POPULAR COMMUNICATIONS

NOVEMBER 1989 $2.50
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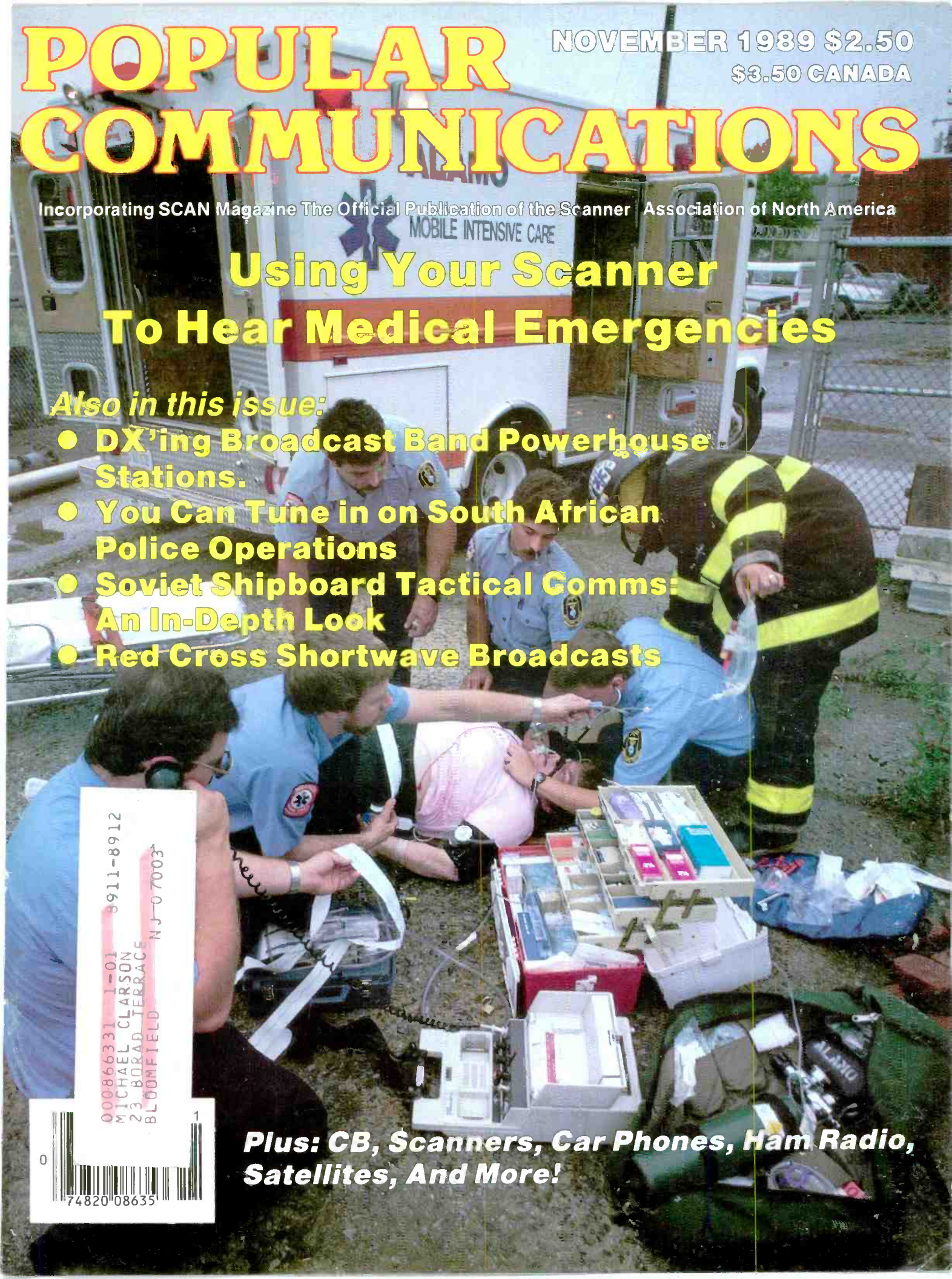

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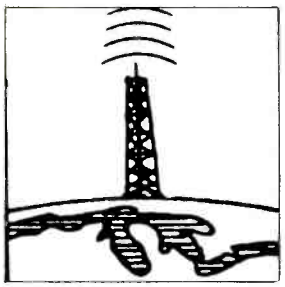

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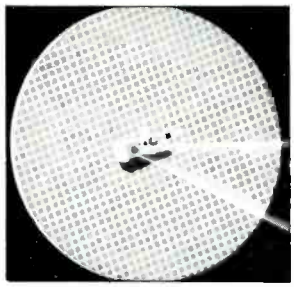

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FEATURES

This month's cover: *Emergency medical team at an accident. One of the members on a two-way radio. Photo by Larry Mulvehill.*

DEPARTMENTS

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BEAMING IN

AN EDITORIAL

BY TOM KNEITEL, K2AES

The Issues

From The vantage point of the November issue, with the year's end just around the bend in the road, I've noticed that '89 turned out to be a year with more than its distinctive share of emotional events for *POP'COMM* readers. At least, that's what the incoming mail seemed to indicate.

In the March issue, for instance, I wrote an editorial in which I agreed with the many folks who have been saying that the time has arrived when there needs to be an entry-level VHF ham ticket that can be obtained without the need for the knowledge of CW. Although the notion of a codeless ham license was something that had long been suggested elsewhere, when it showed up in the March *Beaming In*, it proved to us that it's one of those issues that gets the adrenalin flowing. The large number of letters that came in alternately heralded me as either ham radio's salvation, or the primary focus of evil in Western Civilization.

Letters are still arriving. The vast majority of letters from non-hams, as you might expect, supported the idea of a no-code ham ticket. Still, despite the strident and (occasionally) abusive letters we received from hams, it did appear that about 60% of hams who wrote supported the idea enthusiastically. Another 10% were sufficiently pragmatic to be willing to give it a try for the good of Amateur Radio, although they would have preferred that such a move hadn't become an absolute necessity in order to precision tune ham radio to the 1990's.

Following close on the heels of the March issue, the April issue *Communications Confidential* column carried another item that triggered a lively reader response. That time, we ran a verbatim exchange of correspondence sent to us by Simon Mason, one of our readers in the U.K., who happens to specialize in investigating the "spy numbers" stations that have always tantalized so many ute monitors. Mason wrote to Klingenfuss, the West German publisher of a utility station directory, and asked why they failed to include in their publication two particular "numbers" stations which were quite obviously alternate transmissions from *Duetsche Bundespost* (West German PTT) stations that were listed therein.

The reply Mason received and sent to us was, basically, to tell him that interest in "numbers" stations is mostly something that American monitors perpetuate, that numbers stations are "nonsense," and monitoring them "ia a waste of time." We ran Mason's letter, as well as the reply he received.

In the April *Communications Confidential* (page 65), in defense of ute monitors all around the world who have devoted considerable time and effort in attempting to analyze and explain these stations, we said that we have always welcomed their reports and opinions in the pages of *POP'COMM*. Moreover, we said that we considered all mystery stations "a significant factor in the excitement, adventure, intrigue, and interest in ute monitoring." We felt that to label mystery stations as "nonsense" and a "waste of time" was a harsh rebuke to many serious monitors.

This entire matter brought in mail. Did it ever! Don Schimmel, our *Communications Confidential* columnist tells me that he received several letters on the topic, some quite unhappy that we offered criticism of Klingenfuss' statements to Simon Mason. I received only one letter of criticism for the comments, and it came from someone in West Germany. However, we did receive a healthy stack of cards and letters that were not only supportive of our comments, but felt that we should have presented our thoughts in far stronger language. From this, I got the distinct impression that to belittle the monitoring preferences of people is, like kicking sand in the face of the Lone Ranger, something that was definitely a bad idea.

I don't deny that one person's monitoring fascination (or obsession) may not represent the interests of every other member of the hobby. People who spend a lot of time tuning English language shortwave broadcasts may not get all that turned on about listening to radiobeacons. Those to whom VHF aeronautical communications are a thrill might be totally disinterested in VHF business band communications. To someone who specializes in HF military comms, hearing a shortwave broadcaster in a rare country may draw no more than a shrug. Those who have established their own monitoring preferences, should be free to pursue those preferences. Likewise, it's usually the case that each of those who have specific likes, understand that the monitoring hobby is great because it is such a patchwork of specialties and experts doing intensive work in specific (and often obscure) areas.

When someone decides that they have become the arbiter of what is and what isn't worthwhile to monitor, and announces that *this* or *that* form of enjoying the hobby is a waste of time, I think it sends a collective shudder through many people. Who may decide the value of another person's time and then pronounce it being wasted as if it isn't being used according to certain specifications they've established?

Do they then decide for us which books, magazines, newspapers, films, and TV programs are suitable and which are a waste of our time? May they select our friends, or political, or even religious beliefs because they've decided the ones we already have are nonsense? How does anybody assume the right to judge the preferences of others as nonsense and a waste of time? It's a concept that set off a lot of alarms, especially unfortunate since it came from a source within the monitoring hobby.

The next thing that looks like it's going to be a mail bringer for a while (although the mail is only just beginning as I write this) was the October *Beaming In* on the topic of reallocating frequencies from one radio service to another, and how a big chunk of the 220 MHz ham band is being taken away to be used for communications by a parcel delivery service. Soon as the October issue began reaching readers, mail started flowing in. Looks like the fact that I was in a snit is what proved especially agreeable to many who were kind enough to write. I suspect that more than a few readers feel a combination of rage, frustration, and helplessness that these frequencies should have been so deftly snagged by others who set their cap for them.

Although the final shot in this ugly 220 MHz business may not have been fired off yet, maybe the answer to avoiding such disasters in the future is for all of us to get a lot angrier, sooner and louder, when these threats appear on the horizon. Most folks tend to sit back and assume that there's some wonderful, and mysterious benevolent force that watches over and protects babies, the innocent, bunny rabbits, pixies, and frequency allocations. We tend to feel that *they'll* know what to say and do to maintain the *status quo*.

It does seem, however, that those who would preserve the sanctity of such allocations need much more to work with than their divine mission backed by the tacit approval of the multitudes. What is really needed is a widespread, totally outraged, unrelenting howl of protest that arises at the first inkling of an attempted ripoff, and doesn't let up until a satisfactory outcome is assured. It may take some money, too. For certain, it's going to require a lot more than a

(Continued on page 72)

MAILBAG LETTERS TO THE EDITOR

Each month we select representative reader leters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons. All letters submitted for consideration must be signed and show a return address. Upon request, we will withhold sender's name should the letter be used in Mailbag. Address letters to Tom Kneitel, Editor, Popular Communications Magazine, 76 North Broadway, Hicksville, NY 11801.

Comments: Lost and Found

I read with fascination the July editorial, *SWL's: Lost and Found*. I'm one of the "found;" perhaps I should say one who has rediscovered SWL'ing after a long hiatus. In the late 1960's, I got started as a SWL, and later got a ham ticket. But during one's teen years, interests shift quickly and other activities displaced my communications work. Two months ago, I stopped in at a local electronics store and a world band radio caught my eye. I was impressed with how sophisticated portables had become in twenty years. The price was reasonable, so I brought it home and found that it quickly rekindled my original interest in SWL'ing. I work in marketing research and have found that the information I pick up on shortwave from overseas news broadcasts provides me with an in-depth view of global events and issues, also international trends that haven't yet shown up in the domestic media. I've found POP'COMM to be a very interesting aid to my listening.

David Griscavage,
Plano, TX

The *SWL's Lost and Found* editorial jarred me into writing as I've been a SWL ever since Tokyo Rose came into our living room during WWII over a small Sentinel set. I was born in 1904 and was dabbling in crystal and breadboard sets by the early 1920's. When superhets came in, I turned to a ready made receiver. Around 1955, I bought a big National communications receiver (which I had until just recently). For some time I mulled over buying a new set, not a desktop unit, but a portable. I settled on a Sangean ATS-803A, although I added an external antenna. This world band set exactly suits my needs. Thanks for the extraordinary editorials each month, you are to be commended.

Paul B. Bascom
Mesa, AZ

The July editorial was in my first issue of *Popular Communications*. I'm new to the world of shortwave, but your comments seemed fair-minded and well put. Your mention of the attitude of those who "only" listen are either aspiring or failed hams is an amusing conceit some people display. While I can't argue the fact that it's good to have hams available during emergencies, at other times I've found their conversations such that it hasn't given me any strong motivation to join in. Not that I've spent a lot of time listening on the ham bands, but what I've heard thusfar is mostly the kind of idle chit-chat I hear during coffee breaks at work, or else the conversations are obsessive jargon-fests about the most minute details of the particular equipment they are using. Buying a transceiver so that you can talk to other people about that same radio is a strange concept. The letters you have printed from hams ridiculing your support for a "no-code" ham license provide examples of blustering technomachismo and semi-literacy that I fear may be all too typical of what SWL's are supposed to envy on a level sufficient to wish to join in. Sure! For now, international news, music and commentary are enough to hold my interest. And your magazine looks pretty good, too.

Bradley Beacham,
Salt Lake City, UT

Kind of got a little disturbed about Mark Bills, NY0E, writing in to complain about your views on no-code. I figure that the name of the magazine is *Popular Communications* not *Popular SWL*. Obviously, the magazine is more than for SWL's alone. I'm a ham and not that happy with no-code, but we have to face the fact that the number of new hams isn't what it should be. If a no-code license is what is needed, then lets get on with it. And cut the crap about "world-band." I have been reading your magazine since 1984 and it's definitely my favorite; I read it from cover to cover.

Ken Johnson,
Joliet, IL

Numbered Among The Comments

I was interested to read Mr. Klingenfuss' words (April issue *Communications Confidential* column) about why he doesn't list numbers stations in his ute guide. What a strange response! How can someone call a book the *Guide To Utility Stations* and than leave out these stations? So what if nobody has received a QSL? I can just imagine the CIA answering reception reports! The facts are these transmissions *do* occur, and to pretend that they don't is a disservice to the hobby. Furthermore, his opinions about American monitors who pursue numbers stations were very insulting. He calls what has been printed about numbers stations "nonsense," but from what authority does he speak? Someone has been going to a lot of trouble to broadcast these transmissions which began about thirty years ago. The fact that no one has yet to explain them shows that they are obviously important. Only in matters of considerable importance can a nation as open as ours maintain such a tight lid on information. I can think of few things that have resulted in such a total lack of comment from our government for such a lengthy period of time. After reading what he had to say, I'm glad I bought *Ferrell's Confidential Frequency List*, which does include numbers stations, and I'm also glad that I subscribe to a magazine that's not afraid to take on the unknown.

Michael Willmer
St. Clair Shores, MI

There is no *verified* possibility of knowing the owner of a numbers station, the exact QTH, and it is obvious that there is no possibility to get any card back. With this aspect in mind, I think that listening to these stations is a way of wasting of time. Sure, it is a rewarding hobby to listen to ute stations, ships and aircrafts and other services where there is no problem in identifying the station, the owner, to find the location and try to QSL. Besides the secrecy of the numbers stations, it is a boring experience to listen for long strings of numbers in a metallic voice or morse code, without really knowing what you're listening to or what it means.

Otto A. Wiesner
Feudenheimer Str. 12,
D-6900 Heidelberg, West Germany

Banned Band

As a member of the Elkhart (Ind.) Police Dept., I was one of a group of officers given some handheld transceivers to use during a stakeout. I got curious about the frequency used by these units and a local ham checked one and determined it was on 156.70 MHz, simplex. He also said this was a VHF Marine Band channel allocation and that made me a bit concerned about the use of this frequency. Persons within the Department can't enlighten me about why we are using this frequency for the 1-watt rigs. Is our use 10-4?

(Name withheld by request.)
Elkhart, IN

The frequency could possibly be used for several reasons, including reducing the probability of being monitored by the suspects, the availability of 1-watt Marine Band transceivers at relatively low cost, and the small likelihood that anybody would know or care. However, 156.70 MHz is a frequency reserved for maritime use, and the FCC doesn't license it for police purposes (except for maritime safety aboard police boats). If the FCC ever checks and confirms that, in fact, there is misuse of of 156.70 MHz, they'll be less than totally thrilled. — Editor PC

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CIRCLE 95 ON READER SERVICE CARD

SCAN Editorial

As you all now know Bob Hanson, Managing Director of the Scanner Association of North America passed away during an attempt to save his life. Mr. Hanson died during liver transplant surgery in early May. All of us here at SCAN will miss Bob and the leadership he provided for us. We will remember him as a true "scanner radio enthusiast." His love of the hobby lead him to make many important contributions to the radio monitoring field. As you'll remember SCAN developed a defense fund. Those resources were used in lobbying efforts to modify the so-called "privacy" legislation in several states and at the federal level. Bob also initiated the Public Service Award giving a cash award and commendation to policemen, firemen or citizens nominted by SCAN members for their heroic efforts.

With the overwhelming support of over seven hundred SCAN members Bob organized the SCAN frequency books.

It is with much regret and sadness that we must close this chapter of SCAN and bid your dear friend goodby . . .

PSA Winners Commendations

SCAN was pleased to receive pictures of Battalion Chief Steve Lemore, February's PSA winner and Police Chief Wm. Karabas,

We have included their letters of thanks and appreciation from both the February and May winners. Our hats are off to you gentleman for your bravery and courage:

Help Repeal N.J.'s Scanner Law

The New Jersey Senate and Assembly have a bill before them that would repeal the Garden State's law prohibiting the mobile use of scanners.

Both Assembly Bill No. 4557 and Senate Bill No. 3593 would repeal the provision of NJS 2A:127-4, which prohibits the mobile use of radios capable of tuning in police and fire transmissions. Law enforcement officers, firefighters and rescue squad members are exempt from the law, however, regular citizens, including amateur radio operators and news reporters and photographers, as well as radio hobbyists who like to listen to scanners, are not exempt. If caught with a scanner in your vehicle, you could face misdemeanor charges. If you would like to see this law repealed through the two bills introduced in Trenton, please send a post card, QSL card or short letter to the list of legislators listed below. The bill currently resides in the Transportation and Communications Committees of both the Senate and the Assembly. It will remain there and die by the end of the year if it isn't brought up for a vote in the main chambers. Write the legislators listed below and request that the bill be considered for the agenda. If enough radio hobbyists express an interest, we can have this law repealed by the current legislative session. Don't Wait! Write Today!

Senate Transportation and Communications Committee

Newton E. Miller, chairman; 10 Furler St., Totowa, NJ 07512

John Penn, vice chairman; 25 Maple St., Somerville, NJ 08876

Robert E. Littell, member; 47 Church St., Box 328, Franklin, NJ 07416

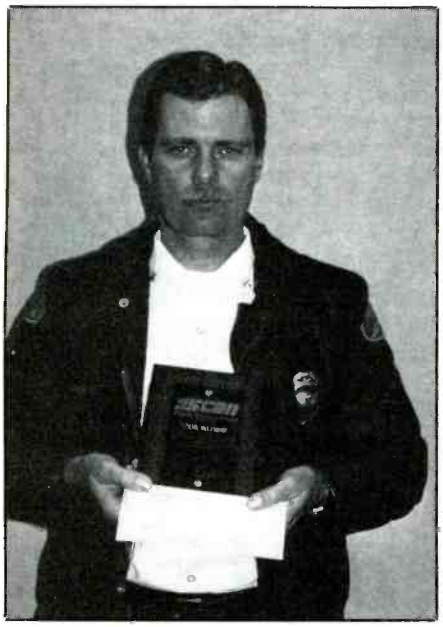
D. Bennett Mazur, member; 448 Main St., Fort Lee, NJ 07024

George A. Spadoro, member; 197 Route 18, East Brunswick, NJ 08816

New Directions

SCAN's Editorial page will take on a new look. While the board of directors of SCAN search for a new managing director the editorial page will feature letters from our membership. We want to develop a self help "hot line" for our members. If frequencies have changed in your area, or you would like help locating or modifying equipment, write, and we will re-print your letter in this column. We're also looking for special interest stories involving scanners. If you have read an article in your local newspaper or have heard of someone using their scanner in a helpful way please send that story to SCAN. We'd like to pass these stories on to all our members through this column. Mail these articles to SCAN, P.O. Box 414, Western Springs, IL 60558.

Fire Chief Robert Niemeyer, Assistant Fire Chief J. Bratcher, and Fire Captain Dave Berkle May's PSA winners.



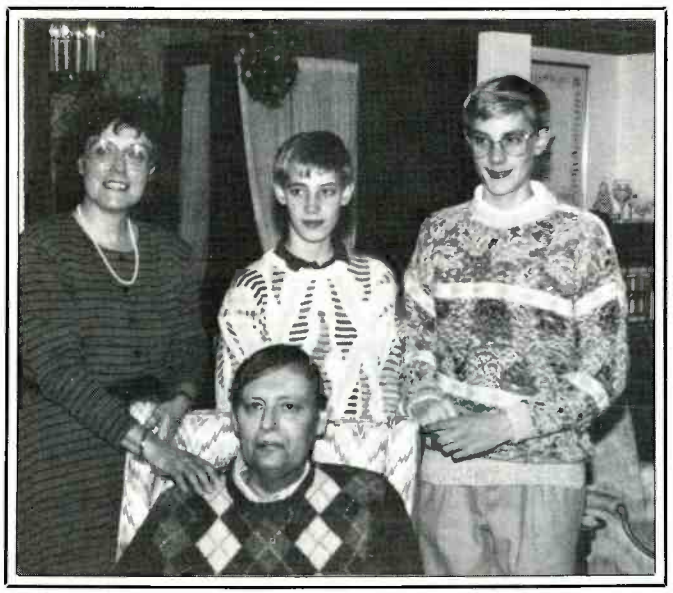
BOB HANSON
MAY WELL HAVE HAD 200,000 FRIENDS.
NOW HE NEEDS THEM ALL . . .

The world of communications has lost a great friend and devoted public servant. On Wednesday, May 8, 1989 Bob Hanson, W9AIF, passed away on the operating table during a delicate and enormously costly liver transplant operation.

Bob will be mourned by literally hundreds of thousands of individuals whose lives he touched throughout the world as a noted columnist . . . public service association executive (SCAN, REACT, Community Watch) . . . communications industry advertising and marketing manager . . . and active radio amateur.

But mourning alone cannot pay adequate tribute to Bob's total dedication to serving others—including his wife of 23 years, Marilyn, and two teenage sons, Peter and Andrew.

Since liver transplants are regarded by some as "experimental surgery," not one dime of the expense—estimated in excess of $200,000—was covered by insurance. We simply cannot allow Bob's wonderful family to live with that impossible burden.



Your help is desperately needed. Immediately. Please, please send your contribution today. Make checks payable to: **Organ Transplant Fund Inc./Robert Hanson** a legally constituted non-profit organization. Any funds collected in excess of those required to pay actual medical expenses will be used to relieve similar transplant victims.

The Robert Hanson Fund.
A Living Memorial.

Organ Transplant Fund Inc./Robert Hanson
P.O. Box 766 • Morris, IL 60450-0766

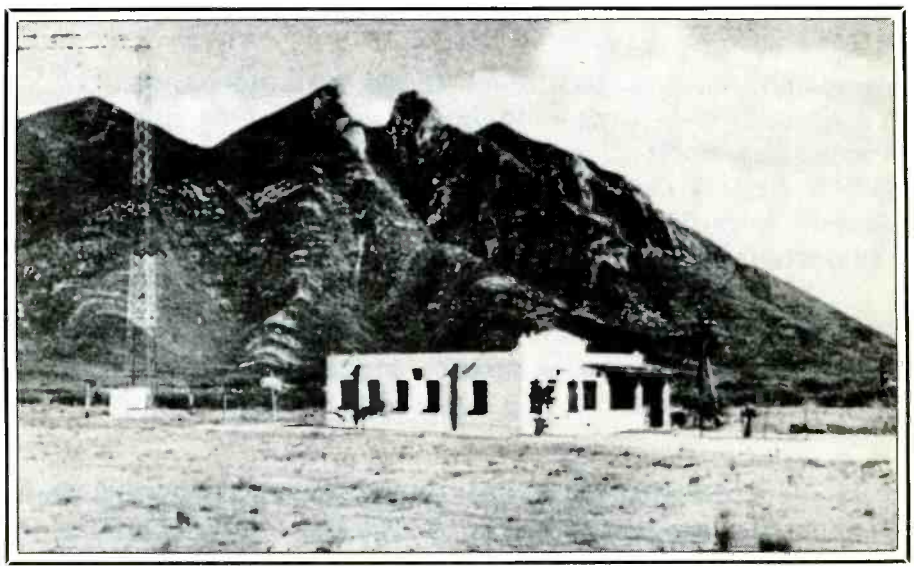
Mediumwave Best Bets

Use That Portable, Car Radio, or Table Radio to Hear Distant Stations! Yes, it's That *Time of The Year Again!*

BY OSCAR SEZINE, KNY2ABX

Sure, it's great to have a super-deluxe communications receiver, but now that the best of the November-March mediumwave DX season is upon us, you can snag many excellent DX stations on virtually *any* receiver such as a table model, car radio, or transistor portable. Nobody claims that you'll be bringing in 50 watt stations located in Chile or India, but don't let that stop you. There are more than 70 powerhouse stations located in the U.S.A., Canada, Mexico, Cuba, and other nearby nations that are best bets for getting through to your receiver, no matter how humble it might be.

More often than not, these are so-called "Clear Channel" (FCC Class 1A) stations. These are perhaps best described in the FCC's own words as, "a dominant station operating on a clear channel and designed to render primary and secondary service over an extended area and at relatively long distances." Certain mediumwave frequencies are designated for use by these stations. While it's true that other stations (local and regional) may share these frequencies and run thousands of watts during daylight hours, but from sunset to sunrise, the dominant station station on frequency is usually given a chance to rule the roost.



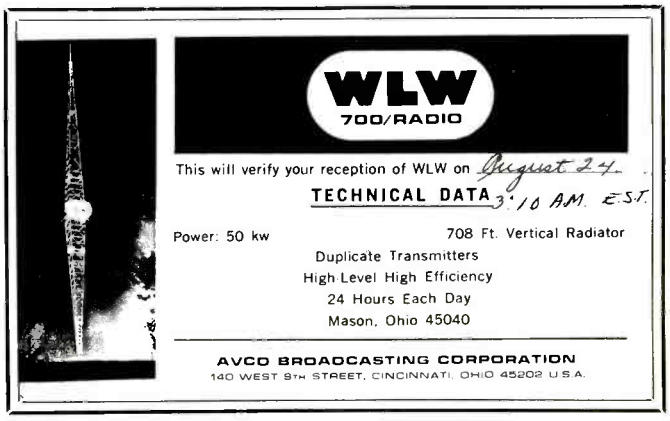
Station XEG in Monterrey, Mexico runs 100 kW on 1050 kHz. Even so, in the northeastern states you may have trouble hearing XEG because of WEVD in New York City which runs 50 kW at night into their directional antenna. (QSL courtesy R.C. Watts, Louisville, KY.)

Needed

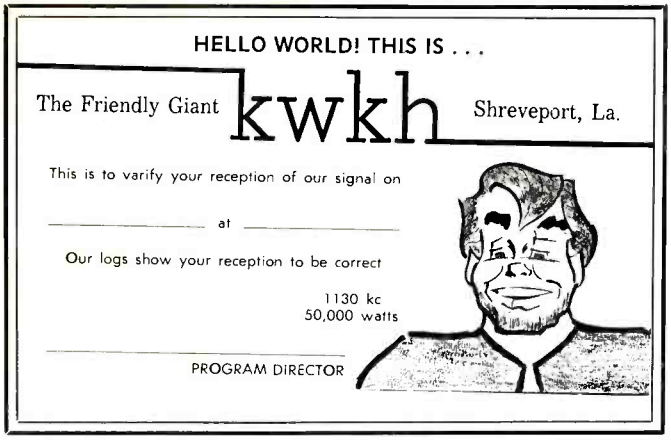
Clear channel stations are vital. Without them, millions of people would be deprived of their only nighttime AM radio service. These stations provide the only radio listening available to residents, long-haul truckers, and travelers in rural regions encompassing well over half of North America. While these regions may well enjoy good daytime reception, changes in the ionosphere at night reduce the coverage of local stations to the point where some leave the air, or operate with reduced power and/or modified antenna radiation patterns.

Technically, clear channel wide-area mediumwave coverage is possible because of radio's skywaves, one of the two kinds of

Station WHO, in Des Moines, serves a large audience at night. (Courtesy Keith Manthey.)

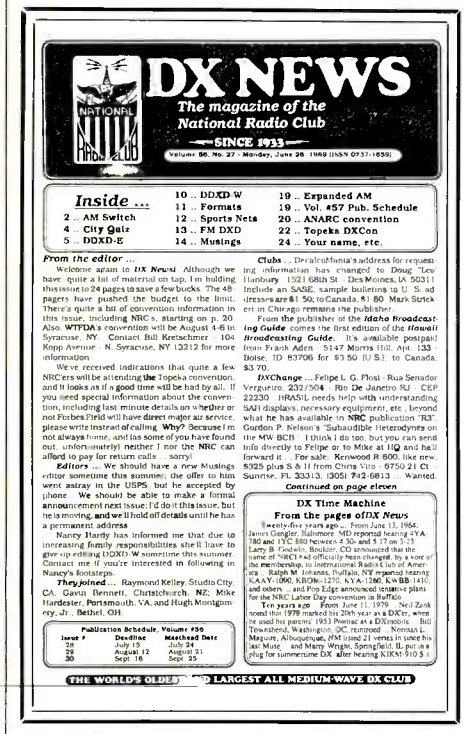


Did you know that WLW once experimented with 500 kW? (Courtesy Keith Manthey.)



Shreveport's KWKH has a big signal on 1130 kHz. In the northeastern states, however, you may find New York's all-night WNEW holding down the frequency with its 50 kW signal, even though at night it uses a directional antenna.

WCCO, in Minneapolis, notes on its QSL that it's "The Station That Serves The Nation." Its signal 830 kHz is widely reported and often one of the first DX stations logged by mediumwave DX'ers just getting started.


DX NEWS
The magazine of the National Radio Club
SINCE 1933

Inside ...

2 .. AM Switch	10 .. DDXD-W	19 .. Expanded AM
4 .. City Quiz	11 .. Formats	19 .. Vol. #57 Pub. Schedule
5 .. DDXD-E	12 .. Sports Nets	20 .. ANARC convention
	13 .. FM DXD	22 .. Topeka DXCon
	14 .. Musings	24 .. Your name, etc.

From the editor ...

Welcome again to *DX News*! Although we have quite a bit of material on tap, I'm holding this issue to 24 pages to save a few bucks. The 48-pagers have pushed the budget to the limit. There's quite a bit of convention information in this issue, including NRC's, starting on p. 20. Also, WTFDA's convention will be August 4-6 in Syracuse, NY. Contact Bill Kretschmer - 104 Kopp Avenue - N. Syracuse, NY 13212 for more information.

We've received indications that quite a few NRCers will be attending the Topeka convention, and it looks as if a good time will be had by all. If you need special information about the convention, including last minute details on whether or not Forbes Field will have direct major air service, please write instead of calling. Why? Because I'm not always home, and (as some of you have found out, unfortunately) neither I nor the NRC can afford to pay for return calls ... sorry!

Editors ... We should have a new Musings editor sometime this summer; the offer to him went astray in the USPS, but he accepted by phone. We should be able to make a formal announcement next issue; I'd do it this issue, but he is moving, and we'll hold off details until he has a permanent address.

Nancy Hardy has informed me that due to increasing family responsibilities she'll have to give up editing DXMS-W sometime this summer. Contact me if you're interested in following in Nancy's footsteps.

They joined ... Raymond Kelley, Studio City, CA; Gavin Bennett, Christchurch, NZ; Mike Hardester, Portsmouth, VA; and Hugh Montgomery, Jr., Bethel, OH.

Publication Schedule, Volume #56

Issue #	Deadline	Mailbag Date
28	July 15	July 24
29	August 12	August 21
30	Sept. 16	Sept. 25

Clubs ... DeralcoMania's address for requesting information has changed to: Doug "Leo" Hanbury, 1521 68th St., Des Moines, IA 50311. Include an SASE, sample bulletins to U. S. address are $1.50; to Canada, $1.80. Mark Stricker in Chicago remains the publisher.

From the publisher of the *Idaho Broadcasting Guide* comes the first edition of the *Hawaii Broadcasting Guide*. It's available postpaid from Frank Aden - 5147 Morris Hill Apt. 133 - Boise, ID 83706 for $3.50 (U.S.) to Canada, $3.70.

DXChange ... Felipe L. G. Flost - Rua Senador Vergueiro, 233/504 - Rio De Janeiro RJ - CEP 22230 - BRASIL needs help with understanding SAH displays, necessary equipment, etc., beyond what he has available in NRC publication "R3". Gordon P. Nelson's "Subaudible Heterodynes on the MW BCB" - I think I do too, but you can send info directly to Felipe or to Mike at HQ and he'll forward it ... For sale: Kenwood R-600, like new, $325 plus S & H from Chris Vito - 6750 21 Ct. Sunrise, FL 33313. (305) 742-6813 ... Wanted:

Continued on page eleven

DX Time Machine
From the pages of *DX News*

Twenty-five years ago ... From June 13, 1964, James Gengler, Baltimore, MD reported hearing YA-780 and TYC-880 between 4:30- and 5:17 on 3-23. Larry B. Gedwin, Boulder, CO announced that the name of "NRC1" had officially been changed, by a vote of the membership, to International Radio Club of America ... Ralph M. Johanas, Buffalo, NY reported hearing KAAY-1090, KBOK-1270, WAKI-790, KWBB-1410, and others ... and Pop Edge announced tentative plans for the NRC Labor Day convention in Buffalo.

Ten years ago ... From June 11, 1979 ... Neil Zank noted that 1979 marked his 20th year as a DXer, when he used his parents' 1953 Pontiac as a DXmobile ... Bill Townshend, Washington, DC reported ... Norman L. Maguire, Albuquerque, NM listed 21 vertes in utes his last Musg ... and Marty Wright, Springfield, IL put in a plug for summertime DX after hearing KIKK-910 5 ...

THE WORLD'S OLDEST ... LARGEST ALL MEDIUM-WAVE DX CLUB

The NRC's mediumwave DX publication comes out 30 times per year with late breaking station news and loggings.

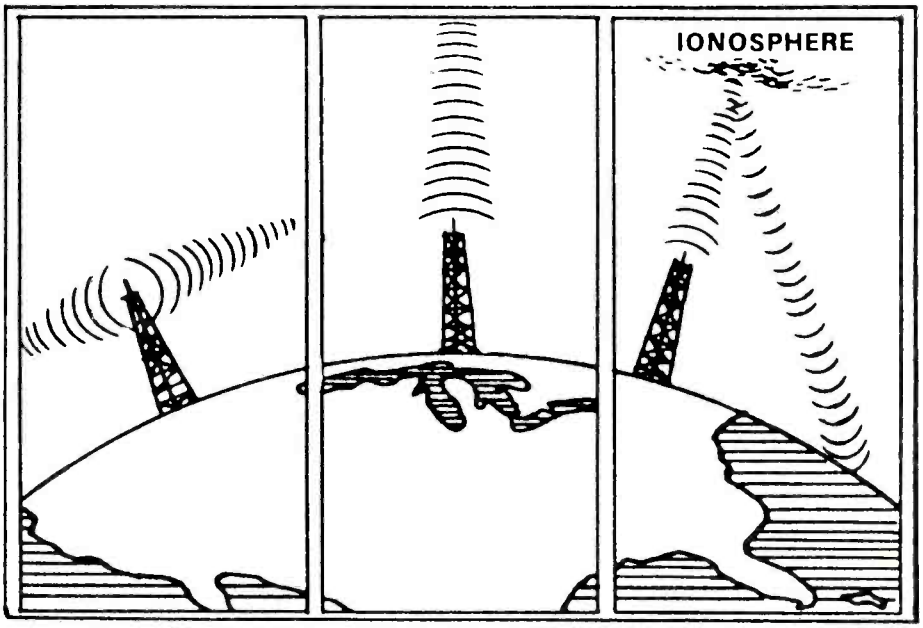


FIGURE 1 **FIGURE 2** **FIGURE 3**

Fig. 1. Groundwave signals parallel the surface of the earth day and night.

Fig. 2. Skywave signals are lost in space during daylight hours.

Fig. 3. At night, mediumwave signals are reflected off the ionosphere and come back to earth in order to give clear channel stations coverage over all of North America, and other continents.

signals emitted by all mediumwave broadcasters. The other is groundwave.

As their name implies, skywaves are those directed towards the sky. During the day, few return to earth. But at night, the ionosphere changes so that it reflects and scatters usable medium frequency skywaves back to earth over great distances. Therefore, the most desired arrangement for a high powered all-night station would be to have a frequency to itself (a "clear channel"), or is permitted to be the dominant station on a channel used at night by low powered local stations employing restrictive signal patterns intended to protect the coverage of the dominant station.

On the other hand, groundwaves parallel the surface of the earth day and night. They are dependable during daylight hours, but at night become subject to fading as well as skywave signal interference.

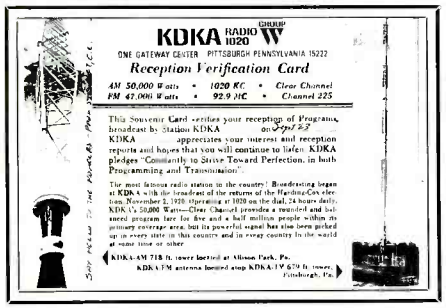
Several decades ago, clear channel stations were entitled to the exclusive nighttime use of some fifteen frequencies. In recent years however (much to the dismay of the stations that had formerly been alone at night on these channels), allowances were made for their limited night use by local stations. Although clear channel stations banded together to protest what they felt was a severe degredation of their service, the practice of allowing local stations to provide groundwave coverage at night on "clear channels" continues.

In the U.S. and Canada, you'll usually find the dominant station running 50,000 watts (50 kW), although some Mexican stations run 100 kW, even 250 kW. Cuba has been suspected of running as much as 500 kW at times on 830, 1040, and 1160 kHz for programs directed at the United States.

American and Canadian mediumwave

Mediumwave Best Bets

540 kHz	CBK	Regina, Sask.
590 kHz	CMW	La Julia, Cuba
600 kHz	CMKV	Urbano Noris, Cuba
640 kHz	KFI	Los Angeles, CA
650 kHz	WSM	Nashville, TN
660 kHz	WFAN	New York, NY
670 kHz	WMAQ	Chicago, IL
680 kHz	KNBR	San Francisco, CA
690 kHz	CBU	Vancouver, British Columbia
700 kHz	WLW	Cincinnati, OH
710 kHz	WOR	New York, NY
720 kHz	WGN	Chicago, IL
730 kHz	XEX	Mexico City, DF, Mexico
740 kHz	CBL	Toronto, Ontario
	CBX	Edmonton, Alberta
750 kHz	WSB	Atlanta, GA
760 kHz	WJR	Detroit, MI
770 kHz	WABC	New York, NY
780 kHz	WBBM	Chicago, IL
800 kHz	XEROK	Cd. Juarez, Ch., Mexico
810 kHz	KGO	San Francisco, CA
820 kHz	WBAP	Fort Worth, TX
830 kHz		La Julia, Cuba
	WCCO	Minneapolis, MN
850 kHz	KOA	Denver, CO
860 kHz	CJBC	Toronto, Ontario
870 kHz	WWL	New Orleans, LA
880 kHz	WCBS	New York, NY
890 kHz	WLS	Chicago, IL
900 kHz	XEW	Mexico City, DF, Mexico
940 kHz	CBM	Montreal, Quebec
	XEQ	Mexico City, CF, Mexico
990 kHz	CBW	Winnipeg, Manitoba
1000 kHz	WLUP	Chicago, IL
1010 kHz	CBR	Calgary, Alberta
1020 kHz	KDKA	Pittsburgh, PA
1030 kHz	WBZ	Boston, MA
1040 kHz	WHO	Des Moines, IA
1050 kHz	XEG	Monterrey, NL, Mexico
1060 kHz	KYW	Philadelphia, PA
	XEEP	Mexico City, DF, Mexico
1070 kHz	KNX	Los Angeles, CA
	CBA	Moncton, New Brunswick
1080 kHz	WTIC	Hartford, CT
	KRLD	Dallas, TX
1090 kHz	KAAY	Little Rock, AR
	WBAL	Baltimore, MD
	XEPRS	Tijuana, BC, Mexico
1100 kHz	WWWE	Cleveland, OH
1110 kHz	KFAB	Omaha, NE
1120 kHz	KMOX	St. Louis, MO
1130 kHz	KWKH	Shreveport, LA
	CKWX	Vancouver, BC
1140 kHz	WRVA	Richmond, VA
	XEMR	Monterrey, NL, Mexico
1160 kHz	KSL	Salt Lake City, UT
1170 kHz	KVOO	Tulsa, OK
1180 kHz	WHAM	Rochester, NY
1190 kHz	WOWO	Fort Wayne, IN
	XEWK	Guadalajara, Jal., Mexico
	KEX	Portland, OR
1200 kHz	WOAI	San Antonio, TX
1220 kHz	XEB	Mexico City, DF, Mexico
1500 kHz	WTOP	Washington, DC
1510 kHz	WLAC	Nashville, TN
	KGA	Spokane, WA
1520 kHz	WWKB	Buffalo, NY
1530 kHz	KFBK	Sacramento, CA
	WCKY	Cincinnati, OH
1540 kHz	ZNS1	Nassau, Bahamas (20 kW)
1550 kHz	CBE	Windsor, Ontario
1560 kHz	WQXR	New York, NY
1570 kHz	XERF	Villa Acuna, CO, Mexico
1610 kHz	—	"Caribbean Beacon," Anguilla, West Indies



Pittsburgh's KDKA pushes out a big signal on 1020 kHz. (Courtesy Keith Manthey.)

broadcasters are limited to a maximum of 50 kW. In the 1930's, the FCC permitted WLW and KDKA to experiment with 500 kW, and some clear channel stations have long hoped that the 50 kW limit would be increased to a higher level to assure reliable service to rural areas faced with modern-day electrical noises, plus interference from domestic and foreign stations now sharing these once-clear frequencies at night. Thus-far, it does not appear that there are any plans to permit increasing the 50 kW power limit.

Tune Tonight!

We have compiled a directory listing of those stations you're likely to find easiest to receive when there aren't any local stations in your area to block out signals on the frequencies shown. You'll probably be able to receive stations that aren't shown on our listing, just as there are stations on our list that you most likely won't pick up at all for one reason or another. However, the listing shows the prime targets to get you started.

Best times to listen are the hours of darkness. Start tuning for DX two hours before your local sunset. DX'ing can be done until about two hours after your local sunrise. Some feel that pre-sunset and post-sunrise DX'ing is the best time to catch those difficult stations. Remember, also, that local sunset and local midnight are popular sign-off times for many local stations, thus giving you a better shot at a particular frequency.

Mediumwave DX'ing is one of those aspects of the hobby that offers unlimited possibilities, as well as QSL cards and letters to adorn the walls and scrapbooks of all who try their hand. Naturally, the more formidable your receiver and antenna system, and the more experienced you become, the better your results will be. The purpose of this feature is primarily to show you that it's easy and inexpensive to get started, if you start tonight, you're sure to finish off the evening with loggings on at least several of the powerhouse stations shown on our listings. Our listing doesn't show the sporadic high-power Cubans that sometimes show up on 830, 1040, and 1160 kHz, but keep those frequencies in mind while you're tuning.

