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POPULAR COMMUNICATIONS

JUNE 1989 \$2.50

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Incorporating SCAN Magazine The Official Publication of the Scanner Association of North America

Broadcast Jamming: Is It Over?

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- Scanning The Bandido Band
- Risky Air Rescue Comms
- WBTP: The Station That Wasn't
- Found: 1 Spy Radio!

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World's Most Powerful CB and Amateur Mobile Antenna*

Lockheed Corp. Test Shows Wilson 1000 CB Antenna Has 58% More Gain Than The K40 Antenna (on channel 40).

In tests conducted by Lockheed Corporation, one of the world's largest Aerospace Companies, at their Rye Canyon Laboratory and Antenna Test Range, the Wilson 1000 was found to have 58% more power gain than the K40 Electronics Company, K40 CB Antenna. This means that the Wilson 1000 gives you 58% more gain on both transmit and receive. Now you can instantly increase your operating range by using a Wilson 1000.

Guaranteed To Transmit and Receive Farther Than Other Mobile CB Antenna or Your Money Back**
New Design

The Wilson 1000 higher gain performance is a result of new design developments that bring you the most powerful CB base loaded antenna available.

Why Wilson 1000 Performs Better

Many CB antennas lose more than 50% of the power put into them. The power is wasted as heat loss in the plastic inside the coil form and not radiated as radio waves.

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it.

In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

In order to handle higher power for amateur use, we used the more efficient direct coupling method of matching, rather than the lossy capacitor coupling. With this method the Wilson 1000 will handle 1500 watts of power.

The Best You Can Buy

So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula 1, you name it) or your money back!

Lockheed - California Company
 4000 S. Rye Canyon Blvd., Dept. 4010
 4000 S. Rye Canyon Blvd., Dept. 4010
 81000 Rye Canyon, Nevada 89015
 Aug. 21, 1987

Wilson Antenna Company Inc.
 3 Sunset Way Unit A-10
 Green Valley Commerce Center
 Henderson, Nevada 89015

Subject: Comparative Gain Testing of Citizen's Band Antennas
 Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below:

FREQUENCY(MHZ)	RELATIVE GAIN(dB)	RELATIVE POWER GAIN(%)
26.965	1.30	35
27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
27.215	1.60	45
27.265	1.75	50
27.315	1.95	57
27.365	2.00	58
27.405	2.00	58

58% MORE POWER GAIN THAN THE K40

A complete description of this test is contained in file #870529. Excerpts of this report are enclosed.

Louis Wilson, Antenna Engineer
 Electromagnetics Laboratory

Approved:
W. C. Weikel
 W. C. Weikel, Group Engineer
 Antenna/ATS Support Laboratory

INTERNAL VIEW Wilson 1000

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 Magnetic Mount89⁹⁵
Wilson 1000 Trucker59⁹⁵

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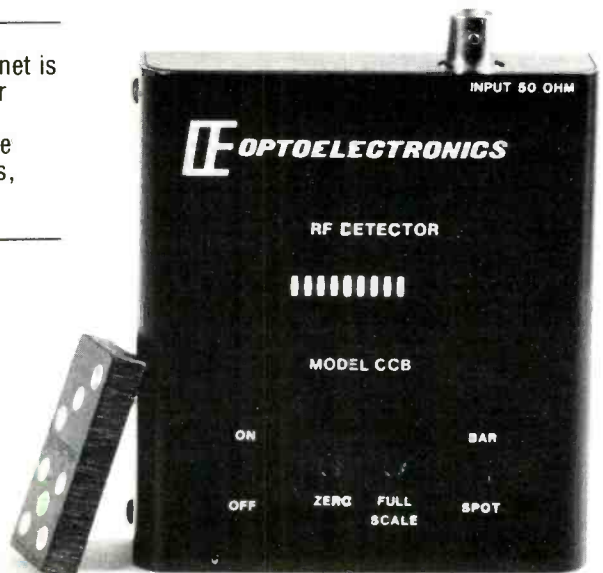
MODEL	2210 <i>New</i>	1300H/A	2400H	CCA	CCB <i>New</i>
RANGE: FROM	10 Hz	1 MHz	10 MHz	10 MHz	10 MHz
TO	2.2 GHz	1.3 GHz	2.4 GHz	550 MHz	1.8 GHz
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PRICE	\$199	\$169	\$249	\$299	\$99
SENSITIVITY					
1 KHz	< 5 mv	NA	NA	NA	NA
100 MHz	< 3 mv	< 1 mv	< 3 mv	< .5 mv	< 5 mv
450 MHz	< 3 mv	< 5 mv	< 3 mv	< 1 mv	< 5 mv
850 MHz	< 3 mv	< 20 mv	< 5 mv	NA	< 5 mv
1.3 GHz	< 7 mv	< 100 mv	< 7 mv	NA	< 10 mv
2.2 GHz	< 30 mv	NA	< 30 mv	NA	< 30 mv

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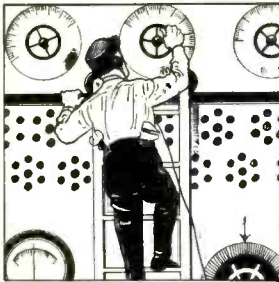


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SCAN Magazine

JUNE 1989

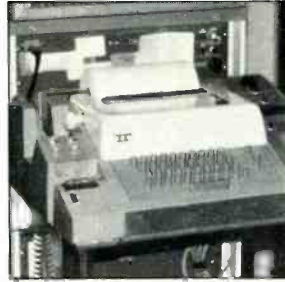
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This month's cover: VOA transmitter site south of Munich at Holzkirchen, Germany. Photo by Larry Mulvehill.

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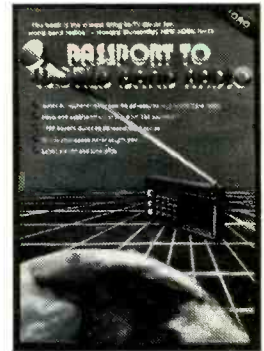
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AN EDITORIAL

Moon, June, Ruin

For those who were too clumsy to let near the high school woodwork shop's bandsaw, and who couldn't be trusted not to burn down the building while attempting sweat soldering in the metalwork shop, there was an alternative. When all else failed, there was always Mr. Costa's electrical shop. This was the shop class of last resort where the school probably figured the worst things that could happen were a few shocks and popped fuses, although the teacher wasted no time in assuring us that the hope was that at least some of us would get electrocuted since there weren't any other shop courses in which to enroll us.

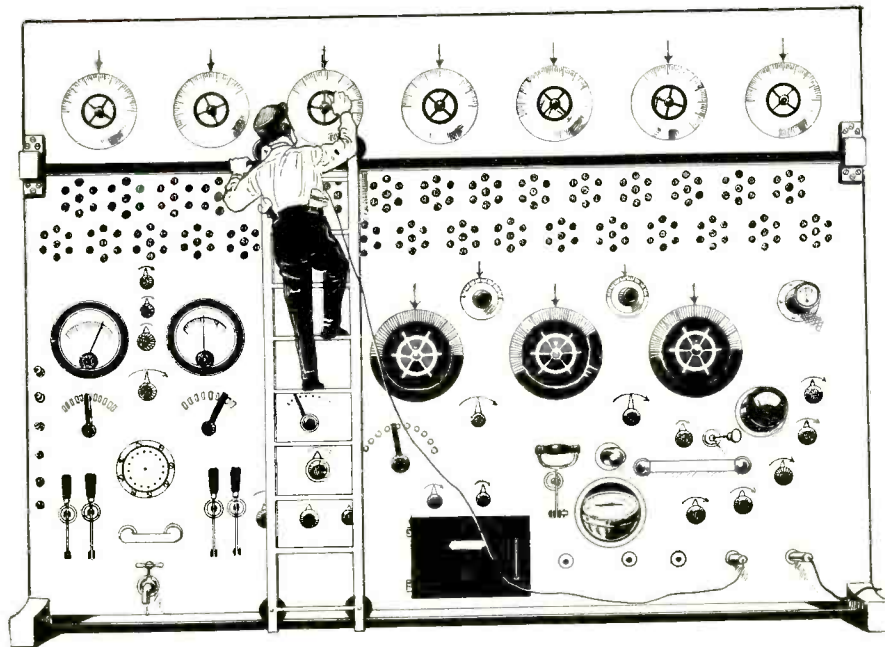
For me, in 1949 at age sixteen, I looked forward to Costa's class. He was a crusty character who promised to teach us something about radio. I was a confirmed radio nut. This was my kind of class.

The first couple of weeks we spent making different splices and learning how to use a soldering iron. Then came the good part. Costa invited each shop student to purchase a Meissner receiver kit and we would build them. This is what he had become famous for. If you took woodwork shop, you emerged with bookends and a useless (in New York City) birdhouse. The metal work shop ended you up with a pair of hideous tin candlesticks. But when you got out of Costa's electrical shop, you had a working radio, albeit a simple circuit with plug-in coils.

Each of us built our own regenerative receiver with loving care. After several weeks they were all finished. A few actually worked on the first try. Those that didn't work, Mr. Costa would tinker with until they'd begin to work. As little, basic, and dinky as these receivers were, when you built one and finally got it working you really felt a sense of accomplishment. It was as if you had assembled some major piece of highly sophisticated electronic hardware and were well on your way to being admitted to M.I.T.

One of the things about these regenerative sets was that they were prone to interacting with other receivers. Sometimes, I'd be minding my own business, sitting with my headphones on listening to *Casey, Crime Photographer* or *Mister District Attorney*, and I'd suddenly find myself listening to the squeal sent out by one of those receivers in the neighborhood.

That's the way it was one June evening when I became aware that someone had tuned their receiver so that the program I



"It was as if you had assembled some major piece of highly sophisticated electronic hardware . . ."

wanted to hear was buried under a terrific howl. After a few minutes of trying to endure this mess, I retaliated. Grasping the tuning control, I swept it back and forth in the hopes of giving the other set owner a dose of his own medicine.

As soon as I stopped, the owner of the other set responded by doing the same thing. Just to confirm that it wasn't an accident, I tried it again. Same response. Primitive two-way communications had certainly been established. But with whom? And where? I was on the fourteenth floor of an eighteen story building, with other tall buildings all around.

For several subsequent nights I was able to engage in this same contact, either initiating the exchange or responding to the wavering invitation signals from the other station. While there wasn't any sense at all to these communications, to a sixteen year old who was fascinated by radio, it was enough to maintain some level of interest.

Then, something amazing happened. One evening, the other station didn't do its usual wavering. Instead, the signal went on and off, slowly, and in a pattern. It was CW, just one letter repeated several times. I responded as soon as it stopped, but all I could do was vary my set's tuning knob in reply.

The following day, I hooked up a CW key

to the receiver's longwire antenna. I didn't know a *dit* from a *dah*, but the other operator didn't seem any to be any more proficient than I was. When the other station began sending its single letter to me, I repeated it back. We then went on to the other letters at random, ending the evening's communications with a recap of all of the letters and numbers that had been sent.

Within a couple of days, we began attempting to exchange very simple messages in slow, faltering, error-ridden CW. I was holding a CW chart in one hand while this took place. The other operator was obviously doing the same. Each simple exchange of information those first few nights seemed to take forever.

The other operator provided the handle Mickey. I had gone through school with a guy everybody called Big Mickey. He was the class geek, the kid who ate pencil erasers, library paste, even gerbil food. This guy was two years older than everyone else in the class, he could turn his eyelids inside out, and had an aversion to tying his shoelaces. This was the only Mickey known to me and there was a horrible thought that I had just devoted all of this time exchanging

(Continued on page 73)

MAILBAG

LETTERS TO THE EDITOR

Each month we select representative reader letters 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.

An Alice By Any Other Name

Recently, at a social gathering, I met your columnist, Alice Brannigan. I found her to be a very pleasant person, and was surprised when she told me that more than a year ago she had OK'd the magazine's use of her real name on her bylines, but that you had turned down the idea. I hadn't heard this before and am curious as to why the change has not been made.

Vendel Boeree, WA2LIP,
Bay Shore, NY

What, and spoil everybody's fun? That she had approved our (optionally) using her actual name isn't any big secret. I even spoke about it over the air months ago when I was on Pat Murphy's program over WNIS in Portsmouth, VA — Editor.

