and low cost with gain comparable to units costing several times as much. Some repeater installations have even eliminated the expense of a duplexer by using two IsoPole antennas separated vertically by about twenty feet. This is possible because of the superior decoupling offered by the IsoPole antennas.

The IsoPole antenna is now available in a 440 MHz version which is fully assembled and tuned.

Our competitors have reacted to the IsoPole, maybe you should too! Order your IsoPole or IsoPole Jr. today from your favorite Amateur Radio Distributor.

ISOPOLE 144  
ISOPOLE 220  
MAST NOT  
SUPPLIED

**AEA** Brings you the  
Breakthrough!

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION



ISOPOLE 440



ISOPOLE  
144JR  
ISOPOLE  
220JR  
MAST NOT  
SUPPLIED

by sending SASE to Lake County Hamfest Committee, 1326 East 349th Street, Eastlake, OH 44094. Telephone (216) 953-9784. □

## Tennessee

The Oak Ridge Amateur Radio Club invites you to attend the Fourth Annual Oak Ridge Hamfest at the Civic Center in Oak Ridge, Tennessee, 3-4 April. Doors open 9:00 a.m. to 5:00 p.m. Admission \$3, accompanied children free. Large indoor dealer display, forums, prizes and concessions. Enjoy a free cup of coffee while you eyeball old friends in our QSO room, or take advantage of the Tennessee springtime while browsing through the ample outdoor flea market.

Talk-in on 146.28-88 repeater (147.72-12 backup) and 146.52 simplex.

For more information, send SASE to: ORARC, Hamfest, P.O. Box 291, Oak Ridge, TN 37830 (Attn: Jim McNair N4EXG). □

## Wisconsin

The Madison Area Repeater Association, Inc. (MARA) is pleased to announce its 10th annual Madison Swapfest which will be held on Sunday, 4 April 1982, at the Dane County Exposition Center Forum Building in Madison, Wisconsin. Doors will be open at 8:00 a.m. for sellers and exhibitors and at 9:00 a.m. for the public.

The Forum Building has over 20,000 square

feet of space for exhibitors and the flea market, as well as plenty of space for parking in the adjacent paved lot. Hotel accommodations are available within walking distance of the swapfest.

Commercial exhibitors and flea market vendors will provide a large variety of equipment and components for amateurs, computer hobbyists and experimenters. Door prizes will be awarded. An all-you-can-eat pancake breakfast and a barbecue lunch will also be available.

Admission is \$2.50 per person in advance and \$3 at the door. Children 12 and under are admitted free. Tables are \$4 each in advance and \$5 at the door. Be sure to reserve early, as tables were sold out last year.

Talk-in on WR9ABT, 146.16/76.

For reservations or more information, write to MARA, P.O. Box 3403, Madison, WI 53704.



## Tennessee QSO Party

The 12th annual Tennessee QSO Party, sponsored by the Tennessee Council of Amateur Radio Clubs, will be held Saturday, 20 March, 2100Z to 0500Z, 21 March; and Sunday, 21 March, 1400Z to 2200Z.

**Exchange:** Tennessee stations give signal report and county. Out-of-state send signal report and state, province or country. You may work same station on different bands, modes or counties.

**Scoring:** 1½ points for contacts on 10 and 15; 1 point all other bands and combine phone and CW scores as one contest. Out-of-state stations (QSO points times different counties in Tennessee) Tennessee stations' (QSO points times SUM of following (different) states plus Tennessee counties plus VE/VO provinces).

**Frequencies:** CW-approximately up 50 from band edge. Phone-3980 7280 14280 21380 28580. Novices in their bands.

**Miscellaneous:** Repeater contacts not allowed. Mobiles compete against mobiles. Portables against portables. Single transmitter entries only. No county line operation for multiple contacts. Portable station must set up per Field Day rules. Phone stations call CQ Tenn QSO party; CW call CQ TN. **Bonus points:** 200 for each county outside of home county. Minimum of 10 contacts each county to qualify for bonus. **Power multiplier:** 1.5 for all stations operating at 200 watts DC or less entire contest. No list operation permitted.

**Logs:** Date/time in GMT, station worked, band, mode, exchange and score. Use separate log sheet for each band over 50 contacts and submit contest cross-check sheet if work over 200 stations. Logs must be legible to avoid disqualification.

**Awards:** Plaque to Tennessee winner, Tennessee mobile, Tennessee portable and out-of-state winner. Certificates with results to everyone sending business-size SASE and 15 contact log.

**Deadline:** 1 May 1982. Mail to Dave Goggio, W4OGG, 1419 Favell Dr., Memphis, TN 38116. □

## DX YL to North American YL

The CW portion of the DX YL to North

The perfect gift for amateur or interested friend  
**WORLD RADIO**

Your name \_\_\_\_\_

Name \_\_\_\_\_

Call \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

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

Name \_\_\_\_\_

Call \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

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

\_\_\_\_\_ 12 Issues (75¢ issue) \$9.00

\_\_\_\_\_ 24 Issues (71¢ issue) \$17.00

\_\_\_\_\_ 36 Issues (67¢ issue) \$24.00

\_\_\_\_\_ Lifetime \$90.00

Worldradio

2120 28th Street • Sacramento, CA 95818

To be introduced at Dayton Hamfest

# New, Simple, Modern, Fast.

Capable of communication rates to 300 baud, the TU-300 is designed specifically for modern high-speed and standard RTTY applications. The TU-300 operates with standard microcomputer, TTY and radio equipment and is TTL and RS 232-C compatible. Controllable by remote, this next generation terminal unit with innovative modular design provides more than six times the conventional amateur data transmission rate using present radio and computer equipment. Featuring three frequency shifts, the TU-300 is the only 300 baud terminal unit offered in easy to construct kit or wired.