Also keep in mind that POP'COMM runs a monthly column called *Broadcast DX'ing*, which will be of interest to you in keeping abreast of new stations, as well as making you aware of changes in the status of stations. A worthwhile club (operating since 1933) devoted entirely to mediumwave DX'ing is the *National Radio Club*, P.O. Box 118, Poquonock, CT 06064. The NRC publishes an excellent membership magazine that is issued thirty times a year. Membership is $24 per year (in Canada it's US $25). A club information packet for those who want to know more before deciding whether to join is $1. PC

uniden®

$12,000,000 Scanner Sale

Uniden Corporation of America has purchased the consumer products line of Regency Electronics Inc. for $12,000,000. To celebrate this purchase, we're having our largest scanner sale in history! Use the coupon in this ad for big savings. Hurry...offer ends February 28, 1990.

★★★ MONEY SAVING COUPON ★★★

COUPON COUPON

Get special savings on the scanners listed in this coupon. This coupon must be included with your prepaid order. Credit cards, personal checks and quantity discounts are excluded from this offer. Offer valid only on prepaid orders mailed directly to Communications Electronics Inc., P.O. Box 1045 – Dept. UNI3, Ann Arbor, Michigan 48106-1045 U.S.A. Coupon expires February 28, 1990. Coupon may not be used in conjunction with any other offer from CEI. Coupon may be photocopied. Add $12.00 for shipping in the continental U.S.A.

Regency TS2-T **$259.95**
Regency R1600-T.....**$239.95**
Regency R1099-T.....**$99.95**
Regency RH606B-T.....**$419.95**
Regency RH256B-T.....**$294.95**
Bearcat 200XLT-T2.....**$229.95**
Bearcat 100XLT-T.....**$184.95**
Bearcat 800XLT-T2.....**$229.95**
Uniden HR2510-T.....**$229.95**
Uniden HR2600-T.....**$274.95**
Uniden PRO500D-T2.....**$29.95**

★★★★ VALUABLE COUPON ★★★★

Bearcat® 760XLT-T

List price $499.95/**CE price $244.95/SPECIAL**
12-Band, 100 Channel • Crystalless • AC/DC
Frequency range: 29-54, 118-174, 406-512, 806-956 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.
The *Bearcat* 760XLT has 100 programmable channels organized as five channel banks for easy use, and 12 bands of coverage including the 800 MHz. band. The *Bearcat* 760XLT mounts neatly under the dash and connects directly to fuse block or battery. The unit also has an AC adaptor, flip down stand and telescopic antenna for desk top use. 6-5/16" W x 1⅝" H x 7⅜" D. Model **BC 590XLT-T** is a similar version without the 800 MHz. band for only $194.95. Order your scanner from CEI today.

NEW! Regency® Products

R4030-T *Regency* 200 ch. handheld scanner $254.95
R4020-T *Regency* 100 ch. handheld scanner $189.95
R4010-T *Regency* 10 channel handheld scanner....$114.95
R1600-T *Regency* 100 channel mobile scanner ...$244.95
P200-T *Regency* 40 channel CB Mobile $38.95
P210-T *Regency* 40 channel CB Mobile $56.95
P220-T *Regency* 40 channel CB Mobile $79.95
P300-T *Regency* 40 channel SSB CB Mobile.....$137.95
P400-T *Regency* 40 channel SSB CB Base.....$174.95
PR100-T *Regency* visor mount radar detector $54.95
PR110-T *Regency* "Passport" size radar detector ...$114.95
PR120-T *Regency* "micro" size radar detector....$144.95
MP5100XL-T *Regency* 40 Ch. marine transceiver...$139.95
MP5510XL-T *Regency* 60 Ch. marine transceiver...$159.95
MP6000XL-T *Regency* 60 Ch. marine transceiver...$209.95
MP2000XL-T *Regency* handheld marine trans.....$189.95

Regency® RH256B-T

List price $799.95/**CE price $299.95/SPECIAL**
16 Channel • 25 Watt Transceiver • Priority
The *Regency* RH256B is a sixteen-channel VHF land mobile transceiver designed to cover any frequency between 150 to 162 MHz. Since this radio is synthesized, no expensive crystals are needed to store up to 16 frequencies without battery backup. All radios come with CTCSS tone and scanning capabilities. A monitor and night/day switch is also standard. This transceiver even has a priority function. The RH256 makes an ideal radio for any police or fire department volunteer because of its low cost and high performance. A *60 Watt* VHF 150-162 MHz. version called the **RH606B-T** is available for $429.95. A UHF 15 watt, 16 channel version of this radio called the **RU156B-T** is also available and covers 450-482 MHz. but the cost is $454.95.

★★★ Uniden CB Radios ★★★

The *Unicen* line of Citizens Band Radio transceivers is styled to compliment other mobile audio equipment. Uniden CB radios are so reliable that they have a two year limited warranty. From the feature packed PRO 810E to the 310E handheld, there is no better Citizens Band radio on the market today.

PRO310E-T *Uniden* 40 Ch. Portable/Mobile CB...$83.95
PRO330E-T *Uniden* 40 Ch. Remote mount CB...$104.95
PRO500D-T *Uniden* 40 Channel CB Mobile $38.95
KARATE-T *Uniden* 40 channel rescue radio $53.95
GRANT-T *Uniden* 40 channel SSB CB mobile....$166.95
MADISON-T *Uniden* 40 channel SSB CB base...$244.95
PC122-T *Uniden* 40 channel SSB CB mobile.....$119.95
PRO510XL-T *Uniden* 40 channel CB Mobile.....$38.95
PRO520XL-T *Uniden* 40 channel CB Mobile.....$56.95
PRO530XL-T *Uniden* 40 channel CB Mobile.....$79.95
PRO540E-T *Uniden* 40 channel CB Mobile.....$97.95
PRO640E-T *Uniden* 40 channel SSB CB Mobile ...$137.95
PRO710E-T *Uniden* 40 channel CB Base $119.95
PRO810E-T *Uniden* 40 channel SSB CB Base ...$174.95

★★★ Uniden Radar Detectors ★★★

Buy the finest *Uniden* radar detectors from CEI today.
TALKER-T2 *Uniden* talking radar detector $144.95
RD7-T *Uniden* visor mount radar detector $99.95
RD9-T *Uniden* "Passport" size radar detector $114.95
RD9XL-T *Uniden* "micro" size radar detector.....$144.95
RD25-T *Uniden* visor mount radar detector $54.95
RD500-T Uniden visor mount radar detector.....$74.95

Bearcat® 200XLT-T

List price $509.95/**CE price $239.95/SPECIAL**
12-Band, 200 Channel • 800 MHz. Handheld Search • Limit • Hold • Priority • Lockout
Frequency range: 29-54, 118-174, 406-512, 806-956 Mh Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.
The *Bearcat* 200XLT sets a new standard for handheld scanners in performance and dependability. This full featured unit has 200 programmable channels with 10 scanning banks and 12 band coverage. If you want a very similar model without the 800 MHz. band and 100 channels, order the **BC 100XLT-T** for only $189.95. Includes antenna, carrying case with belt loop, ni-cad battery pack, AC adapter and earphone. Order your scanner now.

Bearcat® 800XLT-T

List price $549.95/**CE price $239.95/SPECIAL**
12-Band, 40 Channel • No-crystal scanner Priority control • Search/Scan • AC/DC
Bands: 29-54, 118-174, 406-512, 806-912 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.
The Uniden 800XLT receives 40 channels in two banks. Scans 15 channels per second. Size 9¼" x 4½" x 12½." If you do not need the 800 MHz. band, a similar model called the **BC 210XLT-T** is available for $178.95.

Bearcat® 145XL-T

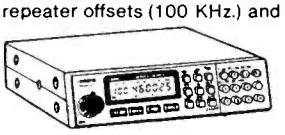
List price $189.95/**CE price $94.95/SPECIAL**
10-Band, 16 Channel • No-crystal scanner Priority control • Weather search • AC/DC
Bands: 29-54, 136-174, 406-512 MHz.
The *Bearcat* 145XL is a 16 channel, programmable scanner covering ten frequency bands. The unit features a built-in delay function that adds a three second delay on all channels to prevent missed transmissions. A mobile version called the **BC560XLT-T** featuring priority, weather search, channel lockout and more is available for $94.95. CEI's package price includes mobile mounting bracket and mobile power cord.

President® HR2510-T

List price $499.95/**CE price $239.95/SPECIAL**
10 Meter Mobile Transceiver • Digital VFO Full Band Coverage • All-Mode Operation Backlit liquid crystal display • Auto Squelch RIT • Preprogrammed 10 KHz. Channels
Frequency Coverage: 28.0000 MHz. to 29.6999 MHz.
The *President* HR2510 Mobile 10 Meter Transceiver made by Uniden, has everything you need for amateur radio communications. Up to 25 Watt PEP USB/LSB and 25 Watt CW mode. Noise Blanker. PA mode. Digital VFO. Built-in S/RF/MOD/SWR meter. Channel switch on the microphone, and much more! The HR2510 lets you operate AM, FM, USB, LSB or CW. The digitally synthesized frequency control gives you maximum stability and you may choose either pre-programmed 10 KHz. channel steps, or use the built-in VFO for steps down to 100 Hz. There's also RIT (Receiver Incremental Tuning) to give you perfectly tuned signals. With receive scanning, you can scan 50 channels in any one of four band segments to find out where the action is. Order your HR2510 from CEI today.

NEW! President® HR2600-T

List price $599.95/**CE price $299.95/SPECIAL**
10 Meter Mobile Transceiver • New Features
The new *President* HR2600 Mobile 10 Meter Transceiver is similar to the *Uniden* HR2510 but now has repeater offsets (100 KHz.) and CTCSS encode.



BC760XLT
800 MHz. mobile scanner SPECIAL!

CIRCLE 82 ON READER SERVICE CARD

★★★ Uniden Cordless Telephones ★★★

XE750-T *Uniden* Cordless Phone with speaker $99.95
XE550-T *Uniden* Cordless Phone.....$79.95
XE300-T *Uniden* Cordless Phone.....$69.95

★★★ Extended Service Contract ★★★

If you purchase a scanner, CB, radar detector or cordless phone from any store in the U.S. or Canada within the last 30 days, you can get up to three years of extended service contract from Warrantech. This service extension plan begins *after* the manufacturer's warranty expires. Warrantech will perform all necessary labor and will not charge for return shipping. Extended service contracts are not refundable and apply only to the original purchaser. A two year extended contract on a mobile or base scanner is $29.99 and three years is $39.99. For handheld scanners, 2 years is $59.99 and 3 years is $79.99. For radar detectors, two years is $29.99. For CB radios, 2 years is $39.99. For cordless phones, 3 years is $34.99. Order your extended service contract today.

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R2066-T *Regency* 60 channel scanner.....$149.95
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TS2-T *Regency* 75 channel scanner.....$269.95
UC102-T *Regency* VHF 2 ch. 1 Watt transceiver...$114.95
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TIC-T Techniques for Intercepting Communications ...$14.95
RRF-T Railroad frequency directory $14.95
EEC-T Embassy & Espionage Communications....$14.95
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A1300-T 25 MHz.–1.3 GHz Discone antenna.....$109.95
USAMM-T Mag mount VHF ant. w/ 12' cable $39.95
USAK-T ¾" hole mount VHF ant. w/ 17' cable $35.95
Add $4.00 shipping for all accessories ordered at the same time. Add $12.00 shipping per radio and $4.00 per antenna.

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Radio's Yesterdays

A Gentle Look Into The History of Broadcasting and Communications

BY ALICE BRANNIGAN

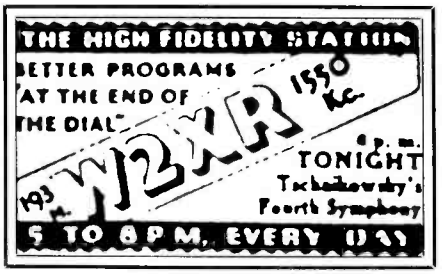
In the New York City area there are several FM stations that play classical music, but only one AM station, although it has an FM outlet. There are perhaps fewer than twenty AM broadcasters in the U.S. today that have a classical music format, but that's the way it has been at WQXR (1560 kHz, 50 kW) for more than a half-century.

The station's roots go back at least to 1908 when music-lover John V.L. Hogan was working with Dr. Lee deForest. Even then, Hogan was sending out occasional musical programs over the early deForest equipment. In 1928, Hogan opened his own radio lab in Long Island City, NY where he experimented with exotic things such as TV and FAX. His company (known as Radio Pictures, Inc., 3104 Northern Boulevard) was licensed as W2XR for video transmission on 2100 to 2200 kHz, and 2850 to 2950 kHz, with a second Experimental license (W2XAR) for voice and other types of transmissions running 500 watts on eight discrete frequencies between 1604 and 17300 kHz. By 1931, Hogan's TV authorization had been expanded to add 43 to 46 MHz, 48.5 to 50.3 MHz, and 60 discrete frequencies up as high as 400 MHz, even "401 MHz and above."

W2XR, the TV transmitter, soon obtained an authorization to operate on 1550 kHz for the purpose of experimenting with high fidelity music broadcasts. Remember, in the 1930's, the AM broadcasting band ended at 1500 kHz, although W2XR's transmissions were clearly aimed at the broadcast audience, as were similar high fidelity broadcasts being carried out on 1550 kHz by a station in Bakersfield, CA.

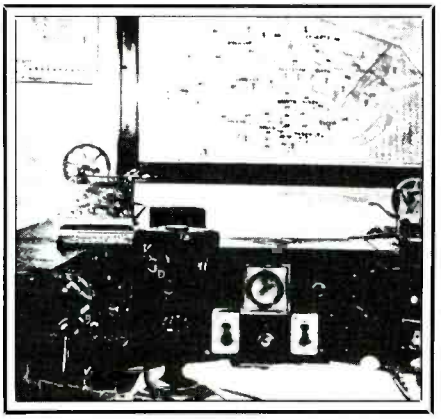
The W2XR programs were such a favorite with audiences that, in 1936, Hogan joined up with Elliott M. Sanger and formed a corporation to change W2XR into a commercial broadcasting station. The power went up to 1 kW (from 250 watts), the call-sign was changed to WQXR, and commercial programming began on December 3, 1936. In less than four months, WQXR became the third most popular station in New York City. High fidelity AM broadcasting wasn't just a meaningless gimmick, WQXR's signal actually needed twice the bandwidth required by other AM broadcasters.

In 1939, WQXR was contacted by Maj.

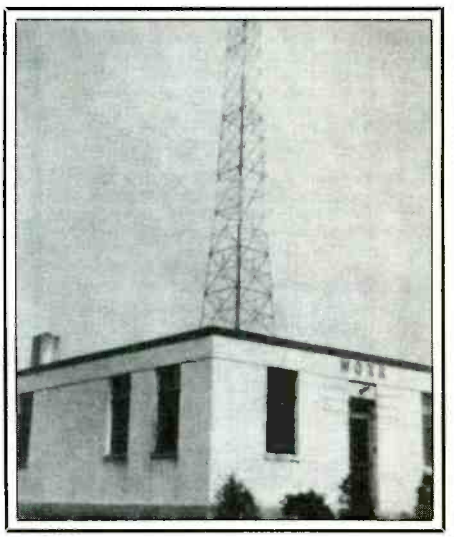


An early newspaper ad for W2XR's programming sought a general audience for the station even though it wasn't yet licensed as a broadcaster.

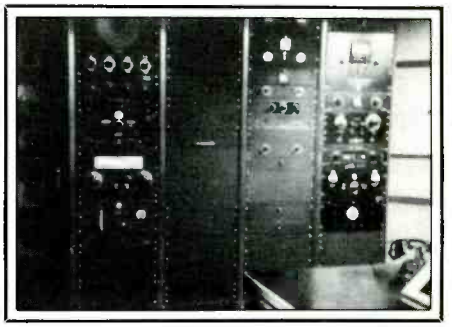
A reader in Brazil offers some thoughts on this medal that originally appeared in the May issue.



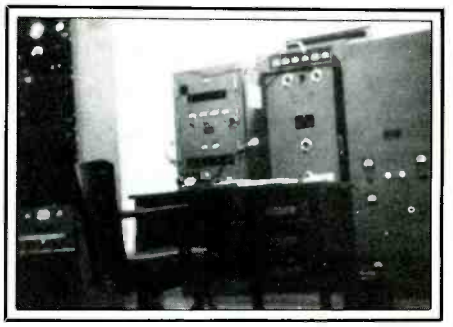
The master console at St. Louis broadcaster WIL in the late-1920's. In those days, WIL doubled as the city's police dispatcher.



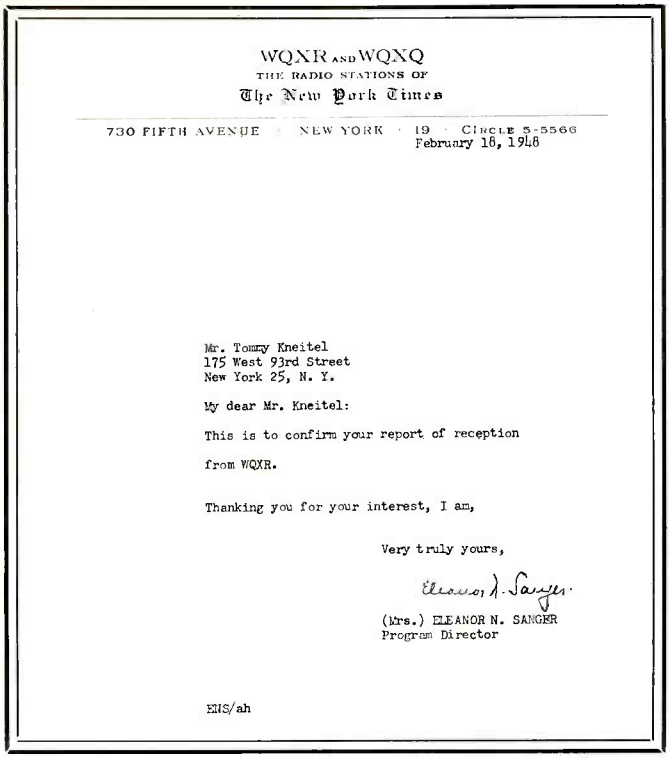
The WQXR (AM) transmitter building in 1942.



WQXR's AM transmitter in 1942.



The original FM transmitter that WQXR placed on the air.



WQXR AND WQXQ
THE RADIO STATIONS OF
The New York Times

730 FIFTH AVENUE · NEW YORK · 19 · CIRCLE 5-5566
February 16, 1948

Mr. Tommy Kneitel
175 West 93rd Street
New York 25, N. Y.

My dear Mr. Kneitel:

This is to confirm your report of reception

from WQXR.

Thanking you for your interest, I am,

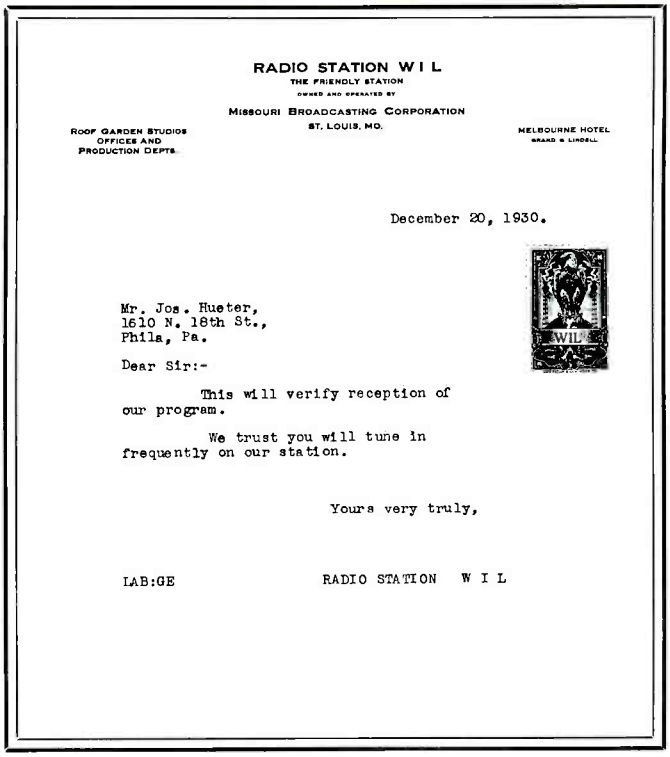
Very truly yours,

Eleanor N. Sanger

(Mrs.) ELEANOR N. SANGER
Program Director

ENS/ah

WQXR sent this veri letter in 1948. Note the FM callsign WQXQ on the letterhead. (Courtesy Tom Kneitel.)



RADIO STATION W I L
THE FRIENDLY STATION
OWNED AND OPERATED BY
MISSOURI BROADCASTING CORPORATION
ST. LOUIS, MO.

ROOF GARDEN STUDIOS OFFICES AND PRODUCTION DEPTS.

MELBOURNE HOTEL GRAND & LINDELL

December 20, 1930.

Mr. Jos. Hueter,
1610 N. 18th St.,
Phila, Pa.

Dear Sir:-

This will verify reception of our program.

We trust you will tune in frequently on our station.

Yours very truly,

LAB:GE RADIO STATION W I L

By 1930, WIL was broadcasting from studios atop the Melbourne Hotel in St. Louis. (Courtesy Joe Hueter.)

Edwin H. Armstrong, inventor of FM. He wanted WQXR behind the first FM broadcasts and, a few months later, New York City's first FM station was put on by WQXR. That station was W2XQR on 43.20 MHz, which went on the air November 8, 1939. Later it became WQXQ on 97.7 MHz, and is presently WQXR-FM on 96.3 FM, and was New York City's first FM stereo station.

In the early 1940's the AM outlet switched to its present dial position of 1560 kHz (where it now runs 50 kW). In 1944, the AM/FM stations were purchased by *The New York Times*, which continues to operate the stations around the clock. Last June, the stations moved into new digs above the Barnes and Noble bookstore at 18th Street and 5th Avenue.

Update on Old Business

In the July issue we had some information about New York City's WFBH, *The Voice of Central Park*, which later became WPCH, then merged with WMCA. That brought in a letter from David Walcutt, New York City. He wrote that he lived across the street (until 1986) from the old Park Central Hotel, former home of WPCH. He reports that the hotel was more recently known as the New York Sheraton, and is presently called the Omni Park Central. One of the two old WPCH towers still stands on the roof, although it hasn't been used for about sixty years!

Bob Harrington, of Union, NJ tells us that the *Newark (NJ) Evening News* for June 14, 1927 carried a story about WPCH moving into the Park Central Hotel from its former home at the Majestic Hotel, and how the station's new location would allow broadcasts of swimming instruction and water sports direct from the hotel's lavish indoor pool.

Roberto B. Benevolo, of Rio de Janeiro, Brazil wrote to comment on the *Old Time Telegraphers Association* medallion we ran in the May issue. At that time we speculated that the 1896 convention mentioned on the disc as being in "Pittsburg" was probably a misspelling of Pittsburgh, PA. Roberto reminds us that Pittsburg (without the final "h") is the correct way of spelling other locations with that same name in California and Kansas, although it's also the original way the city in Pennsylvania spelled it before someone added the last letter. Roberto believes that one of the faces shown on the medallion is that of Ernst-Werner von Siemens (1816-1892).

Meet Me In St. Louis

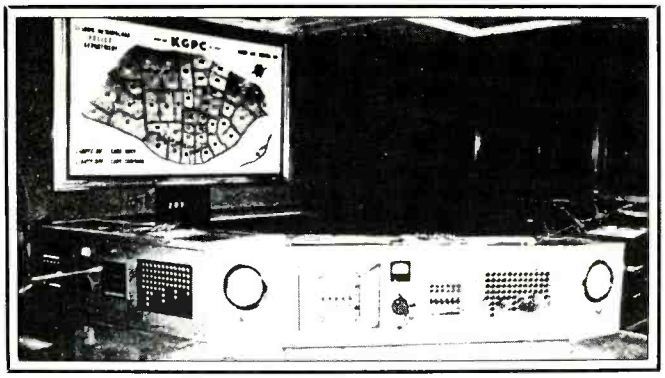
An article in the July issue of *The Police Chief* was sent in by R.C. Watts, of Louisville, KY. That article mentioned that in the 1920's, police radio dispatching in St. Louis, MO was done via "announcements over WIL (formerly WEB)." That set us digging, since we knew that WIL is still an active commercial station in St. Louis (1430 kHz, 5kW) that has a "country gold" music format.

WIL traces back to a station called WEB that began operating on 834 kHz on February 9, 1922. It was operated by the Benwood Co., 1110 Olive Street, St. Louis. In 1924, WEB was on 1100 kHz, but by 1925 things had changed.

By 1925, the station underwent the first of the many modifications it was to encounter in its career. For starters, it became known under the callsign WIL (a callsign formerly held by a 5-watt broadcaster in Washington, DC). Also, it's ownership had changed to the *St. Louis Star* and the Benson Radio Manufacturing Co. The station's location was changed to the Missouri Hotel, 1010 Locust St., St. Louis. Programs consisted of music interspersed with important police messages directed at officers throughout the city. The station's slogan at that time was *Watch It Lead*, and related to the letters in the callsign.

In 1926, WIL had hopped over to 1160 kHz with 250 watts, and was using the slogan *A Wavelength Ahead*. By late 1928, the FRC told WIL to change frequencies again, this time to 1350 kHz. By then, the newspaper that had been one of its owners had stepped out of the picture and its owner was Benson.

The station moved again in 1929. The corporate name (with the same owner) became Missouri Broadcasting Co., and the studio and transmitter were relocated to the Melbourne Hotel, Grand and Lindell Streets, St. Louis. The station, running 250 watts (100 watts nights), switched to 1420 kHz, where it started using the slogan, *Choice of The Multitudes*. In 1930, the sta-



Dispatch point of KGPC, the St. Louis Metropolitan Police Department in the 1930's.

One of the secret Sigsaly communications terminals during WWII.

tion moved to 1200 kHz, where it became *The Friendly Station* and stayed until the beginning of the 1940's when it moved briefly to 1230 kHz, before shifting to its present dial spot at 1430 kHz. Today, located at 300 North Tucker St., WIL is owned by Heritage Media, Inc. Since 1962, WIL-FM has also been operated, playing country music on 92.3 MHz.

As for the local police, in 1930 they put their own 500 watt station on the air under the callsign KGPC (citizens insisted the letters stood for *Keep Going, Police Coming)* on 1712 kHz. There were fifty police cruisers equipped with receivers to hear dispatches from KGPC. In 1930, KGPC sent out almost 63,000 radio calls. In 1936 (with KGPC moved to 1706 kHz), there were 200 radio cars in the system, 11 with two-way equipment.

FM police radio came to St. Louis in 1948, with station KAB246 on 155.61 MHz (155.37 MHz intersystem), and 150 two-way vehicles operating on 155.85 MHz. A portable 250-watt command post (KAB879) located in a 15-ft. trailer was also authorized to dispatch on 155.61 MHz. By the early 1970's, a 9-channel UHF system was required to meet the needs of the community.

The "X System"

During WWII, the most often used method of direct voice communications between President Franklin Roosevelt and Prime Minister Winston Churchill was known under the code names *X System* and *Green Hornet*. Officially, it was called *Sigsaly*, a highly secret Bell Labs development implemented by the U.S. Army's 805th Signal Service Company.

Sigsaly was so hush-hush that it wasn't even declassified until more than thirty years after WWII ended. Upon declassification in 1976, Bell Labs was granted about thirty patents relating to the complex voice security system. It was considered the first workable enciphered voice system that couldn't be "broken" by the enemy, although it was known that German Military Intelligence regularly monitored the exchanges of these shortwave transmissions with the hopes of figuring out their key.

The system was operated by means of large communications terminals at various locations around the world. At first, only Washington and London were linked, but later and after the war there were also facilities established in Algiers, Brisbane (transferred to Manila), Frankfurt, Honolulu, Berlin, Guam, and Tokyo. The Pacific Coast station in CONUS was at Oakland, CA. A terminal installation required forty 6-ft. racks of equipment, a 50-kW generator, and enough air conditioning to maintain a constant temperature.

The way *Sigsaly* worked was for users to speak into a special handset. The speech patterns were then encoded via electronic key signals, and the results were sent out via shortwave. Stations at each end of the communication were issued matched vinyl disc records. It was necessary for the identical discs to be played simultaneously and in synchronization at each end of the contact. After the conversation was ended, the discs were destroyed.

Remnants of the *Sigsaly* technology that still linger today include pulse modulation techniques, also the digital methods used in compact disc recording.

Sigsaly was freely used by heads of state and top military personnel for exchanging the highest level secrets. As the war progressed, terminals were installed in territories that had been liberated and captured, for the continuing transmission of secret messages via shortwave. So far as is known, no message sent via the system had ever been compromised.

Former members of the 805th SCC are invited to contact Mr. Eugene Major, who was a member of the unit (Brisbane/Manila facility) for two years. His address is 253 Windsong Ln., Lilburn, GA 30247. There were 354 members in the 805th SSC. Although 231 have been located and accounted for (62 are deceased), 123 are still being sought by the organization of former members.

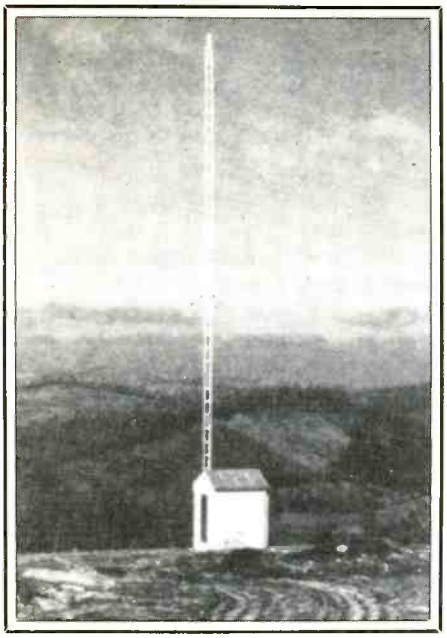
TILS went on the air as a shortwave broadcaster in late 1937. It's still operating, but no longer as TILS, and no longer on shortwave! (Courtesy Leo Frankenmuth.)

Remote control console of WSEL, the communications station used by the rangers on the Blue Ridge Parkway about 1941.

Central American

Late 1937 marked the first appearance on the air of shortwave broadcaster TILS (5800 kHz), of San Jose, Costa Rica. The station's slogan was *Emisora Para Ti*, and the closing theme every night was the *Good Night Song*.

To DX'ers, the best thing about the station was that it had an attractive QSL card which it promptly sent in response to all correct reception reports.



The WSEL transmitting site on Rocky Knob, VA.

Later, in the 1940's, TILS opened up a 5 kW mediumwave outlet on 880 kHz, and shifted its shortwave operations to 6165 kHz with a 5 kW transmitter. In the late 1950's, the shortwave outlet was closed down and the mediumwave station was moved to Guadalupe, as the station's slogan became *Radion*. By 1961, however, TILS decided that 880 kHz wasn't working out from its new location so it changed over to 925 kHz. More changes were on the way, for 1963 saw the callsign changed to TIR, the power upped to 3 kW, and the slogan modified to, *Radion, la emisora de la juventud*, as the station became youth-oriented and returned to San Jose.

Back in San Jose, the slogan was soon changed again to *Cadena Musical*, and (in 1967) a new callsign picked up to reflect that slogan, TICM. Presently, TICM continues on the air from Costa Rica, calling itself *Radio Metropolis*, with 5 kW on 910 kHz.

But, way back when it all began, it was TILS on shortwave. As such, it falls into our domain and we can show you one of the station's original 1937 QSL cards thanks to Leo Frankenmuth, of Emporium, PA whose dad collected this veri for dial twirling more than a half century ago.

Park Radio

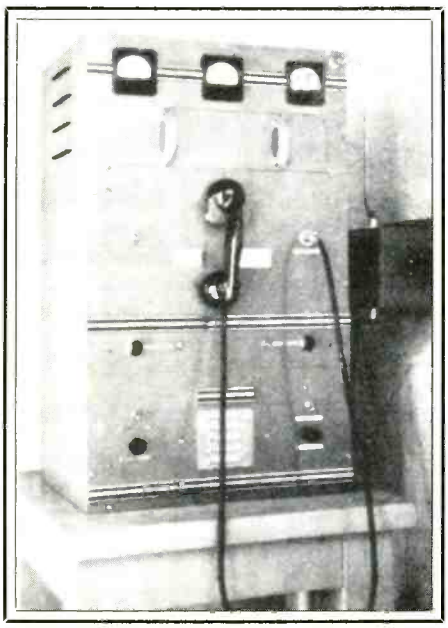
The many uses of two-way radio were still being explored when the National Park Service established a network of base stations and patrol cars along the 600-mile Blue Ridge Parkway system. That was in the late 1930's.

This communications system was assigned the call letters WSEL and operated in AM-mode on 3207.5 kHz. There were three 100-watt base stations located at Bluff Park, NC, Rocky Knob and Roanoke, VA. Each base station used a 75-ft. steel tower as an antenna. At the base of the tower was the crystal controlled transmitter and receiver, which was unattended and normally operated remotely from the nearest Parkway office.

Six ranger patrol cars were equipped with 10-watt two-way radios which used top-loaded antennas. These were peaked on 3207.5 kHz, but would also load up on secondary frequencies in the 2496 to 3415 kHz band.

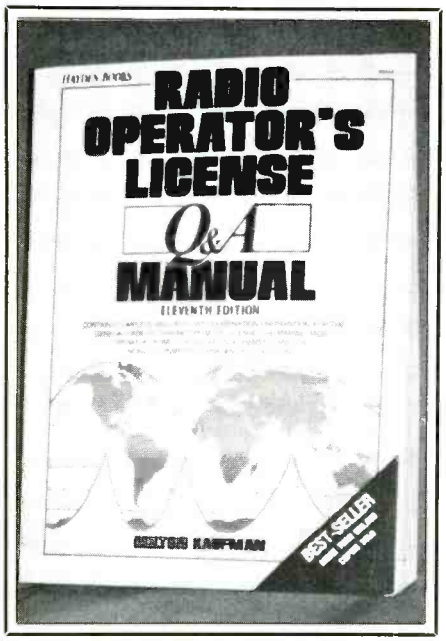
In some ways, this 3 MHz system was somewhat of an anachronism inasmuch as, by that era, frequencies above 30 MHz for mobile communications were in use, with 3 MHz technology getting a bit outdated for such purposes. The use of the 3 MHz band in this application was because of the need to further develop methods of base mobile communications in large national park areas which couldn't be well served with existing 30 MHz equipment. The 3 MHz equipment gave vehicles a 100-mile communication range at night, without the need for repeaters or relay stations.

Hope to see you in December! **PC**



Inside a WSEL transmitting site showing one of the 100-watt remote controlled transmitters. The handset could be used for local control of the equipment.

BOOKS YOU'LL LIKE!



We'll Pass On This One

If you've ever worried about passing FCC licensing exams for the general Radiotelephone Operator License, the Marine Radio Operator Permit, the Radar Endorsement, or the Non-Government Technician Certification, your worries and fears can be put to rest. So says Milton Kaufman, author of the 583-page book entitled *Radio Operator's License Q and A Manual, 11th Edition*.

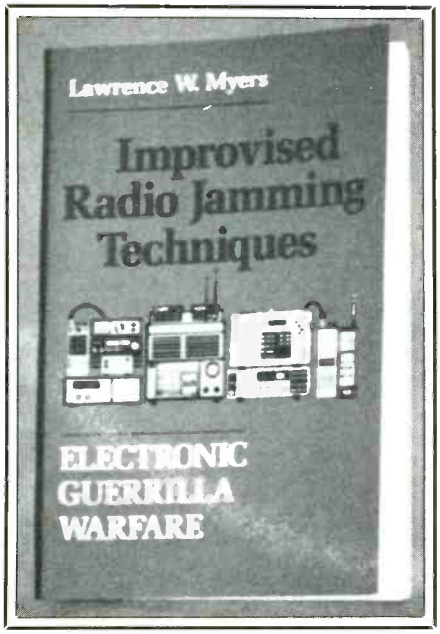
The original edition of this chunky volume came out about forty years ago, and in the ensuing years it has racked up and enviable reputation as being a reliable approach to preparing for certain FCC non-ham exams. Of course, over the years the FCC has not only changed and (to some extent) modernized the exam questions in order to reflect current technologies. As all of these changes have continued to take place, new editions of this book have kept arriving on the scene in order to retain its usefulness.

This book has just about everything you need to pass these tests, presented in an easy-to-follow format. Typical FCC-type questions are given, followed by clear and concise answers on every subject. Usually, a discussion follows that covers the specific topics in depth. Each section ends up with an FCC-style practice exam, with the answers at the back of the book.

The new edition includes information on topics that have been recently added to or modified in FCC tests, notably the PLL, frequency synthesis, digital-logic circuits, operational amplifiers, chips, FET's, mobile equipment, RFI, active filters, modulators, mixers, receiver sensitivity, and microprocessors.

The information is in this book, it's your job to transfer it from the printed page and into your head, retaining it in your memory banks at least long enough to call it up on your mind's screen while you're sweating out the actual exam. That's the best anybody could hope for, and Kaufman has done a good job of making it as clear as possible. However, be aware that none of the exams covered in the book are for the beginner or the faint of heart. These FCC exams are generally used to qualify persons to be professional communications technicians. Anybody who is still trying to figure out Ohm's Law isn't going to understand much of what's in this book. For those who have a reasonable working knowledge of communications technology, the book is excellent.

Radio Operator's License Q and A Manual, 11th Edition, by Milton Kaufman, is $19.95. It's from Hayden Books, 4300 West 62nd St., Indianapolis, IN 46268.



Getting Into A Jam?

Communications jamming is one of the greatest equalizers in unconventional warfare. By defeating the enemy's command and control capabilities during one of his missions, his ability to function is seriously reduced, or even completely doomed. Jamming of broadcasts and communications was practiced heavily by the major powers in WWII, and has continued extensively in the ensuing years in peacetime and during hostilities. The war in Vietnam saw an increase in tactical jamming and that appears to have been the inspiration for unconventional warfare participants (guerillas, terrorists, smugglers, revolutionaries, paramilitary groups, assorted criminal elements, etc., and those who oppose them) to become adept at jamming, usually with improvised and on-hand equipment.

In his fine 256-page book, *Improvised Radio Jamming Techniques*, Lawrence W. Myers covers the three phases of electronic guerilla warfare: target interception, target acquisition, and target jamming. The basic principles of communications are explained; and the book gives a detailed breakdown of the nuts and bolts of a jamming operation. The book covers setting up a HF/VHF/UHF listening post; intercept operations; operational security; covert antennas; selecting and operating jamming equipment; effective jamming techniques; police radio systems; high-risk frequency detection techniques; pirate radio; repeater jamming; use of computers; site selection, and much more. There's a glossary, plus names/addresses of many sources, even a concise directory of relevant HF/VHF/UHF frequencies. There are numerous useful charts, tables, and codes included. Looks like he's got the topic covered very thoroughly, and it's well presented.

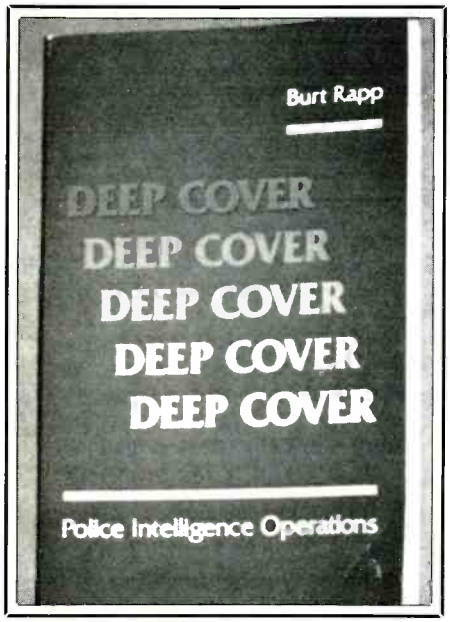
The information on setting up and operating an intercept station is especially informative and should be of use and interest to most scanner and HF communications monitors in their normal listening activities. Lots of good thoughts and ideas here to get the most from monitoring. Obviously, author Myers speaks from experience. This is a fine book in every respect.

This is not a jargon-filled tech manual or theoretical textbook. It's an illustrated practical field guide written in straightforward language that clearly outlines improvised, covert, and field-expedient methods of detecting, intercepting, identifying, analyzing, and (even) effectively defeating radio communications by means of easily available equipment.

Improvised Radio Jamming Techniques is $19.95 per copy, plus $2 postage to addresses in USA/Canada/APO/FPO. New York State residents please add $1.50 sales tax. Order from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725.

They've Got You Covered

As those who are avid scanner monitors soon learn, the police undercover officer moves in a shadowy world of stoolies, wise



guys, drug pushers, crooked politicians, hookers, and small time hoods. The present court and legal system seems, if anything, to have given criminals new rights, and unprecedented opportunities to pursue their activities undetected, and all too often with minimal punishment. Undercover police operations can provide effective countermeasures to stem the rising tide of organized criminal activity. Bit by bit, the collecting, recording, assimilating, and analyzing seemingly trivial and unrelated bits of information and evidence, the undercover officer patches together a network of sources in order to compile a data base that can assist officers throughout his department.

In *Deep Cover*, Burt Rapp's latest handbook, the author turns his attentions to police intelligence operations, which are one of the least understood aspects of law enforcement activities. The book covers the establishing, staffing, and securing and effective intelligence unit; dealing with informants, informers, and other sources; occupational hazards; surveillance techniques; storing information; political pressure; corruption; controlling information, etc.

This is a 123-page book that was written for the primary benefit of law enforcement officers and agencies. For the average citizen, especially one who follows police activities via a scanner, it is an interesting introduction to the fascinating, eerie, and dangerous world of deep cover.

Deep Cover: Police Intelligence Operations, by Burt Rapp, is $14.00 plus $3.50 postage/handling from Paladin Press, P.O. Box 1307, Boulder, CO 80306.

In Addition

A good looking and informative 6-page San Francisco Bay Area scanner frequency guide has been compiled by Mike Kolb. Mike's a "911" Emergency Service Dispatcher with a police department and his information is quite good. It covers San Francisco City and County, San Mateo County, Santa Clara County, Alameda County, Contra Costa County, Marin County, Santa Cruz County, Solano County, and Napa County. The listing has lots of info on police, fire, and EMS frequencies for the local and county agencies, plus some state and other miscellaneous frequencies. Mike will swap a copy of his listings for your recently compiled city/county/state listing for OR, CA, NV, or WA agencies. Or, he'll sell you a copy for $4.50, postpaid. His address is: Michael R. Kolb, 171 Santa Clara Avenue, Redwood City, CA 94061.

Three interesting books came our way from Diamond Communications The first is a softcover 229-page book entitled *Tuned To Baseball*. by Ernie Harwell, who spent forty years announcing major league baseball for the Giants and Dodgers in New York, the Orioles, and Detroit Tigers. This is a fine book that combines baseball and broadcasting in a most entertaining manner. It's an $8.95 book.

Next, Diamond sent us a hardcover book called, *Thanks For Listening*, by Jack Brickhouse. This is the broadcasting autobiography of the man who was, for more than forty years, the radio voice of the Chicago Cubs and the Chicago White Sox over WGN radio and TV. Lots of excellent insights into the interesting sports and media people Brickhouse had to deal with are in his 224-page book. It sells for $15.95.

The third of the Diamond books is *Voices Of The Game*, by Curt Smith. This large 594-page hardcover book is a full-scale overview of baseball broadcasting from 1921 to the present - the stations, networks, the broadcasters who thought they were sports personalities, the sports personalities who thought they were broadcasters, and all the rest. It starts out with how the first baseball game broadcast took place in 1921, and tells about the first baseball telecast in 1939. It's rich in broadcasting history and offers much inside information of the people involved. This book is priced at $22.95.