Armored DX

I'm a POP'COMM subscriber and wanted to let you know about a strange contact recently. I was in a USMC armored vehicle engaged in a training exercise at Fort A.P. Hill, VA. Our callsign was "Green 2." At this time, we heard a station calling itself "Skywatch" coming through on our frequency of 38.35 MHz. "Skywatch" told us his location was Fort Collins, CO and said something about the frequency being authorized by the FAA. This contact was at 1200 local time. Would appreciate it if any reader could provide any specific information on this unusual skip contact made from a USMC armored vehicle on the high ground at Fort A.P. Hill.

L/Cpl. Tietnan Leavy,
P.O. Box 147,
Jacksonville, NC 28540

The 30 to 50 MHz "low band" is getting really hot these days. If any reader has information on the Fort Collins station, contact L/Cpl. Leavy directly — Editor.

Skippin' On Towards France

Skip DX reception above 30 MHz has captivated me! I have managed to identify commercial, public safety, and federal government stations in many states, Canada,

and throughout Latin America in the "VHF Low Band." Can anybody help me identify an apparent broadcast station (French speaking) operating on 50.10 MHz in the 6 Meter ham band? Sometimes that comes through during band openings, along with European hams.

L.J. Ricks, KRI1KG,
Pawtucket, RI

Your mystery station on 50.10 MHz is the studio/transmitter link used by an FM broadcaster in France. That station is "Radio France Bordeaux Gironde," which runs its regular broadcasts on 100.1 MHz. Their address is Post Office Box 585, 33006 Bordeaux Cedex, France — Editor.

Card Quest

After sending out exactly 100 SWL cards containing detailed reception reports to American and Canadian ham operators, I must sadly report that I got back a total of 17 ham QSL cards. While I didn't expect a 100% return, I thought I'd receive 75 to 80 QSL's in return. This was certainly a very disappointing experiment for me. You'd think that a QSL card in response to a SWL card would be regarded by most hams as a wonderful encouragement to join the ranks of ham radio. It sort of discouraged me about getting into that hobby.

Bill Christiansen,
Wausau, WI

By "that hobby," I'm not sure whether you mean ham radio or sending out SWL reports to ham stations. Years ago you might have been able to expect about a 60% return, with the majority of QSL's containing a few words suggesting that you get yourself a ham ticket and join the fun. These days, printing costs and postage rates are such that many hams don't even seem to QSL 100% on their actual contacts anymore, saving their pasteboards and postage only for those whose cards they need to qualify for awards. Chances are that 15 of the 17 QSL's you got came from oldtimers who got started in radio by sending SWL cards to hams. So, I wouldn't let your low response discourage you about getting into ham radio. You might, however, wish to reconsider your participation in the hobby of sending SWL cards to North American hams in order to acquire some decorations for your radio room walls. You'll get a better return from Shortwave broadcasters — Editor.

Pirate QSL Problem

A number of months ago, per announced instructions by pirate station WROX, I sent a

reception report for the station in care of *Popular Communications*. The hope was that I would receive a QSL in return. For my troubles I received nothing. If POP'COMM is going to make these kind of arrangements with such stations, then I would expect that you'd take your responsibilities with some diligence or else provide a better address for QSL requests.

Ted Orjelick,
Hamden, CT

We have never agreed to act as a mail drop for any pirate station or stations. Still, many stations have advised listeners to send reception reports to them in care of our offices. It's rather a cruel deception to hobbyists who are so anxious to get the rare pirate QSL's that they're often willing to use any mail drop address that's announced. As we have mentioned numerous times in the magazine, all such letters are thrown out when they arrive here. Although we don't keep any totals, last year alone we tossed out well over a hundred letters sent to us for forwarding to pirates WFIX, KBFA, WROX, Wabbit Radio, and several other stations. Pirate station addresses, when known, are presented in our "Pirate's Den" column. — Editor

Would Get A Ham Ticket, If Only. . . .

With regard to the question of whether the code (CW) requirement for a ham radio license should be retained or dropped, I'd like to offer my opinion. Nothing I've yet read on this debate has pointed out that inasmuch as keyboards can be interfaced with amateur equipment to send code, and many CW "reading" terminals are available, these devices have relegated manual telegraphy transmission and reception to that of a non-essential curiosity. Under the circumstances that a person is still being compelled to demonstrate a working knowledge of CW, even if they never intend using the mode, they should also require a person to pass a spelling test! I'm an avid scanner monitor. By profession, I'm an engineer with a major electronics firm. I would very much like to obtain an Amateur Radio License. However, just as a matter of principle, I refuse to waste my time learning and then demonstrating the knowledge of a mode in which I have no interest, and which is not even used in the UHF portion of the spectrum where I would be operating. I applaud the position *Popular Communications* has taken on this matter.

Thad Deveroux,
Chicago, IL

A Worthy Cause

It has been three years since I became aware of *Popular Communications* through the article you ran in the June '85 issue entitled "Father Murgas: Radio's Forgotten Genius." The article has been very helpful in drawing attention to this inventor whose wireless patents from 1903 predate Marconi's. We have been endeavoring to convince the U.S. Postal Service to issue a commemorative postage stamp for Slovak Heritage which depicts Fr. Joseph Murgas. Two Pennsylvania State Resolutions (SR 82 of 1985, and HR 25 of 1987) have recognized Fr. Murgas, but we still have not been successful with the Postal Service. We invite all of your readers to write to the U.S. Postal Service on behalf of this unrecognized genius. We can use all of the help/support we can get. Readers wishing additional information many contact our organization.

John J. Kovalic, Chairman,
Slovak Heritage Stamp Committee,
739 Deatrich Ave.,
Middletown, PA 17057

This is a worthwhile cause which we at POP'COMM wholeheartedly support. Murgas had to show Marconi how to send wireless messages over land. Murgas did it all before Marconi—a documented fact. Now let's help to finally get this good man the recognition he deserves. — Editor

Scare Tactic

Your thoughts on instituting a ham license without the code requirement posed worthwhile food for thought. From what I understand, though, there is some concern that such a move could cause the ham bands to become inundated with outlaw operators moving out of their present 27.415 to 27.995 MHz band.

Laurance Hotchkiss,
Little Rock, AR

I've heard that, too, although I don't see any particular reason why instituting a no-code ham ticket would trigger such a calamity. Outlaw operators have been using 27.415 to 27.995 MHz for many years now and they seem quite happy there chatting with others of their own ilk. Only rarely have any of these people wandered above 28 MHz to attempt bootleg ham communications, although their equipment is easily able to do so. The truth of the matter is that a considerable number of these people already have ham licenses, but operate on "Freeband" simply because they like the people who operate there. While a no-code ham license would probably cause many "Freeband" operators to obtain such licenses, "Freebanding" appears to have a loyal following of operators who will remain there because they have no interest in becoming involved in ham radio. Basically, my own views of the concerns you mention are that they are without merit and are grasping at straws by those who don't want to see a no-code ham license, and who have absolutely no knowledge at all of the "Freebanders." Between

you and I, Larry, other than the fact that "Freebanders" are operating without licenses, they seem to be reasonably good folk who are hardly the wild eyed and irresponsible crazies that some folks would have you believe. When the FCC catches these people they put them through the wringer, which is a chance they have elected to take for their own reasons. For the most part, however, they mean no harm to ham radio. The only real threat they pose is to the FCC's regulations and to themselves. — Editor

RTTY A La Mode

The RTTY section often contains listings of stations utilizing ARQ-E mode. I have tried tuning in these stations, but my RTTY terminal doesn't appear to be able to copy this mode, even when set to copy ARQ stations.

Sandy Buczynski, KOR7RB,
The Dalles, OR

ARQ-E is a synchronous single-channel full-duplex mode that is different than what your unit identifies as "ARQ" mode. Until now, only certain European-made RTTY readers could copy ARQ-E signals. Inasmuch as the mode is beginning to gain in popularity, it (and another mode known as ARQ-E3) is included in the features of the Universal M-7000 Version 2. Owners of the

original M-7000 (Version 1) can retrofit their units by changing a single chip, which is available for relatively low cost from Universal Amateur Radio in Ohio. — Editor

Hard Cell

You have taken frequent digs at cellular telephones, yet in the December issue, you said that you have a cellular telephone. Me-thinks I detect doublespeak.

Anthony Beneggia,
Winchester, IN

I have two cellular 'phones, one aboard my boat and the other in one of my cars. These have been mentioned in these pages several times and they're extremely useful. My quarrel has never been with the technology. I do, however, think that there is a definite sleaze factor involved in other some aspects of the industry behind CMT's. I don't like the smell of the Electronic Communications Privacy Act and the way the industry slipped it past politicians who hadn't the foggiest notion of the true issues involved. I think the cost of the equipment is twice what it should be, as is the cost of air time to use the equipment. Furthermore, I feel that the practice of telling the public that they have a CMT for "99 cents a day" without stating that using the thing may add as much as \$200 (or more) per month to the tab, is really raunchy.

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CIRCLE 83 ON READER SERVICE CARD

OFFICIAL NEWS COLUMN OF THE SCANNER ASSOCIATION OF NORTH AMERICA

**Victory In Scanner Labeling/
Manufacturing Ruling!**

To those who are skeptical about how your government agencies work—especially in cases where commercial interests with almost unlimited resources are involved—take heart! The Federal Communications Commission has proven again that it does listen to organized citizens groups and is willing to make fair rulings in the face of enormous opposing pressure influential special interests.

For those of you unfamiliar with the background of this case, the FCC action culminates years of action by SCAN to protect the traditional American right to free access to the airwaves. Beginning with efforts by some interests in the cellular telephone industry to ban scanners, or at least restrict their frequency coverage, SCAN was successful in having any manufacturing ban included in the Electronic Communications Privacy Act. Having been defeated in the Congress, these same interests began pressuring the FCC to ban manufacturing. In an effort to head off this attempt, Regency Electronics in 1987 suggested that the FCC require warning labels on scanners.

A special acknowledgement should be given here to the many SCAN members who donated money to the SCAN Legal Defense Fund, allowing us to obtain top-notch legal assistance in Washington. The pertinent parts of the FCC Report and Order are reproduced below

Introduction

1. By this action, the Commission is terminating this proceeding without adopting the proposed rules to require advisory labeling of scanning radio receivers and manually tuned radio receivers that are intended for use by the general public and are capable of receiving communications protected by the Electronic Communications Privacy Act of 1986 (ECPA).¹

Background

2. The ECPA was enacted expressly to extend the protections of the Omnibus Crime Control and Safe Streets Act (Safe Streets Act). 18 U.S.C. Sections 2510-2520, to radio communications. Generally, the Safe Streets Act, as modified by the ECPA, now prohibits, unless one party consents or a court order has been obtained, the interception of all forms of common carrier communications, except cordless telephones and tone-only paging communications, and of any non-common carrier or private radio communications when they are encrypted, scrambled, or "transmitted using modulation techniques whose essential parameters have been withheld from the public"²

3. On March 31, 1987 Regency Electronics (Regency) submitted a petition for rule making requesting that the Commission amend Part 15 of its rules to require the following advisory label on radio frequency scanning devices: "Improper use of this device may violate the provisions of the Electronics Communications Privacy Act of 1986 through the intentional unauthorized interception of protected radio communications." Regency stated that requiring labeling would help educate the public that certain uses of scanners could be illegal in light of the ECPA.

4. In response to the petition, the Commission, on May 27, 1988, adopted a *Notice of Proposed Rule Making (Notice)* in the above captioned proceeding.³ The Commission observed in the *Notice* that, while the ECPA placed no direct obligation on the Commission, the Senate Report that accompanied the ECPA indicates that labeling of devices might be an acceptable method of fostering compliance with the law.⁴ Moreover, the Commission tentatively concluded that a label appeared to be the simplest and least burdensome method of advising general radio receiver and scan-

ner users of ECPA prohibitions.⁵ The *Notice* proposed that scanners and manually tuned receivers intended for use by the general public and capable of receiving protected communications be required to bear an advisory label concerning the ECPA. The *Notice* did not propose specific wording for the label, but instead requested comments as to the appropriate wording and message content of the label. Comments were also requested regarding the appropriate location for the label as well as the possibility of requiring not only a label but some accompanying instructive material pointing more specifically to communications intended to be protected by the ECPA." The *Notice* also addressed the possibility of technically "blocking" frequencies which carry protected communications. The Commission noted, however, that this approach may not be practical because many frequencies are used for both protected and unprotected communications. Comments were filed by ten parties and reply comments were filed by four parties. A list of the parties filing comments and reply comments is contained in appendix A.