## TU-300



**DEALERS!** Fleisher Corporation is seeking qualified dealers for the US and international markets. For complete dealer information, call or write TODAY!

- 300 baud communications rate
- crystal controlled AFSK with downshift CW ID
- autostart motor control with AC outlet
- remote operation
- high quality commercial construction
- modular design with steel case for RF shielding
- indicator type push-button switches
- separate send and receive "reverse shift" controls

- bar graph tuning and LED function indicators
- mark-hold and selective fading compensation
- 3 shifts (170Hz standard - other shifts extra)
- oscilloscope tuning outputs

- easy to tune multipole active filters
- TTL and RS 232-C compatible I/O's
- optional 20 and 60ma optically isolated loop supply
- simple kit construction - no instruments needed for alignment with AFSK installed

For more information about the TU-300, contact:



**Fleisher Corporation**

507 Jackson • P.O. Box 976 • Topeka, Kansas 66601  
913-234-0198 • Telex 437125

American YL contest begins Wednesday, 7 April at 1800 UTC, and ends Thursday, 8 April at 1800 UTC. The Phone portion of the contest starts Wednesday, 14 April at 1800 UTC and ends Thursday, 15 April at 1800 UTC.

**Eligibility:** All licensed women operators throughout the world are invited to participate.

**Procedure:** DX YLs call "CQ North American YL," and North American YLs call, "CQ DX YL."

**Operation:** All bands may be used. No cross-band operation. Net contacts, repeater contacts, and contacts with OMs do not count. Stations may be worked and counted once on each band and mode.

**Exchange:** Station worked, QSO number, RS or RST, state or 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) DX YLs, including Hawaii and Alaska, may contact all the North American continent, which includes the 48 contiguous states and Canadian provinces. C) Contestants on the North American continent (including the 48 contiguous states and Canadian provinces) may contact DX YL stations, to include Hawaii and Alaska. D) A station may be counted once on each band for credit and 1 point is earned for each station worked once on each band. E) Multiply the number of QSOs by the number of different states and provinces OR countries worked. A multiplier is counted only once in the contest. It is NOT counted on each band. F) Contestants running 150 watts or less on CW and 300 watts PEP or less on SSB, at all times, may multiply the results of (E) by 1.25 (low-power multiplier).

**Logs:** All logs must show state or 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 29 April 1982, and received no later than 24 May 1982, or they will be disqualified. Please send logs to: YLRL Vice President Sandra Heyn, WA6WZN, 962 Cheyenne Street, Costa Mesa, CA 92626.

**Duplicates:** For each duplicate contact that is removed from the log by the vice president, a penalty of three additional and equal contacts will be exacted.

**Awards:** Cup to 1st place DX phone; Cup to 1st place North America phone; Cup to 1st place DX CW; Cup to 1st place North America CW. Plaque to highest combined CW and phone DX score; Plaque to highest combined CW and phone North America score. 2nd and 3rd place DX and North America winners in each contest will receive certificates.

## QRP ARCI SSB QSO Party

The QRP Amateur Radio Club International (ARCI) SSB QSO Party begins at 1200 UTC on Saturday, 17 April 1982, and ends at 2400 UTC on Sunday, 18 April 1982. Participants may operate a maximum of 24 hours.

**Exchanges:** Members give RS, state/province/country and QRP number. Non-members give RS, state/province/country and power output.

Stations may be worked once per band for QSO and multiplier credits. Each member contact counts 5 points regardless of location. Each non-member U.S. or Canadian contact counts 2 points. Non-member stations other than W/VE count 4 points.

**Multipliers:** 8 to 10 watts PEP output  $\times 2$ ; 6 to 8 watts PEP output  $\times 4$ ; 4 to 6 watts PEP output  $\times 6$ ; 2 to 4 watts PEP output  $\times 8$ ; less than 2 watts PEP output  $\times 10$ ; entries from stations running more than 10 watts PEP output will count as check logs only.

**Bonus multipliers:** If 100 percent natural power (solar, wind, etc.) with no storage,  $\times 2$ . If 100 percent battery power,  $\times 1.5$ .

**Scoring:** QSO points (total of all bands)  $\times$  total number of states/provinces/countries (the same state/province/country may be counted on more than one band)  $\times$  power multiplier  $\times$  bonus multiplier (if any) equals claimed score. Send large SASE to contest chair for scoring summary sheet in advance of contest.

**Suggested frequencies:** 1810, 3985, 7285, 14285, 21385, 28885 and/or 50385 kHz, all plus or minus to clear interference. VHF/UHF contacts must be direct and not through a repeater.

**Calling method:** CQ CQ QRP from (call sign).

**Awards:** Certificates to highest-scoring station in each state/province/country with two or more entries. Entries automatically considered for annual Triple Crowns of QRP Award. (See award information in January issue, page 47.)

**Logs:** Separate log sheets are suggested for each band for ease in scoring. Send full log data plus separate work sheet showing details and time(s) off air. No log copies will be returned. All entrants desiring results and scores please include a No. 10 envelope with enough U.S. postage for one ounce or an IRC. It is a condition of entry that the decision of the contest chairman of QRP ARCI is final in case of dispute. Logs must be received by 20 May 1982. Logs received after that date or missing information will be used as check logs.