Each of these books would make a wonderful gift for any radio enthusiast who also happens to be sports fan. They are all well written and good looking. The publisher is Diamond Communications, P.O. Box 88, South Bend, IN 46624. PC

Medical Emergencies On Your Scanner

Let Your Scanner Tune in on The Pulse of Your Community

BY DR. ALEX ZORKA, KDC3LX

Accidents happen—transportation, industrial, household, and school. And people become ill, sometimes very suddenly and without warning. Then there are natural disasters such as storms, floods, tornados, and earthquakes that quickly create large numbers of injured. There are also victims of violent crimes, fires, and civil unrest. All of these things, and more, call for fast response and action by personnel skilled in emergency medical procedures.

Very often, the difference in whether a life is saved is based upon being able to save a few minutes, even seconds. This calls for trained personnel who know what they're doing, who can work quickly, and who won't panic while working under pressure. It calls for fast vehicles to reach and transport those in need of immediate medical aid. Invariably, it also involves two-way communications in order to coordinate arrangements, exchange vital information, and make everything work as smoothly as possible.

If you've got a scanner, you can listen in on these communications. While you may hear much in the way of exciting traffic by monitoring police and fire communications, you'll also hear plenty of routine and administrative comms. Not so on the medic frequencies, they're usually devoted to in-progress emergencies with very little else to be heard there.

Ambulances carry two-way equipment, sometimes operating on several different frequencies. Many are now equipped with cellular telephones (869 to 894 MHz band). Ambulances often have the ability to communicate with hospitals so that bio-telemetry information (the patient's EEG, EKG, pulse rate, and blood pressure) can be sent for analysis by staff members. This permits important factors in the patient's condition to be considered while a decision is made as to the on-the-spot treatment needed, whether the patient can be moved, etc. Portable units can be carried out of the ambulance and to a sick or injured persons in the street, at home, in a factory, etc. In addition to the exchange of bio-telemetry data, voice communications are also possible with this equipment.

Bio-telemetry and accompanying voice communications from ambulances and portable units is most often encountered on eight MED channels that lie between 468.00 and 468.175 MHz (25 kHz spacing between channels). The hospitals communicate with the ambulances on eight channels between 463.00 and 463.175 MHz (25 kHz spacing). At times you can also find these communications in simplex mode on 155.325 and 155.34 MHz.

Hospitals dispatching and otherwise communicating with ambulances can be monitored on 155.34 (simplex), and duplex (base/mobile) on 460.525/465.525, 460.55/460.55, 462.95/467.95, also 462.975/467.975 MHz.

Paramedics and EMT's sometimes have handheld transceivers that can be copied within a mile or so range. Often these operate on 35.02, 150.775, and 150.79 MHz.

Medical pagers can usually be copied on 35.64, 35.68, 43.68, 152.0075, 157.45, and 163.25 MHz.

If you have an adventuresome nature, you can also explore the following frequencies to see if they'll produce medical emergency activities in your area:

33.02 MHz	45.96 MHz	155.175 MHz
33.04	46.00	155.205
33.06	46.04	155.22
33.08	47.46	155.235
33.10	47.50	155.265
37.90	47.58	155.28
37.94	47.62	155.295
37.98	47.66	155.355
45.92	155.16	155.385
		155.40

These frequencies accomodate ambulance services, rescue squads, hospitals, and emergency teams of various types.

For those who are located in areas where most of the above frequencies are active, it will probably also be of value to check out the following offset channels for posible additional emergency medical activities:

453.0125	458.1875	468.0625
458.0375	465.5125	468.0875
458.0625	465.5375	468.1125
458.0875	465.5625	468.1375
458.1125	467.9375	168.1625
458.1375	468.0125	468.1875
458.1625	468.0375	

If you haven't yet explored these frequencies, now's as good a time as any to see what all the fuss is about. PC

Emergency medical communications tune you in on some of the most exciting communications your scanner can pick up.

Accidents happen, and people will fall ill without warning. Happens all of the time. It takes communications to coordinate the efforts to help them.

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Afrikaner Police Scanning

Let Low Band Skip Bring You South African Police Intrigue!

BY CHUCK ROBERTSON

Last winter I sat riveted to my scanner. Via the miracle of skip propagation in the 30 to 50 MHz band, I was able to zero in on the police frequencies used in the Republic of South Africa. Few nations have as volatile a political climate as the RSA and monitoring this on my scanner while it was taking place was far more vivid than watching an edited tape of the events on the following night's network TV news.

There were, of course, the usual reports of stolen cars that you'd expect to hear on any police frequency. But there were also sniper reports, and orders to arrest persons for "identity passport" violations. I would assume that "identity passport" violations relate to more than 1,700 blacks arrested each day for being found without proper identity documents in areas restricted under RSA's strict Apartheid segregation laws.

The RSA police frequencies listed here have never shown up before in any publication. They're *hot*, and bristle with high power police activity when propagation conditions are right. As we enter the peak DX period of Solar Cycle 22, expect to be able to monitor activity on these frequencies with increasing regularity.

In the context of the RSA, the term Afrikaner applies only to citizens of European descent, mainly Dutch and English. All others, including blacks and persons of mixed racial backgrounds, are restricted by Apartheid laws as to where they may live, work, socialize, and travel. This has resulted in a continuous state of racial tension which frequently breaks out into riots, assassinations, terrorism, guerrilla warfare, and other violence. These frequencies have it all, and you never know what you'll hear next.

The Nervous Dispatcher

If you like hearing your local police handing out *greenstamps* to speeders, just wait till you get a load of them doing it in the RSA; it's a different game. For instance, on 37.70 MHz, a nervous dispatcher asked one of his traffic patrol vehicles, "Oscar Control to Oscar 286. What is your location? Over."

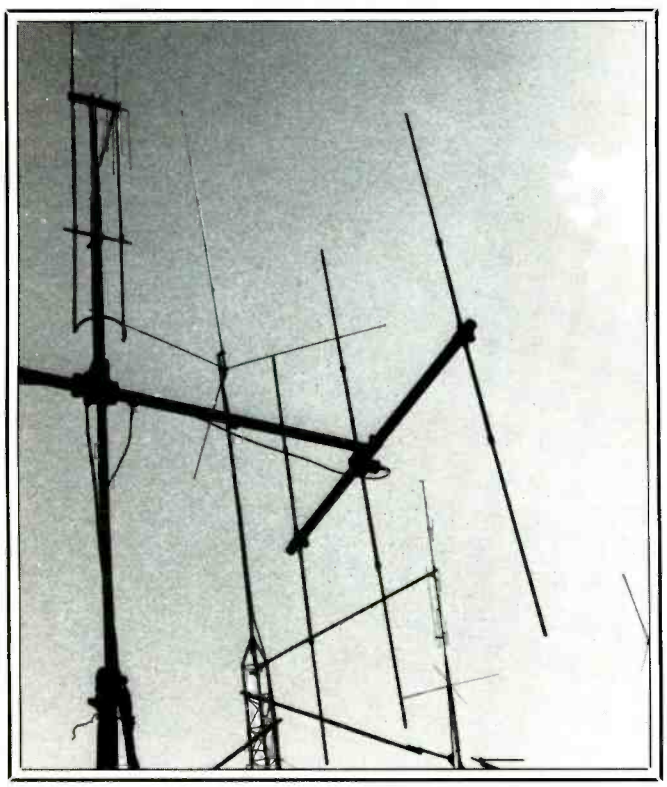
Oscar 286 replied, "I'm at Africa Valley. Quite a few shots have been fired."

Over on 38.00 MHz there were evidences of the tensions between the races: "Control to Golf 1. See the Colonel at Kimberly about a complaint regarding a black male cursing at the Colonel's wife."

I noted that when Control 3 sent out a report of a car stolen in Pretoria, a few minutes later the same bulletin went out on 38.00 MHz. It appears that operations at various bases are closely tied to one another.

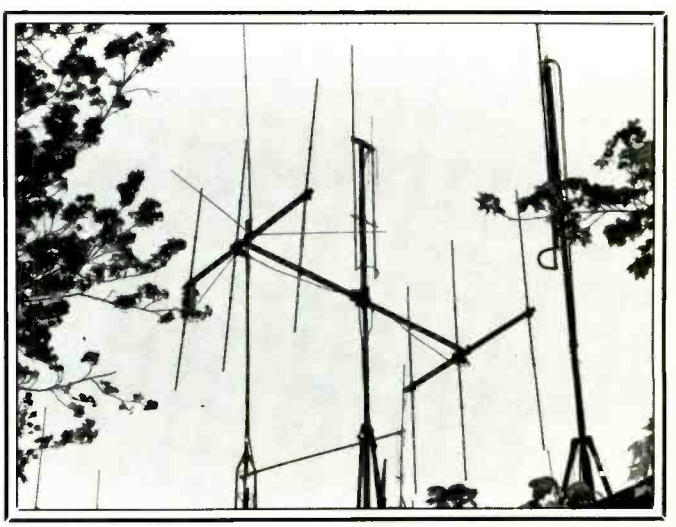
The Language

The language spoken will tickle your ears. One of the main languages heard is Afri-



Some of the author's VHF low-band antennas.

A tri-band scanner antenna can be used to this band, other antennas that will produce results include those made for CB, and the 10 and 6 meter ham bands.



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kaans. If you can't understand Afrikaans, hang in there because the communications usually are at least partially in English. Fluency in both languages is encouraged by the government, and the radio traffic reflects this.

Phonetics are used extensively in reporting crimes, accidents, and for giving locations. Bases ID with names like Echo Control 12, Lima Control 6, Lima Control 7, and India Control. The mobiles may turn up with ID's like Kilo Papa 3, Echo 22, Papa Zulu, Papa Tango, Double 2, Double 4, Mobile 1, or even plain numbers like 74. There are several bases on each frequency, and there's lots of activity. When the skip is coming through, it's non-stop chatter. The channels between 37.60 and 38.30 MHz are the most active.

A police department using an African language (a variety of Bantu, possibly Swazi) is being monitored on 37.05 MHz. Plenty of phonetics there, too, but no place names. I suspect that this station is in one of the eight major black national territories ("homelands"). These are relatively small rural areas where the government requires blacks to live.

A business using an unidentified African language operates on 32.10 kHz. Conversations are long and casual, with many English phrases tossed in ("OK, no problem.")

A dispatcher (possibly police) in Afrikaans is noted on 36.15 kHz. This one requires further study to get a fix on what it is.

What could possibly be railroad office operations have been heard on 42.075 MHz. "Measure the rail and send the dimensions down to Johannesburg," was one comment heard. There's talk about the delivery time of cattle. One of the bases is "Home Office," and everything is in English. This operation is thought to be in Natal Province.

In RSA, the 41 to 44 MHz band is primarily allocated for aero navigation stations. Two-way activities in the band (such as the one described above) are on a secondary, non-interference basis. In addition, 54 to 87.5 MHz is primarily used for the land mobile comms in RSA, with the exception of specific freqs used for aero comms. There aren't any TV channels in this portion of the spectrum in the RSA.

When RSA skip comes rolling in, you can usually also pick up a Malagasy (Polynesian dialect) station in Madagascar on 36.825 MHz. Madagascar is a large island in the Indian Ocean about 250 miles east of RSA. Lots of political unrest there, too.

RSA Police Frequencies

33.40 MHz	37.20 MHz	37.70 MHz	38.10 MHz
36.70	37.30	37.80	38.20
36.95	37.50	37.90	38.30
37.00	37.60	38.00	38.40
			38.50

Listening Tips

At my location in southern Illinois, these stations can be heard almost daily throughout the winter months from about a half hour after local sunrise until about 1 p.m. local time (1900 UTC). RSA is 9,000+ miles from my location, which is pretty good for communications that were intended for line-of-sight coverage.

From October through March (well, except for December and January) are generally good for this long haul F2 layer type skip to Africa between 30 and 50 MHz. Monitors on the U.S. east coast can intercept these skip signals from just after sunrise to about 2 p.m. On the west coast, signals should be usable until about 11 a.m. local time.

Program these frequencies into your scanner and get ready for RSA! PC

Soviet Shipboard Tactical Communications

An In-Depth Examination

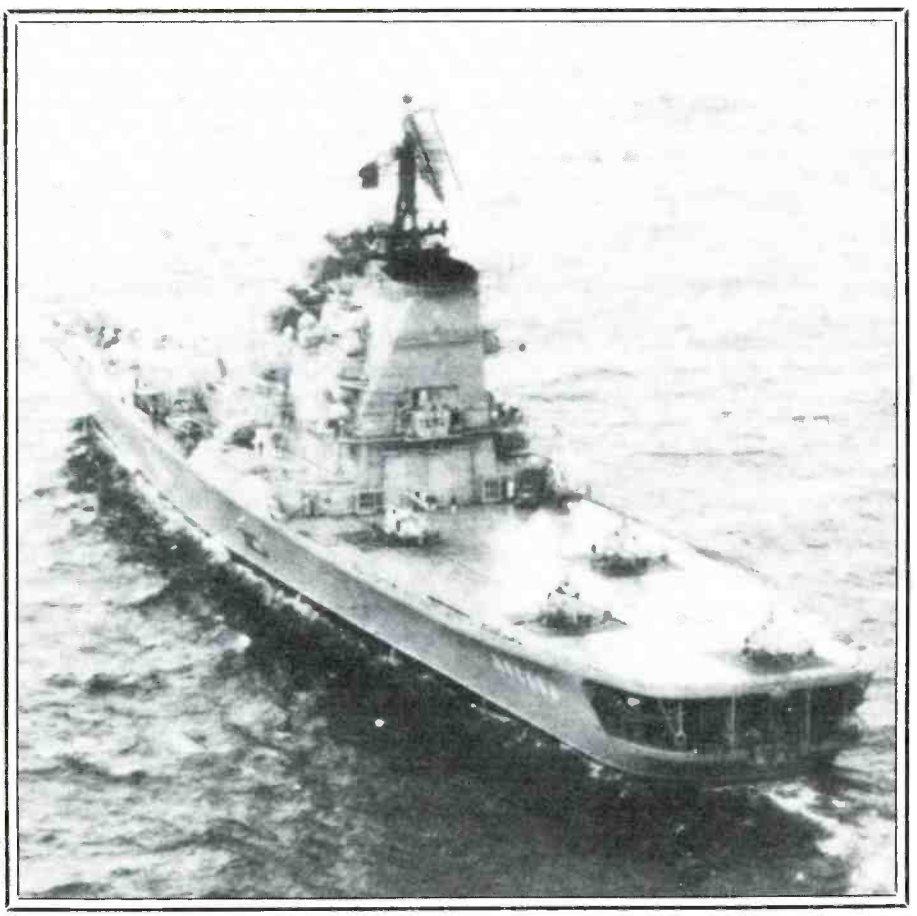
BY DR. MILAN VEGO

Soviet tactical communications are relatively rigid. The use of radio and visual-optical signals is controlled strictly and and as a rule is permitted only on the orders of the ship's commanding officer (CO) or force commander. Communication between command posts ashore and Soviet surface ships at sea in peacetime reportedly is more limited than in the U.S. Navy. Emission control onboard Soviet surface ships is strictly enforced, and the ship's CO or force commander on an out-of-area deployment may transmit for only a few seconds per day at a specific time.

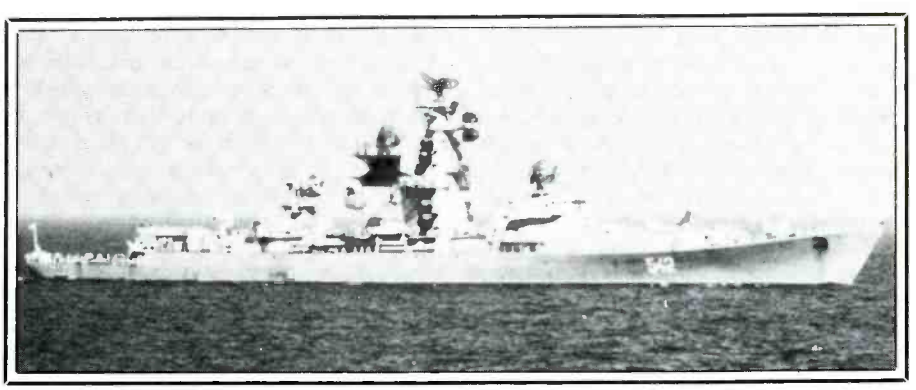
All intelligence and reconnaissance data are collected, processed and analyzed at command posts ashore. Then, individual commanders or tactical group commanders receive their orders to carry out a specific action via the transmission of a single coded word. In remote ocean areas, the Soviet ship or force commanders receive radioed numerical information on the overall situation in their immediate area. If the situation changes, the commander on the scene may take a specific action by using the book of proceedings, or he may be ordered to take a specific action by receiving a specific code word from a command post ashore.

Soviet surface ships predominantly use radio for tactical communications with other ships, aircraft and command posts ashore. Very high frequency (VHF)/ultra high frequency (UHF) and more recently UHF/super high frequency (SHF) are used in communications between surface ships and aircraft. Also, combat craft use predominantly VHF/UHF communications within a force and for communicating with coastal signal/radar posts.

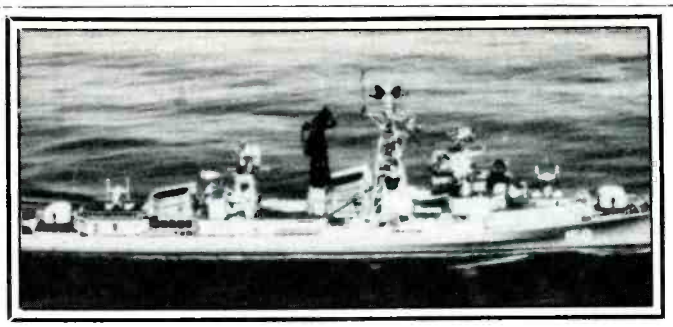
The Soviets also use UHF satellite communications for tactical control of their surface ships deployed in distant ocean areas. Soviet surface ships primarily use high frequency (HF) in communicating with their respective command posts ashore. Visual-optical signaling is used for transmitting commands between ships and coastal observation posts. Also widely used are various pyrotechnic and sound communications means. To communicate with submerged submarines, Soviet major surface combatants also use sonar.



The Soviet Navy's Moskva is a 620 ft. helicopter carrier.



The Vladivostok is one of four "Kresta I" class cruisers in the Soviet fleet.



This is the Soviet warship Stereguschiy, a "Kashin" class missile cruiser.

The Rezkiy is a sleek, 405 ft. Soviet missile cruiser.

The main task of Soviet tactical shipboard communications is to ensure uninterrupted command and control between individual ships and ship formations, and between these and cooperating submarines, aircraft and coastal defense forces. Perhaps most important, tactical shipboard communications must ensure an uninterrupted link between the ships at sea and command posts ashore. These communications also must provide reliable and timely warning to subordinate units of extreme dangers and enemy nuclear biological-chemical (NBC) weapons. In addition, tactical naval communications must enable control of rear area services that provide continuous material-technical support for the ships at sea.

Any tactical shipboard communications system must be reliable, fast and secure. Communications reliability is dependent on the quantity and quality of the transmitted and received messages, and the communications link is reliable when the messages are transmitted error-free and uninterrupted. Speed of communications is achieved by using high speed radio or visual-optical means and by transmitting the information in the needed time frame. One of the mast important requirements for communications speed is the ability of the commanders and watch officers (WO's) to transmit messages clearly, concisely and timely.

Radio Communications

One of the principal advantages of radio over other types of ship communication is that it allows two-sided, or bilateral, transmission and reception of messages during ship movements at sea. Radio communications can be established in a short time, and radio allows communications at long range, over the adversary ship or command post ashore and over any type of terrain or water surface. The number of subscribers in a one-sided communications net, such as a warning net, can be rather large.

Radio's chief shortcoming is that the sender's position can be revealed. An adversary can intercept radio communications covertly and obtain data on the position, strength and intentions of the transmitting forces.

The Soviets define radio communications as a branch of electrical communications conducted between two or more posts by emitting and receiving electromagnetic waves. Its purpose is to transmit or receive telephone, telegraph and facsimile information, as well as to transmit data to automated data systems. Radio communications can be single channel or multichannel; bilateral or unilateral; receive-only or with relay; and duplex or simplex.

The Soviets differentiate between radio sets with a small (up to 10), medium (11 to 50) or large (more than 51) numbers of channels. According to their power output, radio sets can be low power (less than 100 watts), medium power (less than one kilowatt (kW), powerful (more than one kW) and extremely powerful (more than one megawatt (MW).

Soviet radio communications are organized according to radio axis, radio direction and radio net. The first is organized between command posts of the same command echelon. Radio direction is a method of organizing radio communication between two or more command posts (commanders and/or staffs) or ships adjacent to each other and of the same echelon. This type of radio communications is distinguished by reliability, covertness and high circuit availability.

A radio net is organized between three or more command posts (ashore or at sea). These communications allow the possibility of circular transmissions of information (simultaneously to all addresses) and maintained communications between all addressees. However, the net method results in less reliable and less covert transmission of messages. This method also has a lower circuit availability than other methods.

The Soviets stress that the reliability, speed and security of communications in shore-to-ship and ship-to-shore communications links are achieved by a set of organizational and technical measures drawn up jointly by the staff that organizes control and by the communications entity.

VHF Band Communications

The Soviets consider VHF to be the ideal frequency range for conducting short-range communications. This channel is used between individual ships; ships and coastal post; and ships and aircraft within one to 15 times the distance of the horizon range. Soviet shipboard communications in this band probably is digital, thus ensuring a high speed data transmission rate. Because of the short range, VHF is more secure than other frequency bands.

Use of voice radio is restricted in peacetime. It can be used only by order of a force commander ship CO. The watch officers can can use voice radio only by permission of the ship CO or executive officer (XO).

Soviet surface ships will use VHF voice radio communications extensively in combat. The VHF radio is the basic means of communications between a pair of ships, as well as between the pair commanders and the force commander. However, only the lead ship/craft in a ship pair transmits VHF messages. The other ship/craft in that pair has its VHF set switched on the listening mode. Voice commands from the shipboard commander also are encoded by using a table of conditional signals. This is a set of one letter words, each representing a command for a specific tactical procedure or ship's maneuver.

VHF radio communications can be conducted by using either the designated time method or the constant readiness for communications method. When the addressee's bearing is known, the caller using the designated time method aims the transceiver in the proper direction, slowly turning it five to ten degrees to either side of the specified bearing, and then makes a call. After both subscribers exchange calls, the communications link is established, and the transmission of messages begins. If the addressee's bearing is unknown, the scanner sets on both ships are switched on at the designated time. After receiving the call, the ship being called switches on its transceiver, aims it along the communications bearing and transmits a call response signal.

In contrast, the constant readiness for communications method requires that the VHF radio sets on all ships or shore posts be switched on in a listening (scanning) watch for the entire period planned for establishing communications.

The Soviets use several models of VHF radios onboard their surface combatants and auxiliary ships. The standard Soviet R-

622 VHF radio is intended for short-range directional duplex radiotelephone communications between ships; between ships and launches; and between ships or vessels and shore posts. The power output of the set is five watts.

Another radio set widely used onboard Soviet surface ships is the R-619. This gear is intended for short-range simplex radiotelephone VHF communications. This radio is directed from a control console or from a separate communications post. The radio operates in the 100 to 150 MegaHertz (MHz) band. It has a maximum power output of 12 watts, and it has 20 preselected crystal-stabilized channels, although as many as 601 channels may be selected. These guarantee reliable operation and communications without searching. The R-619 operates in A3 (voice) or A2 (Morse) mode. The maximum allowed time for operation of the R-619 radio set in the transmitting mode is 20 minutes; afterward, the set must be switched of for at least 30 minutes for cooling.

Soviet naval auxiliaries and commercial merchant ships are equipped with the Reyd transistorized VHF transmitter/receiver. This simplex/duplex radio set is intended for work on international frequencies to prevent accidents at sea. The Reyd radio set operates in the 156 to 162 MHz band, and it has 78 channels, 35 of which are duplex. The set's mean time between failures (MTBF) reportedly is at least 700 hours.

Soviet large surface combatants, specifically missile cruisers and vertical takeoff and landing (VTOL) aircraft carriers, use the Prichal portable VHF radio set. This gear is intended for official communications onboard, and it operates in the 156.3 to 158 MHz range. MTBF reportedly is 2,000 hours.

UHF and MF Band Communications

UHF is used for tactical communications between ships and coastal posts. It also is used for long-range satellite communications between the shore and Soviet surface ships deployed overseas. Most Soviet major surface combatants are equipped with satellite receivers/transmitters. For example, the *Kirov* class battle cruisers and the *Slava* class missile cruisers are fitted with Punch Bowl antennas for satellite communications. The battle cruiser *Frunze* (*Kirov* class) is equipped with the Big Ball antenna.

One of the main disadvantages of satellite communications is that satellites probably will be the first items to be destroyed in any world wide conflict, nuclear or conventional. Communications satellites also are vulnerable to jamming by anyone within their extensive fields of view.

Medium frequency (MF) is used mostly for broadcasting and automatic direction finding. The ground wave in an MF band propagates up to a distance of 50 nautical miles (nm), and the effective range in MF band is from 310 to 620 miles during the day and several thousand miles at night. An East German source claimed that, by using a 100 watt MF transmitter, ranges of 750 to 1,000 nm can be obtained. These communications are used for radio navigation and for communications between Soviet surface ships and coastal posts at medium distances.

HF and LF/ELF Band Communications

The HF band predominantly serves as a two-way channel for long-range ship-to-shore communications. The principal means of communications for WO's. HF has low resistance to jamming. However, considerable time is required to establish and conduct communications between a ship and an onshore command post. Also, communications in the HF band have a dead zone at certain distances form the transmitter, where the reception of messages is difficult or even impossible. For example, the dead zone for transmitters with output from 100 to 1,000 watts is 50 to 100 nm wide. Outside this zone, radio communications are reliable, and ranges from 2,000 to 4,000 nm are possible.

HF radios operate in Morse code, voice and telegraphy modes. However, a major part of Soviet shipboard HF radio sets operates apparently in the F1B mode (telegraphy). This mode allows fast programmed frequency changes. Output of transceivers is 25 to 100 watts, and they are fully automatic. The HF sets used by the Soviets and their Warsaw Pact allies reportedly have 30 preselected channels spaced at 100 Hertz (Hz) intervals. HF single sideband (SSB) transceivers with 400 channels spaced at 10 kilohertz (kHz) are used for ship-to-ship and ship-to-aircraft communications, and their output is five watts.

For communicating at ranges up to 200 nm at night, the most favorable frequencies in the HF band are between two and five MHz, while the favorable daytime frequencies are between five and nine MHz. For a

range of 500 nm, the HF frequencies used are between five and seven MHz at night and between seven and 14 MHz in daytime. Whenever the distance between the sender and addressee exceeds the range of the radio horizon, transmission is conducted by radio relay. For these purposes, the Soviets mainly use onshore communications posts or helicopters.

Communications between an onshore command post and a Soviet force commander or ship pair commander at sea normally are conducted via HF links. HF message transmissions must be held to a minimum during combat maneuvering, and only encoded messages are used. No other ships in a tactical group or a ship strike group maintained communications via HF radio with either the onshore command post or other ships at sea.

Low frequency (LF) extremely low frequency (ELF) is used for long-range communications, especially with submarines. These communications normally are used for telegraphy and transmittal of signals for precise time. However, the LF/ELF band, because of its very slow data rate, is unsuitable for tactical communications for Soviet surface ships.

Radio Communication Modes and Security

As a rule, shipboard radio communications are conducted by radiotelephone. Most use variable fixed frequencies. Voice radio is strictly limited and is controlled only by the ship's CO or by force commanders. The WO's use voice radio with the permission of the ship's CO or XO.

Telegraphy is one of the basic types of communications between surface ships and command posts ashore. Automatic recording of transmitted messages is important for controlling Soviet naval forces at sea. Repeated relay of signals allows rapid establishment of multichannel communications in a specified direction.

Facsimile use permits not only long distance transmissions of a document's content, but also of imagery as well. Document transmission and reception is automatic.

The Soviets regard communications security as the principal element in the ship-to-shore link. For this reason, they try to reduce the number of radio messages transmitted from ships on one frequency with a maximum reduction in the emission length of each transmission.

The Soviets postulate that secrecy in radio communications is achieved by maintaining radio discipline; protecting communications gear from loss and damage; maintaining the rules for concealment in troop control; and preserving radio secrets. Radio discipline is described as the strict adherence to all rules for conducting radio communications. Using superfluous signals or messages and conducting private talk are forbidden. Time limited prohibition of radio transmissions is considered essential to deny the adversary detection of ships or aircraft. This prohibition is lifted after contact with opposing forces is established.

Protection of radio communications is achieved by changing operating frequencies, switching call signs frequently and varying transmission times. In a combat situation, if compromise is imminent, operators are instructed to destroy their radio equipment.

The Soviets emphasize that radio communications security requires strict secrecy in transmitting data on rank, service position and name of commander; position and unit's designation; strength and combat status of a ship or unit; the state of weapons and equipment; and form and means of force concealment. The Soviets stress that clear text messages must be signed, and the signatory also must enter his name in a control book.

Radio secrecy is ensured by prohibiting staff from listening to or repeating military, state or commercial radio messages. Listening to other radio nets is allowed only in exceptional cases and only if ordered by the respective commander. Exceptions to these rules are permitted only in a combat situation, a time of operational need, when there is no time to encode the text of a message or when the adversary does not have time to react immediately. For example, such a situation would occur when a commander is transmitting the command to commence firing. A superior officer's order could free the radio operator from maintaining secrecy in radio communications.

Radio concealment and deception onboard a ship are achieved by extensive precautions and limiting the message transmission time; that is, using short messages, short signal tables, fast telegraphy techniques and the no receipt method. It also is achieved by using automated enciphering machines, operating with minimal transmitter output and using one-side voice radio (A3J mode). Radio communications secrecy is enhanced greatly by strict maintenance of radio discipline.

The Soviets stress that sending radio messages can take place only on the order of a ship's CO or, in a ship unit, on the order of the force commander or on a call from the main radio post.

Conclusion

The Soviets employ a variety of methods for their shipboard tactical communications needs. This mix of systems offers them many choices to deal with whatever contingency arises, but the large number of methods in no way challenges the Soviet doctrine of strict centralized management and control. The Soviets design shipboard tactical communications to suit their needs according to strict rules and regulations regarding the use of such communications.

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Dr. Milan Vego is a naval analyst associated with a research organization in Virginia.

PC

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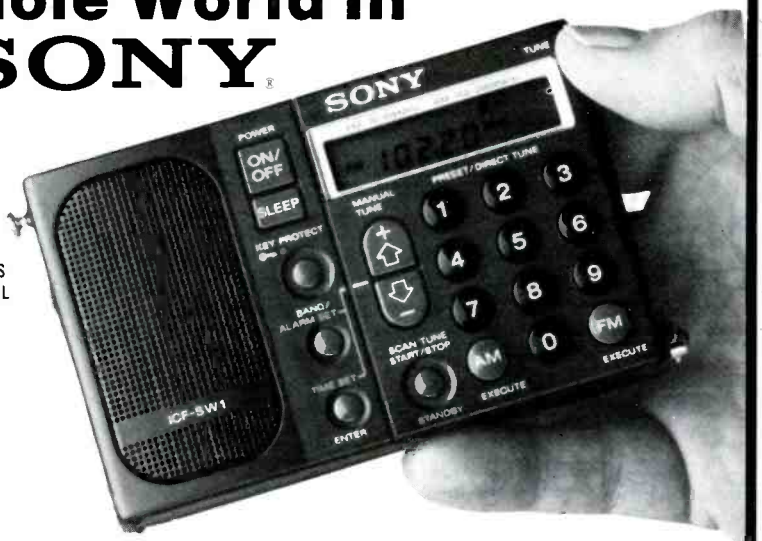

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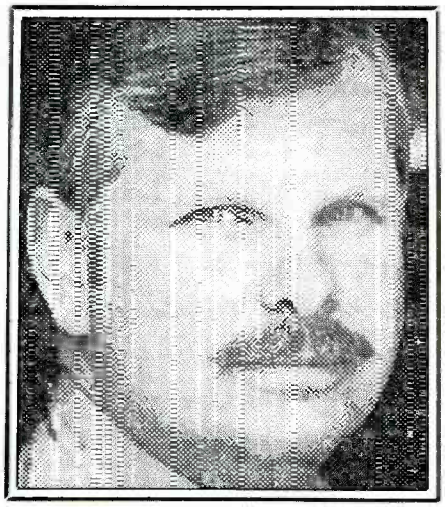
New Jersey Firefighter Saves Girl From Burning Building

SCAN PUBLIC SERVICE AWARD

It was a slow day in Atlantic City when firefighter Kevin Stransky looked out the window of the firehouse and saw smoke rising from an apartment building just half a block away. By the time Stransky reached the scene, everyone was out of the building except Maryeia Huff, a two year old who was trapped inside. Maryeia's mother was running around outside frantically trying to find someone who would help her get her baby out of the fire, according to The Press. Once lines were established in the complex Stransky and another firefighter went in to find the lost child. Stransky, a veteran of the force for more than twelve years, has rescued people from burning buildings before. But this time it had a lot of meaning to him, since the girl in this case was two years old, the same age as Stransky's child. He entered the building and started to crawl along the floor while searching through various rooms. As Stransky entered the second room he felt a blanket and followed it to the unconscious child. While he was grabbing for her his helmet and oxygen mask were knocked off. He then proceeded to give Maryeia mouth to mouth resuscitation while at the same time crawling towards the front of the building where the paramedics could further the live reviving methods.



Hero firefighter, Kevin Stransky of Atlantic City, NJ.

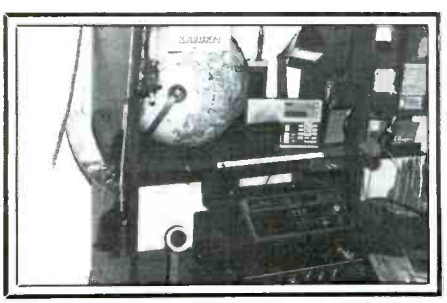
For firefighter Kevin Stransky's good vision and quick thinking he has been awarded the Scan Public Service Award.

SCAN PHOTO CONTEST WINNERS

Best Equipped

Meet Michael J. Magliocco of Carle Place, New York. Magliocco, at the age of fourteen, is the youngest scanner enthusiast we know of. He has an extremely well stocked shack. It consists of a Cobra 142GTL citizens band with a Tri Star desk mic and a 21 foot ground plane on the roof. His shack also contains a Bearcat 800XLT which he uses to monitor the Nassau County Police and Fire Departments, the Parkway Police Patrol, LaGuardia and Kennedy Airports. Magliocco also has a Sony ICF-2002 SW receiver and a SONY ICR 4800 6 band receiver which he uses to monitor FM, SW, and LW. Not to mention his TRC-217 40 channel Realistic walkie talkie and a solid state 7 transistor.

We hope that Michael J. Magliocco and other young people like him keep the spirit of scanning alive.

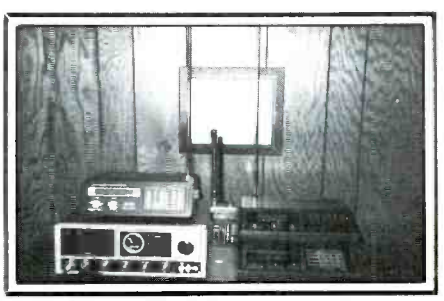


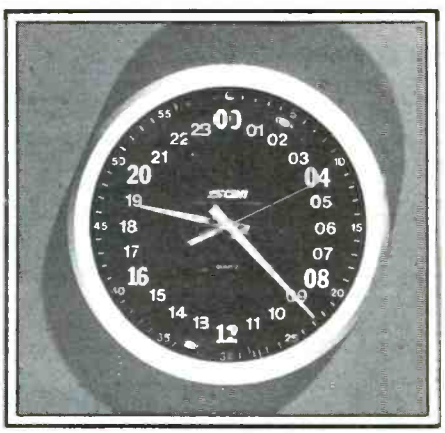
Best Appearing

Michael B. Grimm, of Jackson, Michigan, is a Scan member who puts his hobby to practical use. Grimm is also a member of Skywarn, a group that uses scanners to monitor the various weather channels and warn local governments of potentially dangerous weather systems.

When it comes to the hobby side of things he enjoys monitoring commercial aircraft frequencies which he uses to inform the officials of Skywarn.

Grimm's setup includes a Realistic PRO 2021, a Regency 210, a Regency 245, and a Uniden BC 100 XLT handheld. He also uses a Uniden ZACAHARY T CB transceiver.





Winners of the SCAN Photo Contest will receive the official SCAN 24 Hour Clock used universally in radio communications. It features a crystal clear glass face for clarity. Accurate to within 10-seconds per month, it is powered for a year or more by a single "AA" battery. If you would like to enter the SCAN photo contest, just send a sharp black/white print along with a list of your equipment to SCAN Photo Contest, P.O. Box 414, Western Springs, IL 60558.

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CIRCLE 112 ON READER SERVICE CARD

SCANNING VHF-UHF

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

BY CHUCK GYSI, N2DUP

Winter is about to approach. Do you have your scanners programmed with all the local snow-plowing and snow emergency frequencies? If you live near a ski area, be sure to program in those channels used by ski patrols and ski maintenance operations. And then sit back and wait for the snow to start falling while you start tuning across the bands on your scanners. And now on with this month's mailbag.

Mitch Freidman of Somerville, Massachusetts, says he recently bought a Radio Shack Realistic PRO 2011 scanner, however, he was interested in tuning in frequencies between the various band limits in the radio. For instance, Mitch is interested in tuning in 54-108 MHz, which falls between the VHF low and VHF aero bands. First of all, Mitch, we know of no modifications that can be made to this radio that will extend its coverage. And even if you could make it operate out of band, it's doubtful the radio could track the RF that far and wide-ranging. If you could modify it, you might get a couple extra MegaHertz at the most beyond its normal band limits. You also have to consider what is within the bands that you want to scan out of band. For instance, from 54-108 MHz, you'd be able to tune in the audio portions of TV channels 2-6, the FM broadcast band and paging links in the 72-76 MHz band, as well as possibly some low power industrial operations in the same 4 MHz-wide band. The paging links would just be duplicative of what you could hear on the 152 or 454 MHz bands anyway, where the actual paging is being done. The links tie together one or more additional transmitters. And as to the TV or FM signals, I stick with TV or stereo to tune in those signals. Some scanners can tune in these wide-ranging signals out of normal scanner band limits, but there are only a few models that will, such as the Radio Shack Realistic PRO 2004 and 2005, the ICOM R-7000, the Yaesu FRG-9600 and several of the AOR line models.

Jeff Gouldsmith of Independence, Missouri, asks whether there is an inexpensive scanner priced less than $200 that can cover the 174-380 MHz band. He says: "There is so much action on these bands, I wonder why most scanners stop at 174 MHz and pick up again at about 380 or 406 MHz." Well, the main reason scanners stop short of covering the full bandwidth you desire is cost. The more frequency coverage a scanner has, the more it will cost for the added circuitry. In addition, while serious VHF/UHF hobbyists will be interested in some of the communications that take place between major land mobile bands, most people buy a scanner to listen to their local police an fire departments, without the thought of using them to tune in exotic frequencies such as their neighbor's cordless telephone of fast-food drive-through order windows. While there is the 216-220 MHz inland waterways radio system for along the Mississippi and the Gulf of Mexico and the 220-225 MHz amateur radio band (about to be sliced to make room for a new land mobile band), most of the rest of the band you mention between VHF high band and UHF is used by TV stations for their signals and military aircraft and satellite communications. Most scanner hobbyists don't have the interest in tuning in some of these specialized types of operations, thus, the manufacturers opt to leave them out of the mass-market scanners.

John Thompson of Mentor, Ohio, wrote in to say that Lake County, Ohio, has switched to a new 800 MHz trunked radio system. He says that every radio used in the county by governments are now on 800 MHz, except for some county and city road crews. In addition, 46.14 still is being used for fire dispatching, however, the 800 MHz system is used for fireground. Frequencies used by Lake County are: 851.4375, 851.4625, 852.4375, 852.4625, 853.4375, 853.4625, 854.4125, 854.4375, 854.4625, 855.4125, 855.4375, 855.4625, 856.4375 and 856.4625. The county's callsign is WNAS488 and the town of Mentor uses 853.0875 under the callsign of KNER492. John passes along some additional frequencies of interest for the Cleveland,

GOODYEAR BLIMP

AIRSHIP OPERATIONS

May 11, 1989
AOG-380

Mr R C Watts
4109 Graf Drive
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Dear Mr Watts:

Many thanks for your letter and interest in Goodyear and the blimps.

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Confirming all of the information contained in your letter regarding radio reception verification from Enterprise, N1A between the two airports in the Louisville area.

The first flight over the race course was rehearsal with ABC to make sure we were sending a clear signal to the television production people as weather on Friday did not cooperate for us to rehearse that day.

The second flight was for actual, live coverate of the Kentucky Derby, with ABC Sports, between 4:30PM to 6:00 PM EDT.

I don't have a QSL card but I hope this letter is verification enough of your visit with our blimp via the airways.

Again, our thanks for writing and I have attached a package of information I hope you will enjoy.

Manager
Airship Operations

Thomas B Riley

encls

PS: Pilot was Dr James C Maloney who is stationed with Enterprise in Pompano Beach, FL

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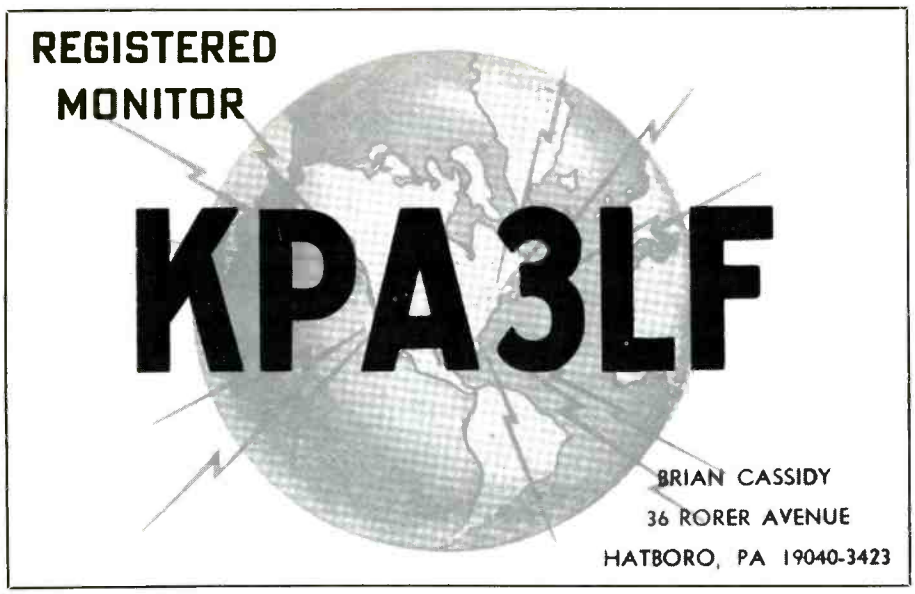


A very striking station card in black, red, and silver from Brian Cassidy, Registered Monitor KPA3LF, of Pennsylvania. Send us your card!

Ohio, area. He says that Cleveland Metro Hospital's Life Flight's five medical helicopters can be heard on 155.385 and University Hospital's Air Care copter can be heard on 155.325.