Comments

5. The comments received in response to the *Notice* were primarily from two groups, cellular radio telephone interests, and organizations whose members have a common, active interest in the recreational monitoring of the radio spectrum.⁶ All of the comments oppose the specific proposal set forth in the *Notice*, but for different reasons. The cellular radio telephone group believes that labeling is an insufficient means for ensuring the ECPA intended protection of cellular communications. Some commenters argue that a warning label, by calling attention to the prohibited activity, might actually encourage violations of the ECPA. Other commenters argue that compliance with an advisory labeling requirements may shield manufacturers from liability for violations of the ECPA. Telocator expresses this concern when it states that, "by reducing the manufacturers' risk of liability the Commission, may in turn, also reduce the economic incentive of the manufacturer to modify its receivers in a manner that will prevent the unauthorized interception of protected communications."⁹

6. The recreational radio monitoring interests agree that some communications should be protected, but disagree with our proposed method. The Scanner Association of North America (SCAN) in its comments asserts that if labeling requirements for receivers are adopted, then transmitters capable of transmitting protected communications should also be labeled to alert users that their conversations may be monitored. SCAN suggests that, in addition to the advisory label, a clear explanation be contained in the owners manual or elsewhere defining "protected communications," SCAN goes on to explain that, without such an explanation, the label may merely serve to disturb the consumer, or might convey the wholly unwarranted and highly objectionable impression that the mere possession of the device is a violation of the ECPA. The Association of North America Radio Clubs (ANARC) agrees with SCAN that information sufficient to deter violations of the ECPA cannot be contained on a label and suggests at least a full page statement devoted to explaining the provisions of the ECPA be contained in the instruction manual accompanying the device.

7. Two commenters, Telocator and ANARC, contend that it is premature to consider actions concerning the ECPA since the law has been in existence for only a short time.¹⁰ Telocator and ANARC argue that there has not been a demonstrated need for the Commission to take any action concerning the provisions of the ECPA. They indicate there was no evidence supplied in support of Regency's petition nor any evidence submitted that the ECPA is in-

(Continued on page 70)

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The Jamming Stops – Free Air At Last

What's Behind The Recent Cessation Of International Broadcast Jamming? Is It Too Good To Be True. What's Next?

BY GERRY L. DEXTER

We all know that elephants are mighty heavy creatures. But the fact isn't really brought home to you unless one of these Dumbos happens to step on your toe. We all know that Washington is crammed with thousands of lobbyists, but most of us never really felt their presence until some among them brought about the Electronic Communications Privacy Act.

The steady stream of news about the new openness in the Soviet Union and the remarkable changes in its stance on the world stage, again, may have been noted, but not really have sunk in with many of us. Not until one such change hit us right in the shortwaves. Over a few weeks' time in late 1988, the Soviet Union and its East Bloc friends ceased virtually all jamming of western shortwave broadcasts.

Sign some treaties, let some dissidents leave, permit commercial advertising in state newspapers—that's all wonderful—but the end of jamming touched us directly. Even if we had heard or read absolutely nothing about all the other changes the end of jamming, in and of itself, would speak volumes.

Since the early 1950's, when the communist world got into the practice in a really big way, they've been condemned for it again and again. Various world agencies and international agreements including committees of the United Nations, the UN's International Telecommunications Union, the Helsinki Conference on Security and Cooperation in Europe and, of course, the nations and broadcasters which were targets of the jamming effort all raised protests. On a very much smaller scale, so did various hobby groups.

In the 1950's and 60's, Arthur Bear, head of the England's International Shortwave Club waged a one man campaign—to the point of obsessiveness—to try and bring an end to jamming. Members were asked to have no correspondence with stations in countries engaging in jamming—indeed, to boycott listening to broadcasts from the guilty countries. Like the other efforts by hobby

groups, Bear's campaign, even though it ran for years, had all the effect of a flea taking a bite out of a rhino.

Who Started It All?

The Soviets did not invent jamming. The Germans did, and well before World War II. The first use of jamming is generally thought to have occurred in 1915, during the first World War when the German Post and Telegraph Office put a 5 kW station on in order to jam coded messages being transmitted between Paris and St. Petersburg (France and Russia were allies against the Germans). In 1934 the Austrian government jammed propaganda broadcasts from Nazi Germany. Once World War II got going, nearly everybody was jamming everybody else, using various methods and for a multitude of reasons, including a desire to block the enemy's broadcasts and the hope of disrupting his battle communications.

The end of the war saw jamming nearly vanish from the airwaves, however briefly. The defeated enemy was hardly in a position to be concerned about such things and the US and USSR were enjoying an all too brief period of more or less friendly relations.

It did not last. In 1948, the Soviets placed a dozen or so jamming stations on the air in an effort to block reception of the Voice of America's Russian service.

Getting Serious

Then they got serious. Just two years later the Soviet Union was estimated to have some 400-500 jamming stations in operation. Another year later, the USSR's East Bloc friends joined the campaign and, by 1952, there were an estimated 1,000 active jammers. By the mid-1950's that figure had been raised to between 2,000 and 3,000! Fortunately, it was never revised upward any further.

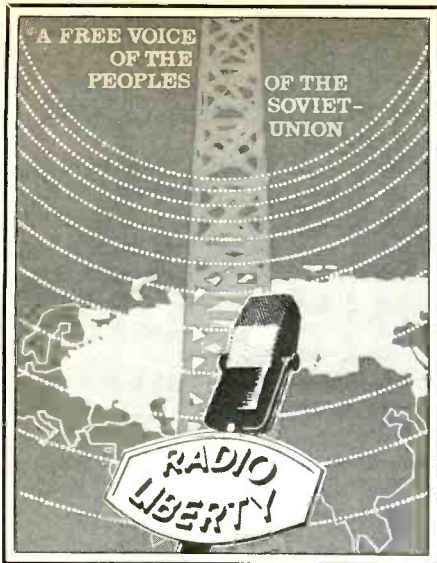
The dramatic increase in the jamming effort in the early 1950's was a direct result of the start up of Radio Free Europe. RFE, ini-



The VOA—"Broadcasting to the World" is now heard much better in a large part of it.

tially, was cloaked as an independent station but was actually a CIA operation though it later became an open and directly funded US government station. RFE beams broadcasts to the Eastern Europe countries, serving as a sort of surrogate home service.

In 1953, a sister station, Radio Liberation (now Radio Liberty) began broadcasts in native languages (mostly Russian) aimed ex-



An older QSL from Radio Liberty.



Master Control for both RFE/RL, from where programming is fed to transmitters in Spain and Portugal.

clusively at the Soviet Union and jamming efforts against that station began immediately.

All along, the Soviets have had a particular hatred of RFE/RL. The stations have been denounced on numerous occasions by official Soviet media. A few years ago a movie about the station—"Can Can in An English Garden," played to packed movie

houses in Moscow. The plot had a KGB agent infiltrating the station's Munich headquarters and discovering it to be a tool of the CIA, run by drug dealers and perverts.

Ebb And Flow

There have been many ups and downs in jamming efforts over the four decades its been used by the USSR and its satellite na-

tions. In 1956 the Poles lifted jamming against RFE's Polish service. But in 1970 they resumed it when worker riots hit several cities. The international service of Radio Warsaw, as it was called then, had to be cut back so some of its transmitters could be used for the task.

Jamming fell off somewhat in 1963, after a nuclear test ban treaty was signed and oth-

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er east-bloc nations eventually began to reduce their efforts here and there—some experts think that was due as much to the expense involved as anything else. Jamming jumped up again in 1968 after the Soviet invasion of Czechoslovakia. Another significant upsurge occurred around 1980, after the USSR invaded Afghanistan. Charted with a rising/falling red line, jamming activity over the last ten years or so might give the appearance of a business with a declining sales trend.

The Voice of America and RFE/RL certainly haven't been the only one's on Moscow's hit list. The BBC, Voice of Germany, Voice of Israel—even Radio Peking (Beijing) was a target for much of the period during which the two nations were most at odds. In fact, the well known Radio Mayak (Lighthouse) service is said to have had its origins as a jamming operation against the Chinese. Moscow also used a technique in which it simply rebroadcast China's own programming on frequencies which carried Beijing's Russian service.

Many of the Russian jamming stations "identified" themselves—sending a double letter or letter/number combination every

minute or so, so that Soviet engineers could track the effectiveness of the stations. Often there would be a number of jammers on a single frequency, all of them targeting the same service. Western experts have estimated that there were anywhere from 5,000 to 15,000 people employed in the Soviet jamming industry, an effort said to have cost as much as \$1 billion a year in recent years.

Even with all of that effort, some broadcasts got through. Stories of city residents driving into the country to hear the broadcasts, of various programs being transcribed and passed around, are common.

No "All Clear" . . . Yet

The Russians and East Europeans have hardly been the only guilty parties in recent history. Many countries have used jamming as crises developed or pocket wars flared up. England has jammed the Voice of Greece and the offshore pirate radio station Radio Northsea International (around 1969-70). Greece and Turkey jammed each other's broadcasts to Cyprus, Israel and Egypt have both jammed broadcasts from various Arab nations at various times.

The Smith regime in Rhodesia (Zimbabwe) jammed broadcasts from the BBC's Botswana relay station, far right regimes in Chile have jammed Radio Moscow and Radio Havana Cuba.

Actually, the jamming has not fully stopped, even today. Voice of America broadcasts in Dari and Pashtu, beamed to Afghanistan, are still jammed (though the "Radio Free Afghanistan" service being carried on RFE/RL facilities is apparently clear.) Deutsche Welle's broadcasts to Afghanistan are also still being jammed.

Bulgaria religiously jams the Bulgarian language program from Vatican Radio, along with those from Radio Tirana, the Voice of Greece, Italy's RAI, Radio Beijing and the Voice of Turkey. China—despite the occasional hand of friendship offered to Taiwan, still attempts to block broadcasts from Taipei. The Iraqi "bubble" jammers are still at work against Iran, music jammers and other techniques are used against the FMLN's clandestine Radio Venceremos and there are a number of other instances of this type. This sort of thing is always going to be with us, no matter how cozy relations between the big powers may become.

This end, or near-end, to jamming is creating some additional benefits besides a reduction in interference. It's not necessary to employ so many transmitters to get the program through to the target area now so the VOA, at least, is cutting back on the number of frequencies it employs for certain services.

The end of jamming also raises an eyebrow in another area: what use, if any, will Moscow now make of all those jamming transmitters? If you are reading this in the embassy, comrades—more Radio Moscow-Radio Peace and Progress-Radio Atlantika-Radio Mayak-Radio Rodina frequencies we don't need.

For the moment, at least, things from a jamming standpoint are better on the short-wave dial than they've been in 41 years. For that we can only say "Thank you, Mr. Gorbachev!"

And, goodnight Arthur Bear, wherever you are!

Red Letter Dates On The Road To Jamming's End

May 25, 1987—USSR stops jamming nine regional VOA broadcasts directed to the Soviet Union and those of RFE in Russian and Baltic languages.

January, 1988—Soviet Union discontinues jamming the BBC's Russian broadcasts.

November 29, 1988—Soviet Union discontinues virtually all jamming efforts against western nations including those of Radio Liberty Voice of Germany, Voice of Israel.

December 16, 1988—Czechoslovakia stops jamming RFE.

December 23, 1988—Bulgaria, last to am western broadcasts, ceases jamming against RFE.