Send logs and scoring information to: QRP ARCI Contest Chairman, William W. Dickerson, WA2JOC, 352 Crampton Drive, Monroe, MI 48161.

# THE MART



**Classified**  
•Buy •Trade  
•Sell •Inform

Business firms/20¢ a word.  
Private individuals/10¢ a word.  
Mart deadline/20th of the month.  
**THE MART Worldradio**  
2120 28th St., Sacramento, CA 95818

**YAesu FT207R HT** — like new, with charger stand, two nicads, speaker mike, leather case, mobile charger, battery saver kit, FBI sleeve — \$350. Warren Sichel, W6EJY. (415) 435-0585.

**MOTOROLA HT220** — like new, slimline, short case, six-channel (146.10-.70, .16-.76, .22-.82, .34-.94, .94-.94, .52-.52), charger stand, 3 nicads, 2 leather cases, rubber ducky, telescoping antenna — \$300. Warren Sichel, W6EJY, (415) 435-0585.

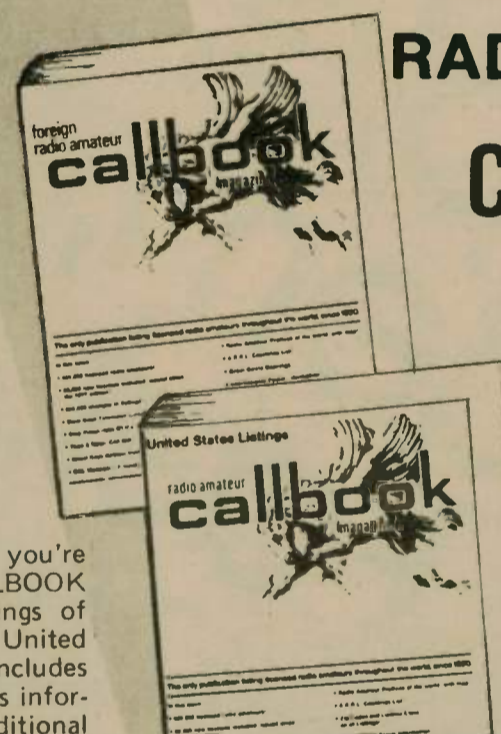
**BEAUTIFUL TWELVE COLOR CHART of United States Amateur Radio Privileges.** All licenses, all bands (160-2), all modes. Over 6400 in use now. \$5. Larry Dennison, KB6KG, 5002 Marion Avenue, Torrance, CA 90505.

**FREE NAMEBADGE** — when ordered with 2x8 call letter plate for only \$5.95. CUSTOM SIGNS, Box 1306W, Rome NY 13440.

## GET YOUR

# 1982

## RADIO AMATEUR CALLBOOKS



Specialize in DX? Then you're after the Foreign CALLBOOK with over 370,000 listings of amateurs outside the United States and possessions. Includes calls, names, and address information plus many additional features of interest to DX'ers. Published December 1, 1981.

FOREIGN CALLBOOK

### \$17.95

PLUS SHIPPING

See your dealer for the latest issue or order directly from the publisher using the handy order form.

Radio  
Amateur  
**callbook, INC.**  
Dept. W  
925 SHERWOOD DRIVE  
LAKE BLUFF, ILLINOIS 60044

The U.S. CALLBOOK has over 400,000 A,K,N,&W listings. It lists calls, license classes, names, and address information plus the many valuable charts and references you have come to expect from the CALLBOOK. Published December 1, 1981.

UNITED STATES CALLBOOK

### \$18.95

PLUS SHIPPING

Respected worldwide as the only complete authority for radio amateur QSL and QTH information.

Foreign residents please add \$4.55 for shipping.

Payment in U.S. funds must be sent directly to publisher not through a bank.

#### ORDER FORM

| Item                                      | Price Each | Shipping | Total Price |
|-------------------------------------------|------------|----------|-------------|
| <input type="checkbox"/> U S CALLBOOK     | \$18.95    | \$3.05   | \$22.00     |
| <input type="checkbox"/> FOREIGN CALLBOOK | \$17.95    | \$3.05   | \$21.00     |

Illinois residents only add 5% sales tax \_\_\_\_\_

Name \_\_\_\_\_ TOTAL \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

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

Charge my:  Visa Card  Master Charge Master Charge Interbank no. \_\_\_\_\_

Card No. \_\_\_\_\_ Expiration Date \_\_\_\_\_

Dept. W Signature \_\_\_\_\_

**GENERALIZE YOURSELF THE EASY WAY!** Revolutionary new word method to learn radio code by Russ Farnsworth. No books to read, no visual gimmicks to distract you — just listen and learn! Based on modern psychological techniques. This course will take you beyond 13 wpm in *less than half the time!* Album contains three 12" cassettes, 2½ hours of instruction — \$9.95; cassette — \$10.95. CA add tax. MC and VISA. DANA, PO Box 161723, Sacramento, CA 95816.

**COLLINS S-LINE FILTERS**, unused: F455FA21, 2.1 kHz \$60, F455FA08, 800Hz \$75, F455FA05, 500Hz \$75, F455Y21, 2.1 kHz \$40, Derek, K16O, (916) 965-1027 days, (916) 965-4904 eves. Sacramento.

**HENRY 2K-4 LINEAR** — mint condition, 5m-10m — \$925. Derek, K16O, (916) 965-1027 days, (916) 965-4904 eves., Sacramento.

**WORLD RADIO ON CASSETTES** — Worldradio for blind amateurs on cassettes. To receive this free service send \$3.00 (one-time only contribution for tapes) with your name, address and call to George Hickin, W4GH, Box 7453, Macon, GA 31209.