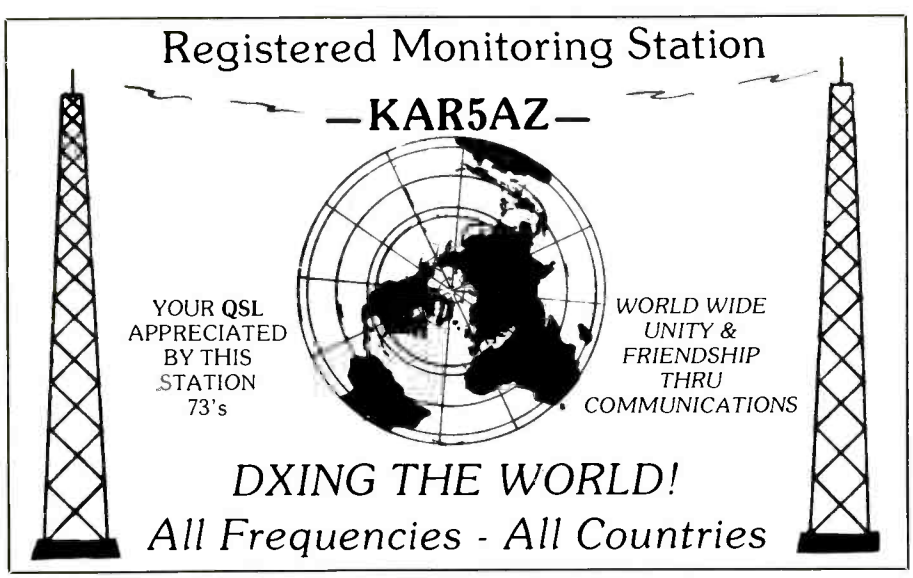
From Honey Brook, Pennsylvania, Stephen Hillman checks in with a query. He says that he is planning on moving to the military town of Yuma, Arizona, however, his scanner, a Radio Shack Realistic PRO 2002, does not cover the military air bands. He was wondering whether a converter was available to monitor the military aero traffic. First of all, most military aero traffic is in the AM mode, however, most scanners receive only in the narrowband FM mode. If an AM signal came across your FM receiver, it would sound very distorted. Even if you were able to obtain a converter, it would be able to cover only a portion of the entire 225-400 MHz band which is what you really want to hear. You might be better off checking out a new scanner that actually covers this band. This will allow you access to the entire band and you'll be able to scan other action, even while scanning military aero comms, something a converter would not allow you to do. Keep in mind, though, even if you don't buy a new scanner, most military installations simulcast some activity onto the civilian aero band, such as the control tower. There is some limited use of the 108-136 MHz aero band by military also. And don't forget the bonanza of activity that can be found on the regular scanner bands at a military base. Check out the stretches of VHF low band between civilian channels (such as 32-33 MHz) as well as the 163-166, 172-174, and 406-420 MHz bands.

R.C. Watts of Louisville, Kentucky, writes to say that he received an interesting QSL to verify his reception of transmissions from the Goodyear Blimp, the *Enterprise*. He heard it on the VHF aero band communicating with Standiford Field and Bowman Field control towers. It identified on the air as "One Alpha," a shortened form of its call sign, N1A. In addition to the QSL letter, Goodyear sent along a large packet of information and photos, as well as a blimp inflatable.

James F. Logan of Mays Landing, New Jersey, says he is looking for frequency information for New Jersey State Police. As far as Troop A, which covers South Jersey, where Jim lives, listen for the new 800 MHz trunked radio system on 856.9375, 857.9375, 858.9375, 859.9375 and 860.9375. These frequencies are used for dispatching and other routine communications by troopers. However, one channel will carry the data signals sent out to mobiles telling them what frequency to switch to each time the microphone is keyed up. You'll need to lock out this channel whenever you hear the buzzing sound. For Central Jersey, Troop C uses the same 856-860 scheme, but .7125 in place of .9375 for the frequencies, and Troop B in North Jersey uses 856-860.9625 for its five frequencies.

In addition, there is an 856-860.4625 group that is used statewide for overflow from the regular channels, as well as detectives, corrections units, etc. The New Jersey State Police still uses its old VHF low band system, however, it's mainly for radio checks a couple of times a day, or an occasional mobile-to-mobile chat. Check out: 44.94, F-1, Troop A; 44.62, F-2, Troop C; 44.66, F-3, Troop B; 44.98, F-4, Special operations; 44.78, F-5, car-to-car; 45.00, F-6, detectives; 44.70, F-7, I-295 patrol; 44.82, F-8, tactical. In addition, 154.920 is used for point-to-point communications. As far as the Garden State Parkway, which Jim asked about, the frequencies are as follows for state police use: 154.905, F-1, dispatch; 155.505, F-2, alternate dispatch; 154.950, f-3, car-to-car; 154.680, F-4, off parkway use (SPEN-1); 154.920, F-5, point-to-point; 155.460, F-6, radar operations; 155.475, F-7, off parkway use (SPEN-2). In addition, state police also use some 800 MHz frequencies on the parkway. Check out 851.1625, 851.3375, 852.1625, 852.7375, 852.7875, 852.8125 and 853.8625. For the Atlantic City Expressway's state troopers, listen in on 453.700 and 453.900, in addition to the 800 MHz channels for Troop A. Hope we've answered your request, Jim.

We're looking for your questions, frequency updates and suggestions here. We also can use photos of your listening posts and radio towers, your station cards, not to mention photos of professional dispatch locations, too. Write to: Chuck Gysi, N2DUP, Popular Communications, Scanning VHF/UHF, 76 North Broadway, Hicksville, N.Y. 11801-2909. PC



RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Andrew Gordon of Connecticut took time out from his hunt of U.S. Navy vessels and logging their voice communications intercepts for the *Communications Confidential* column, to tell us of his monitoring of an as yet to be commissioned naval vessel that was sending RTTY along with other modes.

The vessel was designated in voice communications as PCU Normandy, with PCU meaning "pre-commissioned unit." Andy explains the vessel soon will be commissioned the USS Normandy (CS60).

Andy was listening to 7535 kHz at 1600 UTC on a Saturday when he heard the Normandy testing its USB, LSB, ISB, CW and RTTY modes while dockside at Bath Iron Works in Maine. Andy doesn't have any RTTY decoding gear. But he says he heard SESEF in Norfolk, VA tell the radio officer orally during a RTTY transmission. "Good copy on your quick brown foxes."

For the past two issues, I have been discussing my trip earlier this year to France. There, I combined sightseeing along with finding feature stories that might interest you. This month we will conclude the travelog with a visit to a unique store that sells communications equipment, and a chat I had with the chief of the audio service of Agence France-Presse.

While working along the many curved streets of this picturesque city, I came across a shop at 35 rue Danielle Casanova, with a most curious sign: "The Counter Spy Shop (see Figure 1)." It was closed at the time and a sign on the front door indicated that it was to be moved to another part of Paris. The front window still contained security equipment of all types. The store was operated by Communications Controle Securite Ltd., France.

On display was a "Spyscanner," and communications equipment made by Midland, Uniden, and Kenwood. There was also a Kenwood handheld transceiver covering 440 MHz FM; and SMA Sealab 9000 "Radiation Alert" transceiver by Kachua Communications that offered LSB, USB, AM, and CW modes. Other merchandise included flashlights, tape recorders, binoculars in camouflage coloring, and a verifier/locator device. I wonder if they carry French-language editions of POP'COMM and Tom Kneitel's books?

I visited the newsroom of Agence France-Presse (see Figure 2) to write a story about its shortwave radio teletype news transmissions. But Alain Faudeux, chief of AFP's audio service, insisted that the agency no longer had HF-radio service. "Everything's on satellite now," he told me. When I returned home the following week, I tuned to many of AFP's listed SW frequencies and found them all in operation.

Asking about the huge antennas atop the roof of AFP's headquarters (see Figure 3), Faudeux said they were there so that AFP could monitor teletype transmissions of other news agencies in Europe and Asia, just as you and I do.

If you are an owner of an IBM, or compatible computer like I am, you may know that it's not easy to find software for the SWL to use. Thomas Sundstrom, a frequent contributor of loggings to this column, has designed a database and reporting system software for the utility DX'er called Utility Notebook, V.2.02. He's selling it for $20 and it comes on a 360 KB DSDD diskette. It require an IBM PC, PC-XT, PC/AT, PS/2, and close compatibles. 512 KB of memory and a hard disk.

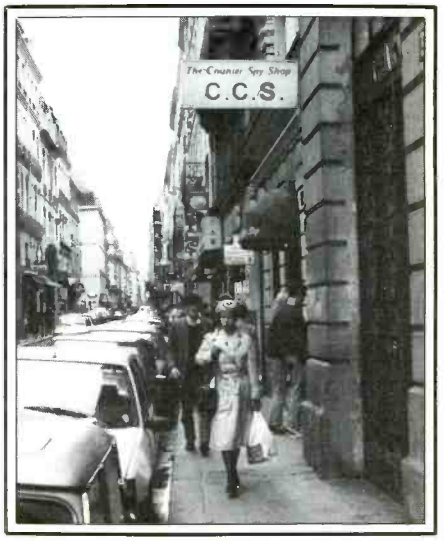


Figure 1

For details about the software, contact Tom at TRS Consultants, P.O. Box 2275, Vincentown, NJ 08088-2275. If you have an earlier version of Tom's Utility Notebook, ask him about the cost for upgrading to the latest version.

Congratulations to Tom, W2XQ, for the award he received from World Radio Television Handbook for achievements in computer accessories. He operates the Pinelands RBBS for SWL's.

Figure 2

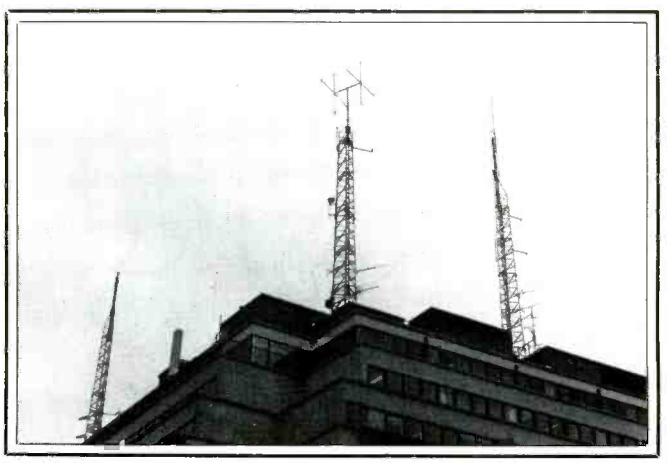


Figure 3

RTTY Intercepts
All Times Are UTC
Settings= Hz/Baud/Polarity

2835: Un-ID w/continuous stream of RY's at 2307, was 56 baud (Fred Bourne, England).

3230: AFF2, Carswell AFBm TX w/coded KAWN wx bc at 0600, 170/75N (Darrell Lingenfeld, PA); KAWN & KGWC wx data now said to be sent from Elk Horn, NE site near Offutt AFB-- Ed.

4045: XXZ8, un-ID (in Macao?) w/RYRY & foxes to ZZX5 (New Zealand?), 50 baud at 0040 (Bourne).

4489: GFL26, Bracknell Meteo, England w/coded wx at 1645, 425/50R (Bourne, England).

5117.5: TYE, ASECNA Cotonou, Benin w/RYRY at 0311, 425/50R (Ed.).

6795: LZM7, Sofia Meteo, Bulgaria w/coded wx at -223, 425/50R (Ed.).

6805: TNL, ASECNA Brazzaville, Congo w/RYRY at 0215, 850/50N (Ed.).

6835: GFL22, Bracknell Meteo, England w/coded wx at 0320, 425/50 (Gilbert Bosse, PQ).

6896: CLN48, RCC Havana, Cuba w/RYRY & foxes at 0138, 425/50N (Tom Sundstrom, NJ).

6975: 6VU, ASECNA Dakar, Senegal w/test tape at 0030, 425/50 (Bosse, PQ).

7585: 6VY41, ASECNA Dakar, Senegal w/coded wx at 0325, 170/50 (Bosse, PQ).

7817: 5NK, Kano Aero, Nigeria w/RYRY at 0423, 425/50R (Lingenfield, PA).

8051: WOO, Ocean Gate R., NJ w/tfc list in FEC at 0427 (Lingenfield, PA).

8140: CLN219, PL Havana, Cuba w/nx in EE at 0825, 425/50 (Bosse, PQ).

8349: SWZH, **M/V Fayrouz 3** w/telexes at 0357 in ARQ (Lingenfield, PA). A Greek cargo ship-- Ed.

9124: HVQ8, VNA Hanoi, Vietnam w/nx in Vietnamese at 1240, 425/50N (Sundstrom, NJ). Tom, that HVQ8 callsign is one that VNA elected to call itself, not one that the ITU sanctions-- Ed.

9961: Un-ID in FDM (VFT) mode w/AP nx on Ch. #1, 50 baud + 5L grps (wx?-- Ed) on Ch. #2 at 75 baud (Sundstrom, NJ). Lots of USN bases on this freq-- Ed.

10113: FMEE, Le Port Meteo, Reunion w/coded wx at 1303. S/off in EE at 1318, 425/50R (Ed.).

10200: JAE50, JPS Takyp, Japan w/nx in EE at 0945, 850/50 (Fred Hetherington, FL).

10389.5: 5NL, Lagos Aero, Nigeria w/RYRY at 0340, 850/50R (Ed.).

10638: TAD, MFA Ankara, Turkey w/telexes in Turkish, 850/75R at 1523 (Ed.).

10732: FDY, French AF, Orleans, France w/RYRY & le brick at 1856, 425/50R (Ed.).

10833.8: VER, Canadian Forces, Ottawa, ON w/RYRY & foxes + RCCACP ID. FDM 170/75N at 1626-1651 (Ed.).

11035: UKS, SAM Barentsburg, Norway w/tfc in RR & crypto after ZZZZZ, 425/50R at 1506-1600 (Ed.).

11044.3-11046: VER, Canadian Forces, Ottawa, ON w/foxes & 10-count on 6 chans to VDD. Was FDM 170/75N at 1243 (Ed.).

11053.5: 5KM, Bogota Navrad, Colombia w/RY & SG + CARMA001 at 1243, 300/75N (Ed.).

11084.4-11086.4: VDD, CF Debert, NS w/foxes & 10-count at 1154, FDM 170/75N. Was on 7 chans linked w/VER (Ed.).

11111: French Navrad, Papeete, Tahiti w/non-protege tfc at 1255, TDM/96A (Ed.).

11125: Y2V56 (ex-Y3B), ADN Berlin, GDR w/nx in EE on beam towards east. Was 395/50N at 2100. Was //Y2V59 on 11420 beamed SE (Hetherington, FL)

11174.5: 5HD, Dar es Salaam Aero, Tanzania w/aero wx at 2256, 250/50N (Ed.).

11440: EIP, Shannon Aero, Rep. Ireland w/NOTAMS at 1208, 850/50N (Ed.).

11450: RDD77, Moscow Meteo, USSR w/coded wx at 0202 & 1255, 1000/50R (Ed.).

11490: VNM, Mawson (Australian) Base, Antarctica clg CQ & RYRY w/foxes at 1258 then coded wx at 1300, 425/50R (Ed.).

11501.7: Possibly Mexican naval tfc in ARQ at 0240, "RD de RA" & SS tfc in combo w/USB mode at 1500. Off at 0248 w/cambio y fuero (over & out) (Ed.).

11541: 7OC, Khormaksar Aero, S. Yemen w/test tape in reverse so that it read YRYR COU COU ED YRYR. Was 390/50 at 2045 (Hetherington, FL).

11600: CLN327, ROC Havana, Cuba w/telegrams to USA at 1624 (Ed.); Same at 2200 (Sundstrom, NJ); Same 0321 (Williams, CO).

12186: JANA Tripoli, Libya w/nx in EE at 1800, 387/50N (Sundstrom, NJ).

12251: Y2V24B, ADN Berlin, GDR w/nx in EE, FF & Portuguese, 425/50R at 1758 (Bourne, England)

12439: MTT, un-ID Royal Navy sta w/RYRY & foxes to GYU at 1900, 850/75N (Hetherington, FL).

12472: Un-ID sta w/5F grps at 2110, 500/50N. Off at 2115 w/QRU SK (Hetherington, FL).

13084: OXZ, Lyngby R., Denmark w/FEC tfc list at 2330 (Ed.).

13089: Szczecin R., Poland ends FEC xmsn at 2215 w/ID SPE/SPB, then into ARQ w/tfc in Polish. New on this freq (Ed.).

Abbreviations Used In The RTTY Column

AA	**Arabic**
ARQ	**SITOR mode**
BC	**Broadcast**
EE	**English**
FEC	**Forward Error Connection mode**
FF	**French**
foxes	**"Quick brown fox . . ." test tape**
GG	**German**
ID	**identification/ied**
MFA	**Ministry of Foreign Affairs**
nx	**news**
PP	**Portuguese**
RYRY	**"RYRY . . ." test tape**
SS	**Spanish**
tfc	**traffic**
w/	**with**
wx	**weather**

13095.5: SVU5, Athens R., Greece w/nx in Greek, FEC at 2100 (Ed.).

13400: LZG3, BTA Sofia Bulgaria w/RYRY at 1153 & nx in EE at 1200, 700/50R. Was //LZP2 on 15555 kHz (Ed.); Same at 1245 but 425/50N (Bourne, England).

13440: YZJ5, TANJUG Belgrade, Yugoslavia w/nx in EE at 1118, 425/50R (Ed.).

13460: Un-ID w/5F msgs & Za Buenos A&res + Ekstrera headers. Was 600/50R at 2057 (Williams, CO). Dallas observes that "A&res" was printed probably because of a non-standard keyboard being used-- Ed.

13505: Un-ID w/aero wx at 1045, 425/50N. Wasn't RUZU listed here. This sta used words in EE like "cold fnt" & "warm fnt." Off 1051 w/NNNN to wx bc, but no s/off (Ed.).

13530: RVW53, Moscow Meteo, USSR w/coded wx, 50R at 1320 (Bourne, England).

13581: Swiss Embassy, Bogota, Colombia w/tfc in ARQ to MFA Berne at 2212 (Hetheringtan, FL).

13656: VNA Hanoi, Vietnam w/nx in EE & FF, 425/50R at 1527 (Ed.).

13787.5: PTT Bukavu, Zaire w/telexes in FF to Kinshasa, 425/50N at 1346 (Ed.).

13803.3: RCR78, Khabaravsk Metea, USSR w/coded wx at 1542, 1000/50N (Ed.).

13872.5: MFA Budapest, Hungary w/nx from AFP, AP & Reuters in Hungarian, 425/100R at 1459 (Ed.).

13886: TAD, MFA Ankara, Turkey w/5F coded tfc to diplo posts, 850/75R at 1435 (Hetherington).

13940: Embacubo Managua, Nicoraguo w/tfc to Havana at 2034, 425/50N; then 425/75N following nite at 2020 (Ed.).

13941.5: Un-ID in FEC at 2046 w/QSA et QRK QRU K. At 2055 (also FEC) w/RYRY + INT QRU K (Ed.).

14362: SOO236, PAP Warsaw, Poland w/nx in EE at 1706, 425/50R (Ed.).

14370: HZJ, Jeddah Aero, Saudi Arabia w/tape loop reading "De HZJ QRR? Are You ready for autamatic operation? NNNN" Was 425/50N at 2025 (Ed.).

14403.5: MFA Jakarta, Indonesia w/tfc in Indonesian at 1055, 850/50R (Ed.).

14498: SUC, Cairo Aero, Egypt w/RYRY at 1409, 400/50N (Ed.).

14510: RIC75, TASS Moscow, USSR w/nx in EE at 0614, 425/50R (Lingenfield, PA).

14523: Un-ID -/5L tfc at 1408, 425/75N (Ed.).

14567.5: HMF32, KCNA Pyongyang, N. Korea w/RYRY at 1030, 510/50 (Hetherington, FL).

14573: JANA Tripoli, Libya w/nx in AA at 1656, 425/50N (Ed.).

14605: Un-ID w/RYRY + VKX QTC, 425/50R at 1502, then a 10-gro 5L msg & off at 1504 w/"GOM all QTN 1 all QTC 0 QRU SKSK" Probably same sta as was for next logging (Ed.); 5L grps w/11177 format header at 1505, 500/50R. This is a GDR freq (Williams, CO). The 11177 in the header usually attributed to GDR Embassy in Havana-- Ed.

14673: Un-ID w/5L grps at 0649, 425/75N (Lingenfield, PA).

14699.5: REB24, TASS Moscow, USSR w/nx in EE at 1207, 425/50R (Ed.).

14785: 9PL, Kinshasa Aero, Zaire w/RYRY & "De Zaire Centre line test" 425/50N at 0153 (Lingenfield, PA).

14800.5: Y2V24A, ADN Berlin, GDR w/nx in EE at 1639, 425/50N (Ed.).

14856.7: MFA Bonn, FRG w/encrypted "teleks" to Managua at 1418, ARQ-E/96 (Ed.).

14898: Un-ID ends xmsn at 1543 w/list of msgs previously sent, 425/75N at 1543 (Ed.).

14944: CLP1, MFA Havana, Cuba w/circulars re Panama, 425/50N at 1700 (J.M., KY).

15670: HGM36, MTI Budapest, Hungary w/nx in SS to Centr Amer at 1617, 425/50N (Ed.).

15693: Un-ID USSR w/telegrams at 1041, 425/100R (Ed.).

15752.7: CNM66, MAP Rabat, Morocco w/nx in FF at 1639, 425/50R (Ed.).

15818.2: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes in FDM 170/50R at 1305 (Ed.).

15845: SUA289, MENA Cairo, Egypt w/nx in AA at 1700, 425/50R (Ed.).

15887.5: Un-ID w/tfc bearing date/time indicator in header, then sig dropped sharply & remainder of text was neg copy, ARQ at 1504 (Ed.).

15890: RNI79, TASS Moscow, USSR w/nx in PP at 1100, 425/50R (Ed.).

15910: RGG43, APN Moscow, USSR w/nx in EE at 1101, 425/100R (Ed.).

15911: Y7A61, MFA Berlin, GDR w/5L msg at 1537, 425/50R (Ed.).

15930: RBI78, TASS Moscow, USSR w/nx in FF at 1103 & 1720, 425/50R (Ed.).

15935: SUA291, MENA Cairo, Egypt w/nx in EE at 1104; & in FF at 1350, 425/50R (Ed.).

16018.6: DFQ21L1, MFA Bonn, FRG w/DDP nx item in GG at 0929, FEC/96A (Ed.).

16029.1: VER, Canadian Forces, Ottawa, ON w/RYRY, foxes & RCCACP ID, 270/50N at 1317. Hrd VER s/on while I was monitoring an idle TDM sta on 16029 (Ed.).

16040: RTT40, APN Moscow, Moscow, USSR w/nx in AA at 0645, 425/100R (Ed.).

16041.4: Un-ID w/RYRY + QRI QRX PSE AR at 0923, 425/50N. At s/off, a 2nd sta was noted here w/crypto FDM 170/75. This freq was one of several in TDM between 16040.2 & 16042.4 that were all in crypto mode (Ed.).

16060: RFM27, APN Moscow, USSR w/nx in PP at 1023, 425/100R (Ed.).

16085: RND71, APN Moscow, USSR w/nx in EE at 0644, 425/100R (Ed.).

16106: FPQ, DIPLO Paris, France w/nx in FF at 0511, 425/50N (Ed.).

16119.7: HBD20, MFA Berne, Switzerland, w/tfc in EE, FF & GG in ARQ at 0830 (Ed.).

16135: BZR66, XINHUA Beijing, PRC w/RYRY & QRA at 1105, then nx in EE at 1113, 425/75R (Ed.).

16181.6: Un-ID w/tfc in AA, was ARQ at 1440 (Ed.).

16129: Un-ID w/5F msgs at 1315, 1000/50N. The op broke into the xmsn at 1345 w/"No byen zo 500 imnida no 500 im" then into CW on 16128.5 at 1347 (Ed.).

16130: Un-ID w/text in AA at 1137, 425/75N. Xmsn ended at 1159 (Ed.).

16136: BZR66, XINHUA Beijing, PRC w/nx in EE at 1130, 425/75R (Ed.).

16140: RGW28, TASS Moscow, USSR w/nx in EE at 1400, 425/50N (Sundstrom, NJ); Same at 0637, 425/50R (Ed.).

16145: RWM77, APN Moscow, USSR w/nx in EE at 0943, 425/100R (Ed.).

16250: RME22, APN Moscow, USSR w/nx in EE at 0946, 425/100R (Ed.).

16280.5: PL Havano, Cuba w/nx in EE at 0914, 850/50R (Ed.).

16300: RMD59, APN Moscow, USSR w/nx in PP at 0910, 425/100/R (Ed.).

16308: Y7A66, MFA Berlin, GDR w/5L msg at 1117, 425/50N (Ed.).

16351.2: RCCACP w/RYRY & foxes at 1657, FDM 170/75N (Williams, CO). RCCACP a/k/a VER, Canadian Forces, Ottawa-- Ed.

16397.5: FTQ39, DIPLO Paris, France w/nx in FF at 1122, 425/50N (Ed.).

17024: SAB83, Goeteborg R., Sweden w/nx in Swedish, FEC at 1705 (Ed.).

17030: GYA, RN London, England w/test tape at 1717, 850/75R (Ed.).

17212: VPS82, Victoria Isl. R., Hong Kong w/telex to ELBU, ARQ at 1118. Gud sigs (Ed.).

17214: XINHUA, Beijung, PRC w/RYRY & QRA at 1105, then nx in EE 1113, 425/75R. Strong sigs & using a coastal sta freq. Hrd next day, too, same freq/time (Ed.).

17397.5: HMY47, PTT Pyongyang, N. Koreo w/RYRY at 1010, 425/50N (Ed.).

17411: Y7K32, MFA Berlin w/tfc in GG + 5L msgs, 425/100N at 1200. Was //Y7K37 on 17442 (Ed.).

17413.8: GHH, Jamestown Meteo, St. Helena w/RYRY at 1012, 425/50R (Ed.).

17427.5: OFD47, Helsinki R., Finland w/telexes to CBLW in ARQ at 1211. ID's self as RAHKI. Off at 1230 (Ed.).

17443: BZG48, XINHUA Beijing, PRC w/nx in FF at 1019, 425/50R (Ed.).

17472: RPFN, Lisbon Navrad, Portugal w/RYRY, foxes & 10-count to RPTI at 1527, down at 1555. Was 850/75R (Ed.).

17498.5: MFA Ankara, Turkey w/ARQ tfc in Turkish 1310-1343 (Ed.).

17500: Un-ID dipla w/msgs in EE & telexes in SS, ARQ at 1404 (Ed.).

17502: French Marines, Paris w/AFP nx in FF w/translation of story from NY Times, was ARQ-E/72 at 1747 (Ed.).

17518.3: MFA, Bonn, FRG w/crypto text re Iran at 1047, ARQ-E/96 (Ed.).

17521: HSW61, Bangkok Meteo, Thailand w/coded wx at 1828, 850/50N (Williams, CO).

17525: OLV3, CTK Prague, Czechoslavakia w/nx in EE at 1638, 425/50N (Ed.).

17529: EBA, Madrid Navrad, Spain using its real callsign for an RY/SG/foxes tape at 1827, 850/75R (Williams, CO).

17599: Un-ID w/5L grps at 1534, 425/75N (J.M., KY). My files show YBU of GDR Embassy in Havana here in the past-- Ed.

18035: ZRH, Cape Town Navrad, RSA w/RYRY & foxes to LOL, 850/75R at 1214 (Ed.).

18040: RFVI, French mil, Le Port, Reunion w/controle de voie at 1236, TDM/96 (Ed.).

18050: TASS Moscow, USSR w/RYRY at 1620, then nx in FF at 1621, 425/50R (Ed.).

18061: GYA, RN London, England w/test tape at 1345, 850/75R (Ed.).

18125: RND70, TASS Moscow w/nx in EE at 2017, 425/50R (Ed.).

18178.5: CLP1, MFA Havana, Cuba w/cables in 5F grps to Burkina Faso at 1115, 425/50N (Ed.).

18279.3: HBD20, MFA Berne, Switzerland w/nx in FF & GG + crypto, ARQ at 1315 (Sundstrom, NJ).

18341.6: Un-ID at s/off in AA, ARQ at 1700 (Ed.).

18496: CNM80, MAP Rabat, Morocco w/nx in AA at 0855, 425/50R (Ed.).

18561.5: 9BC31, IRNA Teheran, Iran w/nx in EE at 1057, also AA at 1100, 425/50R (Ed.).

18755.8: Un-ID INTERPOL sta w/info re European drug arrests & seizures of drugs. Signed by "IP Lyon" but could have been via IP Paris. Was ARQ at 0059 (Ed.).

18810: SAM, MFA Stockholm, Sweden w/msg in Swedish, FEC/405 at 1542 (Hetherington, FL).

18932: XVR94, PTT Ho Che Minh Ville, Vietnam w/tfc in Vietnamese & EE to Stockholm, TDM/96B at 1720. This circuit designated as Channel 11 (Ed.).

19171: CNM85X11, MAP Rabat, Morocco w/nx in RR at 1647, 425/50R (Ed.).

19505: RCD36, PL Moscow, USSR w/nx in FF at 1153; PP at 1205, 425/50R (Ed.).

19980: 9BC33, IRNA Teheran, Iran w/nx in AA at 1147, 425/50R (Ed.).

20285: Un-ID w/5F & 5L tfc at 1551, 425/75N (Ed.).

20351.5: 9RL, PTT Lubumboshi, Zaire w/telexes to PTT Brussels, TDM/96A at 1449 (Ed.).

20415: CLP1, MFA Havana, Cuba w/5F to Ghana, 425/50N at 1715 (Ed.).

20495: CXR, Montevideo Navrad, Uruguay w/RYRY, SGSG & foxes to HDN at 1530, 1200/75N (Ed.).

20560: JANA Tripoli, Libya w/nx in EE at 1650, 425/50R (Ed.).

20595.9: HBD20, MFA Berne, Switzerland w/press review in FF, ARQ at 1645 (Ed.).

20715: RFFA, Defense Ministry, Paris, France w/crypto to RFTJD at 1420, ARQ-E3/48 (Ed.).

20802: TAD, Ankara, Turkey w/5L msgs, 850/100R at 1335. S/off in CW at 1338 (Ed.).

20842: Un-ID w/5L grps 1615-1640, 575/50R (Sundstrom, NJ).

20855: RFQP, French Navrad, Djibouti w/controle de voie at 1511, TDM/96B (Ed.).

20863: FDY, French AF, Orleans, France w/RYRY, bricks & 10-count, 425/50R at 1118 & 1522 (Ed.).

20870: ZAY, ATA Tirana, Albania w/nx in FF at 1617 (Ed.).

20878: CLP1, MFA Havana w/tfc in SS to embassies at 2123, 500/50N (Williams, CO).

20910: ZRH, Cape Town Navrad, RSA w/RYRY & foxes to NMN at 1300, 850/75R (Williams, CO).

20933.2: SOV293B, PAP Warsaw, Poland w/nx in Polish at 1226, FEC (Ed.).

22915: FTW91, DIPLO Paris, France w/nx in FF at 2230, 425/50R (Sundstrom, NJ),

23405: SOY240B, PAP Warsaw, Poland in FEC at 1858 w/nx in Polish till 1940 (Hetherington, FL).

23997: Un-ID w/wx at 1412, 425/50R (Williams, CO). Your description of sigs as being weak leads me to believe you intercepted a 5F msg from MFA Berlin, GDR (Y7A84 on 23996)-- Ed.

24790: ISX24, ANSA Rome, Italy w/nx in EE, gud sigs, 600/50R at 1230 (Sundstrom, NJ).

24800.5: Y7A91, MFA Berlin, GDR w/5L grps + some GG text, foll by RY & ID. Was 250/50N at 1220 (Sundstrom, NJ).

24840: Un-ID sta w/crypto at 1521, then 5F grps a few min later, 425/75N (J.M., KY).

25223: HBD20, MFA Berne, Switzerland w/5L grps, then nx in FF, ARQ at 1250 (Sundstrom, NJ).

26450: Y7A92, MFA Berlin, GDR w/tfc in GG to Lima, 340/50 at 1245 (Hetherington, FL). PC

THE HAM COLUMN

BY KIRK KLEINSCHMIDT, NT0Z
AMERICAN RADIO RELAY LEAGUE HQ

GETTING STARTED AS A RADIO AMATEUR

The QRP Craze: Join in The Fun

QRP is a term hams use to describe low-power operating. How low? Well, most hams run about 100 W of output power; that's about 20 times as much as the commonly accepted definition of QRP power levels—5 W output on CW, 10 W PEP on SSB. (QRP evolved from the CW procedural sign meaning "I am reducing power," and QRP? "Shall I reduce power?") It doesn't stop there. For some dedicated QRP'ers, QRP means running 1 W, 500 mW, 10 mW, or even 1 mW of output.

Nobody can make QSO's running such meager power. Right? Wrong! Thousands of hams around the world enjoy the excitement and challenge of running low power. You can too. This month's column will introduce you to the wide world of QRP, and point you toward more detailed information.

The spirit of QRP operating is about working fellow hams while running just enough power to get through. Your 1-W signal will hardly dominate the band, but with the right conditions, you can easily work all 50 states and a lot of DX.

Isn't a 1-W signal lost in the shuffle of more powerful stations? It's not as lost as you might think. A 1-W signal is only a little more than 3 S-units weaker than a 100-W signal. So, if your 100-W signal is S-9, your 1-W signal will be about S-6. And that's plenty of signal!

Admittedly, there are some differences in operating technique. You'll have to listen more, and probably call CQ less. Persistence pays off, as does using the best frequencies for the time of day your operating. Beginning QRP'ers often only call the loudest stations. That's not necessary, although it's a good idea to have a good copy on the stations you intend to call. Some loud stations may listen only for loud calls, whereas other stations may listen a little "deeper."

Which bands are best for QRP? That depends on many factors. During the generally excellent band conditions associated with the current solar cycle, 10 meters, when open, is often your best bet. Whether working SSB or CW, QRP power and even a modest dipole or vertical antenna can work the world. If you don't believe me, try it for yourself!

Fifteen meters is also excellent for DX, although it can be spotty for stateside contacts. Forty is an excellent band for stateside QRP'ing, and can even deliver a fair amount of DX in evening and overnight hours. Low-power DX'ing on 40 usually requires a better-than-average antenna and a little more work. Low-power DX'ing is also much easier from either coast. Eighty meters is another good stateside QRP band; but it's not as popular as 40 meters because propagation is usually not as good (except for close-in contact). Eighty also has DX potential, almost exclusively for those who live near one coast or another.

Randy Rand, AA2U is a veteran QRP operator who lives in Denville, New Jersey. You can hear (or work) Randy in many major contests—he'll be running low power, of course! Pictured with Randy is his Ten-Tec Argonaut QRP rig (on the left), and his ICOM IC-730 HF transceiver. Also shown is a small whisk broom on the top shelf. That's a "Clean Sweep" award, given to those stations participating in the ARRL Sweepstakes contest who work stations in all 77 ARRL sections (the sections cover all of the US and Canada, plus Puerto Rico and the US Virgin Islands). Qualifying for the award at any power level is an accomplishment to be proud of. That's doubly so for Randy, who won the award in 1987 while running less than 3 W of output power; total operating time in the contest is limited to 24 hours or less! Congratulations.

Finding a rig for QRP work is pretty easy. There are a few QRP-only rigs available, such as the Heath HW-9, a 5-W CW rig that covers the bottom end of nine HF bands. Earlier versions of this rig are the HW-8 (five bands) and the HW-7 (four bands; not recommended). The classic QRP rig, now out of production, is the Argonaut, manufactured by Ten-Tec. Its three generations, the 505, 509 and 515, cover five HF bands, putting out about 5 W, CW and SSB. (Ten-Tec says it will soon produce a new version of the Argonaut; it may even be available as you read this.)

If you don't want to invest in a dedicated QRP rig, it's relatively easy to reduce the power output of most modern solid-state rigs. The drive control can usually be used to reduce the RF output to within acceptable QRP limits. Your rig's instruction manual will probably have more information.

The QRP craze may also be one of the last bastions of home-brewing (home construction of ham radio gear). Many QRP'ers build their own transmitters and receivers. The low-power circuits are usually simple, and parts are easily obtainable. It's quite a thrill to work someone while using a transmitter or receiver of your own construction.

As for antennas, the high-power credo holds true—use the best antenna you can. You don't have to get carried away to make plenty of QRP contacts, however. If you don't have a beam antenna, a dipole or loop will do just fine. Whatever the antenna, make sure it's in good shape electrically, and use good quality feed line. Many serious QRP'ers use open-wire line because of its low-loss characteristics.

Several clubs exist to serve the interests of QRP'ers. One of the most prominent is the QRP Amateur Radio Club International (QRP ARCI). For information about QRP ARCI and a sample copy of *QRP Quarterly*, write to Joe Sullivan, WA1WLU, 267 Sutton Street, North Andover, MA 01845. Other clubs include the Michigan QRP Club and the G-QRP Club, based in England.

Awards are popular among QRP clubs and QRP'ers. QRP ARCI issues QRP versions of many popular awards, and several exclusive awards such as the 1000-mile-per-watt award.

Contests are also popular among low-power enthusiasts. About a dozen QRP-only contests are held throughout the year, and many mainstream contests such as Sweepstakes, ARRL International DX, *CQ* Worldwide, and others have QRP classifications.

QRP construction projects can be found in all major ham magazines. As for books, *The Joy of QRP* by Adrian Weiss, W0RSP, is available from the author. ARRL publishes two books of interest to the QRP'er: *Doug DeMaw's QRP Notebook* by Doug DeMaw, W1FB; and *Solid State Design for the Radio Amateur* by DeMaw, and Wes Hayward, W7ZOI.

Whether you're a veteran QRP'er, or you're trying it for the first time, why not share your thoughts (and a photo of you at your QRP station)? Write to me at ARRL, Department PCN, 225 Main Street, Newington, CT 06111. In the meantime, I'll be listening for your flea-power signal. PC

RADAR REFLECTIONS

RADAR DETECTORS AND THEIR USE

BY JANICE LEE

24 Texas Counties Using Uncertified Radar Units

Law-enforcement agencies in at least two dozen Texas counties are using traffic radar units sold with falsified Federal Communications Commission certification, according to a national motorists' rights organization.

The Radio Association Defending Airwave Rights, Inc., believes that drivers may have grounds for dismissal of their speeding citations if ticketed by officers using one of the improperly certified speed guns.

The radar unit in question is the MPH Bee, manufactured by MPH Industries if Owensboro, Kentucky, the association reports.

The certification issue was revealed in a Texas lawsuit alleging that MPH illegally used the "Bee" trademark of Broderick Enforcement Electronics. At least two state highway patrols -California and Texas—pulled their MPH units out of service until the last issue is resolved.

According to the FCC, the radar guns were using fraudulent "type acceptance" numbers. The numbers CIY8AEKF54 or CIY8AEKX54 appear on a label on the units. Two other MPH-manufactured units sold under the Bee and Justice labels also are using the same falsified FCC numbers, RADAR says.

The FCC certifies only that a speed gun is operating on its assigned frequency, not whether it is accurate.

Nevertheless, without commission certification there is definitely a question of whether the speed readings from these units is admissible evidence in court. We recommend that anyone getting a ticket check the model and type acceptance number of the radar gun.

There are no performance standards for radar units. Testing by the federal government and a police association revealed that few radar guns can meet their published specifications, and that radar errors are commonplace. Standards were proposed but never adopted under the Reagan administration.

The radar industry said it would police itself instead. But judging from this latest incident, it still appears that the industry can't be trusted.

According to sources, the following Texas counties use the MPH Bee: Anderson, Bell, Childress, Collin, Coryell, Denton, Eastland, Gray, Gregg, Kenedy, Lampasas, Lipscomb, McLennan, Navarro, Nolan, Potter, Randall, Scurry, Shackleford, Van Zandt, Webb, Wheeler, Willacy and Williamson.

Policy Paradox: Maryland and Virginia Want it Both Ways

Factions in Maryland have worked hard to try to ban the use of radar detectors, among them the state police, some state legislators and insurance organizations. Likewise, Virginia is one of only three jurisdictions in the nation that have outlawed the device.

Yet at the same time, a motorists' rights organization points out, officials in both states are taking advantage of a primary safety benefit if radar detectors in a project designed to decrease accidents on the Capital Beltway in the Washington, D.C. area.

The Radio Association Defending Airwave Rights, Inc. (RADAR) reports that the Federal Communications Commission has given Maryland and Virginia state police permission to use continuously transmitting radar units in state-owned vehicles and unattended at fixed locations along Interstate 495. The permission extends to December 30, 1990.

The purpose of the radar in this instance is not speed-limit enforcement, but to trigger radar detectors in passing vehicles and remind those drivers to pay attention to their speed. In a letter of authorization, the FCC explained that drivers "would not know the source of the radar signal and could be expected to slow down to at least the speed of other traffic, thus reducing the overall variance of vehicle speed in the traffic stream."

Accidents are least likely to occur when vehicles are traveling at about the same speed. However, despite the goal of improving safety, the irony of these two states winning approval for this almost-unheard-of use of unmanned radar.

We've seen more opposition to radar detectors coming from Maryland than any other place. A few state lawmakers have unsuccessfully tried for the last decade to enact a detector ban—in fact the state Senate has already held a hearing this year on such a bill. And on top of that, we have the Government Employees Insurance Company leading its own absurd assault on detector owners.

Though GEICO has no credible evidence that radar detector users are risky or accident-prone drivers, the insurance company has come under fire in Maryland for refusing to sell coverage to motorists solely on the basis of owning a radar detector. GEICO

also has formed an insurer-dominated coalition called the Group United Against Radar Detectors, which is conducting a large-scale public relations campaign aimed at outlawing the devices.

The fact that Virginia also is a part of the Capitol Beltway radar project is a good indication just how little drivers in that state respect the ban.

With the exception of a demonstration project on a dangerous section of Interstate 75 in northern Kentucky, all requests for permission to use unmanned radar have been denied by the FCC. The commission says it is concerned mostly that the transmissions will interfere with other radar in use in the area. Such interference, Lee notes, can easily lead to erroneous radar readings and undeserved traffic tickets.

Consequently, in approving the Maryland/Virginia projects, the FCC will allow the radar to be used only along I-495 and only on the "X" band, one of the two most commonly used traffic radar frequencies to eliminate any interference problems or stop using the unattended radar.

Opponents in Maryland and Virginia would have us believe the only use for a radar detector is to break the law. But at the same time they are accepting the argument that radar detectors help remind drivers to obey the speed limit, and can promote highway safety. They can't have it both ways.

Janice Lee is Editor of RADAR Reporter, a monthly newsletter about radar, radar detectors, and transportation issues.

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

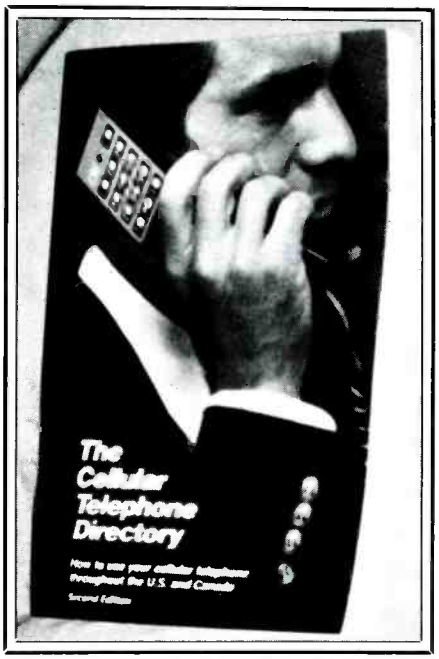
More than a few Readers have written to ask if it's possible to get a cellular phone and be authorized as an unaffiliated, independent mobile unit, or, as one reader phrased it, "a free agent mobile unit." It's a logical question inasmuch as the FCC will license "mobile only" two-way communications systems in many radio services. To persons who are constantly on the move, like truckers, salesmen, or those who live in motor homes or itinerant mobile homes, you'd think there would be little sense in being somehow tied to a local cellular service supplier in one particular city, when the car phone is seldom used there.