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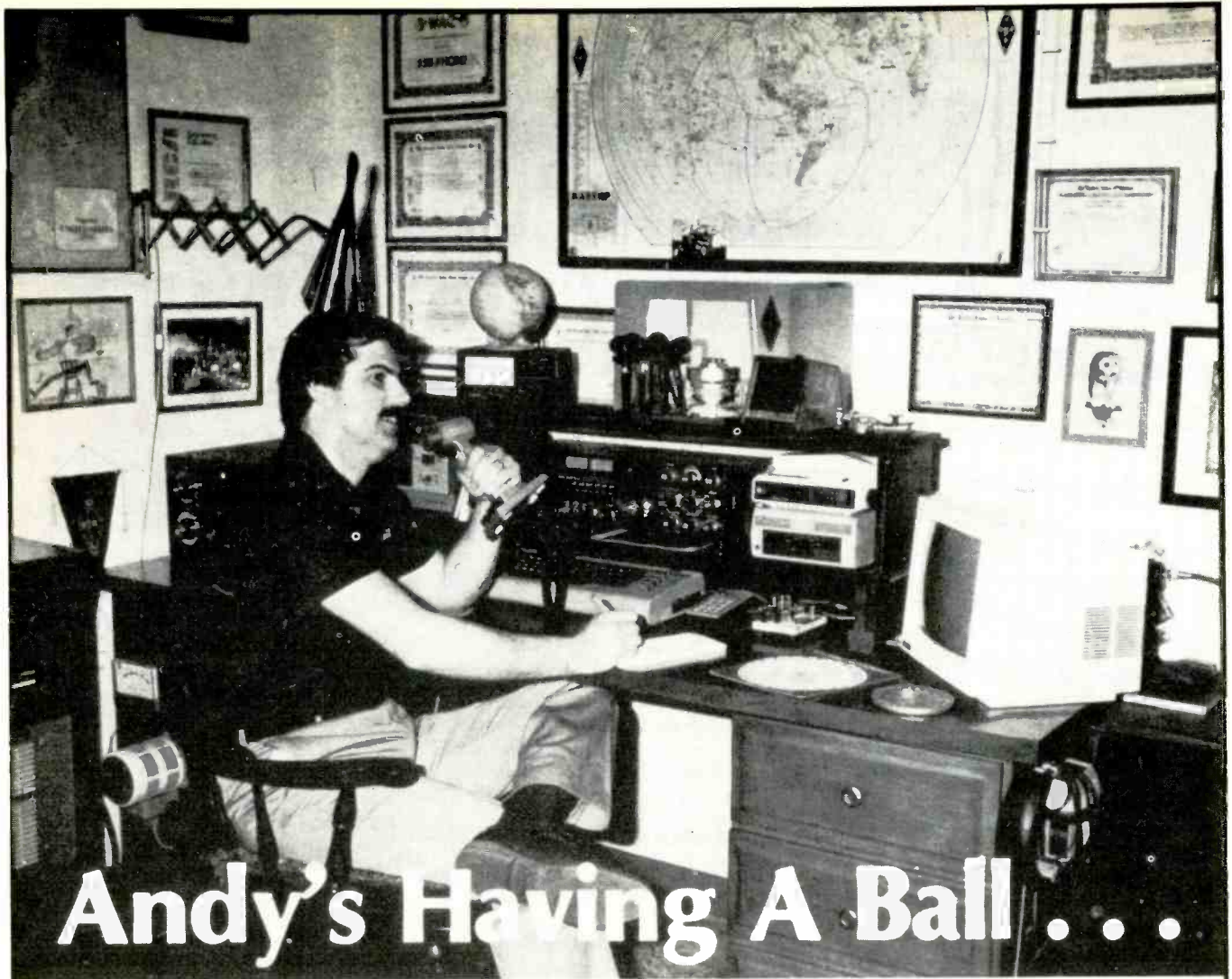
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Scanning The Bandido Band

A Shady and Sinister Side To Scanning You Probably Haven't Discovered – Yet!

BY CHUCK ROBERTSON

If you've been paying attention to your scanner, you may have noticed that this time of year the 30 to 50 MHz "low band" is hopping with distant stations—police, fire, federal agencies, forestry, industrial, military, and transportation. Mixed into this orderly assortment is yet another group of stations, an eerie and bizarre collection of unlicensed and unauthorized stations that may or may not be used in conjunction with legitimate activities.

This is what I call the Bandido Band. Inasmuch as the stations have no band plan and just spring up anywhere between 29.70 and 50 MHz, the whole 20 MHz is included in my definition. Seeking out and spotting these stations as they play hide and seek amongst the licensed stations is a truly exciting challenge, made even more so by the fact that their signals are skipping in from hundreds and then thousands of miles away, thanks to seasonal factors.

For example, from my location in Illinois, I often hear a Spanish speaking drug traf-

ficker in Miami, Florida. He's running his own private full-duplex mobile telephone system on 29.825 MHz. Sometimes there's a little English sprinkled in to the conversations between his base and one mobile unit. Many addresses in Miami and Key West are openly mentioned.

While the operator of this unlicensed system seems to be a wildly exuberant party animal, many of the folks he calls up on his bootleg car phone are either circumspect or downright paranoid. Still, in all, his system is easily the most exciting "commercial" pirate system I've yet cracked.

Miami Bandidos

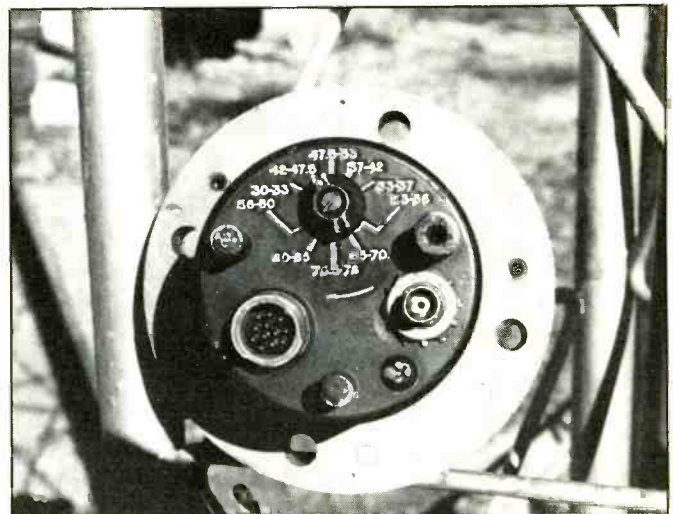
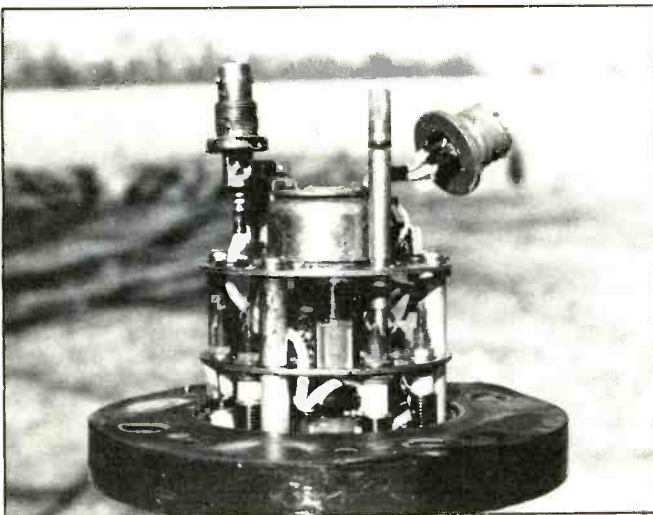
Miami and its environs has become a city of international intrigue of the highest magnitude. It's every bit what Hollywood said of Morocco of the 1930's, or West Berlin of the late 1940's. Drug smugglers, industrial spies, organized crime, competing paramilitary groups, and vaguely connected federal agents are as common as coconuts. Very

strange communications, both legal and otherwise, pour out of Florida in a never ending stream.

Privately operated telephone systems seem especially popular throughout Florida, like the full-duplex mobile telephone comms on 47.65 MHz (English) from the Tampa area. The frequency drops neatly between FCC allocations for industrial and highway systems but is, itself, a phantom.

On 47.83 one fellow was recommending his bootleg telephone to a pal, explaining that it set him back "\$2,800 U.S." Other Florida duplex telephone systems (English) have also been logged on 47.47 and 47.77 MHz, all bootleg.

No shortage of full duplex Spanish systems either. Since they are heard along with other skip reception from Florida, I assume that at least some are from Florida. Some may possibly be from Cuba or the Dominican Republic. Check these telephone systems out on 47.53, 47.59, 48.93, 48.95, 48.97, 48.99 and 49.11 MHz.



The AS-1729/VCR is a surplus whip antenna assembly that provides for transmission and reception between 30 to 76 MHz, in ten selectable bands. RF power-handling capability is 70 watts. It also makes a good scanner antenna in high-noise areas where RFI rejection is desirable. Bands may be selected manually by a switch on the antenna's base, or remotely by a 24VDC solenoid. Available from Fair Radio Sales, Lima, OH.

Table I

29.7*	30.96	32.96*	35.12	35.88
30.71*	30.98*	33.00*	35.14	35.90
30.72*	31.00	33.14*	35.18	35.92
30.74	31.04	33.16	35.70	35.94
30.76	31.10*	34.98*	35.72	35.96
30.78	31.16	35.00*	35.74	35.98
30.80	31.20	35.01*	35.76	36.00*
30.84*	31.23*	35.02*	35.78	36.02*
30.86*	31.24	35.03*	35.80	36.04*
30.88	31.30*	35.05*	35.82	36.92*
30.92	31.70*	35.08	35.84	38.00*
30.94*	32.00*	35.10	35.86	42.96
				43.00

New York City taxis use many frequencies, some legally, others illegally. Radio pirates are marked with asterisks.



High Seas Bandido

Two unidentified vessels in the Gulf of Mexico have illegally set up shop on the Forestry Conservation Radio Service frequency of 31.70 Mhz. Conversations in both Cajun and English and low signal levels are the earmarks of these ship-to-ship comms.

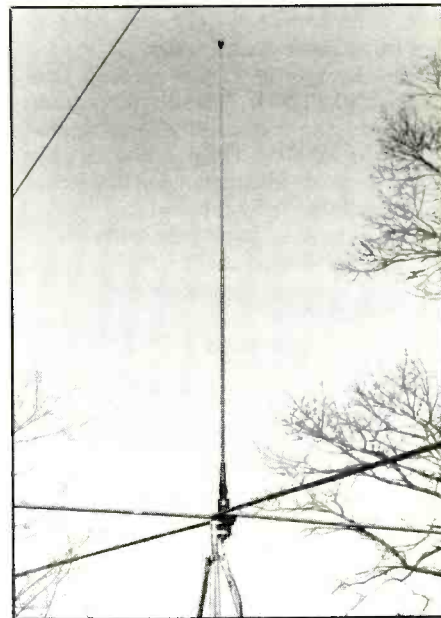
The vessels travel to some point in the Gulf where they rendezvous with another vessel, then they return to port (possibly on the Louisiana coast). What the operators of these vessels are up to, or why they are operating without authorization on this frequency, remains a tantalizing question. Punch up 31.70 MHz and drop anchor there until the next time skip comes rolling in from the Gulf. What are these secretive vessels all about?

Of course, you could speculate that these vessels are smuggling some sort of contraband since there's lots of it going on in the Gulf. Ships show up from various Caribbean ports and lie about 200 miles offshore. Smaller, faster vessels leave from Gulf ports and load up from the offshore vessels, then try to slip back to port without being noticed or caught. If you listen on 37.00 MHz, you can sometimes hear the USCG board and search operations in the Gulf ("Deathdealer Base").

Another Forestry Conservation frequency, 31.22 MHz, is being used by an air conditioning service near a place with a name that sounds like Plum Grove. Listen to the good ol' boys use colorful language and brag how they're soaking their customers: "Get \$120 for the job and put \$50 in your pocket."

San Francisco Bandido

A Bay Area bootleg mobile telephone system has been using full duplex for years on the creative frequency of 30.225 MHz. The professional sounding chap who uses



Converting the AS-1729/VCR to base operation is simple: just add four 1/4-wave ground plane radials (eight feet long). Standard seven-eighths inch (OD) steel electrical tubing is used.

this telephone often calls his wife and also a traffic report phone-in service.

Los Angeles Bandido

A plumber in the L.A. area seems to be running standard high power base/mobile operations on 35.02 MHz, which is supposed to be used only for low power (2 watt) comms.

New York City Bandido

New York City has more bootleggers in this band than anywhere else. So called "gypsy cabs" (that is, unmetered taxis, usually operated without benefit of the proper licenses required by the Taxi and Limousine

Commission) are apparently the sources of most of these signals. Listen for Spanish language communications from the gypsy cabs.

While, at first hearing these stations, you might think you were picking up skip from Latin America, listen more closely. Even if you can't understand the language, you notice mentions of destinations that are strictly from the Big Apple, such as Brooklyn, Bronx, Kennedy (International Airport), LaGuardia (Airport), Broadway, Washington Heights, Jackson Heights, Flushing, Jamaica, etc.

Frequencies already logged as used by New York gypsy cabs include those shown in Table 1.