**AMATEUR RADIO AND TEST EQUIPMENT REPAIR** calibration — experienced, licensed, reasonable. R. HALL, W6BSH, 381 Taper Ct., San Jose, CA 95122, (408) 292-6000.

**INTRODUCING:** Beautiful natural full color photo QSL cards, made from your color negative or slide. From \$235.00 for 1000 cards minimum. Free samples, stamps appreciated. K2RPZ, Box 412, Dept. NCW, Rocky Point, NY 11778, (516) 744-6260.

**QSL CARDS \$12.50/500.** Free 400-illustration catalogue. BOWMAN, 743 Harvard, St. Louis, MO 63130.

**MOBILE IGNITION SHIELDING**, provides more range with no noise. Available on most engines in assembled or kit forms, plus many other suppression accessories. Free literature. ESTES ENGINEERING, 930 Marine Drive, Port Angeles, WA 98362.

**COLORFUL QSL'S** — including Day-Glows and Woodgrains. Samples 50¢. (Refundable with order.) SPECIALTY PRINTING, Box 1, Duquesne, PA 15110.

**TELETYPEWRITER** gears, ribbons, manuals, parts, supplies and toroids. SASE. Buy all unused parts, late machines. PETRONICS, Box 8873, Ft. Lauderdale, FL 33310 N4TT, ex-W4NYF.

**AUTO-CALL KEEPS UP WITH THE LATEST** Ham info from Washington, DC area. Subscription \$5.00 a year, sample copies 75 cents. Address: AUTO-CALL, c/o JGHK, 2417 Newton St., Vienna, Virginia, 22180.

**REPLACE RUSTED ANTENNA BOLTS** with stainless steel. Small quantities, FREE catalogue. ELWICK, Dept. 430, 230 Woods Lane, Somerdale, NJ 08083.

**WYOMING AND UTAH RANCH LAND.** Wild horses, antelope, deer. Near paved road. 10 acres — \$60 down, \$60/month. For information, maps, photographs. (Offer void in Calif.) Will trade equity for ham gear, home computer, test equipment, etc. — Dr. Michael Gauthier, K6ICS, 10 W. Gallatin Road, Downey, CA 90240.

**AMATEUR RADIO STATION BELT BUCKLES**, Western style, brass finished, engraved. \$12.00. ROYAL, Box 2174, Sandusky, OH 44870.

**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.

**DISTINCTIVE QSLs** — Largest selection, lowest prices, top quality photo and completely customized cards. Make your QSLs truly unique at the same cost as a standard card, and get a better return rate! Free samples, catalogue. Stamps appreciated. Stu, K2RPZ, Box 412, Rocky Point, NY 11778. (516) 744-6260.

**ISOTRON** compact antennas — 40, 80 & 20 meters. North Bay Area dealer. KB6LO, Don Bremer, (707) 546-7047.

**RIG TROUBLES GOT YOU DOWN?** You stand a good chance of fixing it yourself. Get help with your own copy of "Owner Repair of Radio Equipment." Shipped postpaid for \$8.95 from Frank Glass, K6RQ, 14910 LG Blvd, Los Gatos, CA, 95030.

**AMP-LETTER:** Devoted to the design, construction, and operation of Amateur Amplifiers. Why buy high-priced amps when you can build one? Let the AMP-LETTER help you find parts and information. 17 issues/yr. \$18.00 SPECIAL! Mention this ad and subscribe for only \$15.00. Sample \$2.00. AMP-LETTER, RR2 Box 39A, Thompsonville, IL 62890.

**10 NOVICE PRACTICE TESTS.** 200 questions and answers! Just \$8. ARPRESS, 380 Willbanks S.E., Rome, GA 30161.

**The SOCIETY OF WIRELESS PIONEERS, Inc.**, invites all professional operators, active or retired, military or commercial, to join the world's largest organization of its kind. Many active nets. Write Box 530, Santa Rosa, CA 95402 for details or send \$1 to pay postage on sample SPARKS JOURNAL.

**THE BEST HAM RADIO/PERSONAL COMPUTING INSIDER NEWSLETTER IN THE BUSINESS!** Published twice a month: \$18.00/year. Twice as many pages as HR Report! (Sample: FREE!) THE W5YI REPORT; PO Box #10101W; Dallas, TX 75207.

**TELETYPE MACHINES** and accessories, BARGAINS. SASE for list. GOODMAN, 5454 South Shore, Chicago, IL 60615.

**WANTED . . . TUBES.** All types high power microwave nixies or ? Pay cash or trade. WA6LHR, (415) 530-8840.

**CUSTOM EMBROIDERED EMBLEMS**, your design, low minimum. Free booklet design hints and guide. EMBLEMS, Dept. 87, Littleton, NH 03561.

**SUBSCRIBE TO THE DXers Magazine.** Gus Browning, W4BPD, editor. Only \$15.00 per year. The DXers Magazine, Drawer DX, Cordova, SC 29039.

**COMPLETE QSL catalog.** 32p, cuts, forms, type plus fifty samples. \$1.00, refundable. UNADILLA PRESS, P.O. Box C, Unadilla, NY 13849.

**RUBBER STAMPS FAST** — 3 lines or 1" call only \$3.00. Engraved name call badge, \$2.50. W6LXW, 905 Pine Tree Lane, Aptos, CA 95003.

**THE PEANUT WHISTLE:** International newsletter of news, reviews, information and opinion. Also, outlandish bargains on publications, software, equipment and accessories. QSL to David Hancock, KA2ETN, 11 Pine St., Hackensack, NJ 07601, for year's subscription.