But, keep in mind that users of cellular phones don't need to apply to the FCC for operating licenses, anyway. Individual car phones are authorized to operate as mobile units of the cellular service supplier with which they are affiliated. It is a cellular service supplier that assigns a car phone its NAM (phone number), and it's also the central business office responsible for keeping track of the money owed for the calls made over that mobile equipment while it is roaming and in contact with other cellular suppliers with which the primary supplier has reciprocal agreements.

A hypothetical independent and unaffiliated mobile phone would have no way of having the necessary NAM assigned for its operation. So, even if you've seldom got any reason to pass through Phoenix, Jacksonville, Seattle, Kansas City, Providence, Detroit, or some other city, you may well find yourself operating as a mobile unit of the service supplier there. Chances are, you'll be a unit of the service supplier in the city where you purchased your unit.

Apparently, the notion of being an unaffiliated mobile unit popped into people's minds when they rationalized that if a roamer is a unit affiliated with a distant cellular system, then a unit not affiliated with any particular system wouldn't be a roamer. That might exempt them from the extra roaming charges to which such calls are subject. Nice try, but it doesn't work that way! Like it or not, your car phone can't be an independent entity.

Not that I blame car phone users for at least trying to think up different ways to avoid the very high roamer charges that you can rack up. Just as an example, for those not yet initiated in such matters, in a one month period, I took three out-of-state trips. On five of the days during that month I needed to place long distance calls from the cellular. When the bill came for that month, it broke down at $15.00 for Monthly Access, $6.95 for Air Time, $.66 for Local Toll, $3.18 for Federal Excise Tax, and $8.47 for State Tax. That part totaled only $34.26, however when $88.29 in Roamer Charges were tacked on to this, the grand total had blossomed to $122.55. Roamer fees comprised 72% of the entire bill!



This big 448-page directory provides operating details as well as signal coverage maps for every single cellular telephone service supplier in North America.

That's why many cellular phones permit the owner to have several (two or more) NAM's. In fact, the NEC America phone I'm highlighting this month has provision for it to be registered with *four* NAM's in an effort to reduce roamer charges. Thusfar, multiple NAM's are the only known way of moving from place to place without paying these high add-on fees. You're limited only by the number of NAM's your phone will accept, and four seems to be the maximum designed into any we've yet seen. Undoubtedly, we'll eventually see phones with capacities for more than that, and customers willing to pay several different monthly access charges to avoid roamer charges.

Roaming Off Frequency?

Jason Hilyard, KB5GFL, of La Jolla, CA reports that he's logged cellular calls in the 450 MHz band. He asks how they turned up there when they started out near 900 MHz. Our guess is that Jason's probably tuning in on one of the non-cellular mobile telephone bands. The calls may give the appearance of being cellular calls, but they're something altogether different.

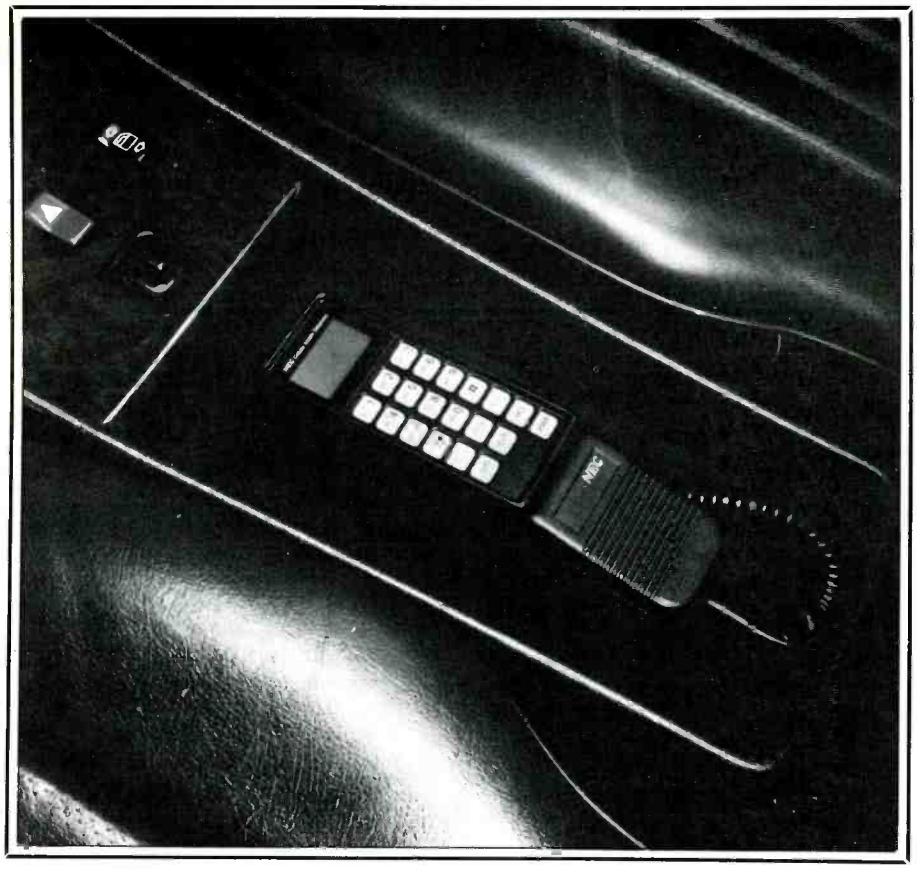
The Antenna Company's K-2 Tunable cellular antenna offers optimum performance regardless of the thickness of the glass used in the window.

Between 454.025 and 454.975 MHz are a bunch of channels that are easily capable of producing car and aero phone calls in many areas of the nation, especially for persons within monitoring range of larger cities.

What's Happening

Next time you're stuck in Philadelphia traffic, use your cellular phone to call in a report on the location of the road jam. Station WCAU/1210 has a number set aside for this purpose. It's 999-1210. Station WILM/1450 in Wilmington, DE also has a traffic-jam reporting number for cellular owners. It's (302) 655-1450.

Bell Atlantic Mobile Systems, of Basking Ridge, NJ passed along to us the true experience of Mr. J.M. Adler, who lives in Lorton, VA. During the summer of 1988, he was driving in the evening rush hour on the



NEC America, Inc. certainly has lots of useful features in their M-4700.

District of Columbia Capital Beltway where two feeder lanes merge into the busy road's four interstate lanes. He noticed a car stopped on the roadside and an elderly man walking down the highway near the vehicle.

Assuming that the man had car trouble during the heat wave, Adler pulled off the road and suggested to the fellow that he had a car phone that could be used to summon a tow truck. The man opened his mouth to speak but couldn't make any intelligible sounds. At that point, a woman motorist who had also stopped to help came over to Adler and implored him to restrain the man since he was being narrowly missed by the cars as he was trying to walk across the Beltway's six lanes.

They realized that the man had suffered heat stroke and was attempting to walk to the hospital, a full twelve lanes of traffic away. Adler used his car phone to call the police, who arrived in minutes to assist the man. Adler said, "That was the day I decided to put a mobile phone in my wife's car and the vehicle that usually transports my daughter and grandchildren."

You see car phones on sale in lots of interesting places these days. The new high-tech car wash in Germantown, TN handles about 2,000 customers each week. It occurred to Cellular Systems, an agent on Cellular One of Memphis, that this was a very high concentration of potential car phone customers. Cellular Systems therefore rented 500 square feet from the car wash to be used as a full time cellular demonstration and sales facility.

The computer-controlled car wash is the largest and most modern vehicle washing system in the entire state. A clever approach, we'd say!

Good Stuff

The Antenna Company has brought out their new K-2 Tuneable glass-mount mobile cellular antenna. This unit has 3 dB gain and can be electronically precision tuned to optimize and peak its performance in every installation, allowing it to be used with different glass thicknesses that could degrade communications. The company says that optimizing the signal provides for better all-around performance, best possible range, and fewer dropouts.

The K2 Tuneable, which is made under the famous Kirkendall patent, is the first through-glass cellular antenna designed with the understanding that many European and Japanese cars on the market have windows which don't conform to U.S. thickness standards. For more information on this interesting product, you can contact Rosemary Maher, The Antenna Company, 2850 Eisenhower Lane, Broadview, IL 60153. You can call them toll-free at 1-(800)-458-2820, too. Or, you can circle 101 on our Readers Service.

The Cellular Telephone Directory, 2nd Edition, is a just-issued 448-page guide to cellular services in the U.S., Canada, Bermuda, and the Bahamas. It covers 372 indexed cities having cellular services, and provides 195 maps showing signal and service coverage areas. If you're a cellular user, this is the latest roaming information, showing where your cellular will operate; also the rates for each city; roamer charges; phone numbers for emergencies, information, business offices, repair services, and roamer access numbers for the various cellular service suppliers; billing information—everything you need to know to place and/or receive calls throughout North America, including the names and addresses of all cellular service companies. Lets you know if you can dial immediately while roaming and have the charges appear on your home bill, or if you've got to provide the local cellular company with a credit card number in advance of your arrival in that service area. Covers all wireline (B-bloc) and non-wireline (A-bloc) systems. It's the whole story.

While the book is great if you've got a cellular phone, it's also useful if you're thinking about getting one since it shows you exactly where service exists, how much it costs in each city, etc. If you like to monitor cellular calls on a scanner (naughty, naughty), this is an invaluable reference source.

This big directory is $13.95 plus $2 postage to addresses in the U.S./Canada/APO/FPO. Order *The Cellular Telephone Directory, 2nd Edition*, from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Residents of New York State add $1.05 sales tax.

NEC America, Inc., introduced their new M-4700 mobile unit featuring hands-free answering which connects telephone calls automatically after two rings. Another new M-4700 is an automatic message recorder, which performs the some functions as a regular answering machine and can also record the caller's message or any message (such as the caller's phone number) on the M-4700 screen. This combines cellular and display paging technology.

The M-4700 offers the user four NAM operation, permitting it to be registered for local (non-roamer) service in four different cities. If you're a regional traveler, this is an excellent feature to have available. Another nifty feature is a long distance calling restriction which limits the use of the phone to local calls only for persons not authorized to place long distance calls. There's also a four-digit code you have to know in order to access the speed-dial numbers stored in the M-4700's memory. What will they think of next?

For additional information, contact NEC America, Inc., Mobile Radio Division, 383 Omni Drive, Richardson, TX 75080, or circle 102 on our Readers Service.

This column seeks your questions, comments, clippings about cellular phones, also new product information, as well as information from cellular service suppliers. PC

BETTER SIGNALS

ANTENNAS AND SIGNAL IMPROVING ACCESSORIES

BY ED NOLL W3FQJ

EPI Wideband Pre-Amplifier For Indoor Reception

The Electron Processing, Inc. signal intensifier, Fig. 1, is an MMIC circuit housed in a small 2 by 2 by 1 inch case. Its gain is 13 dB or more over a frequency range between 300 kHz and 200 MHz. The unit is untuned and has a 2.9 dB noise figure. An amplifier is not really necessary where signal levels are high and can sometimes cause overload problems. But it is ever super in a shielded high-rise! It's great for use in a condo, closed-in location or any spot where you must deal with metallic shielding, weak incoming signal and no outside antenna permitted or feasible. Often AM broadcasts are so weak it is like driving through a tunnel.

Even in a spot where there are several strong signals and/or high-level television hash, you can take steps to reduce the interference or arrange to just make use of the amplifier in the frequency ranges where you have a weak signal and no overload problem. Also, if you learn how to adjust your receiver attenuator, the amplifier in-circuit can help in the noisy spots on your receiver dial or where there is a strong signal that is giving you trouble.

The EPI RFA-20 model I use covers LW, MW, and the shortwave spectrum including all the SW broadcast and ham bands, as well as the scanner bands up to 200 MHz, including VHF aircraft band. The company also makes available a scanner model amplifier, RFA 16B, that operates between 20 MHz and 1000 MHz.

The basic interconnection plan, Fig. 2, links the thin insulated antenna wire to the amplifier and then connects via coaxial cable to the receiver input. UHF SO-239 sockets are used at amplifier input and output. However, a single random wire antenna can be used by mounting a banana plug to its end which can then be inserted into the center of the SO-239 input connector. The RFA-20 must be mounted convenient to a 110V socket.

A big problem in many indoor installations is that along with weak signals, there is television receiver hash. This is especially so in high-rises where signals are weak because of the metallic shielding of girders. Space your television set and radio receiver as far as possible from each other. The adequate spacing needed to completely eliminate the problem is not always possible in a small apartment or condo. Furthermore, the hash from your neighbor's set can come right through the wall, or noise can be radiated from an MATV or cable distribution system.

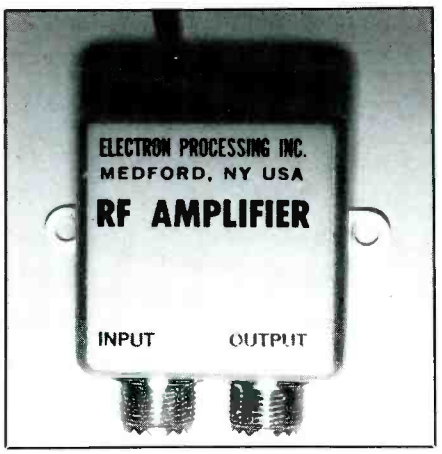


Fig. 1. EPI wideband signal intensifier.

Some TV sets are worse than others. Fortunately most of the hash is on small segments of the broadcast band and the low-wavelength SWB bands. Those signals that are strong ride over the hash. A good pre-amplifier brings out a weak signal in a quiet background situation, and sometimes helps signals override the hash and the noise of a noisy band section.

A step that often pays off is to locate your antenna at the best spot you can find even if well separated from the receiver. Position your pre-amplifier here and transfer the amplified signal to your receiver on a coaxial line, Fig, 3, to the receiver. Such an arrangement can often be an eyesore and not easily hidden. In making tests here I was able to locate a Grove Window antenna a fair distance for testing. Its thin wires could be hidden reasonably well but not the connector and cable. The pre-amplifier was connected directly to the antenna output and a 20 ′ length of coaxial cable connected the amplifier to the receiver input. There was a drop in the hash as compared to using an antenna that was closer to the receiver. Perhaps you can find a crawl space or a hidden closet somewhere where there is good signal levels. In my situation the receiver is only about a yard from the TV set on the other side of the wall.

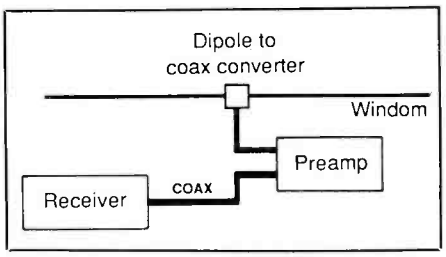


Fig. 2. Simple hook-up of amplifier.

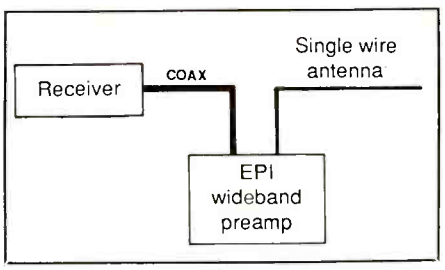


Fig. 3. Separation if antenna from receiver can help to cut TV hash.

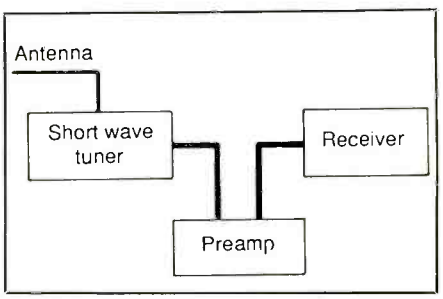


Fig. 4. Addition of shortwave random-wire tuner to receiving system for indoor application.

The MW reception was improved at its two bad spots. However, there was more limited improvement on the low wavelength tropical shortwave broadcast bands. In addition, I have some bad harmonic and hash problems on these bands I have not as yet tracked down. They are there with the TV set on or off. It may be a mass contribution by the entire MATV system!

Fortunately, for DX and SWL on 31 meters and below, the background is quiet on

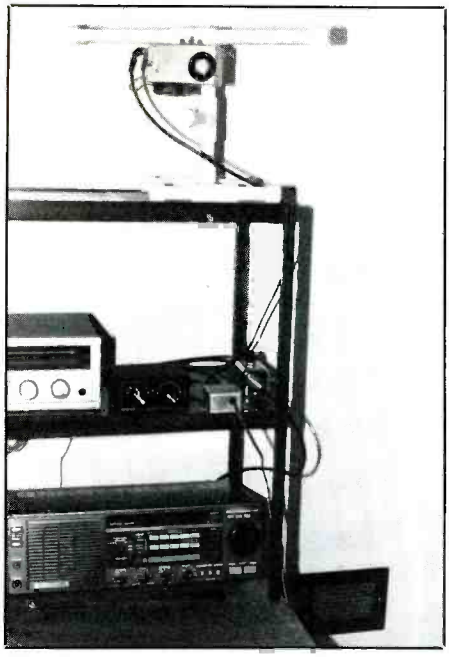


Fig. 5. Listening post with BCB ferrite loop on top of rack. Loop includes its own special amplifier.

the higher-frequency shortwave broadcast bands with my regular hidden antennas. RFA-20 signal intensifier provides a good boost to the signals, making many of the weak stations readable that were not so with the antennas alone. In fact, the general performance on the DX bands 41 meters and down have been good with various antennas; television set on or off. My random wire and loop antennas described in previous columns work well with the pre-amplifier attached, and it serves as a big help in boosting the weak stations.

The MFJ 16010 random-wire tuner can be placed ahead of the signal intensifier, Fig. 4. Combination performs like a good outdoor antenna at work. The fifth floor height may contribute, also, to the welcome results.

The 49M band is fair and does make good use of the pre-amplifier. I found out with the pre-amplifier in service I can add one or two steps of receiver attenuation and come up with a better signal-to-noise ratio and pleasant listening on many stations. I have a lot of answer-hunting to do on frequencies and bands below 49M, although at night when signal levels rise, a number of stations come up out of the interference strong and clear.

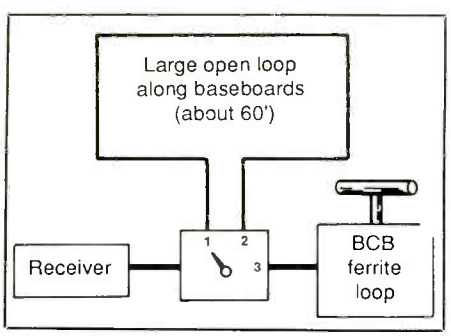


Fig. 6. Easy-operating indoor installation.

The RFA-20 and Loop

In an earlier column, I discussed how well the Radio West Loop and its built-in amplifier operated on the MW band as a better than usual antenna for AM broadcast DX'ing indoors. The orientation capability was an aid in obtaining the best possible signal-to-interference ratio. Also, each of two stations operating on the same frequency can be identified with loop nulling. Some extra boost of weak signals is possible by connecting the RFA-20 between the loop output and the receiver input, Fig. 5.

It is good to plan the installation for easy by-passing of the pre-amplifier and turning it off when you are operating near to the frequency of a nearby local. I have trouble with only one such station. Its transmitter is about a mile from here.

Some LW beacon stations as well as the 500 kHz CW marine band were receivable. The amplifier operates down to 300 kHz and I can set the loop amplifier tuning control to its lowest frequency.

My preferred easy-operating interconnection of units is shown in Fig. 6. First, install a loop (square, circle or whatever shape you can put together). There are no tuners to adjust and no cable changes to be made except those handled by the three position coaxial switch. The combination covers a frequency range from less than 500 kHz up to 30 MHz. Of course there may be trouble spots as discussed previously but there is much more enjoyable frequency space to cover than the several headache regions. Results are excellent to good, and on down to pretty bad. But even the latter bring occasional surprises.

The two end wires of the loop fit into the separate coaxial switch terminals *2* and *3*. You can choose the better of the two positions according to band and even direction of signal arrival. For broadcast band (MW) pick up use, the Radio West loop is connected to input terminal *1*. The output of coaxial switch connects to input of RFA-20 amplifier, and its output to the input of R-2000 receiver. Signals arrive from local region, across the USA, and all parts of the earth. PC

BROADCAST DX'ING

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

BY ROGER STERCKX, KVT1JH

A plea from reader R.C. Watts of Louisville, KY. He says that he's never been able to get a QSL, or any reply from KWKH/1130 by using the address given in the WRTH. He wonders if that is a good address and hopes that maybe we can give him a better one for the station. So far as we know, the address in the current WRTH (P.O. Box 31130, Shreveport, LA 71130) is valid, and KWKH does verify. The next report might be directed directly to John Rutten, the Chief Engineer.

R.C. tells us that one of his favorite DX stations to monitor is WWVA/1170 in Wheeling, WV except that the station's night directional pattern doesn't make it easy to pick up in Louisville. We like WWVA's good country music, too, R.C. We're on the business end of their signal pattern, however, and they do a good job in the Northeastern states at night.

An inquiry from Paul Origlio. Paul lives in a mobile home surrounded by other nearby mobile homes. The park management doesn't want any antenna arrays on display but will, perhaps, allow a vertical that can't be easily seen. Paul would like to get good omni-directional reception, and would like to perform well between 530 and 1600 kHz. He says that he's seen several all-band limited-space antennas, but they're rather expensive. This column has received numerous inquiries of a similar nature. If any readers have solved the problem for themselves, we invite them to write to Paul Origlio, 3060 Bridge -271, Brighton, CO 80601.

The Hawaii Broadcasting Guide is an 18-page booklet containing Hawaiian AM, FM, and TV station listings with frequencies, powers, networks, formats, skeds, owners, station personnel, etc. Listings for FM and TV translators in Hawaii are also included. This publication is $3.50 postpaid (in USA) from Frank Aden, Jr., 5147 Morris Hill, Apt. 133, Boise, ID 83706.

A letter from Jane Wilson, P.O. Box 32516, Palm Beach Gardens, FL 33420-2516 notes that she's interested in hearing New York City's WOR/710. Jane has received this station a few times on her AM/FM portable, but she can't get regular reception because of at least one strong Spanish language on or near WOR's frequency. WOR's 50 kW signal has given the station listeners over a wide area, but it looks as though Jane has a specific localized problem. Perhaps other readers in southern Florida can offer some thoughts on identifying the interfering station and getting it nulled out.

The FCC canceled and deleted the callsigns of three TV licensees: KCTD (Channel 18) in Butte, MT; KHIU (Channel 26) in Hilo, HI; and KGYM (Channel 9) in Guymon, MT.

Maryland stations WSBY/960 in Salisbury, and co-owned WQHQ-FM/104.7 in Ocean City received conditional FCC license renewals; that is, renewals for less than the full possible term, and on the condition that periodic condition reports must need to be made to the FCC. Because of what the FCC claimed were repeated failures to comply with FCC requirements, the licensee was also advised of an apparent "liability of forfeiture" in the amount of $15,000. The FCC also granted the licensee permission to assign both licenses to another party.

Very appealing DX'ing station of Paul Origlio in Colorado centers around a Kenwood TS-430S. Paul needs advice on a suitable antenna for his mobile home installation.

Waiver Request For Split Frequency

The FCC granted a request by Birach Broadcasting Corporation, licensee of WNZK-AM at Westland, MI, for a waiver of the Commission's rules. The waiver will permit Birach to file an application for authorization to provide AM broadcast service on frequency 690 kHz at an increased power during the day, and on frequency 680 kHz at night.

Initially, Birach filed an application for a construction permit to change the facilities of WNZK-AM from daytime-only to unlimited time, and to increase the daytime

New Construction Permit Granted: AM

MN	Watertown	1600 kHz

New Construction Permits Granted: FM

AL	Talledega	97.5 MHz
AZ	Winslow	105.1 MHz
CA	Kingsburg	106.3 MHz
GA	Cleveland	101.9 MHz
ID	McCall	101.1 MHz
KY	Whitley	105.9 MHz
LA	Coushata	92.3 MHz
ME	Madison	97.5 MHz
MI	Muskegon	107.9 MHz
MN	Waite Park	103.7 MHz
MO	Perryville	106.7 MHz
MO	Southwest City	100.3 MHz
MS	Greenwood City	101.9 MHz
NH	Conway	104.5 MHz
PA	Tioga	93.3 MHz
PA	Tunkhannock	107.7 MHz
SD	Milbank	104.3 MHz
TN	Graysville	95.7 MHz
TX	Electra	95.1 MHz
WV	Danville	92.5 MHz
WY	Kemmerer	107.3 MHz

Applications Filed For New FM Stations

CA	Burney	89.7 MHz
CA	Chico	88.1 MHz
CA	Copperopolis	105.1 MHz
CA	Los Banos	106.9 MHz
CA	Mecca	97.7 MHz
CA	Santa Barbara	89.5 MHz
FL	Lecanto	88.3 MHz
GA	Helen	105.1 MHz
GA	Hinesville	104.7 MHz
GA	Waynesboro	107.1 MHz
HI	Haliimale	107.1 MHz
HI	Kahaluu	106.1 MHz
HI	Kwaihae	106.9 MHz
HI	Lanai City	104.7 MHz
IN	W. Lafayette	101.3 MHz
MN	St. James	100.5 MHz
MS	Ft. Gibson	100.5 MHz
MS	Magee	93.9 MHz
MS	Union	104.1 MHz
NC	Highlands	104.5 MHz
ND	Langdon	95.7 MHz
NH	Manchester	91.7 MHz
NY	Middletown	91.7 MHz
OH	Reading	89.3 MHz
OK	Lawton	95.3 MHz
OR	Harbeck	98.3 MHz
PA	Johnsonburg	103.3 MHz
TX	Halletsville	99.9 MHz
TX	Live Oak	88.3 MHz
VA	Rural Retreat	103.1 MHz

Applications For AM Facility Changes

KWPC	Muscatine, IA	860 kHz	To increase power
KYCR	Golden Valley, MN	1570 kHz	Increase to 5 kW nites
WBUD	Trenton, NJ	1260 kHz	Increase to 2.5 kW nites
WBZK	York, SC	980 kHz	Reduce to 3 kW
WKNV	Dublin, VA	810 kHz	Reduce to 600 watts
WWML	Portage, PA	1470 kHz	Reduce days to 525 watts

Applications for FM Facility Changes

KGID	Giddings, TX	101.7 MHz	Move to 101.5 MHz
KKRC	Sioux Falls, SD	93.5 MHz	Move to 103.7 MHz
KQIS	Clarinda, IA	106.3 MHz	Move to 106.1 MHz
KQLV	Sheridan, AR	102.3 MHz	Move to 102.9 MHz
WFFN	Cordova, AL	92.9 MHz	Move to 95.3 MHz
WQTY	Linton, TN	93.5 MHz	Move to 93.3 MHz
WTUG	Tuscaloosa, AL	92.7 MHz	Move to 92.9 MHz

AM Facility Changes Approved

KGHT	Sheridan, AR	1540 kHz	Increase to 50 kW days
KMEZ	Dallas, TX	1480 kHz	Increase nites to 1.9 kW
KTIS	Minneapolis, MN	900 kHz	Reduce days to 25 kW
WGAN	Portland, ME	560 kHz	Reduce to 4.8 kW
WMTY	Greenwood, SC	1090 kHz	Reduce to 780 watts

FM Facility Changes Approved

KICX	McCook, NE	95.9 MHz	Move to 96.1 MHz
KKYS	Bryan, TX	104.9 MHz	Move to 104.7 MHz
WIJK-FM	Evergreen, AL	93.5 MHz	Move to 93.3 MHz
WMCM	Rockland, ME	93.5 MHz	Move to 103.3 MHz
WONT	Ontonagon, MI	98.3 MHz	Move to 101.1 MHz

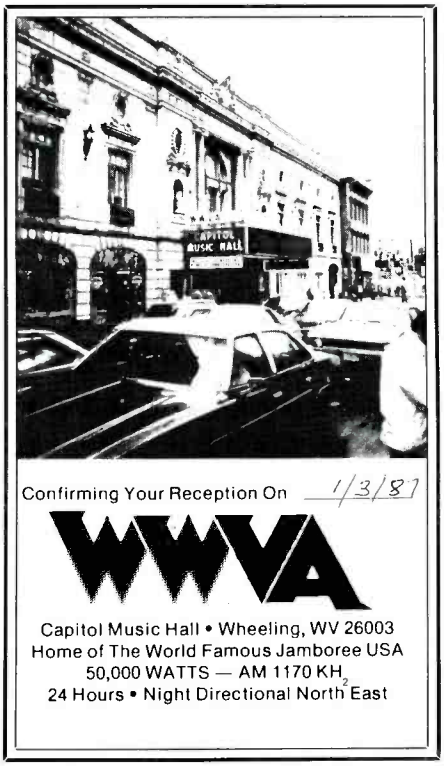
power for 1 kilowatt to 5 kilowatts. Although the application reflected the continued operation of the station on 690 kHz, it specified a nighttime operation with a power of 2.5 kilowatts on the adjacent channel 680 kHz. Birach's application was subsequently dismissed by the Bureau as patently defective. The Bureau stated that awarding a split frequency to the licensee for a single broadcast operation was not contemplated by FCC rules and was beyond the scope of a waiver request.

Seeking review, Birach argued that station WNZK-AM provides a special foreign language program to the ethnic minorities in the Detroit, MI area, and that its situation was unique. Specifically, Birach stated that after conducting an engineering study, it found that WNZK-AM could not achieve unlimited time operation on its present operating frequency of 690 kHz because of severe protection problems towards station CBF in Montreal, Canada. In addition, it could not move WNZK-AM to the adjacent frequency of 680 kHz because that frequency would bring objectionable daytime interference with Canadian station CFTR in Toronto, Canada. Birach found, however, that at night CFTR employs a different antenna directional pattern which would permit a nighttime operation on 680 kHz in the Detroit area without any objectionable interference to, or from CFTR. Moreover, Birach stated that a study made of all U.S. daytime only stations within 200 miles of the Canadian border operating on the eight Class I channels allocated to Canada, demonstrated that few, if any, situations were found to be similar to that of WNZK-AM, in the United States.

In granting the waiver, the Commission found that granting Birach's waiver request would not undermine the policies underlying its allocation plan, particularly those policies underlying the Commission's decision to restrict AM licensees' operations to a single channel. It also appears, the Commission said, to pose no threat to the certainty and administrative ease that strict application of its rules is designed to assure.

In other proceedings, the Commission has concluded that because full time stations are better able to provide useful, consistently scheduled service, they are, on average, more valuable to the public and therefore should be encouraged. Birach's proposal shows in this case, for this particular licensee, daytime operation on 690 kHz and a nighttime operation on adjacent channel 680 kHz would enable WNZK as a full-time station, to provide better service.

Since 1950, there have been no reported cases of Commission action on waiver requests similar to this one. The Commission said that is its decision to grant Birach's request were to trigger many similar requests

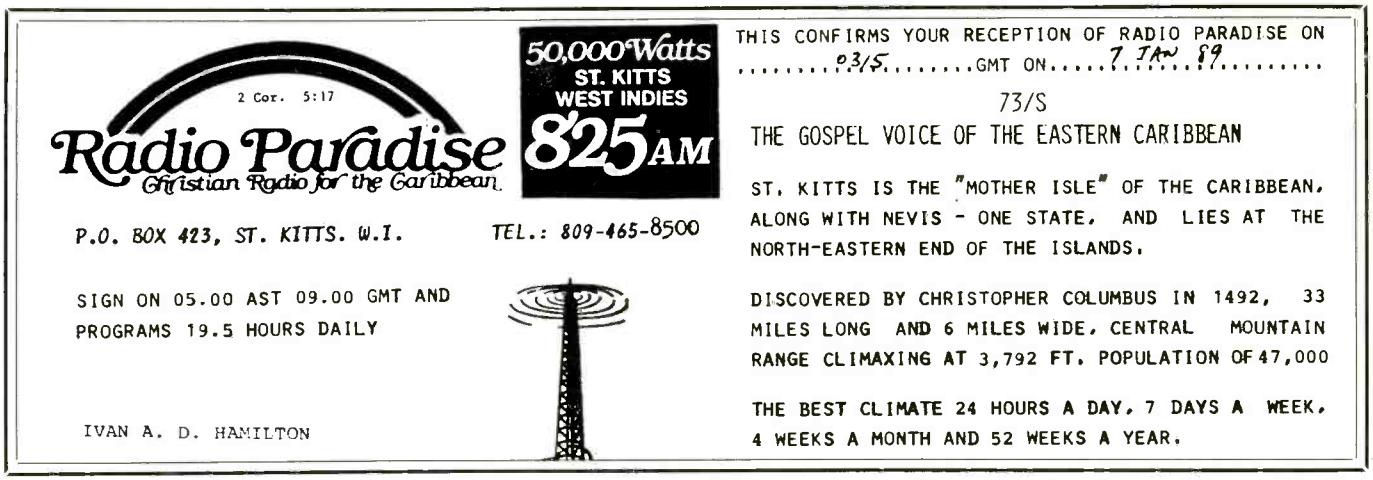


Confirming Your Reception On 1/3/87

WWVA

Capitol Music Hall • Wheeling, WV 26003
Home of The World Famous Jamboree USA
50,000 WATTS — AM 1170 KH$_2$
24 Hours • Night Directional North East

R.C. Watts, of Kentucky, received this QSL from WWVA. He wishes that they had a better signal in the direction of Louisville, though!

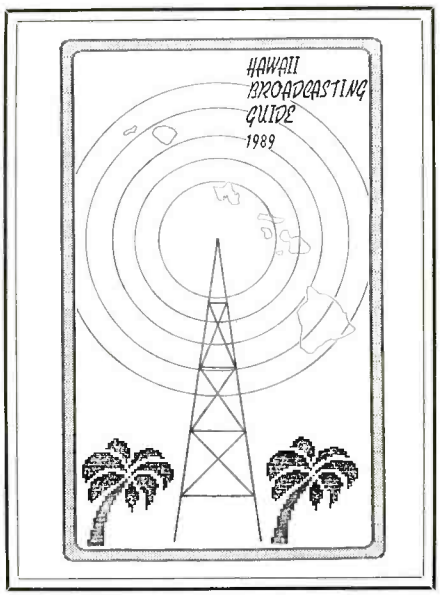


Bob Fletcher, Long Island City, NY tells us that he's proud of this QSL recently received from Radio Paradise, St. Kitts, on 825 kHz with 50 kW. The card gives the sked as 4 a.m. to 11:30 p.m. EST, daily. Bob snagged it on his ICOM IC-R70 receiver.

for authority to operate on split frequencies, concern with respect to administrative efficiency would compel the FCC to examine the more general questions of whether changed circumstances warrant a change in its policy toward split frequency operation.

Looks like a QSL from WNZK on both of its frequencies would be a worthwhile trophy. Split frequency broadcasting authorizations in the U.S. are rare, although we can recall when WBAP in Fort Worth, and WFAA (now KLDD) in Dallas each spent many years splitting time with one another, each taking turns at running 5 kW on 570 kHz and then 50 kW on 820 kHz. Can anybody recall any other dual frequency American stations?

Another QSL worth having will be from the new KFAS/1260 and KFAS-FM/105.5 in Casa Grande, AZ. These used to be known as KPIN and KBBT, respectively. Their new callsigns reflect the initials of the new station proprietor, Mr. Francis Albert Sinatra. Who knows, maybe the Chairman of The Board will sign the QSL's! PC



All the broadcasters in Hawaii are in this recently published guide. See text for more information on booklet.

New FM Callsigns Assigned

KCLW-FM	Hamilton, TX
KDBB	Bonne Terre, MO
KKJI	Gallup, NM
KMGW	Caper, WY
KQKX	Woodlake, CA
KRUX	Las Cruces, NM
WBBY	Vicksburg, MS
WCID	Friendship, NY
WCIH	Elmira, NY
WDKB	DeKalb, IL
WEFR	Erie, PA
WHOE	Avis, PA
WKFK	Carrollton, MI
WKKP	Lansing, MI
WKSD	Paulding, OH
WMMI-FM	Mt. Pleasant, MI
WNBE	Alamo, TN
WNND	Fuquay-Varina, NC
WRPL	Wadesboro, NC
WSRQ	Bushnell, IL
WYCH	Utica, MS
WZLM	Dadeville, AL

AM Callsigns Changes Granted

New	Old	
KFAS	KPIN	Casa Grande, AZ
KIOU	KCIJ	Shreveport, LA
KISN	KLUB	Salt Lake City, UT
KLVJ	KJCY	Mountain Home, ID
KOES	KCLW	Hamilton, TX
KLXB	KPAK	Redding, CA
KQXY	KDVE	Nederland, TX
KRNS	KXET	San Antonio, TX
KSSQ	KPHD	Conroe, TX
KXYL	KZZE	Brownwood, TX
WBKI	WSLE	Bremen, GA
WDLZ	WTRX	Flint, MI
WNEZ	WRCQ	New Britain, CT
WPIG	WFRG	Rome, NY

FM Callsign Changes Granted

New	Old	
KBOR-FM	KGAR	Brownsville, TX
KCNA	KBGG	CaveJunction, OR
KFAS-FM	KBBT	Casa Grande, AZ
KGSR	KSSR	Bastrop, TX
KQXY-FM	KQRY	Nederland, TX
KSFX	KURQ	Roswell, NM
KSNO	KTYE	Aspen, CO
KVLJ-FM	KJCY-FM	Mountain Home, ID
KYYI	KXWT	Burkburnett, TX
WGES	WSGO	Oswego, NY
WLKZ	WRGI	Naples, FL
WKBM	WXKB	Coal City, IL
WMXW	WLTB	Vestal, NY
WPRX	WGGC	Glasgow, KY
WSRX	WSCA	Ft. Myers, FL
WVOA	WOIZ	DeRuyter, NY
WWIN-FM	WHTE	Glen Burnie, MD
WZVU	WMJY	Long Branch, NJ

SATELLITE VIEW

BY DONALD E. DICKERSON

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

An Interview With Geoffrey Perry M.B.E.

Few men can claim similar accomplishments in space research as those of Geoffrey Perry. This is especially true when you consider that he began his career in space research as an amateur. His accomplishments, especially those dealing with the Soviet Space program, have earned him special honors from Queen Elizabeth in a ceremony at Buckingham Palace. I will let Mr. Perry tell you about some of his more important discoveries and his views on the US and Soviet Space Programs in a moment.

In 1954, Geoffrey Perry became the head of the Physics department at the prestigious Kettering Boys School. Located just north of London, the school was founded by Queen Elizabeth I in 1577.

1957 saw the birth of the Space Age. Sputnik, naturally, caught Perry's interest with his background in physics. This led him into space research. Besides his work at Kettering, the 61 year old Perry is a space consultant for Independent Television News Limited. He has also worked as a consultant for the Western Intelligence Agencies.

The well known Kettering Group, headed and founded by Geoffrey Perry, is a small group of largely amateur satellite sleuths scattered around the world. These dozen or so volunteers coordinate efforts to track and decode telemetry from Soviet spacecraft. Besides their interest in telemetry, the group pays close attention to the orbital parameters of various Soviet spy and navigation satellites as well as their manned space program. Much information can be gained from these observations. For instance, in 1977, Geoffrey Perry predicted that Afghanistan was a potential trouble spot just prior to the Soviet invasion. This was determined by closely watching for changes in the orbit of the Soviet Spy satellites he was tracking.

In 1974, he tracked two manned Soviet Soyuz spacecraft and announced, by observing the telemetry, that the Soviets had docked the two spacecraft and transferred a cosmonaut from one spacecraft to the other.

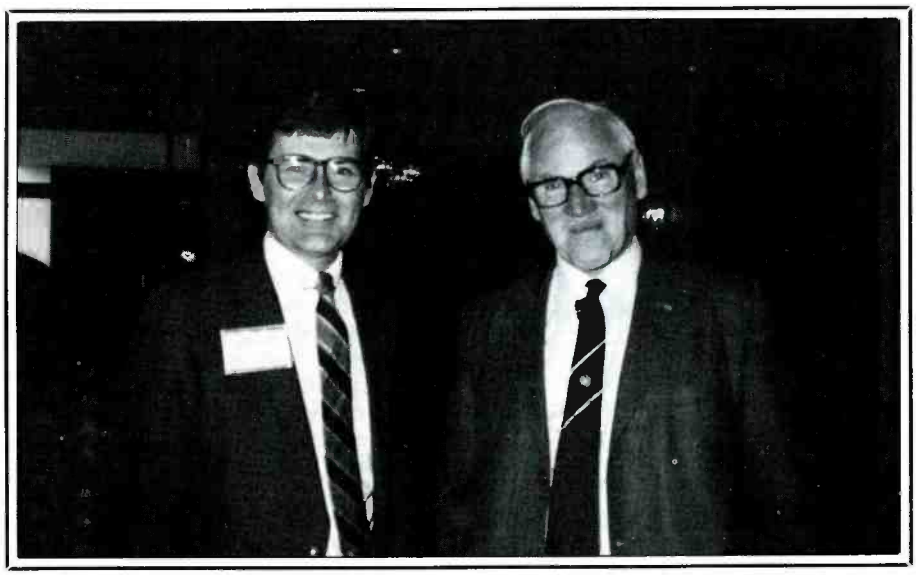
In an exclusive interview for POP'COMM I asked Mr. Perry the following questions.

Q: What sparked your interest in Space?

A: The fact that it was new and exciting. The 1957 launch of Sputnik fascinated me. There was a lot of physics involved which I used to help me teach the subject in school.

Q: What is the most influential book in your life?

A: There were two books, one was *Exploration of Space* by Arthur C. Clarke. It set it all out, just what was possible in space.



Donald Dickerson and Geoffrey Perry.

The other was a book by Desmond King-Hele, *Satellites and Scientific Research*, but it is out of print now. They set me on a path to space research.

Q: What other areas of research interest you?

A: Up to the time of the Sputnik launch, I was looking into the use of radioactive substances in school physics teaching. Then regulations came into effect preventing the use of radioactive isotopes in school which meant the end of this line of research. You see, back then, the nuclear age was an exciting age, just after WWII, and by the time the excitement was running out of that, then the space age took off.

Q: How many people, world-wide, work with the Kettering Group?

A: There are 12 to 15 people, with the same interest, who have sort of come together through the years.

Q: What is one of your most important discoveries?

A: The first one was the realization the Russians were using a third launch site and establishing its location at a place 200 miles south of Archangel. The second, in terms of intellectual achievement the almost complete decoding of the 6,000 bit telemetry message from the Russian Navigation satellite. We have also been able to predict launch and recoveries of Soyuz spacecraft among other things. Sort of learning to think like Russians think.

Q: What format is used on the Soviet navigation satellites?

A: Floating-point-binary transitionally encoded, 50bps 0's and 1's. The first bit is synchronized with standard atomic time. The next 5 bits give you the hour count. The next 6 bits, minutes and the next 6 bits, seconds. That's 18 bits, the remaining 32 bits, the first half of each minute, is location information for the satellite. It's updated every 3 minutes, so you can extrapolate when it will be at any given instant. In the second half of each minute, you get orbital parameters for all operational satellites in the system which includes 6 military and 4 civilian spacecraft.