Another taxi fleet operates on 38.00

Table II

30.04	30.56	31.27	31.50	31.94
30.06	30.64	31.28	31.64	32.34
30.14	31.06	31.32	31.66	34.38
30.16	31.08	31.38	31.74	35.04
30.32	31.20	31.46	31.76	37.30
30.38	31.26	31.48	31.78	42.30

Canadian fishing fleets use speech inversion and time domain scramblers on many of their bootlegged frequencies.

Table III

30.86*	31.10*	31.34	31.58	31.82
30.90*	31.14*	31.38	31.62	31.86
30.94*	31.18	31.42	31.66	31.90
30.98*	31.22	31.46	31.70	31.94
31.02*	31.26	31.50	31.74	31.98
31.06*	31.30	31.54	31.78	

State Conservation channels are popular with Bandidos. Those shown with an asterisk are also used (legally) by municipal buses.

MHz, a frequency reserved exclusively for radio astronomy monitoring. The communications are a combination of Russian, Yiddish, and English. The presumption is that this fleet is operated in and around the Brighton Beach area of Brooklyn since many recent Soviet immigrants have settled there.

A Korean language base/mobile system is regularly monitored on 35.05 MHz. Possibly it is a food delivery service. The frequency falls between FCC business allocations and doesn't officially exist.

A wrecker service (English language) operates on 30.71 MHz. A parcel delivery service is usurping the Forestry Conservation channel 31.30 MHz. The parcel service has its base station in Manhattan, but dispatches trucks to all areas and airports.

A novel twist by Big Apple is the use of AM instead of the usual FM. Like the Span-

ish dispatcher running AM on 31.10 MHz—a frequency authorized for FM use by the N.Y. City Transit Authority.

The low power (2 watt) frequency of 30.84 MHz has a high powered Spanish language business station in residence. Another similar frequency, 33.14 MHz, has an English/Spanish taxi service operating full time with high power.

One cab service is on the Forest Products Service frequency of 29.79 MHz. No less creative are cabs that operate on federal government channels such as 32.00, 32.96, 33.00, 34.98, 35.00, 36.02, 36.04, 36.92, and 38.00 MHz.

One even suspects that actual FCC-allocated business frequencies even host their own share of piggybacking Bandidos. Frequencies 31.20 and 31.24 MHz are used by three or more competing dispatchers who never offer any call signs or ID's. It's impossible to sort out who's legal and who's not.

A Brooklyn bootleg duplex mobile phone system operates on 34.95 MHz with much casual chatter and talk of blueprints. Another system is on 46.65 MHz, and is most definitely not a cordless phone base.

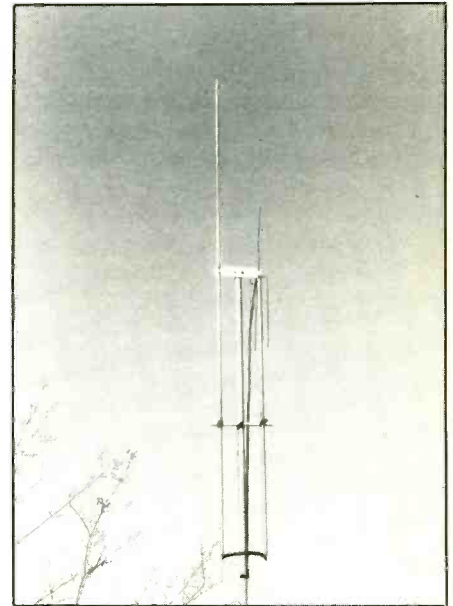
Some youngsters have set up a full duplex pirate telephone system on 30.05 MHz and mostly discuss partying. Dial tones are heard on 31.06 MHz, where they don't belong.

Canadian Bandido

Although Canadian frequency allocations march to a vastly different drummer than those in the U.S., legit maritime mobile comms in Canada don't take place in the VHF low band. Yet, when the skip begins rolling in from Canada, the frequencies produce their share of Canadian fishing boats.

Some of these stations use speech inversion scramblers, or (as on 31.38 MHz) time to main scrambling. You somehow get the impression that this band is a paradise for unauthorized communications of the Canadian fishing fleet. No doubt about the fact that commercial fishing is highly competitive, so offbeat frequencies and voice scramblers probably insure some degree of message security. Frequencies in Table II have produced much of this Canadian fishing fleet traffic, which comes from both the Atlantic and Pacific areas, also the Great Lakes.

Those frequencies sent in the clear (unscrambled) reveal lots of salty chatter while



This homebrew antenna similar to the Avanti AV-801 was built with three-fourths inch steel electrical conduit. The U-shaped element at the bottom was made from flexible copper tubing. This makes a fair low-power transmitting antenna over the 27 to 50 MHz range. It's a folded five-eighths wave antenna at 40 MHz. Below 35 MHz gain drops off noticeably. I've found that a 1/2-wave dipole tuned to 31 MHz far outperformed this unit below 34 MHz! To increase gain in the 30 to 35 MHz area, add 19 1/2 inches to each of the lower legs, and 14 1/2 inches to the upper element. The small UHF and VHF-high band elements are left as is.

waiting for the "smilies" (fish) to be hauled in. Sometimes it sounds like there are liquid refreshments available while waiting.

Discovering New Bandidos

Bandidos can turn up anywhere, but some frequencies are better bets than others. For instance, 30 to 32 MHz channels allocated by the FCC for State Conservation agency use. FCC license records indicate that there are relatively few stations licensed on these frequencies anymore. They are listed in Table III for your reference.

Their somewhat inactive status seems to have acted as an implied invitation to Bandidos, even those channels 31.14 and below

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(which are shared with city buses and therefore do show a little legal activity).

U.S. Government bands have also been exploited by Bandidos. This, despite the fact that legit military and other federal stations are logged there when skip comes in. I am always amazed at how pirate comms systems operate year after year on these federal channels without getting noticed or caught. Put your set into search/scan operation and check this out on: 30.00 to 30.55; 32.00 to 33.00; 34.00 to 35.00; 36.00 to 37.00; 38.00 to 39.00; 40.00 to 42.00; 46.60 to 47.00; and 49.60 to 49.95 MHz.

A favorite Bandido tactic is to show up on split frequencies. These are phantom frequencies they find between FCC allocated channels. They apparently feel that this will cause no interference, avoid FCC detection, and also provide uniquely private communications. The flip side of the coin is that, since they're not on normally used frequencies, they stand out rather glaringly from legit stations.

Low power frequencies are sometimes used by Bandidos with equipment running power that far exceeds the FCC limitations. Their hefty signals drown out the low power units and provide them with little signal competition. These frequencies are: 30.84, 33.12, 33.14, 33.40, 35.02, and 42.98 MHz.

Standard FCC channels shelter countless Bandidos. While a taxi dispatcher might stand out on a Forest Products frequency, a regular FCC Business Radio Service channel is a spot where it will blend in with other miscellaneous dispatchers. It's called "Hide in plain sight."

When To Listen

June and July are *hot* months for Sporadic-E type skip DX reception. It can come in any time of the day or night, but mid day (10 AM to 2 PM local) and again in the evening (6 to 10 PM local) are especially good. Skip distances are from 450 to 1,500 miles, with multi-hop skip extending out to 2,500 miles.

As we head into the peak years of Solar Cycle 22, look for long hop (F layer) skip openings into early summer, although it's usually best in fall, winter, and spring during daylight hours. This type of skip extends from 2,000 to more than 5,000 miles for multiple hops.

Tropospheric DX occurs in the spring, mostly in the evening and morning. Unfortunately, tropo doesn't have much effect on the frequencies discussed in this story, and it's mostly a matter of 300 miles maximum involving high powered base stations with good antennas.

There has been a definite increase in illegal comms in this band. There are many more bootleggers operating on low band today than there were five years ago. Whether it's because of a general change in the public, or a lack of FCC enforcement, or other factors, I can't tell. But if you've got a scanner, you can hear it all! **PC**

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Remembering Radio

The Days of Coils, Sparks, Tubes, Cats' Whiskers, and Coherers.

BY ALICE BRANNIGAN

Long before the era of the Mexican "border blaster" stations pushing 100 kW powerhouse signals for the purposes of selling medical cures and spiritual salvation, there were just average local broadcasters. One of the early stations there was Mexico City's CYL.

Operating with 500 watts on 588 kHz, CYL began its career under joint ownership of a radio supply shop called La Casa Del Radio, and also the newspaper *El Universal*. The station was inaugurated on September 15th, 1923 by broadcasting the returns from the Dempsey-Firpo fight as received by telegraph directly from ringside in New York. At any time it looked as though CYL's career wasn't going to last much longer than the two round fight itself. Problem was that CYL's engineers were very disappointed in the station's signals. They tweaked and retuned everything several times, but it still wasn't what they had in mind. On October 10th, less than a month after CYL began operation, it was decided to shut it down in order to make major changes in the antenna system.

CYL didn't return to the air again for another two months. On December 7th it came back with a test that brought in reception reports from throughout the United States and Canada, from Cuba, and through-

out Central America. By 1926, CYL had moved to 750 kHz. It was out of business by the end of the 1920's.

Early FM'caster

One of the very earliest FM broadcast stations in operation was the Zenith high-fidelity operation that, in 1940, was operating on 42.8 MHz under the experimental callsign W9XEN. Operation was from the Chicago Towers Club using a 1 kW transmitter located on the 37th floor. W9XEN's antenna was a halfwave coaxial type mounted atop the building (490 ft. above street level) for the experiments, which began in February, 1940.

The biggest problem encountered by W9XEN was that the building was located in the d.c. area of downtown Chicago. Arrangements had to be made to furnish three-phase, 60 Hz, 220 volt a.c. for the transmitter. Another difficulty was in getting the turntables to operate properly without easily available 60 Hz a.c.

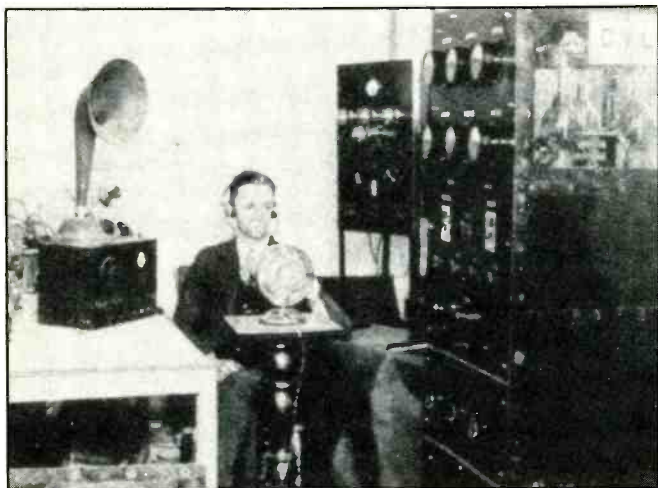
A number of improvements had been made in the facilities, and on March 1, 1940 the FCC authorized the station to operate with 5 kW under the callsign W9XZR. Tests began on November 11th, with regular programming commencing on February 10th, 1941.

On February 26th, 1941 the station facilities were moved to the Field Building, a taller structure that was in an area having a.c. power available. On March 31, 1941, the station's operating frequency was shifted to 45.1 MHz and its callsign was changed to W51C. At this point, a new antenna system was put into use, being a pole 14 inches in diameter at the base and tapering to 8 inches in diameter at the top. It was 45 feet tall. The antenna elements and coaxial feeders were fastened to the pole in such a manner to give the distinctive "turnstile" appearance (and that became the name for this type of FM broadcast antenna). The antenna made W51C's 18 kW transmitter have an effective radiated power of 50 kW. This antenna was placed in full operation in October, 1941.

After WWII, the FCC changed the FM band, and also the callsign formats used by FM broadcasters. W51C emerged as WWZR on 98.5 MHz in 1946, but by 1948 it had further changed to WEFM on 94.7 MHz, a spot later filled in turn by WENR-FM, WDAI, WLS-FM, and WYTZ.

The First Rock Station?

Hard to believe that Rock Radio goes back 45 years, but it does. This was more



The main control and transmitter room at CYL in 1923. Doing the honors is Raoul Azcarraga, one of CYL's owners.



A pioneer FM broadcaster, WWZR (ex-W9XEN, ex-W9XZR, ex-W51C) as it looked in late 1943. It was the first FM station in the midwest to operate commercially with 50 kW ERP.



WWZR's transmitter room in late 1943. The rig generated 18 kW, but the antenna gave it a 50 kW punch.