**CERTIFICATE FOR PROVEN TWO-WAY RADIO CONTACTS** with amateurs in all 10 USA call areas. 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.

**FOR SALE — OUTSTANDING DX LOCATION.** Spectacular view of San Francisco Bay from thousand-foot elevation. Many amenities — \$260K. Ernie, WB6UOM, (415) 482-2444, or (415) 981-8890.

**DE K3HAM:** ICOM, Bird, Cushcraft, Beckman, Fluke, Larsen, Hustler, AEA, Antenna Specialists, Astron, Avanti, B&W, CDE, Amphenol, Belden, W2AU/W2VS, Sony, Fanon/Courier, Ham-Key, Vibroplex, Ameco, Callbook, Shure, LaRUE ELECTRONICS, 1112 Grandview Street, Scranton, PA 18509, (717) 343-2124.

**ELECTRONIC PARTS CATALOG.** IC's, transistors. Send first class stamp to ALDELCO, 2789 Milburn Ave., Baldwin, NY 11510.

**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.

**MACK'S TUBES** — new or used electronic tubes. Guaranteed. New tubes — 60% off list. Some "oldies". No COD. Send large SASE for list. MACK'S TUBES, 2565 Portola Dr., Suite 4, Santa Cruz, CA 95062.

**PICTURE QSLs MADE FROM YOUR PHOTO-SLIDES.** Get a better return; be distinctive. Price subject to discount. 250 B/W — \$23.00, 1,000 full color — \$77.00. Write for samples & prices. PICTURE CARDS, Box 5471, Amarillo, TX 79107. 806/383-8347.

**TELETYPE WANTED:** New equipment or spare parts, top prices paid, any quantity. Send lists. Parts and supplies for all models for sale too. SASE for list. Van, W2DLT, TELEPRINTER CORPORATION, Box 217, Berkeley Heights, NJ 07922.

**CODE PROFICIENCY DRILLS** are transmitted from WB3IVO, BRASS POUNDERS ARC, each Saturday and Tuesday starting 0200Z on 3560 kcs. Each Saturday and Sunday starting 2000Z on 7060 kcs. Monday thru Friday starting 1930Z on 14060 kcs. Speed ranges from 20 to 60 WPM.

**MIRROR IN-THE-LID**, and other pre-1946 television sets, picture tubes, parts, magazines wanted for substantial cash. Especially interested in any RCA "TRK", G.E. "HM", or Westinghouse "WRT" series set. Arnold Chase, 9 Rushleigh Road, West Hartford, CT 06117. (203) 521-5280.

**SCANNER OWNERS!** New 4th Edition! "TOP SECRET" REGISTRY OF GOVERNMENT RADIO FREQUENCIES by K2AES! Reveals 50,000 listings: FBI, Secret Service, FCC, Border, Immigration, NASA, BATF, Treasury, CIA, Customs, military, etc. Only \$9.95 (add \$1 for speedy First Class Mailing). CRB Research, Box 56-WR, Commack NY 11725. (Free brochure.)

**QSLs. QUALITY AND FAST SERVICE FOR 22 YEARS.** Include call for free decal. Samples 50¢. Ray, K7HLR, Box 331, Clearfield, UT 84015.

**CDE ROTOR OWNERS** — You need a "D-Lay-5"! This easy-to-install circuit protects the rotor from damage caused by accidental braking. Works with the Ham II, Ham III, Ham IV, and Tailwister models. Provides a five-second safety factor in your rotor brake. Incredible value at \$19.95 — Postage paid world wide. LANCE JOHNSON ENGINEERING, PO Box 7363, Kansas City, MO 64116.

**DX PREFIX LISTING.** Personalized and computer generated. Includes prefix — country — CQ and ITU zones — Long and short path distances and bearings — Checksquares for stations worked and confirmed. SASE sample. \$6.95 + 1.50 shipping. Jon Presley, WD0EAO, R3 Box 117, Lebanon, MO 65536.

**VERTICAL FANS!** Roof, pole or ground mount? What's best and why? Our book "Vertical Users: Novice to Extra" explains in detail. It's complimented by Hustler, Butternut, Worldradio, Ham Radio, 73, Bill Orr, Barry Goldwater. \$4.95 postpaid. DANRICK ENTERPRISES, 213 Dayton Ave., Clifton, NJ 07011.

**QSLs by W6BA** — "Customized" \$19.75 per 1000. Star Route 2, Box 241, 29 Palms, CA 92277.

**NOTICE** — Trickle Charge your HT Nicads with our adapter works Base or Mobile. Fully Guaranteed. Send type of radio. In USA \$19.95 ppd. Canada add \$2.00, Overseas add \$3.25. Quantity discounts available. FREE INFO. NARWID ELECTRONICS, 61 Bellot Road, Ringwood, NJ 07456.

**AUTO LICENSE FRAMES.** White vinyl with engraved overlay. Top, Amateur Radio; bottom, Call and QTH. \$10.00 each, \$17.50 pair pp. ROYAL, PO 2174-W, Sandusky, OH 44870.

**TRS-80 AMATEUR RADIO PROGRAMS** for the Model-I and Model-III. Contesters can now dupe-check up to 3,000 contacts with my program. The second program allows you to log, delete, find, list and save on tape or printer all your QSO's and typical logbook information. FREE LISTING available if you send a self-addressed stamped envelope to Bill Gosney — KE7C, 2665 N. 1250 East, Whidbey Island, WA 98277.