Q: What type of equipment was required to decode the telemetry?

A: We fed the audio to a very simple pen recorder, originally used to turn Morse signals into visible traces on 1 cm wide paper tape. For the Soviet navigational satellites we used an old polygraph. It was all done visually rather than digitally.

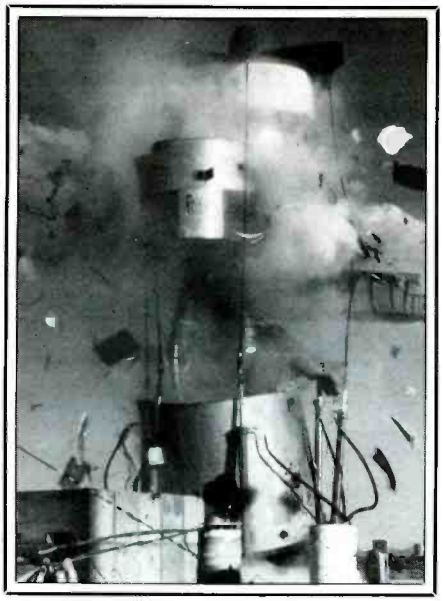
Q: How long did it take to break the navsat codes?

A: Five years, we did it in stages. First we got the time and then the positions decoded, then the orbital parameters.

Q: What other areas of communications are you interested in?

A: Russian weather satellites. I monitor them but don't bother producing pictures. I listen to monitor their status. Other members of the group produce the imagery. My real interest is not in communications or even radio. I am interested in the product, the raw data satellites produce.

Q: Is there anything in the area of space



Under special test conditions long term high energy laser bombardment can work, at close range. (DOD)

research you have not yet accomplished that you would like to?

A: We have to realize our limitations, but we are always looking for something new. Like the new Chinese weather satellite. I am working on their telemetry code. Our next big project will be to find the transmission from the Russian Shuttle.

Q: What accomplishment gives you the most personal satisfaction?

A: The first, finding the new launch site in Russia. That was a discovery I made on my own, unaided. My writing about it went unnoticed for 9 months, then all of a sudden - POW! it took off. This was due to Dr. Charles Sheldon at the US Library of Congress. He wanted to write about my discovery but wasn't allowed to as it had been classified by the American Intelligence community.

Q: What frequency bands do you monitor in your work?

A: The navigational satellites are on 150.00 MHz. The shortwave frequencies are less important now, though 20 MHz is still active. The only things there now are the recovery and tracking beacons from Soviet spy satellites, but you can't generally get them in America as they are only turned on over Russia. This way England is very useful, being situated just to one side of the Soviet Union.

Q: What other frequencies interest you?

A: The Mir voice frequency of 143.625 MHz. You seldom hear it exactly on 143.625 MHz because the spacecraft is usually heading away when it comes in, so it is Doppler-shifted toward 145.620 MHz.

Q: Have you heard anything about what frequencies the Russians may use or is it a tightly held secret?

A: They won't be announcing the frequencies, so we will have to rely on our own instincts and techniques of finding something and correlating it with other information.

Q: What do your instincts tell you about what frequencies the Russians may use for their shuttle?

A: S-band, like the American shuttle.

Q: The American shuttle has used UHF frequencies for air-to-ground, EVA and emergency communications, will the Russians do the same?

A: They might use 142.400 MHz which was the Salyut voice frequency. They still have a lot of equipment for that.

Q: What is the name of the Soviet Shuttle?

A: Buran, it means violent snow storm. It was also the code name of the Soyuz 7 spacecraft.

Q: Do you think that world economics are such, that the US and USSR will be forced to cut back on space operations?

A: I don't think either side will cut back because whether you like it or not, the main thrust is military. So they will keep pouring dollars and rubles into it. And if they want to go to Mars, I am almost certain, the only sensible way is to do it together. But I don't think I'll be alive to see it, though it could take place as early as 2015.

Q: With the loss of Challenger, do you think NASA has been completely militarized?

A: There is a danger that its civil role could be very much diminished. I was shattered by Challenger and I think perhaps they have been overly thorough. They may have been able to launch earlier but you want to be 110% safe with this sort of thing. Another accident could have a devastating effect on your space program.

Q: Which is more important, manned spaceflight or robotics?

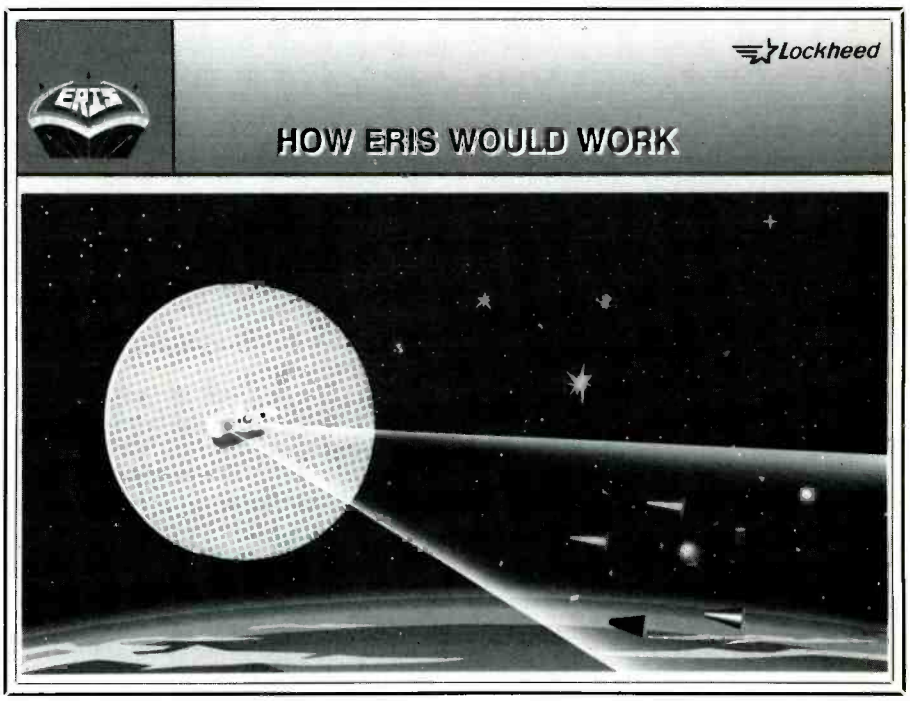
A: They are really complementary, you need both.

Q: Are the Soviets ahead in the space race?

A: In some areas, certainly. In throw-weight, at the moment, is one area. On the other hand, Energia, has no more throw-weight than the Saturn 5's of 1967, it's just that you threw that technology away. The US is well ahead in electronics and computers. But overall, both sides get the product they need. The Russian philosophy of launching lots of satellites on short flights and closing a satellite down when its replaced so that they can re-awaken it if and when needed, gives them great flexibility in the event of a pre-emptive strike. It would take the US an awful lot of launches to take out their capability, and they could re-constitute that capability quite quickly. Whereas, if you have a point failure in your Rhyolite or KH-11's, it takes you a long time to get one up because they are so sophisticated. So. I think their philosophy is not one of inferiority, but of expediency.

Q: Are the Soviet and American manned spaceflights actually spy, or recon missions?

A: Well, the Russian Mir has manufacturing capability to produce space products, micro-gravity research. It can also be used, not so much for spying, as Earth remote sensing. I don't think they will be able to use it for espionage any better than their recoverable recon satellites. The American space shuttle seldom flies over sensitive territory and your space station will be in a low equatorial orbit which would not be useful for spying. I said several years ago in Washington D.C., that the US does need a space station, but you don't need the one you're going to have. You need one in a polar orbit.



ERIS-the futuristic Exoatmospheric Reentry-vehichle Interceptor Subsystem. (DOD)

'Freedom' will be in LEO at 30 degrees inclination and it's not going over anywhere other than between 30 degrees north to 30 degrees south. If it were in polar orbit it could be used for espionage. I am not sure that the concept of the 'Freedom' space station is correct.

Q: Is it true that Reagan tried to keep the Europeans out of the space station project to ensure secrecy for SDI experiments?

A: The Europeans are afraid are afraid of the uses of SDI and loathe the idea of getting involved with anything military. You see, the ESA charter does not allow them to take part in anything military. Both them and the Japanese would not allow their parts of the space station to be used for military purposes.

Q: What is your opinion of SDI?

A: Well, I don't think it is going to work. That is if you look at the terms of reference that it was to provide a 100% safe shield to prevent anything from coming through. On the other hand, it was a politically clever move, because if it did work, all well and good, and if it didn't, it would commit the Soviet Union to vast expenditures to either duplicate, or negate it.

Q: Do you think the US was trying to engage in a spending war with the Soviets in order to cripple their economy?

A: I am not sure about that, but it did have the effect of bringing the Soviets to the table to sign the INF treaty, so it had a positive payoff.

Q: Do you think space will be militarized and if so with what weapons?

A: Well, the US already had the ASATS on the F-15. Miniature homing vehicles (MHV's) that knocked out Solwind, an AF satellite. In fact the US is the only nation to have an ASAT system that has worked. The Soviets have conducted ASAT tests against their own targets, but they were just tests. You actually knocked out an operating satellite. The MHV is now being abandoned and the Soviets have not tested their ASATS since 1982. Before that they had deployed a fractional orbital bomb system (FOBS), which has only been tested. What we are looking for now is laser test in space. The US Shuttle is already participating in laser irradiation test. I have no doubt the Soviets have also conducted such tests using Mir.

Q: What are the practical implications of such systems?

A: Well, at the moment it is purely R and D. You see the main problem is the optics, stopping the beam from spreading out and losing energy. To actually get something working and operational will be quite a step.

Mr. Perry retired from Kettering School in 1984 after 30 years. Now he has more time to work with the Kettering Group. Current projects include decoding telemetry from China's newest class of navigational satellites and a search for the radio frequencies used by the Soviet's Space Shuttle. I would like to thank Mr. Perry for granting POP' COMM this exclusive interview . . . See you next month. PC

PIRATES DEN

FOCUS ON FREE RADIO BROADCASTING

BY EDWARD TEACH

There's quite a bit of info at hand this month so let's waste no space and just get on with it.

A former pirate on the FM band which used the call WFEZ on 102.7 reports plans to drop FM and open up a shortwave outlet which will be called **Weekend Music Radio Atlanta**. It'll operate with 270 watts lower sideband on 6680 and carry programming for SWL's and DX'ers. The schedule varies from month to month, but operations are set for Saturday and Sunday evenings, local time, with various sign-on and sign-off times—as early as 0100 and as late as 0745 UTC. Correct reception reports will be QSL'd. The address is WMRA Free Radio, P.O. Box 9006, Dunwoody, GA 30097.

WXZR reports that it operates on 7415 and, musically, features "the strangest of the strange." The information I received notes that, in December (1989, I presume) it will be airing "Meontological Research Recordings" and that those who hear and comment on the recordings will receive a special QSL. WXZR's address is 3007R 4th Avenue, Beaver Falls, PA 15010.

This rather strange QSL will be issued to those who hear and report WXZR's "Meontological Research" recordings during planned broadcasts in December.

Zodiac Radio notified me that it planned to return to the air and has, in fact, since been logged by Bob Combs in California at 0525-0535 sign off. The frequency is 7423 and the station says it's running just 50 watts. "Frank Marauder" runs this west coast pirate. He says he's on the air on Fridays and Saturdays from 8 p.m. to midnight west coast time and plans to hook up with the Hilo, Hawaii maildrop and will advise me when that arrangement has been confirmed. Frank notes that pirate radio on the west coast is "dead" so his must be one of the few active ones, at least on shortwave.

Tests were supposed to take place late this spring from **Outlaw X**. The operator also says he's offering a maildrop service to any pirate stations who may be interested and he guarantees security. Reception reports should include a stamped envelope but with only the sender's return address on it. This new maildrop is P.O. Box 24323, Richmond VA 23224.

Free Radio One continues to be very active and quite widely heard. It is relaying Tom Valentine's "Free Radio America" program which is a satellite broadcast. Free Radio One's unlicensed shortwave relay of this is part of something calling itself the Free Christian Patriot Radio Network which has the goal of getting 10 thousand underground broadcasters operating. This is seen as the way to break "big brother's" hold on the licensed channels. Reports to Free Radio One, 3434 N. Pacific Highway, Medford, OR 97501. Logs on this one have been made by Raymond W. Arritt in Kansas at 0130 on 7415 varying to 7418 and another time on 7422. Mike Dercebo in Connecticut had them at 0158. The station was heard at 0155 on 7416 by Steve Johnston in Virginia; at 0200 by Fraser Bonnett in Ohio, 0110 by Gary Bourgois in Michigan and 0133 by Robert Ross in Ontario, all on 7415.

WKND was logged by several, too. Steve Rogovich at 0326 on 6240 featuring announcers "the Radio Animal" and "Big Ed". Steve had them on a different day at 0110. Robert Ross found them at 0257 and Fraser Bonnett at 0000. This was probably the unidentified noted by Raymond Arritt, too.

Bonnett reports **WENJ** on 7415 at 1640 and 2100 on different days. Robert Ross logged them at 2104 with host Jack Beane giving the Beaver Falls, PA address (see above). This was the first pirate for Peter Murricane in New Jersey who had them at 2230. Steve Rogovich had them at 2145 with someone causing intentional interference, making references to the station and Beane, to which Beane replied.

Rogovich heard **WCPR** at 0030-0154 on 7480 with what was mostly a rebroadcast of a program calls "Saturday Night Alive." Included was a station ID for WAWZ, FM-99 in New Jersey (99.1 in Zarephath—Ed). Ross logged the station at 0110 to close at 0138.

WKZP (K-ZAP) was heard on 7415 by Bonnett, but Fraser didn't mention the time of his log.

Steve Johnston had **WBRI** in lower sideband from 0419-0500 with half hour music segments and a slogan of the "North American Service to Southeast Asia from the Intrepid Broadcasting Company." Ken Berkebile heard this as "WVRI" at 0433 with the "Country Hour" and a DJ saying he was taking requests. No QSL info was noted. Another reporter, who doesn't give his name had them with a YL giving the WBRI call every few minutes between 0339 and 0355 tune out.

The same unidentified reporter took a log on **Samurai Radio**—The Voice of Oriental America, from 0320 on 7415. Announced power was 250 watts. Robert Ross also heard this station reading listener's letters at 0315 and signing off at 0328.

Ross also reports **KRS** on 7425 lower sideband at 2320-0010 with a Star Trek spoof, Dr. Who theme, instrumental space music and ID "This is KRS, the station on wideband sideband." Programming ended at 0008 followed by a tone to 0010 when the carrier went off.

Radio Clandestine, with host R.F. Burns, was heard by Steve Rogovich on 7355 at 0311-0354 close, airing fake commercials and doing a test run of the "Emergency Spaceship Locater." They gave the

now defunct Battle Creek maildrop address so perhaps this was just a rebroadcast of an old program.

Mike Dercebo in Connecticut comments on the increasing interference he's finding in the area around 7415 and wonders if perhaps it's time for the pirate community to look for another frequency to unofficially designate as *the* pirate frequency. Mike does note that a lot of antennas have been cut and crystals purchased for 7415 so perhaps a move isn't practical. Something for pirate operators to consider, particularly if interference continues to grow. Mike complains about WSHB spillover from its 7405 channel and a CW "numbers" station he hears frequently on 7413 around 0200.

As for your unidentified on 7415, Mike, I don't know of any international broadcasters using the frequency, but it sounds like that's what you had. As for our space problem, things are tight, so it's not likely we'll be able to expand.

That cleans out our file for this month. Remember to send me your pirate loggings, QSL and address information, press clippings about pirate radio and so on. Station operators, please remember that your fans want to know about your operations and future plans so let me know what you're up to and I can pass it along in the column. I can really use photos of your pirate station equipment set-up, too! Thanks to all who lend their support to the column! PC

PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS

Handheld VHF FM Transceivers

A new *Two Watt - Two Channel* portable receiver has just been introduced to the land mobile market by FANON COURIER—*PROCOM 2X2*.

The PROCOM 2X2 design specifications assure reliable performance with superior voice reproduction. PROCOM operates on business band frequencies and is available in the following three frequencies:

Frequency A 151.625 MHz
Frequency B 154.570 MHz
Frequency C 154.600 MHz

PROCOM 2X2 comes with *one set* of installed crystals of one of the above frequencies. Also included is a rechargeable nicad battery pack, A.C. battery charger, flexible antenna with BNC connector and FCC license application.

PROCOM 2X2 features include a channel selector switch, an adjustable squelch control with tone squelch ON-OFF switch, volume control with power ON-OFF switch, jacks for A.C. charger, external antenna and remote speaker/microphone.

PROCOM 2X2 is housed in a sturdy, high impact, plastic textured case and weighs about 1 lb. Its dimensions are 7"H × 2½"W × 1¾" deep.

Accessories (Optional)

RSM-1 Remote speaker and microphone.

PRIVACOM-1 Plug-in adjustable CTCSS tone module to exclude unwanted conversations.

CAT-12 All leather catty case with belt loop and plastic rain shield.

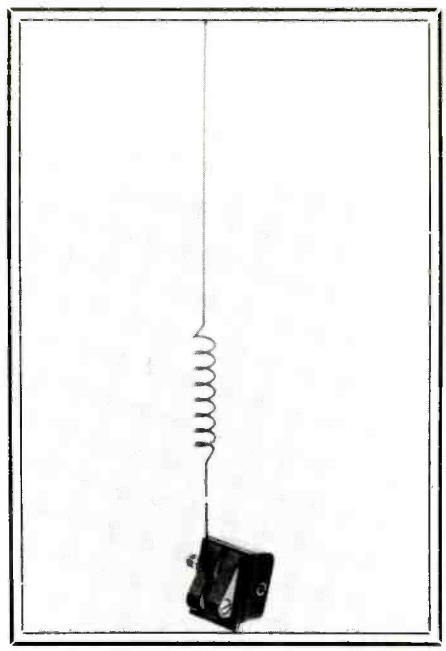
CAT-12SL Same as CAT-12 with quick release loop swivel.

AUC-12 Auto cigarette lighter charger adapter.

DIC-1 Drop-in charger adapter.

FANON COURIER also announced its new updated PROCOM 2X1 a *2 Watt-Single Channel* handheld transceiver. PROCOM 2X1 includes all of the new features, quality of performance and optional accessories of the PROCOM 2X2.

For more information, contact FANON COURIER, 14811 Myford Road, Tustin, CA 92680, or circle 108 on our Readers' Service Card.



New Disguise Antenna From A/S

The Antenna Specialists Co. has introduced Model AP-143, an "On-Glass" disguise antenna for the amateur radio market covering the two meter band. The new model borrows the distinctive "pigtail" configuration of cellular antennas to disguise the presence of professional radio equipment inside the vehicle. This can also be used for mobile scanners for 118 to 174 MHz reception.

The antenna's "On-Glass" design, with capacity coupled transmission through glass, requires no ground plane and permits quick, no-holes installation. The 26-inch stainless steel whip is covered with a black Dura-Coat finish for long life. The antenna has a power rating of 100 Watts continuous, contact the Antenna Specialists Co., 30500 Bruce Industrial Pkwy., Cleveland, OH 44139-3996, or circle 109 on our Readers' Service Card.

HF/50 MHz All Mode Transceiver

ICOM introduces the combined HF and 50 MHz transceiver, the IC-726. This small, lightweight, and easy to operate HF transceiver is big on performance with band operation from 500 kHz-30 MHz and 50-54 MHz. Enjoy DX'ing with the IC-726 and take advantage of the great 50 MHz band conditions during this time of exceptionally high sunspot activity.

100 Watts power output. A full one hundred watts output on all HF bands and 10 watts output on six meters.

Wide dynamic range. Imagine working DX then switching to six meters in the touch of a button. Now with the new ICOM IC-726 everything from 1.8 to 50 MHz is possible.

Compact. The IC-726 is designed to meet the demands of mobile users. It's compact and easy to operate while in your shack or on the road.

26 Memory channels. The IC-726 has 22 regular memory channels, two split memory channels and two programmed scan edge channels.

All mode operation. This radio has the optional UI-7 FM/AM board built-in. All modes built-in!

Band stacking registers. The IC-726 has band stacking registers for remembering your favorite frequencies and modes for each band.

The exceptional IC-726 has all this, and includes 10 HZ digit read-out, a variety of scan functions, CI-V system for computer control. Many options are available, such as the HF automatic antenna tuner and CW narrow filter. The suggested retail price is $1299.00.

For further information, contact ICOM America, Inc., P.O. Box C-90029, Bellevue, WA 98009-9029, or circle 107 on our Readers' Service Card.

CLANDESTINE COMMUNIQUÉ

WHAT'S NEW WITH THE CLANDESTINES

BY GERRY L. DEXTER

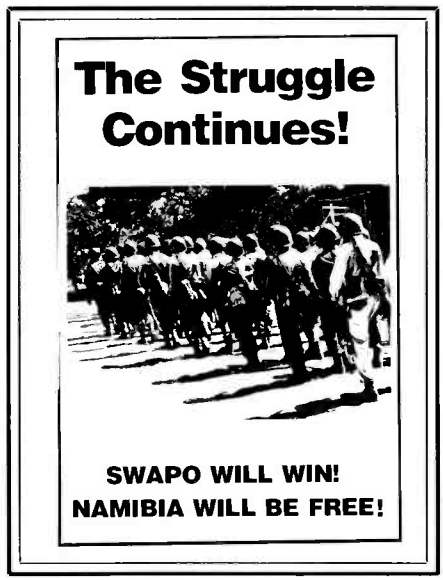
Last month we reported on the (temporary?) demise of the anti-Castro station *La Voz de Alpha 66*. This month we have news about the discontinuation of broadcasting by one of the longest running clandestine stations.

Bizim Radio (or "Our Radio") was an operation of the Turkish Communist Party and had been on the air for some 30 years, programming in support of a communist government for Turkey. A sister station, *The Voice of the Turkish Communist Party* closed down about a year ago. The programming from both stations was via transmitters in East Germany and Romania. The exact reasons behind the closing of the stations are not known, at least to your editor, but may well be linked to the Soviet Union's new approaches to its foreign policy and the seeking of better relations with Turkey. Moscow, not surprisingly, has long been assumed to have been the real power behind these stations. Oddly, a couple of years ago the stations finally gave out a mailing address for the first time but, despite that, we know of no QSL's which were ever issued by either Bizim Radio or the Voice of the Communist Party of Turkey. And it certainly doesn't look as if we'll see any now!

A halt—apparently just a temporary one—has been called in the operations of the *Voice of Democratic Kampuchea,* one of the stations supporting the Khmer Rouge of Cambodia. This station aired several broadcasts each day on a variety of frequencies, using Chinese government transmitters. It doesn't take a guru to figure the probable cause for this station's sudden loss of voice—China probably wanted to use the transmitters for jamming Voice of America broadcasts into China. The station cited technical reasons for the closure and promised a return as soon as the problems were solved.

The news is not all negative, however. There have been some new clandestines reported active. One is calling itself the *World Movement for the Liberation of Lebanon*. The "Media Network" program says it is airing five minute programs in English at 0815 and 1015 on a frequency of 27855. For us in North America that's a bad choice of both times and frequency.

A new one of sorts is the *Burma Nationalites Broadcasting Station*, now on the air from 0030-0130 and 1100-1200 on 5100 with programming in Burmese, Chinese, Wa, Jingpaw, and Shan. Interestingly, this 5110 frequency was formerly used by the Voice of the People of Burma (aka Voice of the Burmese People) run by the Burmese Communist Party and with a fairly similar broadcast schedule. At present, it's unclear whether what we have here is simply a name change, or whether there's more to it than that.



SWAPO's Voice of Namibia program airs on a number of government stations in Africa.

The next appears to be a case of a fresh coat of paint applied to an old house. *The Voice of the Chadian Popular Revolution* is reported to be active in a frequency of 6009—the same used by the anti-Chadian station *Radio Bardai* up until a year or so ago. Radio Bardai was almost certainly a Libyan operation and there's every reason to believe the same holds true for this new version. While Radio Bardai ran 'til around 2030 or so and could thus be heard sometimes in the deepest of winter days, the Popular Revolution station operates from 1600 to 1800, which means only those on the east coast are likely to have much of a chance to hear this station. Programs are in Arabic, French and local languages.

The Southwest Africa People's Organization (SWAPO) *Voice of Namibia* program is scheduled via various government broadcasters in Africa. Specifically, via Radiodiffusion Television Conglaise in the Congo at 2000-2030 on 7105; Radio Nacional de Angola from 1630-1730 (an hour later on Sundays) in 7245, 9535, and 11955. Also via Radio Zambia on 9580 at 1830-1930, Radio Tanzania on 9590 at 1830-1900 (Saturdays at 1815-1845). Also via the Voice of Ethiopia on 9590 at 1900-1930 and Radio Mozambique on 11818 at 1200-1230. Out of all of these the best opportunity for North American based clandestine DX'ers is via Angola and the best frequency choice is likely to be 11955. The Voice of Nambia does confirm reception reports, although it often takes several tries to generate a reply. The address is SWAPO, Voice of Nambia, P.O. Box 953, Luanda, Angola.

The Farabundo Marti National Liberation Front's *Radio Venceremos* is still going strong and has this current operating schedule (all frequencies are variable); Monday through Saturday at 0100 to 0200 on 3475 and 6629. Also 0300 to 0400 and 1315 to 1415 on these same frequencies. On Sundays broadcasts are scheduled at 1500-1600 on variable 3475, 3754 and 6629, 1900 to 2000 and 2100-2200 Sundays on 6629 and 6835, both variable.

Iran's Flag of Freedom Radio now has an additional transmission. The new one runs at 1400-1445 on 15100 with a repeat on that frequency at 0645. Incidentally, this station is being quite well received lately during its 0330 Farsi broadcast on 15555.

Robert Ross in London, Ontario reports the anti-Afghanistan *Voice of Unity* at 0125 on 15685. We've noted this one lately, too, sometimes with excellent signals during its 0125 broadcast. Credit the generally excellent high frequency propagation conditions these past months.

The anti-Columbian *Radio Patria Libre* continues to be heard on variable 6755 with all Spanish programming which sometimes closes a few minutes after 0100, but may run as late as nearly 0200. If you are interested in hearing this one it might be a good idea to get it into your log now. It has come and gone once before. Actually, that sort of advice applies to any station, but particularly for clandestines (and pirates, too). You never know when you may be tuning in on a final broadcast!

Information about clandestine broadcasters is always needed for this column. Such material would include loggings of clandestine stations, QSL and address information and information about the groups which run the stations, press clippings, copies of station schedules, literature and so forth. If you wish we can cover your identity so we hope you will feel free to contribute.

That will do until next month. Good hunting! PC

CB SCENE

27 MHz COMMUNICATIONS ACTIVITIES

BY BILL SANDERS, SSB-295

The Cobra 67-LTD is a remote hideaway type of mobile rig, designed for installations where there's no room for the CB beneath the dashboard, or where you just don't want to look at one there. The rig may be remotely mounted in the glove compartment, in the trunk, beneath the front seat, on the firewall, or in some low visibility location. The mike contains all of the controls for the operation of the Cobra 67-LTD, and since you can easily disconnect it from the rest of the unit when you're leaving the vehicle, you've got a virtually invisible installation (provided you're using a mag or hideaway antenna mount, of course).

The mike/control head features a *channel lock* control, which is a pushbutton contol that disables the channel selector to prevent accidental changing of the channel while you're holding the mike. There's also a *channel saver* memory that automatically tunes the rig to the last channel in use when you turned the set off. Other features include a Channel 9 button, squelch, RF sensitivity, T/R indicator, PTT switch, and a 8.5 ft. mike cord. The power cord runs 10 ft. for easy mounting anywhere you select.

For more information on the Cobra 67-LTD, contact any of the many Cobra dealers from coast-to-coast.

The interesting Cobra 67-LTD hideaway mobile rig.

Sideband Inquiries Galore

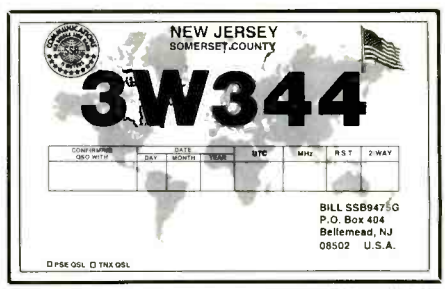
This column gets a huge amount of inquiries about single sideband (SSB) operations, equipment, etc. It seems that, to the uninitiated, SSB is mysterious and confusing. In the hopes of providing some basics and general clarification, here's a brief overview of what it's about.

There are two authorized methods of operating on 27 MHz, by amplitude modulation (AM) and by SSB. SSB is really a version of AM, but unless you have equipment specifically designed and built for SSB mode operation, you won't be able to copy SSB transmissions, nor will SSB operators be able to understand your AM transmissions unless they switch out of SSB mode and into AM mode. All presently manufactured 27 MHz SSB equipment can also operate in standard AM mode, although SSB/AM transceivers always cost more than AM-only rigs.

In fact, AM and SSB operations are not compatable on the same channels within a given operating area since both modes severely jam each other. Although regulations (unfortunately) don't seek to keep the two modes separated on the available 40 channels, for many years there has been an unofficial agreement amongst operators that devotees of each mode will voluntarily attempt to stay clear of the channels most used by the other camp. As of the start of the 40-channel format (1977), SSB operators have usually kept their operations on higher numbered channels, in most areas Channels 32 through 40, most often using lower sideband portions of those nine channels. AM and SSB mode operators who seriously care about better 27 MHz communications, and who know about this agreement, don't usually have occasion to stray on to frequencies where they'll cause interference.

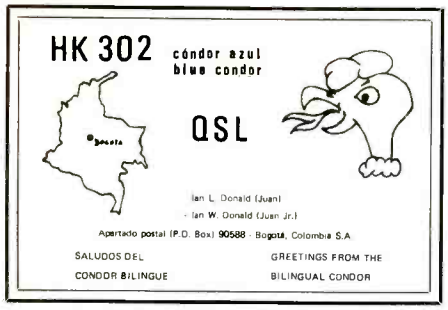
The question than becomes one of what is all the fuss about. Why would someone want to spend more for a transceiver for the honor of voluntarily restricting their operations to only about 9 out out of a potential 40 channels?

For one thing, the nature of SSB mode is such that it permits communications over far greater distances than regular AM. If two local stations (base/base or base/mobile) can communicate at a particular maximum distance from one another, the same two stations may be able to reach out to 50%, or 75% further—possibly more! Not only that, more local area stations can simultaneously utilize a single channel in SSB mode than when using regular AM. A base station using SSB-mode and a directional gain antenna can have reliable and dependable groundwave communications beyond the most enthusiastic hopes and dreams of any operator using regular AM mode.



Bill, SSB Network member SSB-9475G. of NJ also has the numbers 3W344.

Another, and some feel equally important, attracting factor in the world of SSB is that it has always been devoid of the operating practices that many persons found either objectionable, or tiresome, on the AM channels. For example, CB "lingo" is a taboo, so is on-the-air bickering, the use of 10-codes, and anybody caught using a "CB handle" is made to feel as welcome as a lap full of hot soup. In general, there's a more subdued and less frantic pace to the communications than on the AM channels, with operators prone to engaging in conversations that may cover sports, technical subjects, cars, hunting, fishing, movies, and many other topics. It's not at all uncommon to find three to seven operators taking turns in such roundtable discussions. A friendly attitude



Our overseas QSL of the month for November is from Blue Condor of Bogota, Columbia. (Courtesy Larry, SSB-Network member SSB-27C.)

prevails, usually tinged with lots of good-natured ribbing.

Obviously, there are zillions of people who enjoy everything about AM-type operating. Still, there are some who can't stand it, or found that it wore on them after a while. These are the people who gravitate to SSB and who staunchly defend it from all who would let it become an AM-type scene. To be sure, SSB-mode operators do welcome newcomers, albeit with some caution until it's apparent that they are interested in operating in a manner in keeping with accepted SSB practices. Those who don't know any better, are told that there's a vast difference in operating practices and procedures which they're advised to learn. Those that persist or refuse to change are invariably ridiculed mercilessly and laughed at until they either get the message, or else just write these people off as snobs and go back to the channels from whence they came.

Instead of using CB handles for station identification, Sidebanders prefer numbers awarded by organizations to which they belong. There are and have been hundreds, probably thousands, of local and regional sideband groups issuing distinctive numbers to identify their members. Sadly, all too many clubs exist for no longer than 1 to 5 years and then slowly fade into oblivion, leaving many good people holding "orphan" numbers in a defunct club or group. Those who have spent several years in sideband may well have racked up a dozen or more different sets of local and regional numbers issued to them at some point in the past by organizations that are acient history. Still, to attempt to communicate in SSB-mode without a number from a *recognized* group tends to make you a non-person on these frequencies. This is borne home even when attempting to use a recently issued and current set of ID numbers while away from your home area where your "home" numbers are either unknown and unrecognized or, even worse, duplicate numbers being issued by a local group in *that* county!

Many operators simply opt for obtaining a set of national numbers from the oldest and largest established sideband organization, *The SSB Network*. Their popular "SSB" prefixed numbers are issued to stations throughout the world, are recognized in any area. Moreover, inasmuch as the 100,000 member organization has been operating continuosly since 1964, it has become somewhat of an institution that's on the scene to stay. My own number, SSB-295 (which you see after my name at the heading on this column) was issued to me by *The SSB Network* back in 1967. There's a one-time affiliation fee, which gets your SSB numbers on a membership card and wall certificate, plus detailed information on proper sideband operating procedures, practices, and codes. There aren't any annual dues. Once you affiliate, you're always a member and you are welcome to use your SSB numbers to identify your station over the air—as I have always done.

Whether your a sideband old-timer, a newcomer, or a future sidebander, you can get an application to affiliate with *The SSB Network* by furnishing them with a self-addressed stamped (US 25 cent stamp) return envelope. Send one of those long #10 envelopes. If you mention that you are a reader of *CB Scene*, they'll toss in a good looking "wooden nickel" showing the group's famous logo. their address is: *SSB Network*, P.O. Box 908, Smithtown, NY 11787. We recommend the group highly.

See you next month. Always looking for your QSL's, station photos, ideas, CB news and view. Our address is *CB Scene, Popular Communications, 76 North Broadway, Hicksville, NY 11801.* PC

This is the SSB Network's logo that appears on one side of the "wooden nickel" they'll send you in exchange for a #10 SASE.

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Over $30,000 of Illegal Equipment Seized

On May 25, 1989, representatives from the Philadelphia office of the Federal Communications Commission and the U.S. Marshals Service conducted a search and seized over 200 pieces of electronic equipment, including illegal CB transceivers and linear amplifiers, with an estimated value of $30,000. The search warrant was executed against Jade Electronics located in Trevose, Pennsylvania.

The seized items were believed to be manufactured in the Far East and imported into the United States for illegal sale. The CB transceivers were capable of operating on unauthorized frequency channels with transmitter power in excess of that permitted by the Commission's regulations. These radios do not have the Commissions required type acceptance which would permit their marketing in the United States. Additionally, the linear amplifiers allowed stations to illegally increase their power. All of these devices are a potential source of interference to CB users as well as essential radio services and home electronic entertainment equipment. Also seized were Jade's business records which reflected the illicit importation and sale of electronic items all over the country.

The importation and sale of these devices is in violation of Section 302 of the Communications Act. Maximum penalties include fines of up to $200,000 and imprisonment for a term not exceeding one year.

Equipment Seized at Seattle Residence

U.S. Marshals, assisted by engineers from the Federal Communications Commission's Seattle office, seized CB equipment owned by Edward Joseph "Chris" McGeary of Seattle, WA. Acting upon a search warrant obtained by the Assistant United States Attorney, the Marshals confiscated all radio equipment and transmitting antennas, including illegal radio frequency amplifiers.

McGeary, alias "Too High," was first found to operate a radio transmitter station in violation of Commission rules several years ago causing widespread complaints of CB radio interference to home entertainment equipment in the area of 35th Avenue S. in Seattle. Subsequent to Commission investigation, the interference ceased and no prosecution was pursued at that time.

In January, 1987, another case was opened against McGeary in response to CB

users who reported he was using excessive power on his radio to transmit radio signals that were solely intended to disrupt or "jam" the communications of other CB users. A subsequent investigation revealed that McGeary not only employed excessive power on the CB frequencies for "jamming" other CB'ers, but he also operated on unauthorized frequencies outside of the CB band. In addition, it was discovered that interference to neighbors' home entertainment equipment had resumed.

Repeated attempts by the FCC to gain McGeary's compliance with the FCC rules and the law were unsuccessful. McGeary's equipment was seized after he refused to allow inspection of his radio station, continued his illegal radio operations, and failed to pay a $1,600 monetary forfeiture.

Amateur Radio Operators Fined for Pirate Activity

Two licensed ham radio operators in Massapequa, NY were fined $750 for pirate radio operation, the Federal Communications Commission said.

On the evening of June 8, an FCC engineer monitored the radio station on 7415 KHz, a frequency not authorized for the amateur radio service. The station was in operation at the residence of Herbert Meyers, K2LPK. Neal Newman, KA2CAF, was assisting in the station's operation.

The transmission were first detected by the FCC's national monitoring network. Using mobile radio-direction finding equipment, an engineer from the New York FCC office located the illegal station at the Meyers residence.

The unauthorized broadcast station was playing popular music and gave "WNPR" as its call letters. The station also called itself "World Wide National Public Radio."

Newman and Meyers were fined for unlicensed radio operation which is a violation

of Section 301 of the Communications Act. Unlicensed radio operators may be subject to fines of up to $100,000 and/or one year in prison.

Expand Use of Business Radio Frequencies

The Commission amended its rules to allow both the Business Radio Service and the Taxicab Radio Service to use, on a nationwide basis, 15 kHz offset channels in the 150 MHz band. It also provided 22 new offset channels for use by Business radio eligibles in Puerto Rico and the Virgin Islands, some of which will be used as high power paging channels.

This proceeding was initiated by the National Association of Business and Educational Radio, Inc. (NABER) which asked the Commission to assign 34 15 kHz offset channels to the Business Radio Service for use in certain areas, with 22 of these channels for use in the Virgin Islands and Puerto Rico and 12 channels for use in the Continental United States. In addition, NABER requested that high-power paging be permitted on some of these channels and that the Commission affirm that the 1950 census data will continue to be used for determining the use of certain channels in the 150 MHz band. In a counter-proposal, the International Taxicab Association (ITA) asked the Commission to assign the 12 continental U.S. channels to the taxicab industry and to abandon its use of 1950 census data in defining the usage of certain 150 MHz band channels.

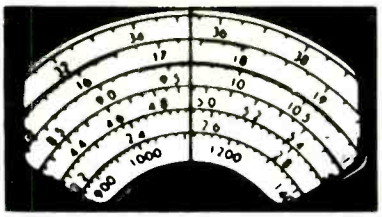
Because the 150 MHz band is less congested in Puerto Rico and the Virgin Islands than in the continental United States, the FCC was able to create and make available 22 offset frequencies that are adjacent to Business Radio channels in those areas.

After reviewing the record, the FCC concluded that the additional use of the 12 existing 150 MHz offset channels in the continental United States was both desirable and practical and, thus would be in the public interest. Both Taxicab and Business Radio eligibles demonstrated that greater use of these offsets was needed for private communications in the congested segment of the spectrum. The FCC said expanded use of these offsets should help alleviate some of the congestion of the 150 MHz band. However, because the Business Radio Service has significantly more users than the Taxicab Radio Service, the FCC provided Taxicab Radio Service, with four frequencies and the Business Radio Service with eight frequencies.

In view of the congestion of the 150 MHz band, the FCC explored the possibility of creating new offset frequencies adjacent to Business Radio channels. However, it concluded that it would not be beneficial to do so in interference concerns regarding the existing use of 30 kHz channels, as well as interference to narrowband operations.

The Commission concluded that it would be possible to allow high power paging on the offset channels in Puerto Rico and the Virgin Islands, but not in the continental United States. In contrast to the situation in Puerto Rico and the Virgin Islands, the existing frequencies on the mainland are heavily congested. In view of the potential interference to the many users in the land mobile services, the FCC said it would not permit the use of any of the 12 subject offset channels or even lower-power paging channels for high power paging in the continental United States.

The Commission, in licensing taxicab and business users on the 150 MHz channels, has consistently relied on a single list of affected Standard Metropolitan Areas of 50,000 or more population. If it were to update this list whenever new census data become available, as requested by ITA, then the distribution of these channels between the two services could be in a constant state of flux. The Commission said it would retain the listing now used and obtained from 1950 census data. PC



COMMUNICATIONS CONFIDENTIAL

BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

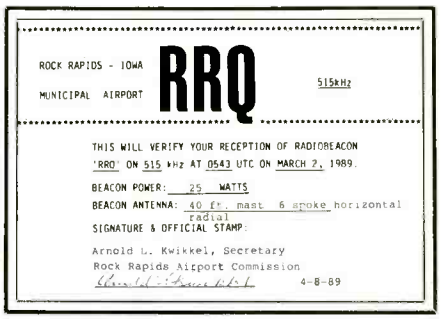
According to a short news article sent in by Michael Wilmer, MI, the SAC Global Shield exercise held this past Spring caused a military alert in Cuba. If hobby monitors could deduce the activity was an exercise, why couldn't the Cuban military intercept personnel do likewise?

Simon Mason, England wrote "I have been monitoring a YL/EE station that appears regularly on various frequencies. A 5F identifier is sent for five minutes then 'Ready, Ready' followed by the group count and then the 5F message. What is interesting is that the identifiers used seem to be related, which is very unusual. The ones I have heard recently are: 10361, 10491, 35702, 36511, 43101, 43473, 62453, 62683, 62467, and 62794.

The station skeds are Monday 2000-4740 and Wednesday 1900-6685. It also appears on 8070 and 6675 kHz. The 'Drum and Trumpets' Czech station uses 4740, 6675 and 8070 kHz so maybe they are using the same facility?"

Bill Such, PA is new to utility monitoring. He states he is suffering from severe chronic illness and would appreciate corresponding with other ute monitors. His address is: 1425 Pacific Avenue, Natrona Heights, PA 15065-2001.

From Patrick O'Connor, NH we learned of his receipt of an unusual QSL. "I received a package from Canada and upon opening it, I found it was from the tanker, Imperial St. Clair, which I had logged three months earlier. Besides my PFC, there was a nice letter from the Captain, a photo of the ship, and ESSO pin, an Imperial St. Clair mug and an ESSO/Imperial St. Clair baseball cap. Once in-a-while, going after those QSL's will yield a nice surprise!"



ROCK RAPIDS - IOWA
MUNICIPAL AIRPORT

RRQ

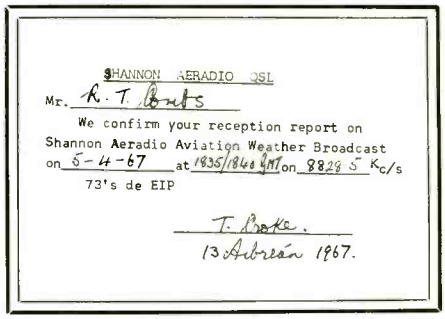
515kHz

THIS WILL VERIFY YOUR RECEPTION OF RADIOBEACON 'RRQ' ON 515 kHz AT 0543 UTC ON MARCH 2, 1989.