Patch used by the Navy Broadcasting Service Detachment at Guantanamo Bay, Cuba. They operate on-base AM, FM, TV broadcast stations.

than ten years before Bill Haley's Rock Around The Clock. The first station to call itself Rock Radio was located on the island of American Samoa in 1944. It was powered by 2.5 watts worth of salvaged radio tubes, and some assorted bed springs and other junk scrounged up by its owners, three American sailors who happened to be stationed on Samoa during WWII. The station was called Rock Radio because the island was called "The Rock" by the many sailors and Marines stationed there. American military personnel comprised Rock Radio's audience.

The builders, owners, and operators of Rock Radio had all been radio buffs before the war, so they saw the station as a form of relaxation. There was Radio Tech 1st Class Ken D. McCoy, of Salem, OR who was an

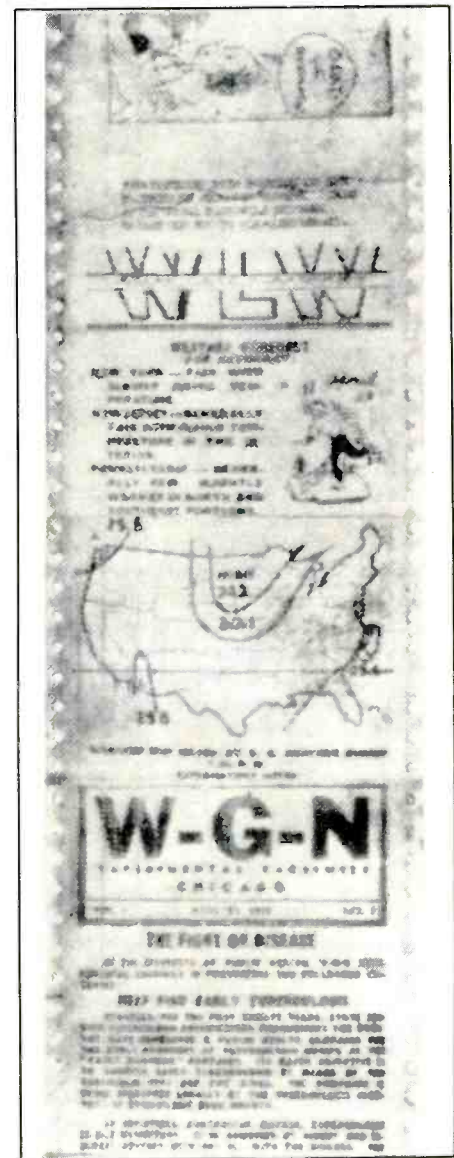
announcer at station KWIL, Albany, OR before he joined the Navy. Then there was Radioman 1st Class Stan T. Dixon, of San Francisco, CA. Finally, there was Radio Tech 1st Class Charlie H. Wilson, of Stuebenville, OH. Before the war, he had been an announcer at station WKST, New Castle, PA.

They carefully pieced together the entire station from odds and ends. The microphone had once been the receiver in a USMC field telephone. The turntable was an antiquated hand-wound Victrola purchased from a Samoan resident for \$3.

Nevertheless, the homemade station pieced together from discarded and makeshift parts managed to operate on a daily basis, be heard over the entire island, draw lots of fan mail, and do it all with the bless-



"Rock Radio" was the name of this 2.5-watt broadcast station operated in their spare time by three American sailors during World War II.



WGN in Chicago was one of the key MBS network stations experimenting with FAX transmissions sent out by mediumwave broadcasting stations.

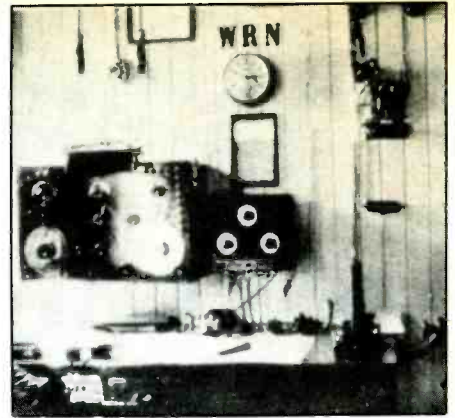
ings of the military authorities.

Mostly, Rock Radio was operated by whichever of the three owners was not on duty at the time. Programs featured recordings (requests and dedications), jokes, wisecracks, sports scores, local talent, and news of the world as well as local happenings around the island. This filled up several hours of air time with the audience constantly asking for an expanded schedule.

Of course, broadcasting by and for American military personnel within a localized area has continued through the years. Among the more interesting modern-day stations that, I suppose, might regard Rock Radio as an ancestor of sorts, would be the station operated by the U.S. Navy Broadcasting Service Detachment at "Gitmo" (Guantanamo Bay, Cuba). They have a TV station on Channel 8, a 250 watt AM station on 1340 kHz, as well as an FM transmitter on 102 MHz (400 watts, stereo), and 103 MHz (500 watts, mono). Rock Radio was a far cry from Gitmo's station, but we felt it should be recognized for its novel and historical significance before it became totally forgotten.



The Crosley Model 758 "Reado" receiver was designed to pick up FAX transmissions sent out by mediumwave broadcasting stations.



Note the old-style three-letter ship's call sign, WRN, on the bulkhead of the S.S. Siboney's radio shack.

Until late 1932, Shreveport's KRMD was still running only 50 watts. This was unusually low power for a station in a large city at that late a date. This QSL from KRMD was received by DX'er Joe Hueter, of Philadelphia, in 1932. ↓

Matter of FAX

Ed Bowsky, of North Platte, NE wrote to say that he recalls that many decades ago there were plans to have special medium wave receivers available for home use that would provide a FAX printout of a daily newspaper during the night. When you got up in the morning, you'd have the latest copy waiting for you without having to dig around in the shrubs for the copy tossed there by the delivery boy. Ed asks we check into this seemingly clever scheme and try to find out why it never came into being.

From what I can find out, it did happen, but only on a trial basis. Throughout the late 1930's, this seemed to be one of the most practical uses anybody could come up with for FAX (radiofacsimile) technology. In 1939, Crosley produced a Model 758 "Reado" receiver that was intended to be used for this purpose.

The Mutual Broadcasting System had some of its key stations (such as WOR in New York, and WGN in Chicago) sending out a weekly FAX program. This transmission, for instance, was sent out between 1 and 2:30 a.m. every Friday night over WGN. Crosley "Reado" receivers had built-in automatic timers that would operate them for this broadcast.

FAX quality was good, however, the experimental nature of the FCC license grant restricted the information sent out to be such that it might be of interest only to someone checking on the technical quality of the FAX reception. There were some weather maps, sports scores, drawings, cartoon strips, test charts, public service health information, and similar. There was virtually nothing of any substantive value to capture the public's imagination as being something they really

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KRMD

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P. T. PULLEN
PHONE
6221

Feb. 3, 1932

Joseph L. Hueter
1722 Nor. 18th St.
Philadelphia, Pa.

Dear Sir:

We were very glad to receive your report of reception of this station. This letter acknowledges your reception and will, we hope, serve the purpose of verification.

Our station operates on a frequency of 1310 kilocycles, and a power of 50 watts. At this time we have no regularly arranged schedule for D. X. broadcast, but if you tune us in again we would be pleased to hear from you.

Thanking you for your courtesy in writing, we are

Very truly yours,

Radio Station K. R. M. D.

needed at that point; and it happened only once per week, anyway.

There are probably a dozen other reasons why the idea never took off. An hour and a half of air time at night over 50 kW clear channel AM broadcast was many times more valuable than broadcasters saw fit themselves earning for years with something as experimental as FAX newspaper transmissions. A full FAX newspaper at that time might have required up to six hours of air time, and on a nightly basis. That's what it would have taken to get the public to buy the receivers. Broadcasters wanted to transmit programming, not FAX signals, for some highly speculative premise. These reasons immediately come to mind, there may have been others.

Another FAX experiment of the late 1930's was tried in order to demonstrate public usage of the medium in connection with criminal identification. Philadelphia's WCAU set up a FAX receiver at their studios during Radio Open House Week. The receiver reproduced FAX transmissions sent out by an RCA station at Camden, NJ. Daily transmissions of "wanted" posters and other police information were sent, as supplied by the Philadelphia Police Department.

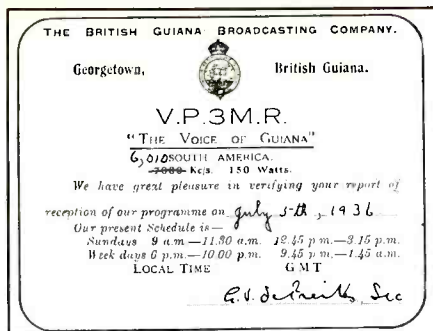
Ship Shape Shack

In response to many reader requests, its time to return to the sea again for a look at one of those great floating shipboard radio shacks. This time, we'll inspect the S.S. *Siboney*, a 6,937 ton twin-stack, 443-foot passenger liner. When she was launched as the Ward Line (New York and Cuba Mail Steamship Co.) vessel S.S. *Oriente* in August of 1917, she was given the callsign WRN. A mere six months later, the ship was acquired by the U.S. Navy and commissioned as the wartime transport U.S.S. *Siboney* (ID-2999). Her new USN callsign was became NZM.

The *Siboney* came under fire several times, eventually making a total of seventeen round trips across the Atlantic, and ferrying a total of 50,000 military passengers during and immediately after the war. In September, 1919, she was returned to the Ward Line and went into civilian service as the S.S. *Siboney* on the popular New York-Havana tourist and honeymoon route. Her former callsign (WRN) was restored. By the mid-1920's, however, ship callsign formats were all changed to four letters and she was given the callsign WECZ.

Although the *Siboney* was neither the largest nor handsomest liner on the seas, she was always booked solid and remained in passenger service until 1941, when she was again acquired for wartime transport duty. At that time the vessel was assigned the Army callsign AMQF. In 1944, she was converted into an Army hospital ship and renamed *Charles A. Stafford*.

After WWII, the vessel was simply too tired to refurbish for a return to civilian du-



VP3MR tried broadcasting with 150 watts on 7080 kHz in 1935. A year later it moved out of the ham band to 6010 kHz. This 1936 QSL shows its new frequency written in by hand.

ties. She was laid up and, in 1957, scrapped.

We have a photo of the radio shack in the S.S. *Siboney* taken during the early 1920's just after she had been put into passenger service. In the photo, you can see the ship's callsign on the bulkhead. The transmitter at the time of the photo was taken was a 2 kW arc type.

Low Power Station

In the early to mid-1920's, the airwaves were crowded with numerous backroom, garage, and front parlor broadcast stations running as little as 5, 10, 15, and 50 watts. Most "serious" commercial broadcasters scraped up enough money to get on the air with a minimum of 100 watts. By the time the 1930's rolled around, the vast majority of the stations running less than 100 watts were gone. Either they had quit, been kicked off the air, absorbed into other stations, or else increased their power. To be sure, there were still a few flea powered stations still operating, but they were getting scarce by the 1930's.

One such station was KRMD, which first appeared in June of 1928 with only 50 watts on 1360 kHz. This station was in

Shreveport, LA and operated by Robert M. Dean from 504 Wall Street. Within five months, the Federal Radio Commission moved the frequency to 1200 kHz.

Not long after, KRMD was again shifted, this time to 1310 kHz and, by 1931 had changed its location to 1445 Claiborne St. The station was still running its 50 watt rig. Its slogan was "We Cover The Buying Radius." In late 1932, however, the station upped its power to a modest 100 watts.

Not long after, KRMD moved its studios and transmitter into the New Jefferson Hotel, 901 Louisiana Avenue, in Shreveport. The antenna was a 176 foot vertical on the hotel's roof. Just before WWII, the FCC re-assigned KRMD to 1340 kHz and permitted it to raise its power to 250 watts. As late as the postwar years, Robert Dean still owned the station.

Presently, KRMD still operates on 1340 kHz, although now it runs 1 kW. Since October of 1985 it has been owned by AmCom of Louisiana, Inc.

DX'er Joe Hueter, of Philadelphia, tuned in KRMD in 1932 when it was still running only 50 watts. A good catch, and we have a chance to ogle his QSL letter here this month.

A Station Evolves

In 1926, broadcasting (or a sort) began in Georgetown, British Guiana, South America. That is, persons who had telephones could arrange for BBC programs received by shortwave from London to be played through their phones for a few hours each day. The following year, though, the British Guiana Broadcasting Co., of Georgetown, built an experimental low power shortwave transmitter that operated for two hours daily on 6300 kHz, later switching to 6840 kHz.