**EMBROIDERED EMBLEMS**, custom designed club pins, medallions, trophies, ribbons. Highest quality, fastest delivery, lowest prices anywhere! Free info: NDI, Box 6665 L, Marietta, GA 30065.

**WANTED** — old radio transcription discs. Any size, speed, subject. Send full details & price. W7FIZ, Box 724, Redmond, WA 98052-0724.

**STANDOFF BRACKETS** — assorted styles. Clamp to towers, screw to side of house, etc. Perfect for Ringo Rangers. Also custom made to solve your problems. Info — Box 9, Oaklawn, IL 60454. WD9IIX.

**FAST, DEPENDABLE MAIL ORDER???** You bet! Semiconductors, parts, ham and computer accessories. Surplus goodies, too! Free Catalog. THE PARTSTORE, Dept. 140, 999 44th St., Marion, IA 52302.

**VOXCLOCK BY RADIO SHACK**, (63-902) as mentioned on page 51 of January Worldradio - \$55 postpaid; Calif. add sales tax. OJAI VALLEY ELECTRONICS, 307B East Matilija, Ojai, CA 93023.

**ELECTRONIC CMOS KEYS** \$14.95 kit (PCB & Parts), \$19.95 assembled and tested. Include \$1.50 postage. Send for free information. DGM ELECTRONICS, INC. 787w Briar Lane, Beloit, WI 53511 (608) 362-0410.

**SELL: TEKTRONIX 531 OSCILLOSCOPE**, "K" preamp, reconditioned, probe, \$200. Precision signal generator, E-200, 100 kc.-44 MHz, book, reconditioned, \$25. W6LGQ, (707) 762-2132.

## EIMAC 3-500Z's

• Very limited quantity •

**\$170** PAIR  
CASH NO. COD  
Add \$7 shipping/handling

I pay cash or trade for all types of transmitting or special purpose tubes.

**MIKE FORMAN**  
3740 Randolph • Oakland, CA 94602  
415-530-8840

## Change of address?

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

**LEARN THE CODE** — a course for family members and friends who don't know the difference between a dot or a dash; Monday - Friday, 0630-0700 Pacific local time, ± 3780 kHz, A2/A3/LSB, MARCH-APRIL-MAY, SEPTEMBER-OCTOBER-NOVEMBER. K6RAU. Starts first Monday of each month.

**BUYING OR SELLING?** An ad in **Worldradio** makes it happen **FASTER**.

•••

## ADVERTISERS' INDEX

A & M Woodcraft — 38  
 Advanced Communications Intl. — 10  
 AEA — 21, 52  
 AMSAT — 31  
 Anteck — 10  
 Antenna Bank — 32  
 Appliance & Equipment — 43  
 A.P. Systems — 11  
 ARMS — 14  
 Bencher — 44  
 B.G. Carl — 51  
 Butternut Electronics — 36  
 Callbook — 54  
 C & A Roberts, Inc. — 47  
 Certified International — 6  
 Clutterfree Modular Consoles — 50  
 Collins — 9  
 Courage HANDI-HAM — 21  
 Curtis Electro Devices — 42  
 DANA — 48  
 Dayton Hamvention — 45  
 Doppler Systems — 42  
 DX Edge — 27  
 Electrokit — 27  
 Electronic Accessories — 4  
 Electronic Equipment Bank — 31  
 Encomm — 37  
 Engineering Consulting Service — 48  
 E/T Labs — 48  
 Fallert's Engraving — 4  
 Flesher Corp. — 53  
 G&R Design — 7  
 Grove Enterprises — 32  
 Ham Radio Center — 17  
 Handi-Tek — 14  
 Henry Radio — 13, 41  
 Hi-Reli — 31  
 ICOM — 18, 19  
 IIX Equipment — 24  
 IMRA — 3, 38  
 Johnston, Bill Great Circle Maps — 27  
 Jun's Electronics — 26  
 JW Miller — 3  
 Kenwood — 28, 29  
 Long Island DX Bulletin — 56  
 L-Tronics — 25  
 Magnus — 7  
 MFJ — 16, 34, 38, 40, 44, 46  
 Mike Forman Tubes — 55  
 Mil Industries — 25  
 Norfolk Electronics — 14  
 N.P.S. — 10  
 Oak Hill Academy — 34  
 Palomar Engineers — 39  
 Pipo — 8  
 Plak, Rudy — 2, 16  
 Quement — 8  
 Radio Amateur's Conversation Guide — 24  
 Radio Clubs — 33  
 Radio Store — 32  
 Radio World — 12  
 Rex Bassett Electronics — 20  
 R. L. Drake Company — 22, 23  
 Rogo — 34  
 RQ Service Center — 16  
 Rusprint — 12  
 Saroc — 49  
 Sartori Associates — 40  
 Spectrum International — 30  
 Spider Antenna — 40  
 Telecraft Labs — 30  
 Ten-Tec — 5  
 TET — 6  
 Universal Electronics — 36  
 Valor Enterprises — 42  
 Van Gorden Engineering — 2  
 Vanguard Labs — 51  
 Webster Associates — 3  
 West Coast VHFer — 51  
 Wheeler Applied Research Lab — 2  
 Willcomp — 24  
 Williams Radio Sales — 15  
 Yaesu — 35

**AMP-LETTER SPECIAL!** One year subscription to the AMP-LETTER and a copy of Bill Orr's "Radio Handbook", 22nd edition, \$45.95. Save \$12.00. Add \$2.00 for shipping and handling. AMP-LETTER, RR2, Box 39A, Thompsonville, IL 62890.