BEACON POWER: 25 WATTS
BEACON ANTENNA: 40 ft. mast 6 spoke horizontal radial
SIGNATURE & OFFICIAL STAMP:

Arnold L. Kwikkel, Secretary
Rock Rapids Airport Commission
4-8-89

When his PFC was returned, Steve McDonald, BC Canada also received additional details in the accompanying letter.



SHANNON AERADIO QSL

Mr. R. T. Combs

We confirm your reception report on Shannon Aeradio Aviation Weather Broadcast on 5-4-67 at 1835/1840 GMT on 8828.5 Kc/s

73's de EIP

T. Burke.
13 Aibreán 1967.

Bob Combs, CA said this 1967 QSL had a recipe for Irish Coffee on the reverse side.

And here are some more QSL addresses sent in by Patrick:

1. British Destroyer HMS Liverpool. Radio Supervisor, HMS Liverpool (D92), BFPO ships, London, England.

2. C6BW5, ship Nippon Reefer. Nippon Reefer, ATTN: Radio Officer, c/o J. Lauritzen A/S, Hammerensgade 1, DK-1291 Copenhagen K, Denmark.

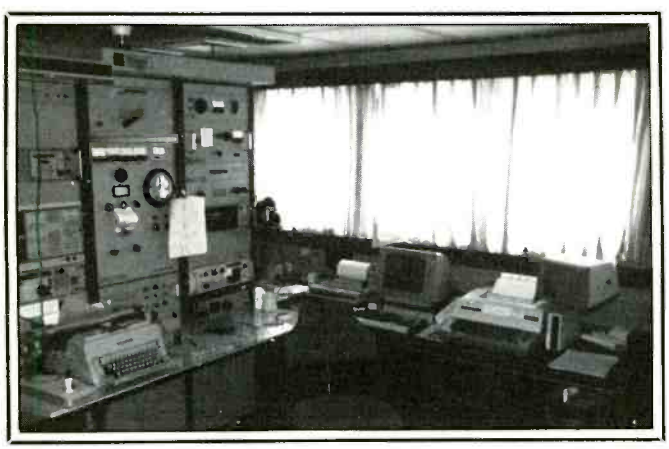
3. Ship Miss Aliki, C4RC. Miss Aliki, ATTN: Radio Officer, c/o Shipping and Produce Co. Ltd., Prince Rupert House, 9-10 College Hill, London EC4R 1AS, England.

4. KZU, Harvey, LA. Marine Radio KZU, c/o Zapata Gulf Marine, Operations Office, 1253 First Avenue, PO Box 802, Harvey, LA 70059.

5. TRK, Libreville, Gabon. Libreville Aeradio, ASENCA, B.P. 2252, Libreville, Gabon.

Many thanks Patrick, the addresses are appreciated by readers.

Paul Scalzo, Canada, wrote to the Department of Communications twice requesting information regarding station VEB2. "The first reply was very short and to the point, 'The frequency and callsign do not exist in the D.O.C. computer.' In my second letter I asked if a monitoring station could establish at least what direction the signal was coming from. I am still waiting for



Radio Officer Walter Treftz provided these pictures of the M/G Faust and radio room. The vessel can carry 6,400 cars or 3,000 cars and 500 trucks.

AEP Fuel Supply
River Transportation Division
P.O. Box 66
Lakin, WV 25250-0086
304 675 6300

AEP FUEL SUPPLY

Mr. Howard G. Kemp

June 5, 1989

Dear Mr. Kemp:

I have verified your report with our dispatchers. At the time stated WIX was communicating with the M/V ROBERT KOPPER (you reported "Robert Coffer"). This vessel was on the lower Mississippi River approximately midway between Baton Rouge, Louisiana, and Natchez, Mississippi.

Wix operates with a Northern 550, 150-watt sideband, working into a Northern 542, 1000-watt linear amp. The antenna is a Shakespeare style 222, 35-foot whip. The radio on the M/V ROBERT KOPPER is a Northern 550, 150-watt radio using a 75-foot longwire antenna.

Station WIX is the dispatch location for the River Transportation Division of American Electric Power Company. The boats move coal and other goods on the Ohio and Mississippi Rivers and their tributaries.

Sincerely,

Randall K. Callihan
Communications Engineer

RKC:r

Howard Kemp, NH reports that WIX ownership has changed and it is now the AEP Feul Supply. The address is the same as in the past. Howard monitors with an ICOM-71A and a 100' longwire antenna.

the reply, that letter was dated 18 December 1988." Paul, if you do happen to hear from the DOC, please let us know the details.

Former newspaper editor, Jim Sponseller, MI sent in a very interesting news article detailing the soon-to-be fully-operational ELF system. This system is one whereby the Navy uses Extremely Low Frequency transmissions to communicate with US Submarines around the globe. The article told of an unforeseen problem with woodpeckers chipping out big holes in the poles supporting the transmitting cables. A number of poles have had to be replaced already and it appears it will be a continuing problem. The installation agreement with the Department of Natural Resources precludes spraying the poles to deter the woodpeckers. This is in line with the 'Good Neighbor' policy being followed by the US Navy because the ELF project had stirred up such a controversy since it was initially proposed 1969.

If you have been bothered by QRM on the HF bands which sounds like a "video buzz" perhaps this is the cause. William Fernandez, MA discovered that the popular touch-lamps are the source of such noise. The "touch circuit" appears to be an oscillator which changes frequency when added capacitance (your hand) is introduced into the circuit. The frequency change activates the lamp in a typical three position brightness range, then off. Even when the lamp is in the off position it still generates noise. To knock off the noise you must unplug the lamp. William determined, with the aid of a friend, that the noisy lamps were imported and none had a UL approved sticker on them. They tried various filtering methods with little or no effect on the noise. The solution was to unplug the lamp. Bill closed his letter with - "I hope this information will be helpful to your readers. If people would stop buying these import trash-generating devices there will no longer be a demand and the devices will vanish, hopefully soon!"

The latest US Navy information provided by Andy Gordon, CT is as follows: New

ROCK RAPIDS AIRPORT COMMISSION

Rock Rapids, Iowa 51246

April 8, 1989

J. S. McDonald

Canada - V3B 4k8

Dear Steven,

Thank you for responding to the reception of the radio beacon. We replaced our previous beacon with the present beacon about the first of the year, it is good to know that the signal is easily identified, this is especially important to aircraft homing to the station.

The terrain is is gently rolling plains, airport elevation is 1363 feet above sea level, located in extreme North West Iowa. The beacon is a 25 watt transmitter, the antenna is a radial spoke type with six spokes about 12 feet across, I hope the description will give you an idea of our installation.

Thank you again, I will pass the information you furnished to the other commission members and the Avionics Co. that maintains the installation.

Sincerely yours,

Arnold L. Kwikkel
Secretary/Treasurer

Enclosed: Reception verification card.

MARS callsigns are NNN0CBP, USCGC Morganthau, WHEC-722; NNN0CYP, NOAA Fairweather.

In addition to his HF monitoring, Andy Gordon also watches 156.650 MHz (Channel 13) for US Navy "Bridge-to-Bridge" comms.

Lastly, Andy reports SESEF also uses 12315 and 4040 kHz for RTTY traffic for ships.

Henry Jackson, PA uses a ICOM R-7000, a JRC NRD-525 and for his travels a Sony 2010 for his monitoring.

Jim McDonald, MO advises he uses a Kenwood R-2000 with a homemade loop antenna. He said he has been listening to SW for about 15 years but really never paid much attention to utes until lately.

Randall Reese, Thailand, says he has a Yaesu FRG-8800 but for trips he takes along a National RFB65D Digital Portable (National is Panasonic) which is a SSB added version of the Panasonic RFB60.

A very nice letter was received from Philip Galasso which showed HAM/SWL interaction. His letter said in part: "I was pleasantly surprised to see a logging of my experimental radio station, KA2XUK, in your column. If the person who logged the transmissions would send me a reception report, I would be happy to send him a QSL card. Any and all SWL reports are welcome. Due to the somewhat temporary nature of experimental stations, such QSL's are quite rare.

"All 18 MHz transmissions using the experimental station licenses have been discontinued. Since that band is now available to hams, all of us are simply operating in that band using our normal amateur callsigns. However, I will be operating Stations KA2XUK (Lakewood) and KA2XUJ (Iselin, NJ-about 35 miles north of Lakewood) on longwave with 200 watts PEP output (except on RTTY, where the licensed output is 75 watts). Emissions used will be CW, RTTY, and SSB and tests will be run with Station KA2XWO in Orange County, NY. The authorized band is 160-190 kHz with 175 kHz being the prime frequency (subject to interference). The KA2XUK antenna will be a flat-top antenna, similar to those used on ships. At KA2XUJ, a short loaded vertical will be used."

For those interested in monitoring the above experimental transmissions here is the address for QSL's. Philip E. Galasso, 416 Fifth St., Apt. 2, Lakewood, NJ 08701.

Contributor Thomas, TX sent in the following Piedmont Airlines (US Air) LDOC (Flight Support Services) frequencies. All in kHz.

RAINBOW STATION
(CANADA)
3458
5604
8819
13285
17910

U.K. STATION
(ID's as "Orion Radio")

3482	12133
4807	13865
5610	14890
6634	16370
8170	17405
8185	18210
8960	19510
10291	20065
11306	21765

LIMA STATION
5535
8885
11306
17937

Ute Intercepts
All Times Are UTC

216: Beacon CLB, Carolina Beach, NC at 0506 (Buchignani, PA).

224: Beacon DN, Dauphin, MAN. QSL address: Flight Service Station, Dauphin Municipal Airport, Dauphon, Manitoba, Canada (McDonald, BC).

290: Beacon TZ, Gibraltar Pt., Toronto Is., ON at 0245 (Balogh, ON).

356: Beacon YZD, CFB Toronto, ON at 0250 (Balogh)

362: Beacon C7, Geraldton, ON. QSL address: Geraldton Town Office, 424 Main St., P.O. Box 70, Geraldton, ON, Canado P0T 1M0 (McDonald, BC).

366: Beacon YMW, Maniwaki, PQ at 0643 (Buchigani, PA).

515: Beacon RRQ, Rock Rapids, IA. This facility wos just rebuilt & they were happy to get a DX report (McDonald, BC).

2716: NXSF, USS **Edenton (ATS-1)** clg Halifax Port Control at 1115; CGWP, **HMCS Skeena (DDG-207)** clg Shearwater Ops (Nova Scotia) at 0940; NRDW, USS **DeWert (FFG-45)** clg St. George Harbour Control (Bermuda); "Fisher" (Cape Radio), Cape Canaveral wkg Port Ops (Canaveral Control) at 0130-- Cape Radio often monitored on this circuit (known as Net 3); CGWF, **HMCS Gatineau (DD-236)** clg Navy Tug **St. Charles (ATA-533)** at 0135; USN's **R/V Athena 1** wkg Mobile Unit 1 (Portsmouth Naval Harbormaster, NH). There are 2 Athena reseorch vessels, #1 & #2. Both are homeported at the USN Coastol Systems Center, Panama City, FL. They're involved in mine & torpedo countermeasures (MC & TCM); CGDQ, **CCGC Alert** wkg QHM Halifax at 0200; CYWS, **HMCS Porte St. Louis (YNG-183)** wkg Harbour Control at 0915 (Gordon, CT).

4019: AAR07 (un-ID sta) in USB at 2330 w/tfc to unknown sta. Ops in EE. At end of tfc asked, "Any questions technical in nature? The net is informal." No replies, tho (McDonald, BC). Probable US Army-- Ed.

4055: Beacon K at 0923 (Szolony, CA).

4183: Un-ID CW sta sending string of V's w/o spacing or pattern (Scalzo, PQ).

4222.2: ZRH, Cape Town Navrad, RSA in CW; ZRQ, also RSA Navrad at Cape Town on 4223.8 & 6338.1 (Ross, ON).

4373: E2T in USB at 0215 wkg Giant Killer (USN at Virginia Capes) asking latter to contact Norfolk Tug

Control to tell them to call E2T. First time I hrd FACSFAC handle ship tfc (Willmer, MI).

4400.8: NENC, **USNS Sealift Pacific (T-AOT-168)** wkg NOJ in USB at 0300 w/patch from Marine Safety Office (MSO) in Anchorage, AK re need for tug to enter Prince William Sound. Vessel was carrying jet fuel & had 1 main engine & 1 main generator down (Bell, WA).

4517: OM/EE w/eqpt request from 1 sta, USB at 0210 (Balogh, ON). Could this have been a National Guard op on 4520 kHz?-- Ed.

4577: YL/EE announcing 027 (X3), 1-0 count at 0007. Then 10 tones at 0010 & grp count 63 & into 3/2F grps. Rpts missing. Dropped at 0014. AM mode (Ed.).

4730: YL/SS at 0403 w/5F grps. Same xmsn noted on 4728 kHz (McDonald, MO).

4779: Auto CW sta at 2352 w/grps of 3 alphanumeric characters in sequences of 18 grps (Ed.).

4960: Un-ID sta ID's as CZN & sends NR 586 28 1 390 2045 BT & into text of 5-character grps, letters A-Z + Spanish nyeh (--.--) + figs 2, 3 & 8. Dropped at 0220. First hrd 0212 in CW. Noted CZN being called by THL on 7641.9 kHz few months back (Ed.).

5047: YL/EE in 3/2F grps, same msg as 4638 kHz, AM mode at 0016 (Ed.).

5228: CMU967, Soviet Navrad, Santiago, Cuba in CW at 0341 w/6556 ZBR PSE (Margolis, IL).

5340: At 2000 a music box type marker in AM mode till 2005 when YL/GG rpts 91422 82745 & 80505 for 1 min, then Achtung & into 5F grps. Was //4778//6506 kHz. This is Sat only & is a rpt of 9458 sent earlier same day (Moson, England).

5413: YL/EE w/750 750 750, 1-0 count, then 174, 10 tones & into 5F grps at 0207 in USB (Scalzo, PQ).

5437: YL in AM mode at 2103 w/phonetics, similar to the CIOX2 xmsns on 6745 kHz, same YL. This is Mossad ops (Scolzo, PQ).

5696: NOO, CGAS Sacramento, CA in USB at 0230 wkg CAMSPAC San Francisco, then QSY 6494 kHz for RTTY (Symington, OH); CG-1503, an HC-130 a/c w/8 POB req Camsta Portsmouth to take its radio guard while airborne, USB at 2332 (Kelly, MA); Rescue 1501 to Portsmouth in USB from 0244-0400 re having dropped life raft to 3 persons in water from capsized vessel. Was foll by report from vessel Driscole rptd picking up survivors 75 miles off VA coast & reporting all in good shape (Fernandez, MA).

6235: YL/GG in AM mode at 0410 had 3/2F grps, rptd at 0412 (Fernandez, MA).

6521.9: KTD423, Delaware Research (U. of DE), Lewes, DE wkg their unit WZC800 located in Bermuda at 1200, USB (Kemp, NH).

6640: UPS-01007 in USB at 0409 w/patch thry NY Aeradio for UPS Dispatch re engine problem (Balogh)

6708: YL/GG at 2000 rptng 257 (X3) 455 86 78. At 2005 5-dashes & into 5F grps. Wound up w/"Ende," AM mode (Mason, England).

6728: Air Force 2, USB at 1437 w/patch to Crown via Andrews. Said was going "Echo/Fox" (Willmer, MI). According to Kneitel's Top Secret Registry, going Echo/Fox indicates that patches would be handled with the a/c on 415.70 MHz FM, & ground on 407.85 MHz

6730: Venus 25 (a Gulfstream 310) in LSB at 2327 w/patch via Andrews (Willmer, MI).

6738: MAC 60184 in USB at 0710 wkg McClellan AFB w/patch to Travis AFB for wx & ETA report (Kelly)

6756: SAM 203 at 35,000 ft. over mid-Atlantic enroute from Ireland re meeting next day at the DIA HQ's, USB at 1527 (Scalzo, PQ); SAM 86972 in USB at 2130 wkg Andrews w/patch to Maintenance re portable secure voice unit (Symington, OH).

6757: Station 3300 in USB at 0143 via Red Fern to sta 3530 w/radio check (Willmer, MI). This freq used by Croughton (England) in USAF's Global Command & Control System-- Ed.

6785: Signal reports by OM & YL EE ops, USB at 1235. Net ref'd as some kind of Emergency Signal Test. Freq listed for US Army Corps of Engineers, N. Atlantic Div. Calls noted included: WUB44, Ft. Eustis, VA; WUB57, Ft. Lee, VA; WUB58, Radford Army Ammo Plant; WUB59, Langley AFB, VA; others, too (Ed.).

6797.6: Cremation & Crutchfield in USB at 1228 conducting signal checks on various freqs. Noted freq designators S-16, -13, -18, -19 (all unlocated). One sta referred to a particular un-ID freq as "Dog Poop" (another designator?). Crutchfield indicates he wants to go RTTY. Both opps OM/EE. Dropped at 1246 (Ed.).

6802: YL/SS w/count & 408 at 0400 in AM mode. They stopped & used some noise to indicate beginning & end. Was like a scratching. Same thing on 8418 kHz (Balogh, ON).

6840: YL/EE w/#'s from 2312-2336 (Parrish, PA).

6862: Beacon U at 1800. At 1801 began sending 5F grps, then 3 fast U's, rptd 5F text foll by 3 fast U's & rptd this X3 to 1805 when back to normal U beacon w/5.5 sec spacing between U's (Mason, England).

6963: YL/EE in AM at 0210 had 3/2F text. Was //8176 kHz (Fernandez, MA).

6999.9: A GDR #'s sta w/4F grps at 0310 (Parrish).

7200: Un-ID sta w/3L grps at 2005 (Parrish, PA).

7520: WWCR at 0305 in AM mode w/eqpt test & tape giving address as: WWCR, 3314 West End St., Noshville, TN 37203. Wonder what they'll be programming? (Balogh, ON). Have nothing on this one, but might be a pirate broadcaster-- Ed.

7535: NNCD, **USS San Diego (AFS-6)** wkg Norfolk SESEF at 1910. Vessel tests in all modes + KY-8 crypto device. SESEF told them to monitor 274.8 MHz; also noted testing with SESEF were: NQCE, **USS Raleigh (LPD-1)** at 1815; NHPA, **USS Stark (FFG-31)** at 1940; NXXG, **USS Iwo Jima (LPH-2)** at 1930; NGKO, **USS Saginaw (LST-1188)** at 1800; NQUB, **USS Donald B. Beary (FF-1085)** at 1905; NCOK, **USS Harry E. Yarnell (CG-17)** at 1900; NDVW, **USS Nashville (LPD-13)** at 1900; NSBJ, **USS Ponce (LPD-15)** at 1900 (Gordon, CT).

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/Ied/ication
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	with
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

7606: YL/EE w/VLB callup in AM mode at 0250 for Mossad ops (Scalzo, PQ).

7887: YL/SS w/5F grps at 0603 in AM mode. The YL sounded mechanical, but different than the usual robot voice (Balogh, ON).

8146: YL/SS w/5F grps in AM mode at 0632 (Balogh)

8186: YL/SS w/5F grps in AM mode at 0632 (Balogh).

8445: 9PA, Banana, Zaire in CW (Ross, ON).

8719: NIHI, **USS Opportune (ARS-41)** clg COMSUPRON 8 at 2355; NQOD, **USS Preserver (ARS 8)**; NCFR, **USS Adroit (MSO-509)**; & NLYP, **USS Inflict (MSO-456)** exchanging routine tfc w/one another & COMSUPRON 8 from 0100-0300; NZNG, **USS Paiute (ATF-159)** wkg COMSUPRON 8 at 2020. The secondary freq for COMSUPRON 8 ops is 4402.4 kHz, USB

8765.4: USCG New Orleans in USB at 0128 in contact w/**Ark Royal** re pos rpt & wx (Willmer, MI).

8846: USN a/c JR824 at 2007 in USB wkg New York re ETA Bermuda (O'Connor, NH).

8891: Cambridge Boy, NWT at 0356 in USB wkg a KLM flt, also using 4675 kHz (Dickerman, PA).

8964: MAC 449 clg Hickam AFB (HI) w/patch to CP at 0815, USB re mechanical woes (Kelly, MA).

8984: CG 1603 in USB at 2050 wkg Portsmouth re dropping off helo (Symington, OH).

8989: Gold Eagle (USS **Carl Vinson, CVN-70**) in USB at 0420 wkg McClellon AFB w/patch to Beaver (USN FACSFAC, San Diego) (O'Connor, NH).

8993: AG601 (a/c) over Atlantic wkg MacDill AFB (FL) (Bell, WA); MacDill AFB in USB at 0226 wkg Sentry 61 w/patch to Raymond 24 for coded msg (Rome, LA).

9000: Un-ID sta w/long counts, USB at 1910 (J.M.)

9023: Several stas in USB at 1835 checking into what sounded like readying for an upcoming exercise. Stas included Sidecar, Pep Rally, Red Dog Ops, Dog Star Papa. Other comms incl present radar trackings (Fernandez, MA).

9270: Executive 1 Foxtrot wkg Andrews AFB in LSB at 0225 re establishing comms on return flt to Andrews. Sked arranged while a/c was still on ground at Heathrow Airport, London. This tactical ID is code name for a commercial a/c carrying a member of the First Family (Fernandez, MA).

9530: A phone patch in SS at 0039 (Parrish, PA).

9987: Un-ID w/5F text, 0 cut as T in CW at 0929 (Margolis, IL).

10188: Un-ID sta w/5F text in CW at 0918 (Margolis)

10194: USAF stas Bandsaw Kilo & Brewmaster in comms at 1620 in USB (J.M., KY).

10444: US mil stas November-03 & -17 w/sig checks at 1600, USB (J.M., KY).

10636.6: KKN50, apparent US Dept. of State, presumed Washington, DC in CW at 0309 w/marker (Szalony, CA).

10666: YL/SS in AM mode at 2231 w/4F grps (McDonald, BC).

10860: YL/EE in AM mode at 0230 w/5F grps (McDonald, BC).

11039: DDH9, Hamburg Meteo, FRG w/plaintext wx in GG at 0902 in CW (Margolis, IL).

11055: SAM 60206 in USB at 2244 wkg Andrews w/patch to Pentagon (Symington, OH).

11073.5: Slingshot in USB at 1718 in contact w/Ranch House re loc of Papa 1 & 2. Spoke of range, bearing, & squawking (Willmer, MI). Kneitel's Top Secret Registry lists this as anti-smuggler Channel "Echo" on 11076 kHz-- Ed.

11214: Overlord & Horsefly in USB wkg in net w/Fox Hound, Red Dog 50 & Penalize. Spoke of targets in system, wx & tankers at 1854. Also Century 54 in contact w/Roymond 24 ID's this freq as Charlie 6 (Willmer, MI). Activity monitored is USAF Tactical Air Command. Roymond 24 is 552nd AWACS, Tinker AFB, OK-- Ed.

11225: YL/SS w/5F grps at 2300 (Willmer, MI).

11246: Hawk 01 wkg MacDill AFB, USB at 1442 w/patch to Black Knight (Symington, OH).

11387: VLS, Sysney, Australia in USB at 0800 w/Volmet wx bc (Ross, ON).

11448: 6U asking 2U to authenticate Brovo Sierra in USB at 1420 (J.M., KY).

11473.5: 6V in USB at 2036 tells 5S, "Got all the helos in the born because of the wx..." On day this was heard, GA & AL were both under tornado watches, so that may have been what this msg was about (Margolis).

11485: Phoenix in USB at 0227 in contact w/Frosty Green & Banjo Player. Were passing msgs via terminal, & Phoenix was instructing other stas on how to do this (Willmer, MI).

11601.9: YL/EE (apparent American) clg 131 (X3), 1-0 repeated to 1310, grp count 51 foll by 3/2F grps rptd text & ended 1320 (A. Nonymous, Far East).

12150.5: Beacon K at 2149 (Margolis, IL).

12301: YL/SS in AM mode at 2204 w/4F grps (Margolis, IL).

12361: M/V **Soverign of the Seas** (Royal Caribbean Cruise Line) at 2248 in USB during 1-week cruise (Dickerman, PA).

13055: UJQ7, Kiev, USSR clg CQ in CW at 0042 (Margolis, IL).

13092.5: UAH, Tallinn, Estonian SSR w/CW marker at 0126 (Margolis, IL).

13113.2: NMG, USCG New Orleans, LA at 0003 in USB wkg USCGC **Point Glass** (Dickermon, PA).

13210: SAM 60203 in USB at 2116 wkg MacDill w/patch made by White House Chief of Staff (Symington, OH).

13247: SAM 202 in USB at 1513 flying a member of US Senate to Elmendorf AFB, AK (Willmer, MI).

13306: Aeroflot 411 w/Gorbachev aboard enroute Cuba. An aide got on the mike and thanked Canada for permission to overfly. USB at 1810 (Scalzo, PQ).

13500.5: Un-ID CW sta w/political nx in PP at 1911. Likely Brazilian CW circuits here are Fernan Noronha to Recife, also Manaus to Belem & Humaita (Margolis).

13558.8: Un-ID auto sta repeating 35 35897, every 4 mins the grps were changed. Noted 1315-1328 (Ed.).

13630: KDM50, FAA Hampton, GA w/patch for a/c Flight Check 52 to Atlanta Center) USB at 1432. This is FAA Channel 11 (J.M., KY). Acording to Top Secret Registry, Flight Check a/c's usually operate on VHF 135.85 & 135.95 MHz-- Ed.

13631: KCP63, FAA Longmont, CO, & KMA47, FAA Miami, FL w/CW tests 1450-1500 at 15/25/45 w.p.m. (J.M., KY).

13783.9: 4UIH DE NB1V (both un-ID) in CW at 1138. Then WTHN DE NB1V QSV K, Bad echo to sigs (Ed.).

14383.5: NNN0CTZ, USN MARS abd **USS Bellau Wood (LHA-3)** wkg NNN0NIM at 1010; NNN0CQW, USS **White Plains (AFS-4)** wkg NNN0NWE in GU at 0955. This freq used by ships w/home ports in WestPac like Japan, GU, Philippines, etc. for patches back to their home ports; NNN0NCA, USCG Loran Sta on Marcos Isl clg NNN0NPN, NAVCAMSWESTPAC at 1230-- NPN is a gateway sta w/Autovan facilities to place calls for NCA into mil bases. NPN is on GU (Gordon, CT).

14441.5: NNN0CYY (new call), USN MARS abd **USS San Jacinto (CG-56)** wkg NNN0KXW at 0100; NNN0CVO, **USS Guadalcanal (LPH-7)** wkg NNN0NIM at 2140 (Gordon, CT).

14461: KWB407, DOT Durango, CO checking into FHwA exercise, USB at 2121 (J.M., KY).

14463: NNN0CNZ, **USS Wm. Pratt** in USB at 2245 wkg NNN0WHT w/patch; NNN0CVC, **USS Kalamazoo** in USB at 2253 w/patch thru NNN0WHT (Symington, OH).

14509: RIW, Khiva Navrad, USSR w/encoded & RR tfc to Soviet vessel w/collsign UAWO, 1516 in CW (Margolis, IL).

14983: Beacon E at 1446 (Szalony, CA).

15015: Airevac 615 in USB at 1840 clg Mainsail (O'Connor, NH).

15035: Edmonton Military w/wx in USB at 2020 (Kelly, WA).

16243: 5ST, ASECNA Antononarivo, Madagascar w/aero wx & notams in CW at 1007 (Margolis, IL).

16274: 146 (X3) 1 rptd in CW at 1922, then 1926 foll by 297 185 297 185 then 5F grps w/0 cut as ltr T. Over at 1938 (Margolis, IL).

16348: KCP63, FAA Longmont, CO, & KMA47, FAA Miami, FL testing voice scramblers in USB at 1605. FAA Channel 13 (J.M., KY).

16503.4: 4QVV, vessel **Lincoln Universal** in USB at 1900 with patches thru GKU65 (O'Connor, NH).

16981.5: SVG6, Athens R., Greece w/coll marker in CW at 1520 (Margolis, IL).

17201.5: CBV, Valparoiso R., Chile w/CW marker at 0016 on this seldom-listed freq (Kneitel, NY).

17385: CLP1, MFA Havana, Cuba w/VVV & ID in CW at 1702, then Prensa MinRex in SS 1715-1750 (Margolis, IL).

17426: GPA6, Partishead R., England in CW/RTTY at 2302 (Fernandez, MA).

17460: Protocol called by Acrobat, Andrews AFB at 1920. Sounded like Andrews was having xmtr problems (McDonald, MO).

17972: Toehold in USB at 2056 wkg Bluestone-01 & -02 during Global Shield exercise. Other SAC freqs very active w/many ID's & lots of coded tfc (3-char alpha-numeric grps). Freq ID as Whiskey 111 (Willmer, MI).

18019: MAC Delta 136 in USB at 1947 in AM mode w/patch via Albrook AFB, Panama (O'Connor, NH).

18236: YL/SS w/5F grps at 2004 in AM mode w/poor sigs (Balogh, ON).

18990: HDN, Quito Navrad, Ecuador w/OM/SS wkg NBA (on another freq). Was USB at 1436. Know this to be HDN because NBA told HDN in 11570 kHz RTTY xmsn to use "fon" on 18990 kHz (Margolis, IL).

20520: YL/SS in AM mode at 1612 w/5F grps (Willmer, MI).

20619: 7L1, Czech Embassy, Havana, Cuba w/5L tfc in CW. The 0 cut as ltr T. Hrd at 1910 (Margolis, IL).

20885: CPP67, USMAAG Bolivia in LSB at 1928 wkg AHF4 at Albrook AFB for patch; OAE21, USMAAG Lima, Peru in LSB at 2049 w/patch thru Albrook (Symington, OH).

21863.5: N. Korean Embassy, Havana, Cuba w/tfc in CW at 1813 after RTTY xmsn (Margolis, IL).

22068.2: PJCO, Holland-America Line cruise ship **M/S Noordam** in USB at 0148 wkg KMI (QSX 22664.2 kHz) during 21-dny trip from FL to BC (Dickerman)

22080.6: Vessel **Gloucester** at 2141, USB wkg Portishead while enroute Panama Canal from Belize. Believe ship is RN aircraft carrier (Dickerman, PA).

22892: IAR, ANSA Rome, Italy w/nx in II at 1340 in CW (Margolis, IL).

25000.7: Some sort of ATC comms in GG. Continuous xmsns w/#'s. Gnd & a/c both readable in USB at 1754 (Scalzo, PQ).

25599: PCW1, MFA The Hague, Holland w/CW marker at 1445 (Margolis, IL). PC

EMERGENCY
COMMUNICATIONS FOR SURVIVAL

BY GORDON WEST, WB6NOA

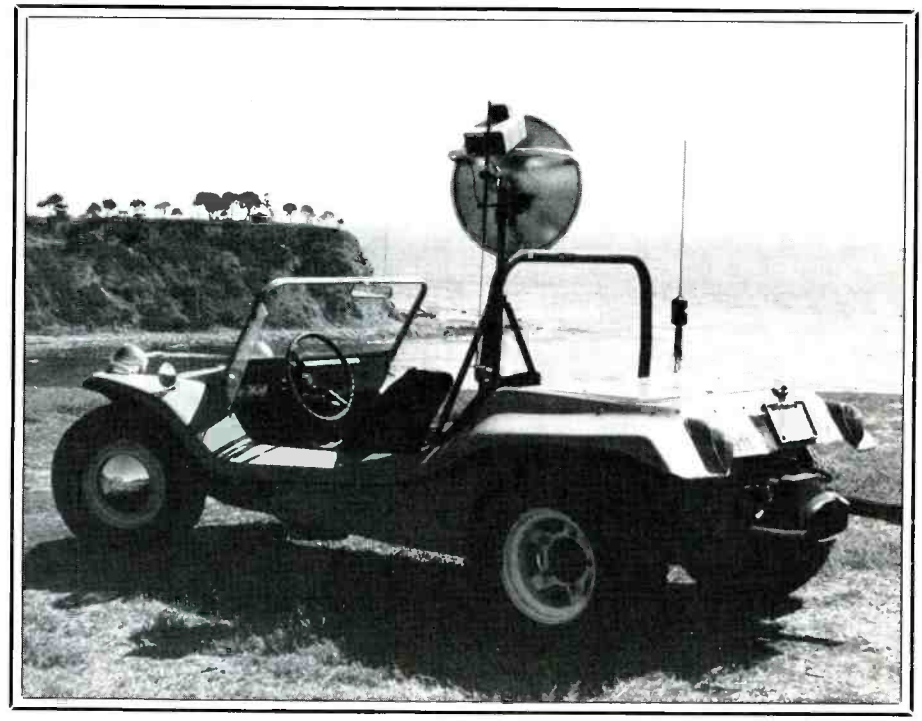
Microwave Communications

Emergency communicators are at times faced with the problem of crowded airwaves, and receiver desensitization when VHF and UHF communications systems are operated in close proximity to the command post. Going microwave is an easy way to avoid the interference and congestion!

The most popular microwave band is 10 GHz. 10 GHz is 10,000 MHz. It takes a Technician class amateur radio license to operate on 10.0 to 10.5 GHz using a pair of microwave transceivers. And yes, these transceivers are readily available, and a complete set is available for under $1,000 a pair.

Emission type at 10 GHz is wide-band FM. Bandwidth is 220 kHz, giving you plenty of room for high-speed packet bandwidth. Since the entire amateur radio 10 GHz band is 500 MHz wide, you have plenty of room to move around with your fat signal.

Completely assembled, tuned, and tested systems are available from Advanced Receiver Research (ARR), P.O. Box 1242, Burlington, CT 06013. What you get is a complete transceiver with a little plastic horn mounted right on the built-in Gunnplexer. The Gunnplexer is the transmitting and receiving device capable of generating a whopping 10 milliwatts at 10.250 GHz, and the other unit is preset at 10.280 GHz Both units operate full duplex, which allows you simultaneous talk and listen communications.



10 milliwatts at 10,000 MHz goes a surprising long distance on a line-of-sight basis. From your emergency command post to a distant hilltop companion transceiver, I have operated over a path longer than 70 miles. Out on the flat lands, you could expect up to 5 to 10 miles range with some objects in between. However, down at "the deck" with heavy foliage around you, range may only go a measly one mile. At 10 GHz, foliage becomes a real problem with signal absorption.

Higher power Gunnplexers, coupled together with 2- and 4-foot dish antennas, help expand the range—but nothing beats getting the two units on a line-of-sight basis with each other. In other words, going high power and adding a big dish won't add much range when you're trying to get through a mountain, or beat a signal into the brush. It just won't happen beyond a mile or so at 10 GHz.

But take a pair of these tiny transceivers up to a pair of mountain-tops, and get ready for some very long-distance communications.

The microwave systems are unaffected by high-power transmitters on VHF and UHF frequencies. These microwave transceivers are also unaffected by nearby microwave towers or local radar installations. They are also unaffected by incoming or outgoing satellite TV signals, too.

Caution: At 10 GHz, microwaves can be harmful to your eyes and to your health. Never point the microwave horn at your face. Make sure it cannot be accidentally energized when you are assembling your station. Even though 10 milliwatts doesn't sound like much, no amount of microwave emission can be healthy!

When ordering the transceivers, expect an approximate 45-day wait for your completed systems. It takes the factory this long to come up with just the right components to give you a rock-steady transceiver. Every system is tuned and tested extensively before it is shipped out. Place your order direct with Jay Rusgrove, W1VD. This company, ARR, is extremely busy with exotic equipment orders, so don't expect immediate delivery or any lengthy correspondence on how you should put your system to best use. There are plenty of ham radio publications dealing with 10 GHz operating procedures that make for good reading.

If you need a secure and clear a way of communicating over a line-of-sight communications path, step up to 10 GHz and hear the clarity of microwave voice and data transmissions on relatively inexpensive, factory-available, pre-wired and tested transceivers. Just add a microphone and 12 volts, and you are on the air!

An amateur radio Technician class license, or higher, is required for 10 GHz microwave operation. PC

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

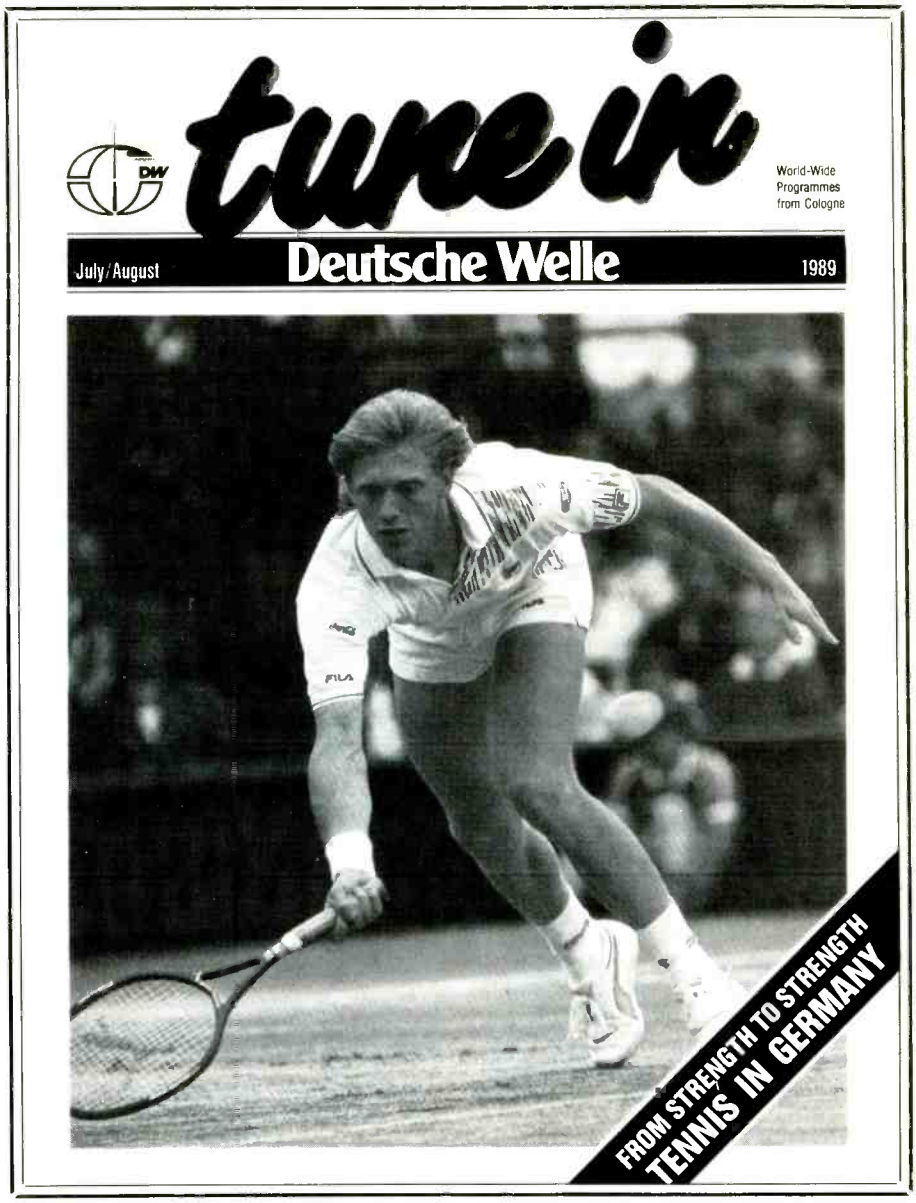
We begin this month with news of another nation's shortwave service in trouble. The necessity of making drastic budget cutbacks are reportedly endangering the very existence of Radio Canada International. A complete closure of the RCI international service is one option being very much considered as something which would go along way towards meeting the government's new budget requirements. Few would argue that RCI is one of the best of the international broadcasters so now is the time to give it more support than simply listening. RCI needs your letters of support. Time may be very limited so act right away. Send a letter supporting RCI to Radio Canada International, P.O. Box 6000, Montreal, Quebec, HC3 3A8, Canada.

A station in even deeper trouble—though one that's far, far less heard, is Kalaallit Nunaata Radioa, Greenland's shortwave station. Danish DX'er, Stig Hartvig Nielson visited the station last spring and reports in *Frendx* (journal of the North American Shortwave Association) that the shortwave service, intended for Greenland's fisherman can't be heard by them. So Chief Engineer Henrik Jorgensen recommended the service be closed and that, apparently, is what's to happen, probably around January next year. You can write to Mr. Jorgensen at KNR, P.O. Box 1007, DK-3990 Nuuk/Godthab, Greenland. Still on the negative side of the ledger, an even more difficult DX target is gone. The Somalian regional station, Radio Hargeisa, is not only no longer on the air, it apparently no longer even exists. War in the region has destroyed the station's facilities.

On the positive side, the Sierra Leone Broadcasting Service has returned to shortwave. It's 3316 frequency closes down around 2330, too late for most of us except during the winter months. But it resumes just prior to 0600, as does transmission on 5980. Some US and Canadian DX'ers are picking this one up. Reports go to the Sierra Leone Broadcasting Service, New England, Freetown, Sierra Leone.

It wasn't all that long ago when there were reports of funding problems for the Voice of Israel. But now we have news that the Communications Ministry has ordered a 500 kW transmitter for the Voice of Israel, which will be positioned in the central part of the country.

The Voice of Germany (Deutsche Welle) says it plans to expand its facilities to the point where each transmitter site will have four transmitters. That will mean the addition of two more outlets (250 kW each) at Kigali in Rwanda and a fourth 250 kW will be added at Sines, in Portugal. Deutsche Welle says it may also resume using the facilities of Radio Veritas Asia in the Philippines as a relay as well. Incidently, DW's "Hallo Friends" program schedule has been dropped and replaced with an expanded and much more attractive bi-monthly called "Tune In"—available free from the station.

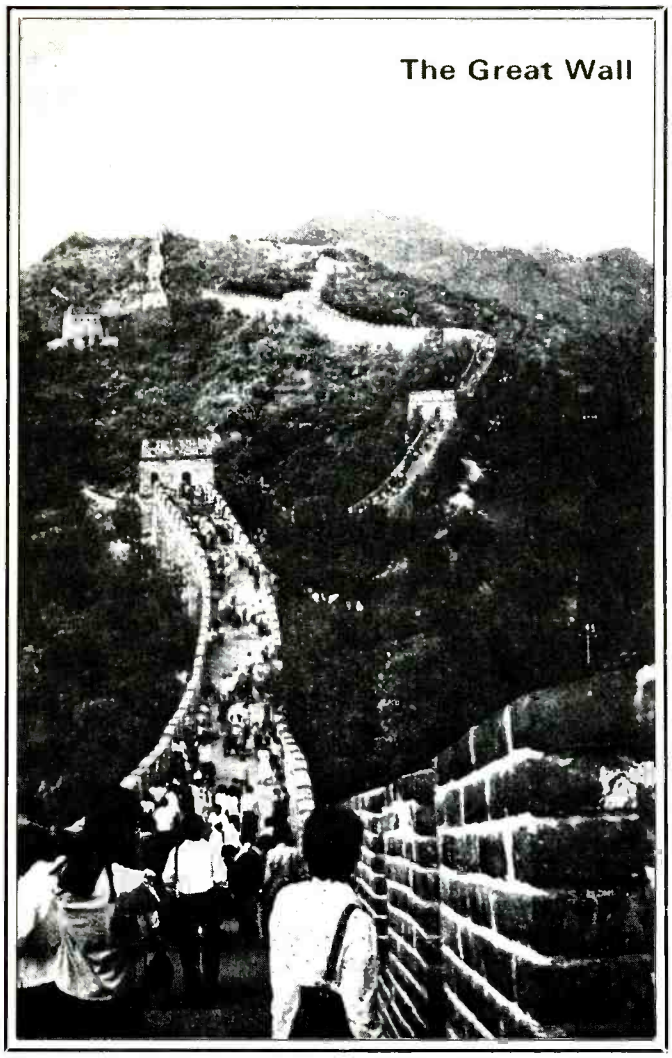


Deutsche Welle's new program guide runs 12 pages and previews some of the upcoming programs. It's free from DW.