In 1935, the British Guiana Broadcasting Company's new station, VP3MR "The Voice of Guiana," with 150 watts on 7080 kHz, replaced the low power station. The frequency, however, had too much ham interference. In 1936 the station shifted to 6010 kHz, then 6079 kHz, in the search for



VP3MR evolved into ZFY, Radio Demerara, The Voice of Guiana. This is the station's Studio B as it looked in the mid-1940's. Announcer Ulric Gouveia is at the mike in the photo.

a clear channel. In 1938, another local broadcaster, VP3BG, and VP3MR merged. Although the combined station was known as the "The Voice of Guiana," only the call sign VP3BG was retained. The year 1939 saw the start of mediumwave service.

In 1946, VP3BG was running 65 watts on 6130 kHz, however, a year later it opened up its new facilities, station ZFY, on 6000 kHz with 1 kW. The year 1955 saw new studios built in Georgetown, and in 1957, a large transmitting facility in Sparendam. The station became known as "ZFY, Radio Demerara, The Voice of Guiana," with 500 watts on 1230 kHz, and 2 kW on 3255 and 5981 kHz. The mediumwave operations soon changed to 10 kW on 660 kHz. In 1961, that frequency was dropped in favor of 560 and 760 kHz, plus the shortwave frequencies. The mediumwave antenna was a vertically mounted 180-ft. wire with a capacitance hat. For shortwave, there were two spaced vertical dipoles fed by 600-ohm open line.

In May of 1966, British Guiana became the independent nation of Guyana. The GBC broadcasting station became known as "The Voice of Guyana." Presently, it remains on 560 and 760 with 10 kW, on 100 and 104 MHz FM, plus irregular broadcasts with 10 kW on 5950 kHz.

Tracking "The Voice of Guiana" through its early history we get a chance to see a rare 1936 VP3MR veri with the 6010 kHz frequency written in by hand. Probably not too



Radio Demerara's new transmitting facilities in the late 1950's.

many of these cards still floating around, eh? We also have photos from the mid-1940's and late-1950's to round it all out.

Java Jive

Before we go "30" for June, let's get out of the Western Hemisphere and drop in on Java. Hard to believe, but there was a time when if someone in Java wanted to place a phone call to a person in California, the call went westward "the long way 'round" by way of Amsterdam, to London, then New York, and finally to California.

In 1934 all of that changed when the Netherlands Indies Telephone Administration opened up its new point-to-point shortwave facility at Malaban (near Bandoeng), Java. Via radiotelephone stations PLE

(18830 kHz), PMC (18370 kHz), and PMY (5170 kHz), all calls went eastward, 8,700 miles directly to the Bell System receiving station at Point Reyes, CA.

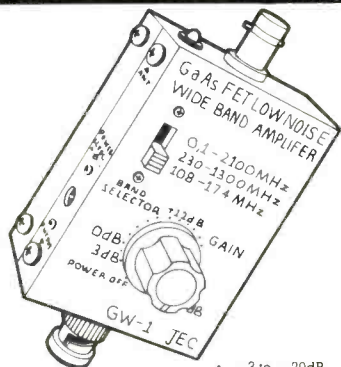
We have a photo showing the buildings at Malaban, along with the antenna. The primary wires appear exaggerated because they've been retouched to make them clearer. A second group of wires (which don't show up) were also part of this interesting station in the Dutch East Indies.

Your continuing submissions of photos, QSL's, books, station directories, postcards, and other items relating to wireless and broadcasting in days gone by are appreciated. This material is considerable help in the preparation of these pages for POP COMM. See you next month; same time, same station!

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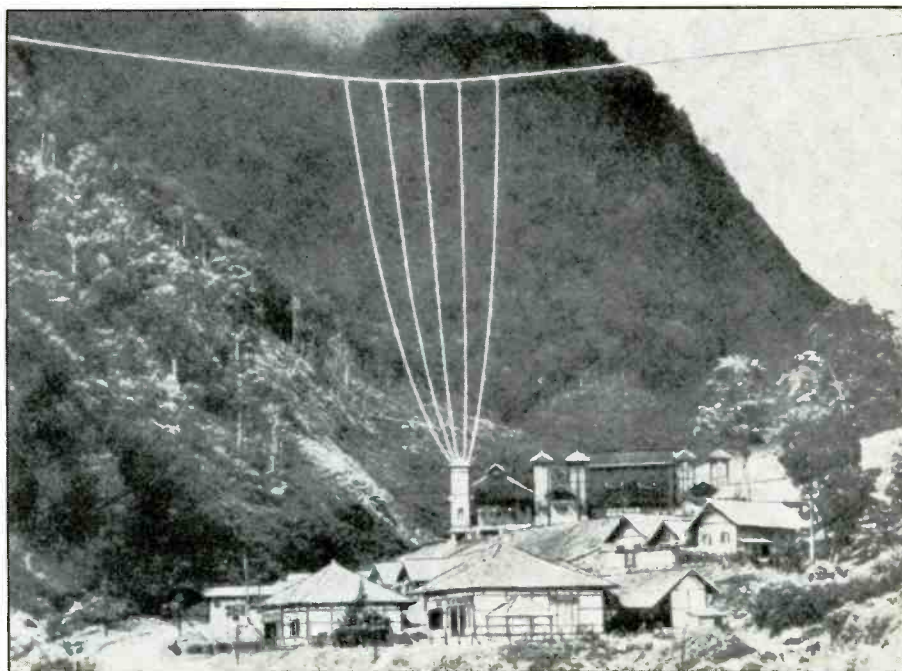
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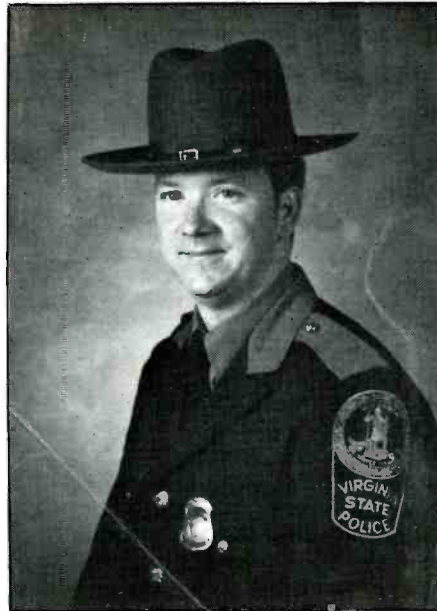


Trans-Pacific radio station of the Netherlands Indies Telephone Administration, Malaban, Java. Photo taken in 1934.

State Trooper Lifts Truck, Administers CPR To Save Boy

Virginia State Trooper Lewis Shelton was in the right place at the right time after a highway accident in James City, Virginia. A 10-year-old boy was pinned under an overturned pickup truck and had no pulse. Rather than wait for a wrecker, Shelton enlisted the help of several passersby and lifted the truck off the boy. Then he administered CPR.

Shelton was investigating a minor accident on the opposite side of the Interstate 64 overpass when the crash occurred. He rushed to the scene and found Ronald A. Abbott Jr. of Croaker, Virginia, pinned underneath the 1986 Ford Ranger pickup, according to State Trooper P.M. Russell, who later arrived at the scene. Ronald's mother, Brenda Abbott, was driving the pickup when it flipped over, pinning him to the pavement. She was suspended in the pickup by her seatbelt.



"When he talked to me on the radio, he was extremely upset that the child was pinned and that the wrecker would not get there for a while," Russell told the *Daily Press*. "And, as a matter of fact, the wreckers didn't get there for a good period of time and if Trooper Shelton had to wait until that wrecker had gotten there, that child would have been dead."

Shelton, a 12-year veteran with the state police, has seen a number of tragic accidents. He last administered CPR some eight years earlier to an 11-year-old girl whose mother had fallen asleep at the wheel. The girl didn't make it.

"I just thank God that I was in the place I was when I was," Shelton told the *Daily Press*. "I truly believe I was there for a reason, to be as close as I was."

Trooper Russell feels that Shelton could be described as a hero for his actions. "Without a doubt, I do feel that is an appropriate work," he said. "Maybe not in the sense of what most people determine as heroes, but anytime you can go above and beyond the call, it fits. I don't know what I would have done in that situation."

Shelton himself doesn't feel that he was a hero. "I did what I had to do and what I was trained by this department to do," he says. "I was the one who was there and had to react."

For his unselfish actions, State Trooper Lewis Shelton will receive the SCAN Public Service Award. The award consists of a special commendation plaque and a cash prize. For making the nomination, Robert L. Price of Tabb, Virginia, will also receive a plaque. Congratulations to both of you.

SCAN PUBLIC SERVICE AWARD

Shelton then called for an ambulance and got two others to help him lift the pickup. They succeeded in lifting the truck, but then it slipped back down. "(After that) I just pulled with everything I had," Shelton later told the *Newport News* (Virginia) *Daily Press*. "It just came upright like that and slammed on all four wheels."

Ronald didn't have any pulse, and Shel-

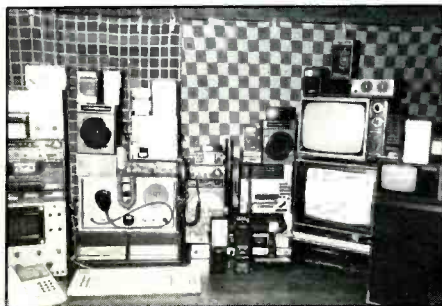
ton gave cardiopulmonary resuscitation until a rescue squad arrived. Shelton continued administering CPR en route to Williamsburg Community Hospital. According to an account of the incident in the *Daily Press*, cardiopulmonary technician Tom Eckenfels said that Shelton and another volunteer were able to revive the boy. Ronald's mother was not seriously hurt in the accident.

Fellow trooper Russell wrote a letter about the rescue to the colonel of the Virginia State Police.

Best Equipped

Dan Alenhof is only 15 years old, but he's already assembled quite an assortment of equipment. He has been interested in scanners, citizens band radio and electronics for more than three years, and is capable of making minor repairs on CB radios, videocassette recorders and televisions.

The equipment shown here includes a Regency HX-1500 scanner, Z-45 scanner, and Realistic TRC-219 handheld citizens band transceiver and TRC-30A base station. Other citizens band equipment consists of a Fanon 195PLL and 330, and Messenger 323A rig. Dan also has a Sony ICF-



SCAN PHOTO CONTEST WINNERS

2002 shortwave receiver and a 75-meter amateur transmitter. A 5/8 ground plane and 75-meter longwire antenna are used with this equipment.

The St. Clair Beach, Ontario, monitor has also built several pieces of equipment, including an antenna checker, antenna switcher and phone patch.

Best Appearing

Gino Mancuso of New Kensington, Pennsylvania, writes that his favorite sections of the radio spectrum are high frequency radioteletype, local public service and federal government bands.

He scans these bands constantly with a variety of equipment which includes a number of Bearcat scanners, such as the 200XLT, 210XLT, 260, 800XLT and 950

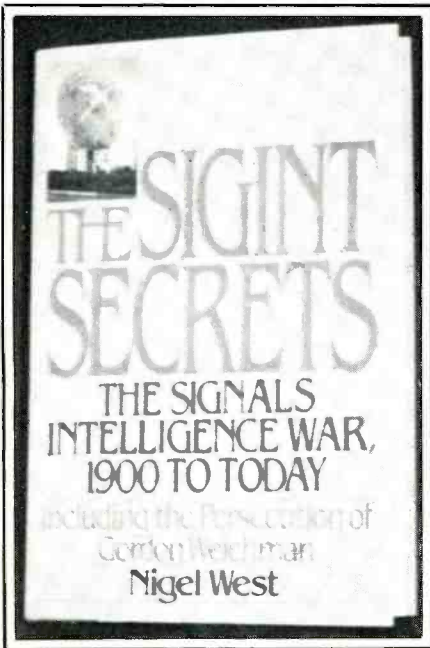


XLT mobile. A Realistic PRO-30 and a Regency 10-channel scanner are also used. For shortwave and amateur monitoring, Gino has a Realistic DX-150A, Kenwood R-2000, Heathkit HF-1424, Yaesu FRG-9600, Universal M-7000 and a Uniden CR-2021.

Gino uses several antennas with all of this equipment, including a Diamond discone 130, Avanti 801, ANT-6, Realistic UHF-TV antenna converted to a vertical, and 50 and 100-foot longwires. Keeping track of frequencies is no problem because he has a Commodore 64 computer with Epson LQ-1050 and Amdek 300 video monitor.