**CONTESTERS, DX'ers, INVESTORS:** Want to own the Midwest's largest Antenna Farm? For sale - three bedroom all brick custom contemporary house on 20 acres overlooking a 3 acre stocked lake. Six towers including four 150'ers with 7el Yagi bank crushers. Would you believe a 7el 10m on 42', 7el 15m on 57', 7el 20m on 88' and a 4el 40m on a 100' boom! Includes tractor, mower, machine shop, welders and all peripherals. A lifetime opportunity. Contact AB0L, Rt. 1 Box 587, Holt, Missouri 64048. (816) 635-6906.

**SEE WORLD'S FAIR** while attending 1982 Knoxville Hamfest and ARRL Delta Division Convention, Memorial Day Weekend (May 22-23). DX, computer, and technical forums; air-conditioned exhibit area; and large indoor/outdoor flea market make this Tennessee's largest hamfest. More information? (Dealers, tickets, reservations) N4BAQ, 5833 Clinton Hwy., Suite 203, Knoxville, TN 37912.

**WAVETEK RF SWEEP** generator model 1050 with all markers for duplexer and cavity tune-up 1 to 450 MHz. Cost \$800, sell \$300. Write for literature. Sherry, WB8JXE, Box 17778, Tucson, AZ 85731.

**MODERNIZE YOUR TRANS-CEIVER** — with Protronics RIT Kit, for only \$15.90 postpaid. Kit comes complete with custom potentiometer and simple step-by-step instructions. Add \$2.50 for XIT. Or send \$3 for instructions, then take \$3 off when you order Kit. VISA/MASTER CHARGE. PROTRONICS INC., 20 Monte Vista, Buckley, WA 98321. 1 (206) 829-0056.

**KENWOOD TS-520S** in original carton with manual, excellent condition, and SP-520, \$525. Write James Panero, 100 Greenwich Ave., NY, NY. 10011.

**WANTED — DRAKE C-4 CONSOLE** for use with Drake R-4B - T4XB. Must be in mint condition. K7OMR, 1361 S. Edlin Ave., Tucson, AZ 85711.

**TS-820 W/DIGITAL**, VFO-820, Shure #444 mic, SP-520, all for \$750. Yaesu FL-2100B amp. w/10m., 600 Watts, for \$290. Call Keith, KD6QE, (707) 448-5748.

**SELL OR SWAP.** Lafayette HA-460, excellent condition. Want Heath HW-16. Pete, K0MVM, 2121 E. Burke Ave., N. St. Paul, MN 55109.

**QUALITY QSLs** printed — one or two-sided (100) min. \$4.75, add 100's @ \$2.25. White & COLORS. Add approx. postage. Samples 2 stamps. (Free order of 500 gold address labels included); D. Testa, Box 9064-WR, Newark, NJ 07104.

**FOR SALE.** Kenwood Twins T599D/R599D. Near mint condition. New finals. Factory boxes and owners' manuals. \$550.00 N6AX, (916) 273-0070.

**SELL OR TRADE - NEW Yaesu FT-127RA** 220 MHz FM Scanning Memorizer transceiver, mike and Cushcraft A-220-11 beam antenna. \$525 list value. Sell for \$375, or swap for linear or ? W7JU, 2200 Jamaica Cove, Riviera, AZ 86442.

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 \$12 for 1-year domestic subscription to:

**LONG ISLAND DX BULLETIN**  
**PO Box 173, Huntington, NY 11743**

**SELL NEW BOXED RECEIVING TUBES** for only one dollar each. Send list of your needs. Trade new Hy-Gain 20-meter Yagi beam for machinists' measuring tools. W5QJT, 6020 Isabella, El Paso, TX 79912. (915) 581-3671.

**ONLY \$169** buys Morse-ASCII converter. Assembled, tested, connector, insured, shipped! Terminal compatible. Now enjoy CW! TELECRAFT LABORATORIES, Box 1185, E. Dennis, MA 02641.

**STOP LOOKING** for a good deal on Amateur Radio equipment — you've found it here — at your Amateur Radio headquarters in the heart of the Midwest. Now more than ever where you buy is as important as what you buy! We are factory-authorized dealers for Kenwood, Drake, Yaesu, Collins, Wilson, Ten-Tec, ICOM, Dentron, Hewlett Packard Calculators, MFJ, Tempo, Regency, Hy-Gain, Cushcraft, Swan and many more. Write or call us today for our low quote and try our personal and friendly Hoosier service. HOOSIER ELECTRONICS, P.O. Box 3300, #9 Meadows Center, Terre Haute, IN 47803. (812) 238-1456.

**TEN-TEC TRITON IV** solid state 200W 80-10 meters - offset tuning, full break-in, CW filter, matching power supply, ceramic mike, just like new - \$595.00 or best offer. Call WA6APB, Lyle, (916) 457-4273.

**UNCLE IRV NEEDS YOUR TRADE.** Have overseas customers. All amateur lines available. Let's deal. NATIONAL, 2500 Channing, Cleveland, OH 44118. (216) 371-2513.

**SWAN 500/C**, SS-16, 117XC Spkr. supp., VOX - \$325 FIRM. 1-318-365-5625, AI, K5MZG.

**WANTED: SBE-34 TCVR;** also SSB adapter for DX-100; also info on adding 160 to HW-101. Contact WB9RBS.

**CROSSBANDER KEEPS EASTERN MASSACHUSETTS** hams informed on the latest in club, ARRL, public service news. Monthly by first class mail. Subscription \$5.00 a year, free sample SASE: CROSSBANDER, Dept. W, 50 Catherine Street, Boston, MA 02131.