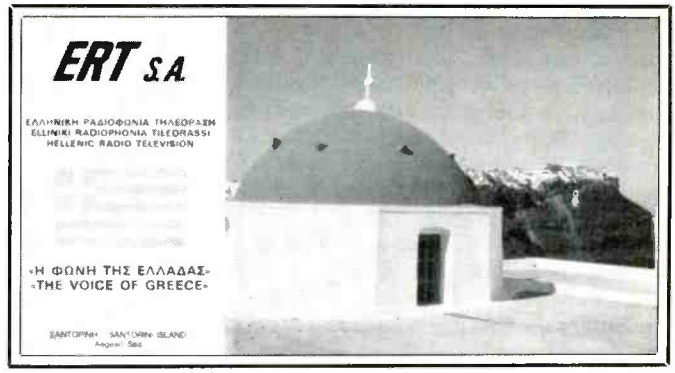
The Australian DX News reports that a new religious broadcaster is to go on the air from South Africa. It will be called International Christian Radio (ICR) and beginning sometime next year, will broadcast in several African languages over a 250 kW transmitter.

Sweden Calling DX'ers, via "DX Ontario" reports that the Mauritius Broadcasting Corporation, inactive on shortwave for several years now, does plan to return to its old 4855 frequency one day, but when seems anyone's guess.

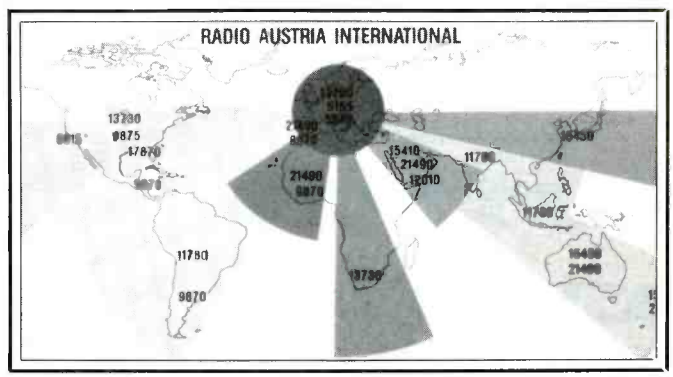
Note that Burma has changed its name to



A list of the main frequencies of the domestic Chinese broadcast network, CPBS. (Thanks to Robert Fletcher, Long Island, NY)



One of several attractive photo QSL's from the Voice of Greece. (Thanks to Aristides Giannarelis, Athens)



It's pretty easy to figure out the best frequencies for reception of Radio Austria International but using this multi-color map from the station's program schedule. The 6015 frequency is via the RCI transmitters in Canada.

Myanmar, and the capital city is no longer called the Rangoon, but Yangon.

Here comes the Mailman: Checking in from Hawaii is first time reporter Paul Dunn Lynch. By the time you read this, though, he'll have relocated to Chicago. What a change! Hope you'll contribute once you're settled in the new location, Paul!

Miles Hess, WB4YQE, started listening on a Hallicrafters S-38D some 30 years ago. Miles says he enjoys hamming on 10 and 15 meters but when the bands go dead he switches to international shortwave. Yours truly began with a Hallicrafters S-38B, Miles. There were probably thousands of us who cut our shortwave eye teeth on the S-38 series.

James McDonald in Plato, Missouri uses a Kenwood R-2000 and has been listening since 1974 and really active since 1981. Good to hear from you James, but please include your last name and state abbreviation on your reports.

Cliff Reynolds in Hazlewood, Missouri would like *Listening Post* to take a poll of our readers' favorite programs. We try to focus more on shortwave monitoring and DX'ing than we do on programs, Cliff. But if there's a lot of interest in such a poll we'd at least give it some consideration.

North Dakota's Larry R. Zamora sent a report to Radio Kuwait's usual address and got back only a calendar, schedule and a note advising that reception reports should go to this address: Controller of Receiving and Frequency Management, 14th Floor, Ministry of Information, P.O. Box 193, Safat, 13002 Safat, Kuwait. Thanks for that useful information, Larry. It's appreciated!

Tom Robertson of New Albany, Mississippi made his nice loggings on a DX-302. He's been listening since 1980 and would like to pick up one of the old Hallicrafters or Collins tube receivers. Check the classified ads in *PopComm* or *CQ*, Tom, and you should find lots of possibilities.

Thanks to L.R. Royston for his first reports as well as the kind words. L.R. is just back after an 11 year absence from shortwave listening. He'd like to make contact with other SWL's in Hawaii and can be contacted at P.O. Box 686, Pahoa, HI 96778.

Jim Ross in Vancouver, Washington has been busy upgrading to a Technician ham license. Hope we don't lose you to the ham bands entirely, Jim!

Another returnee to listening is Sergio Gelato of Ithaca, New York who moved to the US a couple of years ago. He remarks on how fragmentary US media coverage of foreign events is and how well shortwave fills that gap. Sergio speaks several languages and is especially interested in the African stations.

Justin McClure in Cambridge, Iowa wonders if international direct broadcast satellites will make shortwave obsolete in the coming years as some folks are saying. We think there'll always be broadcasting on shortwave, Justin. DBS is the least of our worries!

Let's have your letters with your news, comments and questions, along with your loggings (remember to please include your last name and state abbreviation after each

item), good copies of QSL's or the originals if you have spares you don't need returned, station schedules, clippings about shortwave and so on. Incidentally, we really need shack photos too, so get busy with that camera and let's get a look at you and your listening post!

Here are this month's logs:

SWBC Loggings
All Times Are UTC
English Unless Otherwise Noted

Albania: R. Tirana, 7245 (new) at 2130 (Pannone)

Antigua: DW relay w/IS, multi-lang ID & into GG on 17810 at 1958 (Tuchscherer, WI).

Argentina: RAE, 11710 at 0202 (Gilbert, CA).

Australia: R. Australia, 6060 at 1259; 11770 at 0556; 11910 at 0603; 15140 at 1502, (Carson, OK); 9580 at 1259 (Reynolds, MO); 15160 at 0700 (Yohnicki, ON); 15320 at 0400, in FF 0600 (Gelato, NY); 17795 at 0110 (Pannone, CT).

ABC Perth, 9610 at 1422 (Ross, WA).

Austria: R. Austria Int'l., 6015 (via Canada) at 0608 in GG (Gilbert, WA); 9875 in GG at 0117 (Rass, WA); 13730 in GG at 0500 (Gelato, NY); 21490 at 1631, multi-lang ID 1654 (Zamora, ND).

Belgium: BRT, 21810 at 1530 to Africa (Zamora, ND).

Botswana: R. Botswana, 4820 at 0452 w/mx (Gilbert, WA); 7255 at 0510 w/nx headlines & into un-ID lang (Lynch, HI).

Brazil: Radiobras, 11745 at 0203 w/nx (Ross, WA); At 0159 (Reynolds, MO).

R. Nac. Amazonia, 11780 at 2317 in PP (Gilbert)

R. Anhanguera, Goiania, 4915 at 0355 in PP w/Brazilian pops to ID & s/off 0402 (Berman, WA).

Bulgaria: R. Sofia, 15290 at 0300 w/nx (Zamora, ND); 15330 at 2300 w/nx (Gilbert, CA).

Burkina Faso: RT Burkina, 4815 in FF at 0545 w/trad mx, sked of nx pgms (Berman, WA); At 0536 (Gilbert, CA).

Cameroon: CRTV R. Yaounde, 4850 at 2250 to 0000 close w/**Ici Yaounde**, EE/FF freq annets at s/off (Gelato, NY).

Canada: RCI on 6140 at 0523 in EE/FF; 11720 at 2234; 17820 at 2135 (Carson, OK). Please be sure to see the comments on RCI at the beginning of this month's column-- Ed.

CFVP, Calgary, 6030 at 0456 w/rock, ID/**AM-106** (Berman, WA). That ID refers to mediumwave CFCN, which CFVP relays-- Ed.

CFCX, Montreal, 6005 at 0725 w/commercials in EE/FF, Mutual nx & **Larry King Show** (Berman, WA).

Chile: R. Nacional, 15140 in SS at 2301 (Gilbert).

China (Peoples Rep.): R. Beijing, 9690 (via Spain-- Ed.) at 0326 (Ross, WA); 9690/11715/15130 (11 & 15 MHz via Mali-- Ed.) at 0300 (Pannone, CT); 11855 at 1348 (Carson, OK); 17855 at 1201 (Reynolds, MO).

CPBS, 5880 at 1540 in CC (Lynch, HI); 15030 at 1443 in CC (Ross, WA).

Colombia: Caracol Network, Bogota, 4755 at 0102 in SS (Robertson, MS); Neiva, 4945 at 0611 in SS (Gilbert, CA); Bogota, 5075 at 0412 in SS (Carson, OK); 5095 at 0415 in SS (Berman, WA). Yup! These are the ex-Sutatenza transmitters; 5075 & 5095 don't seem to be in use simultaneously-- Ed.

R. Nacional, Bogota, 17850 in SS at 0156 w/bells, ID & educational pgms (Robertson, MS).

Cuba: RHC, 5965//11820 at 0428 w/nx & DX pgm (Carson, OK).

Czechoslovakia: R. Prague, 7345 at 0340 (Carson, OK); 15540 at 0117 (Pannone, CT); 21450 (not // on also-heard 21505) at 1536 (Tuchscherer).

E. Germany: RBI, 6040//6080//9730//11785//-13610//15240 in SS at 0030 (Gelato, NY); 9730 at 2145 (Carson, OK); 11785 at 0325 (Ross, WA).

Ecuador: HCJB, 6230 at 0625; 11775 at 0602 (Carson, OK); 9745 at 0043 (Ross, WA); 15155 at 0100 (Pannone, CT); 17890 at 1230-- not AWR Gabon as a reader reported in 6/89 column (Pannone)

Egypt: R. Cairo, 6195 in AA at 0332 (Ross, WA); 15235 in AA 2235-0400 (Gelato, NY).

England: BBC, 5975 at 0530; 6005 at 0528; 15260 at 1503 (Carson, OK); 17695 at 1920 (Tuchscherer).

Finland: RFI, 15185 at 0230 to s/off w/anthem 0256 (Zamora, ND); At 1415 (Lynch, HI).

France: R. France Int'l., 9790 at 0217 in FF (Gilbert, WA); 17720 in FF w/ID, nx at 1600 (Yohnicki, ON); 15135 in FF at 0455; EE at 1416 (Carson, OK).

French Guiana: RFI relay, 11670 in SS at 0125 (Ross, WA).

Gabon: Africa #1, 9580 in FF 2100-2300 close (Tuchscherer, WI).

Ghana: GBC, 4915 at 0540 in vernaculars (+EE), ID & EE nx 0600 (Carson, OK).

Greece: V. of Greece, 9395//9420//11645 in GG 0100-0230 (except EE 0130-0145) (Gelato, NY); 11645 at 0129 (Ross, WA); 17550 at 1518 w/mx & ID (Tuchscherer, WI).

Guam: KSDA/AWR, 11700 at 0859 in CC w/EE ID on hour, back into CC (Roystan, HI).

TWR, 11805 at 0930 to Australia & Papua New Guinea; also 11710 at 0930 in CC (Zamora, ND).

Guinea: R. Guinea, Conakry, 7125 in FF at 0657 w/ID's, nx, African mx (Robertson, MS).

Honduras: La V. de Mosquitia, 4910 at 0202 w/rx mx, SS annct, ID & into EE pgm 0226 (Robertson).

Hungary: R. Budapest, 9835 at 2350 (Carson, OK); 11910 at 0054, s/off 0057 (Zamora, ND).

India: AIR, 9950 at 1530 w/nx (Lynch, HI); 15335 at 1351 (Reynolds, MO).

Iran: VOIRI, 9022 at 0147 in SS (Pannone, CT); 9575 in Bengali at 1445 (Ross, WA); 15084 in Farsi 2500-1600, AA 2240, SS 0130 & 0530 (Gelato, NY); 0329 w/tone, s/on & Farsi ID (Robertson, MS).

Iraq: R. Baghdad, 9515 at 0100 w/nx, ID (Pannone, CT); 13660 (new) to 2155 close in EE (Tuchscherer, WI); 2100-2200 (Gelato, NY); 2043 (Miller, GA).

Italy: RAI, 11800 w/nx in II 0000-0015, EE 0100, FF 0120, SS 0305, RR 0325. Also 11910 w/nx in RR 0325-0350, then into EE (Geloto, NY).

Israel: V. of Isroel, 15640 at 0004; 17590 at 1916 (Carson, OK).

Ivory Coast: RTV Ivoirienne, 7215 at 0607 in FF (Gilbert, WA).

Japan: R. Japanm 11815 at 1538 w/JJ lessons (Gilbert, CA); 1440 (Carson, OK); 17825 at 0322 (Ross, WA).

R. Tampa, 6055 in JJ at 1355 w/western mx (Lynch, HI).

Jordan: R. Jordan, 11955 at 0522 in AA (Gilbert, CA); 13655 at 2000 w/time check & nx (Miller, GA).

Kuwait: R. Kuwait, 15345 at 0332 in AA (Gilbert, CA); 15505 at 0710 in AA (Carson, OK).

Lesotho: R. Lesotho, 4800 at 0430 w/nx (Gilbert)

BBC relay, 9515 at 1301 w/World Svc (Robertson)

Liberia: VOA relay, 15600 at 1803 w/mx & **Africa Today** (Reynolds, MO).

Libya: V. of the Great Homeland, 15415 in AA at 0144 (Ross, WA).

R. Jamahiriyah, 15450 at 2309 in AA (Gilbert).

Luxembourg: R. Luxembourg, 15350 at 0525 in FF w/talk, mx, commercials (Gilbert, CA).

Madagascar: R. Netherlands relay, 21480 at 1228 w/IS, ID's in Indonesian & Dutch (Robertson, MS).

Malaysia: R. Malaysia, 7295 at 1300 w/Q&A pgm called **The Law & Us** (Lynch, HI); 15295 at 1029 s/on & into CC (Robertson, MS).

Malta: V. of the Mediterranean, 9765 at 0559 w/IS, EE ID, freq info, mx, & **Psychology For Today** (Robertson, MS).

Mauritania: ORTM Mauritanie, 4845 in FF at 0540, ID 0600, guitar mx, abruptly off 0601 (Berman, WA); 0643 (Gilbert, CA).

Mexico: R. Universidad de Sonora, Hermosillo, 6115 in SS at 0500 w/pops, ID's, s/off w/anthem 0715 (Berman, WA).

Mongolia: R. Ulan Bator, 12015 from 1100-1130 (Gilbert, CA).

Morocco: RTV Marocaine, 15335 at 2334 in AA (Gilbert, CA).

Netherlands: R. Netherlands, 6020//6135//15315 at 0030-0125 close (Pannone, CT); 15150 at 1440 (Carson, OK).

Netherlands Antilles: R. Netherlands Bonaire relay, 6165 at 0350 (Carson, OK); 15315 at 0015 (Royston, HI).

TWR, 11815 at 1135 (Northrup, CT); 11930 at

Abbreviations Used in Listening Post

AA	Arabic
BC	Broadcast/ing
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North American
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South American
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel frequencies

0318 w/**Caribbean Connection** (Carson, OK); 15345 at 1140 w/**Bonaire Wavelength** (Zamora, ND).

New Zealand: R. New Zealand, 15150 at 0535 (Gilbert, CA); 17705 at 0441 (Ross, WA).

Nigeria: V. of Nigeria, 7255 at 0452, drums, IS, pgm info, & into pgm called **African Music** 0500-0600 & 1900-2000 (Pannone, CT); Nx in FF 0600 (Gelato, NY).

Northern Marianas: KYOI, Saipan, 9530 at 0957 w/IS, s/on 1000 (Robertson, MS).

KFBS, 11650 w/IS 0857 s/on & into rx pgm in RR (Robertson, MS).

Norway: R. Norway, 21705 in Norwegian at 1419, an EE ID 1428, off 1443 (Carson, OK).

Pakistan: R. Pakiston, 21575 w/slo speed nx 1105-1120 (Pannane, CT); 21735 at 1257 w/mx, AA ID (Robertson, MS).

Papua New Guinea: NBC Port Moresby, 4890 w/drama 1030, pgm notes 1050, mx, time tones 1059, nx (Robertson, MS).

R. Madang, Madang, 3260 at 1020 w/C&W mx, Pidgin anncr, local nx in EE 1100 (Royston, HI).

R. E. New Britain, Rabaul, 3385 at 0900 w/NBC national nx, into Pidgin 0920 (Royston, HI).

R. W. Sepik, Vanimo, 3205 at 0900. Pidgin ID as **Radio Sundown,** then nx (Royston, HI).

Paraguay: R. Nacional, 9735 at 0904 in SS w/mx, ID (Robertson, MS).

Peru: R. Atlantida, Iquitos, 4790 at 0922 in SS w/slogan, mx, commercials, ID 0929 (Robertson)

R. Tarma, 4775 at 1040 in SS w/Andean mx, commercials, time checks, ID's (Berman, WA).

La V. de la Selva, Iquitos, 4825 in SS at 1050 w/pop & Andean mxm ID (Berman, WA).

Philippines: R. Veritas Asia, 11760 at 1519 w/**Inside Asia** (Gilbert, CA); 15210 at 0938 in Korean (Robertson, MS).

Portugal: R. Portugal, 9705 at 0231 (Reynolds).

Romania: R. Bucharest, 9510 at 0302 in SS (Gilbert, CA); 11940 at 0222 (Reynolds, MO).

Saudi Arabia: BSKSA, 9720 at 1710 w/nx (Lynch).

Singapore: SBC, 11940 at 1148 in presumed CC, ID 1158, time tones, 2 more ID's, nx or commentary (Robertson, MS).

Solomon Islands: SIBC, 9545 at 0630 w/**Birthday Calls** (Lynch, HI); local nx 0733 (Royston, HI); 0742 commercials, regional nx, QRM'd by Australia after 0749. Also noted on 5020 at 1135 (Robertson, MS).

S. Africa, Rep. of: Radio RSA, 9580 at 0205 (Ross, WA); 9615 at 0201 (Reynolds, MO); 11805 (new) at 1358; 21535 at 1406; 21590 at 1842 (Carson, OK); 21590 at 1536 (Pannone, CT).

R. Orion, 4810 at 0155 w/pops, wx (Berman, WA)

R. Suid Afrika, 3320//4810 in Afrikaans 0355 w/call-in pgm, commentary, ID & off 0455 (Berman).

Radio 5, 11880 at 0529, pops, commercials, nx (Carson, OK).

S. Korea: R. Korea, 9750 at 1406 (Reynolds, MO); 13670 at 0925, into PP 0930 (Royston, HI); 15575 at 1428 (Ross, WA).

Spain: Spanish Foreign R., 9630 at 0540 (Gilbert, CA); 11730 at 0455 w/IS to 0500 & into SS (Royston, HI); 15110 at 0110 (Pannone, CT); 21460 at 2005-2100 (Tuchscherer, WI).

Swaziland: TWR, 11760 at 0630 in Swahili or vernacular (Carson, OK).

Sweden: R. Sweden, 11705 at 0323 (Ross, WA); 17815 at 1238 (Robertson, MS); 17880 at 1530 s/on, off 1558 (Yohnicki, ON); 21610 at 1402 (Carson, OK)

Switzerland: Swiss R. Int'l., 6135 at 0406 (Carson, OK); 12035 at 0113 (Pannone, CT); 0140 in II (Ross, WA); 17730 at 0216 (Reynolds, MO).

Syria: R. Damascus, 15095 & maybe 17710 at 2005-2105 (Pannone, CT).

Tanzania: R. Tanzania, 9684 at 1710 w/**Spotlight on Tanzania,** ID 1728, then **Radio Theatre** (Lynch)

Taiwan: VOFC (via WYFR), 5985 in CC at 0153 (Ross, WA); 7130 (direct) in JJ at 1117 (Robertson).

V. of Asia, 5980//7445 at 1530 w/mixed western mx (Lynch, HI).

Togo: RTT Lome, 5047 in FF at 0650 w/ID, but QRM'd from a Lotin on 5050 (Yohnicki, ON).

Tunisia: RTT Tunis, 7475 at 0448 in AA, ID 0500 (Robertson, MS); 11550 at 0521 in AA (Gilbert, CA).

Turkey: V. of Turkey, 9445 at 2346; 17760 at 0306 (Carson, OK).

U.A.E.: V. if the UAE, Abu Dhabi, 13605 at 2200 w/rx pgm, press review, editorials, ID (Miller, GA); 11965 at 2155 w/tone, IS, anthem 2200, ID (Robertson, MS).

UAE Radio, Dubai, 21605 at 1333 w/nx, local wx (Carson, OK).

USA: R, Marti (viq VOA), 11700 at 1240 in SS (Northrup, CT).

WMLK, 9465 at 0548 w/rx talks (Carson, OK).

KVOH, 17775 at 2130 (Carson, OK).

WCSN, 21640 to Africa at 1938 (Carson, OK).

WSHB, 7405 at 0000 (Pannone, CT); 13760 at 1439 (Carson, OK).

WRNO, 11965 at 1500; 13720 at 2330 (Carson).

VOA, 6020 at 0528; 9465 at 0344; 17785 at 2100; 21535 at 2200; 21610 at 1354 (Carson, OK); 9525 & 11965 at 1900-2000 & 2100-2200 (Pannone, CT).

USSR: R. Moscow, 9600 at 1230 (Reynolds, MO); 11730 at 0204; 11840 at 1833; 15585 at 0708; 17595 at 1718 (Carson, OK); 21690 at 0240 (Tuchscherer).

R. Peace & Progress, 11745 at 0330 s/on in SS (Robertson, MS).

Uzbek (SSR): R. Tashkent, 11785 at 1344 (Reynolds, MO); 15470 at 1329 w/IS, s/on 1330 (Robertson, MS).

Vanuatu: R. Vanuatu, 3945 at 0855, also 1032 in Bislama. Possible ID (Robertson, MS).

Vatican: Vatican R., 9605 at 0050 (Gilbert, CA); 11725 at 0251 in FF/EE (Carson, OK); 11780 at 0051 (Ross, WA); 17730 at 1530 (Yohnicki, ON); 17870 at 1511 close (Tuchscherer, WI); 21485 in SS at 1415 to 1425 close (Gelato, NY).

Venezuela: R. Tachira, San Cristobal, 4830 at 0240 in SS w/Latin mx, ID (Robertson, MS).

Vietnam: V. of Vietnam, 9950 at 1600 (Lynch, HI); 10010 in presumed CC at 1535 (Gilbert, CA); 15010 in JJ at 1441 (Ross, WA).

W. Germany: DW, 11865 at 0100 (Pannone, CT); 15105 at 0103 (Ross, WA); 11765 at 0610; 17825 at 0235; 17795 at 2035 (Carson, OK).

RFE, 11815 in Romanian at 0500, **Aici e Radio Europa Libera** (Robertson, MS).

Yugoslavia: R. Yugoslavia, 15102 (nominal 15105-- Ed.) at 0022 (Gilbert, CA).

Zanzibar: R. Tanzania-Zanzibar, 11734 at 1550, ID 1700 & nx in presumed Swahili, several mentions of Zanzibar & Pemba (Lynch, HI).

Many thanks to the following reporters this month: John Tuchscherer, Neenah, WI; Michael Yohnicki, London, ONT; Sergio Gelato, Ithaca, NY; James Ross, Vancouver, WA; Paul Dunn Lynch, Honolulu, HI; Jonathan D. Berman, MD, Amboy, WA; Anthony Pannone, East Haven, CT; L.R. Royston, Pahoa, HI; John S. Carson, Norman, OK; Tom Robertson, New Albany, MS; Warren Gilbert, Sherman Oaks, CA; Larry R. Zamora, Grand Forks, ND; Cliff Reynolds, Hazlewood, MO; John Miller, Thomasville, GA and Mark Northrup, Danbury, CT.

Until next month—good listening! **PC**

Beaming In

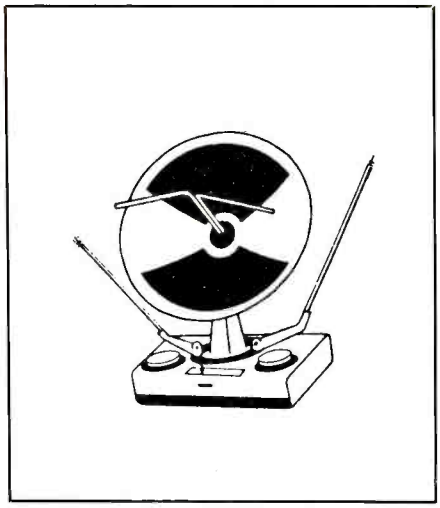
(from page 5)

sprinkling of indignant organizations, annoyed editors, and official FCC petitions in triplicate if there's any hope of escaping with our dignity and frequencies intact.

It was possibly a lack of necessary widespread reaction of shock and rage that allowed the ECPA to become rubberstamped into existence. And that's what became of the 220 MHz ham band. Unless a huge amount of people are willing to loudly make a conspicuous display of their displeasure in the mass media, to their elected officials, to bureaucrats, and anybody within earshot, then the ripoffs will continue to be heaped upon communications hobbyists—like the ECPA, the 220 MHz deal, as well as restrictions regarding SCA broadcasts, TVRO's, picking up signals from MDS stations, etc., etc. It should be obvious that the reserved and well-mannered defensive strategies that have been used in the past, just don't work when it comes to such things. We need lots more angry people out their in Radioland.

One of the first letters we received about the 220 MHz grab set forth a concept that has tantalizing possibilities. The writer observed that if frequencies are up for grabs by those who can think up alternate ways to use them, the hams should fight fire with fire. Surely, he said, hams can find dozens of sufficient reasons to ask the FCC to reallocate to the Amateur Service several juicy slices of VHF and UHF spectrum presently awarded to the Land Mobile services. Maybe those folks would like to defend their own turf for a change.

That's the kind of angry I like! We may have to use that tactic to hang on to the 6 meter ham band; more about that next month.



The wonderful dish-type indoor TV rabbit ears antenna!

A Real Thanksgiving Turkey

Few months back, readers from all over began mailing me copies of an ad that seems to be appearing in many supermarket tabloids. By now, I've collected about two dozen versions of this ad, each accompanied by a letter to me. A typical letter came with the copy of the ad sent to me by Jay, N3DAK, of Sacramento, CA. It read, "I don't know why, but when I saw the enclosed ad I instinctively thought of you and the fun you could have had with this amazing device."

The device in the ad is a miniature parabolic dish a few inches across that looks like a toy version of a backyard TV satellite dish. This sits on a base along with a pair of indoor TV *rabbit ears*. The main difference between this gizmo and any other *rabbit ears*, is that it sells in the $10 price range, which is considerably more than you'd pay for a pair of *rabbit ears* at your local TV shop or *Radio Shack*. Fact is, it doesn't do anything different than any other pair of *rabbit ears*, although many non-radio people I've shown the ad to seem convinced that the dish part of the contraption either picks up satellite signals, or cable TV, or HBO, and/or provides extra reception benefits along those lines. Yet, if you read the description provided, you see that it's been very cleverly and carefully worded to tell you that it's really not going to do anything for your TV reception that plain (minus the dish) *rabbit ears* won't do!

It's hard to believe that some who actually read the description only become all the more convinced that the dish is going to bring in satellite TV signals. The ad lets you know right from the start that although it looks like a satellite dish, it functions "just like ordinary rabbit ears." Because of that, it goes on to explain; it doesn't need to be installed or wired like a satellite dish; also, it's legal everywhere. And, since you aren't hooked to the cable or tuned in on any satellites with the antenna, you don't have to pay any cable or satellite fees. Just in case that sounded too good to be true, you are assured that it is guaranteed "not to utilize, replicate, transmit or interfere with any satellite signal," and that it "complies with all federal regulations."

For those who might think that it would be difficult for this 5 or 6 inch dish to suffice when a full-sized backyard dish is about 8.5 feet in diameter, there is information given that the antenna will work with all TV's, even those with screen sizes up to 7-feet. The technical explanation given for how this wonderful device works so well isn't based on any unsound or far out principles, and the user is relieved to learn that it's all accomplished "via proven RF technology—actually pulls signals *right out of the air*." What's best of all, it picks up TV Channels from 2 to 83; an especially good trick since Channels 70 to 83 were reallocated to other services years ago!

The description notes that the "marketing breakthrough" with this TV antenna is "not technical razzle dazzle," but basic "esthetic superiority." That means, it looks better than plain *rabbit ears* without the little dish. Can't beat that for an honest approach, can you?

Hard to believe that it was possible to top this absolutely hilarious ad, but it happened. A Florida company is even offering this same antenna for $34.98, and noted in their ad, "You may well have seen one selling at $10. Don't be fooled by ridiculously low prices. We won't sell junk!"

Are those readers who sent me copies of these ads persons who built the "truly fabulous" *Vampire Bat* CB antenna? The one that didn't create TV interference since it was a dummy load and didn't radiate any signal? It also had a perfect SWR match to any rig, an omni-directional null radiation pattern, could be used vertically or horizontally, and had so many other exciting features. I wrote it as an April Fool story in the 1960's, and it's hounded me ever since. PC

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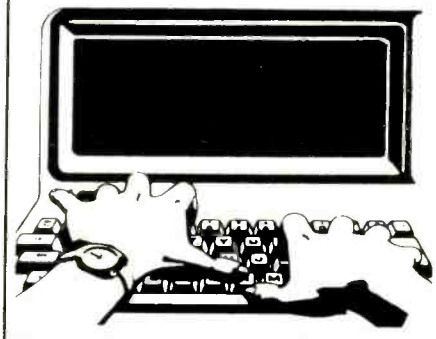
(Signature required on all charges.)

Advertiser's Index



Reach this dynamic audience with your advertising message, contact Don Allen, N9ALK at (217) 344-8653.

"The Largest Dealer of Scanners in the World"

SCANNER WORLD, USA®

10 New Scotland Ave., Albany, NY 12208 518/436-9606

Scanner World, USA®

— SPECIAL —

Regency®

MX-3000

Special $149.99

($7.00 shipping)

30 CHANNELS—MOBILE/BASE

—SCANNER WORLD EXCLUSIVE—

Features include simple programming of the following frequency ranges: 30-50 MHz, 144-174 MHz, 440-512 MHz. Digital display, priority, search, lockout, delay, dim control, top mounted speaker, one year factory warranty. Includes AC & DC cords, mobile mounting bracket, telescopic antenna. All for only ~~$189.99~~ plus $7.00 shipping (optional extended warranty: 3 years $39.99; 2 years $29.99.) MX3000 Service Manual $5.00.

Regency® Z60

60 Channel Automatic Programmable Scanner

Includes Public Service and Aircraft Bands

Scanner World Special

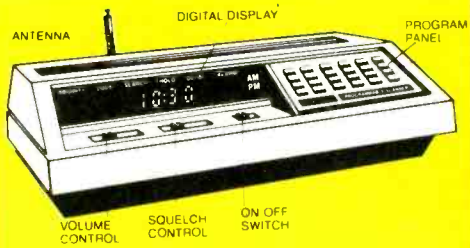
$119.99

(plus $7.00 shipping each)

Optional Accessories:

Cigarette Lighter Plug RGMPC . $4.95

Z Mobile Bracket — *Special* . . . $5.99



The Regency Z-60 is a compact, programmable 60 channel, multi band, FM monitor receiver for use at home or on the road. It is double conversion, super heterodyne used to receive the narrow band FM communications in the amateur, public safety and business bands: 30-50, 118-136, 144-174, and 440-512 MHz. Size 10¾"Wx2-7/8"Hx8-3/8"D.

Sophisticated microprocess-controlled circuitry eliminates the need for crystals, instead, the frequency for each channel is programmed through the numbered keyboard similar to the one used on a telephone. A "beep" acknowledges contact each time a key is touched. The Z60 scans approximately 15 channels per second.

Any combination of channels can be scanned automatically, or the unit can be set on manual for continuous monitoring of any one channel. In addition, the search function locates unknown frequencies within a band.

Other features include scan delay, priority and a bright/dim switch to control the brightness of the 9-digit Vacuum-Fluorescent display. The Z60 can be operated on either 120VAC or 12 VDC. Includes one year warranty from Regency Electronics (optional 3 yr extended warranty only $39.99, gives you a total of 4 yrs complete warranty or 2 yr extended warranty only $29.99, gives you a total of 3 yrs complete warranty.)

Cobra SR-15

$199.99 *($7.00 shipping)*

100 channel pocket sized hand-held scanner (6"Hx1"Dx2¾"W), no crystal, portable scanner, 29-54 MHz 118-174MHz, 406-512 MHz, bank scanning, backlit LCD display, automatic search, lockout, scan delay, priority, key lock, plus much more. Includes rubber antenna, rechargeable Ni-Cad battery pack, AC adapter charger, earphone, and carry case. optional cigarette lighter adapter #15MPC $12.99

BEARCAT 100-XLT Hand-held 100 Channel	$199.99 (7.00)
BEARCAT 70XLT Programmable Hand-Held	169.99 (6.00)
BEARCAT 55XLT Programmable Hand-Held	119.99 (5.00)
AD100U AC Adapter/Charger for 50 XL/55XLT	12.95 (")
BP55 Ni-Cad Battery Pack for 50XL	13.99 (")
VC001 Carry Case for 50XL/55XLT	11.99 (7.00)
PS001 Cigarette Lighter Adapter for 50XL/100XL/100XL	12.95 (")
BEARCAT 140 AC Programmable Scanner	94.99 (5.00)
BEARCAT 145XL AC Programmable Scanner	98.99 (5.00)
BEARCAT 175XL AC Digital Scanner	159.99 (5.00)
REGENCY TS-1 Turbo Scan AC/DC	169.99 (7.00)
REGENCY TS-2 Turbo Scan 800 AC/DC	274.99 ((8.00)
BEARCAT 210 XLT AC/DC Digital Scanner	189.99 (7.00)
BEARCAT 800 XLT AC/DC Digital Scanner	264.99 (7.00)
REGENCY MA-257 Cigarette cord for HX1000/1200	16.99 (7.00)
REGENCY MA-917 Ni-cad Battery for HX1000/1200	24.99 (")
REGENCY HX-CASE Hvy Leath. case for HX1000/1200	19.99 (")
FEGENCY MA-549 Drop in charger for HX1000/1200	29.99 (5.00)
REGENCY MX-3000 AC/DC Digital Scanner	149.99 (7.00)
REGENCY Z-60 AC/DC Digital Scanner	109.99 (7.00)
Mobile Mounting Bracket for Z Scanners	5.99 (")
REGENCY RH-256 High Band Transceiver w/Ant	329.99 (9.00)
REGENCY UC-102 Hi-VHF Hand Transceiver	124.99 (5.50)
REGENCY RH-606B High Band Transceiver w/Ant	469.99 (9.00)
REGENCY R806 AC/DC Crystal Scanner	79.99 (6.00)
REGENCY INF-3 AC Informant Receiver	139.99 (7.00)
REGENCY INF-5 AC Informant Receiver	119.99 (7.00)
COBRA SR35 100 Channel Hand-Held	199.99 (7.00)
COBRA SR12 Digital Hand-Held Scanner	189.99 (6.50)
COBRA SR10 Digital Hand-Held Scanner	124.99 (6.00)
COBRA SR900 AC/DC Digital Scanner	104.99 (5.00)
COBRA SR925 AC/DC Digital Scanner	99.99 (7.00)
Book "Top Secret Registry of Gov't Frequency" 6th	14.99 (3.00)
Book "Covert Intelligence, Electronic Eavesdropping"	8.95 (")
Book "Betty Bearcat Frequency Directory"	7.99 (")
Book "Rail Scan Directory"	7.95 (")
Book "Air Scan Directory"	12.95 (")
RCD MRP-1 Single Channel Hand-Held	38.99 (3.00)
FANON M8HLU DC Crystal Scanner	89.99 (5.00)
FANON PSK-1 AC Adapted for M8HLU	12.99 (")
REGENCY HX-1500 Hand-held Scanner	199.99 (8.00)
FOX Mounting Bracket for BMP-1060	9.99 (")
ANT-1 Magnet Mount Mobile Scanner Antenna	29.99 (3.00)
ANT-6 Base Scanner Antenna w/50' cable	29.99 (4.00)
REGENCY CB-ONE CB Radio	34.99 (5.00)

UNIDEN Bearcat BC-600 XLT

$199.99 *($7.00 shipping)*

Digital Programmable 100 Channel Scanner

BC-600 XLT covers the following frequencies: 29-54 MHz 118-174 MHz 406-512 MHz. Features compact size of 6-5/16"Wx1-5/8"Hx7-3/8"D, scan delay, priority, memory backup, channel lockout, bank scanning, key lock, AC/DC power cords, telescopic antenna, mounting bracket supplied, one year factory warranty, search direct channel access, track tuning, service search including pre-programmed frequencies by pushing a single button for police, fire, emergency, aircraft, weather, and marine services. Plus exclusive optional features never available on any scanner before. First is an RF receive amplifier for boosting weak signals for only $24.99 plus a CTCSS tone board is available for only $59.99 to make this the number one scanner available in the USA. Optional cigarette lighter plug #600MPC $4.99

BEARCAT BC-950XLT

Same features as BC-600XLT but also receives 800-954mhz.

$249.99 *($7.00 shipping)*

BEARCAT 70XLT

20 CHANNEL HAND-HELD SCANNER

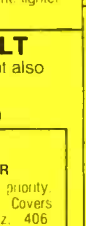
Small size 6"Hx1"Dx2¾"W, full digital readout, priority, search, channel lockout, scan delay, key lock. Covers following frequencies: 29-54mhz, 136-174mhz, 406-512mhz. Package includes rubber antenna, rechargeable Ni-Cad battery pack, AC adapter/charger, and carry case.

SPECIAL PACKAGE DEAL **$169.99** ($6.00 shipping each)

SCANNER WORLD EXCLUSIVE

UNIDEN BEARCAT BC205XLT

$259.99 *(7.00 shipping each)*



Digital programmable 200 Channel hand-held portable scanner with raised button keyboard for easy programming of the following frequency ranges: 29-54MHz, 118-175MHz, 406-512MHz, 806-956MHz. Features include: Scan delay, memory backup, key pad lock, sidelit liquid crystal display, channel lockout, 10 twenty channel banks, direct channel access, automatic search, full one year factory warranty, 10 priority channels, Ni-Cad battery pack, AC adapter/charger, flexible rubber antenna, carry case are all included. Size is 2-11/16Wx1-3/8"Dx7-1/2" high. (Optional extended 2 yr warranty $59.99, 3 yr extended warranty $79.99).

SCANNER WORLD SPECIAL

COBRA SR-925

$99.99

(plus $7.00 shipping each)

Digital programmable, 16 channel, AC/DC mobile/base, with raised button keyboard for easy programming of the following frequency ranges: 29-54mhz, 118-174mhz, 406-512mhz. Covering aircraft, marine, police, fire, weather, trains, public service, plus much more. Features include: digital display, priority, scan delay, weather button, channel lockout, search, scan speed, automatic squelch, memory backup, one year factory warranty, external speaker jack. (Extended warranty 2 years extra $29.99, 3 years extra $39.99.)

Regency HX-1500 Hand-Held Scanner Package

Deal includes MA-549 Drop in Charger

$199.99 *(plus 8.00 shipping)*

ORDERING INFORMATION

Call (518)436-9606 to place orders by phone or mail orders to ***Scanner World, USA***, 10 New Scotland Av., Albany, NY 12208. Orders will be shipped same day received by United Parcel Service. ***Scanner World*** accepts Visa, MasterCard (COD shipments by United Parcel will be cash or certified checks only). Mail orders with personal or business checks will be held 4 weeks for bank clearance. Orders with cashiers checks or money orders shipped same day received. Prices, specifications and terms subject to change without prior notice. If items are out of stock we will backorder and notify you of delivery date. All shipments are F.O.B. ***Scanner World*** warehouse in Albany, NY. We are not responsible for typographical errors. All merchandise carries full manufacturers warranty. Bid Proposals and Purchase orders accepted only from Government agencies. Free full line catalogue available upon request. New York State Residents add 7% sales tax. Any claims must be made within 7 days of merchandise receipt.

SHIPPING CHARGES

(*) Add ($) per scanner, and $3.00* for all accessories ordered at same time. C.O.D. shipments will be charged an additional $3.50 per package. Full insurance is included in shipping charges. All orders are shipped by United Parcel Service. Shipping charges are for continental USA only. Outside of continental USA, ask for shipping charge per scanner.

Scanner World, USA®

10 New Scotland Ave., Albany, NY 12208

(518) 436-9606

FAX #: (518) 465-2945

Most orders Shipped Same Day Received!

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* For More Information, call 1-800-999-2070

KENWOOD

...pacesetter in Amateur Radio

NEW RZ-1 Wide-Band Receiver.

Hear it All!

R-5000
R-2000
High performance receivers

Scan the entire frequency range from 100 kHz to 905 MHz with Kenwood's R-5000, R-2000 and RZ-1. Listen in on foreign music, news, and commentary. Monitor local police, fire, and other public safety services, as well as the Marine channels, and the many other services 50 MHz and above.

(The VHF converter options must be used in the R-5000 and R-2000.)

R-5000

The R-5000 is a high performance, top-of-the-line receiver, with 100 memory channels, and direct keyboard or main dial tuning—makes station selection super easy! Other useful features include programmable scanning, large, built-in speaker, 110 volt AC or 12 volt DC operation (with optional DCK-2 cable), VHF capability (108-174 MHz) with the VC-20 option, dual 24-hour clocks with timer, and even voice frequency readout with the VS-1 option.

R-2000

The R-2000 is an all band, all mode receiver with 10 memory channels and many deluxe features such as programmable scanning, dual 24-hour clocks with timer, all-mode squelch and noise blankers, a large, front-mounted speaker, 110 volt AC or 12 volt DC operation (with the DCK-1 cable kit), and 118-174 MHz VHF capability with VC-10 option.

Optional Accessories

R-2000:
• **VC-10** VHF converter • **DCK-1** DC cable kit for 12 volt DC use.

R-5000:
• **VC-20** VHF converter • **VS-1** Voice module • **DCK-2** for 12 volt DC operation • **YK-88A-1** AM filter • **YK-88SN** SSB filter • **YK-88C** CW filter • **MB-430** Mounting bracket.

Other Accessories:
• **SP-430** External speaker • **SP-41** Compact mobile speaker • **SP-50B** Mobile speaker • **HS-5** Deluxe headphones • **HS-6** Lightweight headphones • **HS-7** Mini-headphones.

RZ-1
Wide-band scanning receiver

The RZ-1 wide-band, scanning receiver covers 500 kHz-905 MHz, in AM, and narrow or wideband FM. The automatic mode selection function makes listening easier. One hundred memory channels with message and band marker, direct keyboard or VFO frequency entry, and versatile scanning functions, such as memory channel and band scan, with four types of scan stop. The RZ-1 is a 12 volt DC operated, compact unit, with built-in speaker, front-mounted phones jack, switchable AGC, squelch for narrow FM, illuminated keys, and a "beeper" to confirm keyboard operation.

Optional Accessory
• **PG-2N** Extra DC cable

KENWOOD

KENWOOD U.S.A. CORPORATION
2201 E. Dominguez St., Long Beach, CA 90810
P.O. Box 22745, Long Beach, CA 90801-5745

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

CIRCLE 41 ON READER SERVICE CARD