**ROSS'S USED EQUIPMENT SPECIALS:** Icom IC 701 S-AC mike \$695, KENWOOD TS 120 S \$500, TS 700 A \$380. Nationwide sales, huge stock, low prices, free expert advice. All prices cash plus shipping. For updated list of used equipment and current specials, send \$1 and self-addressed envelope. \$2 credit given if ordered within 30 days. Closed Monday at 2:00. ROSS DISTRIBUTING CO., Preston, ID 83263. (208) 852-0830.

**SELL: SSTV KEYBOARD** Model HCV-3Kb-1, \$300.00. Perfect condition. Michael Larson, RR2, Box 57, Jewell, IA 50130.

**ICOM, KENWOOD OWNERS** — very informative newsletters. Details S.A.S.E. UIRC, 364 Kilpatrick Ave., Port St. Lucie, FL 33452.

**YAESU FT-690R** 6-meter all mode portable. New in box. \$200. WA1WYC, (617) 328-1425.

**BIG SALE:** KDK 2025A - \$249.95; Azden PCS300C or PCS 30C - \$279.95; CS6R 6 amp precision power supply - \$39.95; Vo-Com 2 Watts in, 25 out - \$61.00; 200mW in, 25 out - \$71.00; 2 Watts in, 50 out - \$89.95; Larsen MM - \$38.95. Prices include UPS Brown. Add \$1.50 COD. CHUCK'S AMATEUR RADIO SUPPLY, Box 44, Madera, CA 93639. (209) 674-1435 daily.

**METAL DETECTORS.** Send for free discount catalog. C.A.R.S., Box 44, Madera, CA 93639.

**MURCH MOD UT200B** Ant. transmatch. New 10-160m. - \$225. Will ship, you pay. W8MOK, Box 185, Green Camp, OH 43322.

**HAMS FOR CHRIST** - Reach other hams with a Gospel Tract sure to please. Clyde Stanfield, WA6HEG, 1570 N. Albright, Upland, CA 91786.

**LEARN CODE THE EASY W6PHA WAY!** — Former USAF code champ gives unique, simple system allowing all ages to learn quickly. No tapes, etc.! Booklet — \$4.00 ppd. Includes \$2.00 discount coupon and catalog sheets for GLOBALMAN hand keys, electronic keyers, code practice oscillators, 100% money back guarantee! You can't lose! GLOBAL AMERICA CORP., Box 400WR, El Toro, CA 92630.

**PURPLE HEART VETERANS:** Organizing national Amateur Radio chapter and net to be affiliated with Military Order of Purple Heart, Inc. For information and application contact Clem Harris, KC5MM (ex-WB5VDL), 6110 Pecan Trail Dr., San Antonio, TX 78249. (512) 699-1420.

**FREE! US QSL SERVICE, INC.** — non-profit, independent bureau handles your QSLs going to US stations FREE! SASE for cards/details. USQS/KM7Z (N7BMY) PO Box 814, Mulino, OR 97042.

**DISCOVER THE JOY OF CW!** New ear-training program applies psychological insights to help you acquire skill in CW recognition, at high speed. Two nationally tested sets now available: SYSTEM 12<sup>®</sup>, five 60 min. cassettes, takes you beyond 15 WPM; SYSTEM 24<sup>®</sup>, five 60 min. cassettes, goes beyond 30 WPM. \$30/set, check or M.O., with comprehensive study guides. TWIN OAKS ASSOCIATES, R5B37, Knoxville, IA 50138.

**WANTED: IC22A's** or other similar xtal rigs capable of operating out of band. Jim McCallum, 714/772-6561, 10051 Perdido St., Anaheim, CA 92804.

**FOR SALE — LAFAYETTE HA350 RECEIVER**, 80 - 10 mtrs, AM, SSB, CW, very good condition - \$75. DAIWA, CN720, very good condition - \$75. WA1JKI, Oliver St., Chicopee MA 01020.

**GROUND RADIALS WORK** — Solve your vertical antenna radial problems with the fantastic ground plane one (GP-1). A 10' diameter, 24-point cast aluminum buss that fits any 2" diameter or smaller mast. Radial problems solved for only \$24.95. Send a SASE for photos and brochure. Lance Johnson Engineering, P.O. Box 7363, Kansas City, MO, 64116.

## EMPLOYMENT

**Classified ads for jobs wanted or position offered will be run free of charge in Worldradio's MART.**

**HOTEL/MOTEL GEN. MGR.**, experience in motel, food & beverage. Twenty yrs. experience with top chains. Desire to locate Florence, SC area. J. Woolvin, Rt. 2, Box 83, Scranton, SC 29591.

**WANTED** — Career as a Radio Office. Have 2nd class radiotelegraph license w/radar. Have 1st class radiotelegraph license w/radar. Amateur Extra NE6L. Will be a ship radio operator. Call Steve (213) 340-8159 or write to S.L. Shafit, 2192 Lanark St., Canoga Park, CA 91304.

**ENGINEERS, TECHNICIANS:** I am an Engineer, early-retired from industry, now operating a Search and Placement firm. NO FEE TO YOU. Employers in the Los Angeles County and Orange County areas need Analog and Digital design Engineers, QC/QA Engineers and Managers, Manufacturing Engineers, Test Engineers; Electronic, Mechanical, Electro-Mechanical. Your rough draft resume will initiate search. Include salary current/required. Call Steavenson, P.E. K6WZ, 13638 Sprout Avenue, Sylmar, CA 91342. (213) 362-1300.