BOOKS YOU'LL LIKE!

BY R. L. SLATTERY



Signals Intelligence

The SIGINT Secrets, by Nigel West, is a new 347-page book by British historian Nigel West. As you may know, SIGINT is the acronym for "signals intelligence," perhaps the most hush-hush and least understood weapon in the modern espionage arsenal.

In West's book, he traces the origins of England's signal intelligence efforts and provides a detailed account of SIGINT developments up to today. Here are all of the people and personalities, their techniques, their successes, failures, the misinformation, disinformation, and the personal enthusiasms that created the highly secret British Government Communications Headquarters (GCHQ); the apparent model for our own NSA.

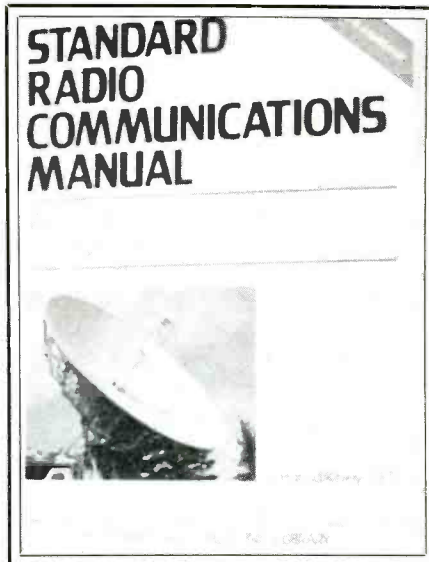
Here is the world of our secret communications operations and organizations that deal in encryption, decryption, censorship, interception, and analysis. In many ways, *The SIGINT Secrets* is a handbook of the methods of modern electronic espionage techniques and how it is based upon a solid historical background and painstaking research. There are plenty of anecdotes here, too, such as the unfortunate attempted muzzling and eventual persecution of one of Britain's most prominent WWII codebreakers, Gordon Welchman.

After the War, Welchman moved to the U.S. and became an American citizen. Some years later he decided to criticize America's SIGINT operation during WWII. The NSA was decidedly unflattered at the

prospect and, according to the author of the book, protected the WWII codebreaking secrets to the point where Welchman's life was, essentially, a shambles. It's a tragic story that hasn't been told before in print, accompanied by the complete correspondence file between the NSA and Welchman.

The book covers WWII interception efforts by ham operators in Britain, it lists the names of the various WWII enemy codes and how they were used, and all sorts of fascinating aspects of 1980's signals intelligence. You'll be surprised to find out that a great many WWII codes have yet to be cracked! There are some photos in the book, too. In all, well done and most engrossing from start to end. Nigel West spins some eerie tales here.

The SIGINT Secrets, by Nigel West, is a hardcover book published at \$22.95 by William Morrow and Company, New York. It should be available through most bookstores.



Taking Stock

There as always been a certain amount of confusion and (as J.R. "Bob" Dobbs would say) slack when it came to testing and evaluating communications equipment, stations, and systems. You never knew if there were any recommended standard reference points for the various things that needed to be checked out. And, when you came to think of it, exactly which components and functions needed to be put to the test, and using what equipment for obtaining the results?

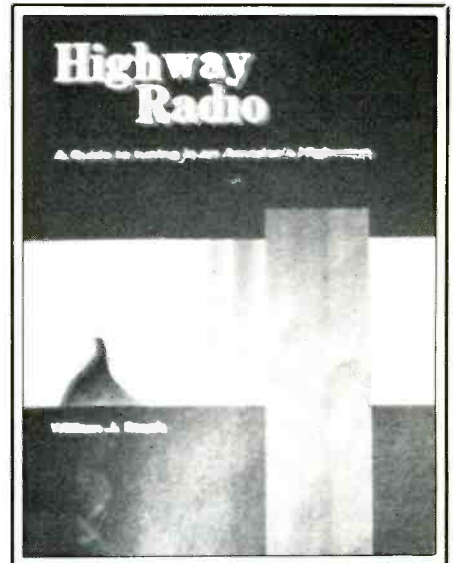
All of these, and many more, questions should now finally be put to rest thanks to a 420-page illustrated (photos, graphs,

charts, diagrams) book entitled *Standard Radio Communications Manual*, by R. Harold Kinley. The author has written this book for communications technicians (he is one, himself) in order to provide a fully up-to-date guide for measuring the performance of SSB, FM, and AM transmitters and receivers, as well as antennas, transmission lines, and remote control lines.

Eleven in-depth chapters, plus six appendices, provides some basic ground rules and thoughts on measurements in general, and then heads straight into highly detailed practical information for producing results. There are plenty of formulas and block diagrams for these tests, and they all seem to be between the pages of this book, which presumes that its readers have at least some working knowledge of communications electronics (the more the better).

For many of the testing tasks, several different procedures and approaches are provided. Doesn't look like the author left anything out in his very comprehensive book, and it's well written.

Standard Radio Communications Manual, by R. Harold Kinley, was published at \$16.95 by Prentice Hall, Inc., of Englewood Cliffs, NJ. Should be available through the many PH dealers, or from local bookstores.



New AM/FM Station Listing

William J. Stank's new 1989 edition (just out May 1) of *Highway Radio* is primarily intended as a station guide for "tuning in on America's Highways." Well, at least on the AM and FM broadcasters you're most likely to pick up while driving along the primary Interstates.

Now Available!

The First Annual



Amateur Radio Buyers Guide



This is a large format (8½ by 11 inch size) book, more than 110 pages, printed on quality paper, with an attractive four color cover. The main body of the directory carries listings of all fifty states, with stations (AM-daytime power of 1 kW or more, FM of 2 kW or more) alphabetized by program format under cities, also information on frequency and transmitter power. Cities and metropolitan areas are cross referenced. For each state, there is an outline map indicating major Interstates routes and larger cities.

In the rear of the book, there is a master call sign list KAAA to WZZZ of all American AM and FM broadcasters, indicating AM or FM and also the station location.

We like the idea of program formats being listed (more than thirty categories are used), and the book is a nice data source while you're on the *superslabs*. Fact is, since it covers most of the full power AM stations you'll hear at night, and the FM stations that can usually be heard beyond the last mailbox on the Rural Route, it's a handy and updated book for any listener to have on hand for a general home listening or DX'ing reference.

Highway Radio is only \$4.95 (plus \$1 postage/handling to addresses in North America) from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. New York State residents please add sales tax.

In Addition

Quite a large number of letters have come in over the past few months from ute monitors who say they'd like to know if there are any registries of the cruise liners that show their routes, owners, addresses, and other vital stats. Although they aren't communications directories, there are several publications and books that provide many updated details of cruise line ships.

Probably the best is *Fielding's Worldwide Guide to Cruises, 1989*, by Antoinette DeLand, 486 pages, and available through bookstores for \$12.95. *The Berlitz Complete Handbook to Cruising, 1989*, by Douglas Ward, is 287 pages and can be ordered through bookstores for \$13.95. *The Frommer Dollarwise Guide to Cruising, 1989-90*, is a 426 page book; \$14.95 from Frommer paperbacks and available via many bookshops. *Stern's Guide to The Cruise Vacation, 1989*, is a 384 page Pelican paperback that's about \$14.95 if ordered through bookstores. There are probably others, too, but a ute monitor who specializes in QSL'ing these vessels advises that the above listed are very good. **PC**

The Active Ham's Complete Annual Reference Master

This valuable new master directory and buyer's guide will serve you day in and day out in searching out new gear, comparing new models, locating dealers near you and mail-order retailers around the country. It'll help you buy more wisely with its multi-reference concept to help you wend your way through the buying maze.

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76 North Broadway, Hicksville, NY 11801

The Spy Radio Set That Wasn't – Or Was It?

The Discovery, The Disinformation, and The Doubts.

BY TOM KNEITEL, K2AES, EDITOR

When 26-year old Goronwy Morris was ploughing the land on his father's 600 acre farm in Wales, he made a rather startling discovery. In addition to the usual assortment of roots and stones turned up by the plough blade, this time it also produced what looked like a carrying case for a portable typewriter. That 1980 find kicked off an incident that seems to have been embarrassing to the British Government and has been a continuing mystery shrouded in a disinformation campaign.

The evening of the day that Morris came upon the mysterious case, he took it with him to a meeting of the Denbigh branch of the National Farmers' Union (NFU). According to the NFU's branch secretary, Meurig Voyle, "Everyone agreed that it was a spy radio. But we weren't quite sure what to do with it next."

Just to be on the safe side, Voyle took the box to his office and the next morning had it photographed. Then he called in the local press. After that, he told the police, explaining, "Farmers in this area tend to trust their own first. After I made a public record that the radio had been found, I handed it over to the police."

A police officer from Colwyn Bay, headquarters of the North Wales Constabulary, took charge of the equipment and gave Mr. Voyle a "miscellaneous property receipt" that described the equipment as a "brown box 14½ inches by 10½ inches containing radio equipment. That was the last anybody in Wales was known to have seen the radio, but not long afterwards, things began to happen fast. Police and Home Office officials began to appear in large numbers at the farm at Pant y Maen, Llanrhaedry Mochnant.

Farmer Morris said that the Home Office people were all carrying equipment that they claimed were metal detectors. He said, "I showed them where I'd found the box and they sent me away and did whatever they do with these things." A week later, more Police and Home Office people were still arriving at the farm. Finally, they produced a letter that they told Goronwy Morris to sign. It was a disclaimer that said he had no right to the radio he had found on his



Meurig Voyle was clever when he had photos taken of the mystery spy radio. The following day the police took the set and it was immediately hidden from public view. That was in 1980, and the British Government has kept a tight lid on the entire matter ever since.

property. He said, "I signed it without really thinking about it. Wish I hadn't now. But they were the authority. What else can you do?"

That was in September of 1980. Three months later, the Denbigh Free Press began demanding some answers, but without much luck. The North Wales police claimed

that they turned it over to the Home Office. The Home Office said they didn't have it. Scotland Yard denied any knowledge of the radio, neither did the Special Branch nor the Anti-Terrorist Squad.

Detective Chief Superintendent Eric Evans from Colwyn Bay guessed that it was unlikely that anyone would ever reveal



The outer container and coder tape of the AN/GRA-71 solid state Coder-Burst Transmission Group device. The mystery set dug up from a Welsh farm field may have been an early version of this American military crypto unit. (Courtesy of A. E. Feldman)

where the box came from. At that point, Wrexham's member of Parliament, Tom Ellis wrote Home Secretary William Whitelaw for more information about the find.

The Disinformation Campaign

In a brief reply to Mr. Ellis, The Home Secretary stated that the device was "of foreign origin" and was being examined by security service experts. "Beyond that I'm afraid I can't go," explained Mr. Whitelaw.

Mr. Ellis' opinion of this response was, "There is something very fishy about this."

Rumors about an examination of the box said that there weren't any clues as to its origin other than some bolts with "USA" stamped on them. The electronic equipment was said to be a transmitter capable of sending coded signals using a wire recorder at ultra high speed. There were 40 metal-cased, crystal-type valves (vacuum tubes) in the box, which was like a portable typewriter.

By early February of 1981, a new twist was added to the mystery. NFU's Voyle was straightening up his cluttered desk when he noticed a two and a half inch strip of microfilm. He felt that it was something that had fallen from the mysterious case, so he had it copied. It turned out to be five pages of working instructions entitled, "Transmitter Handling and Maintenance," and referred to the device as being housed in a "dead box."

A communications technician looked at the instructions and guessed that the radio was from about 1965, and could have been used to communicate over distances sufficient to reach Eastern Europe. He felt that the set might have been buried by a sleeper operator, a non-operative espionage agent who can be activated at some future time when needed.

Language experts saw the document, proclaimed them to have been poorly translated from a foreign language, probably German. This explanation made sense to Aubrey Morris, who is Goronwy's father. He said, "A lot of Germans come here for

their holidays. One of them could have buried it."

Goronwy Morris felt it had something to do with the Special Air Service, the British commando unit. He said that the SAS have long used the area for training purposes, and that SAS items had been previously found within 150 feet from where the radio had been located.

Sidelights

Oddly enough, despite the speculation about where the radio might have been made, the photo of the unit that NFU's Voyle had taken shows a box of spares that included vacuum tube cartons from Mullard and Sylvania. Mullard is a British manufacturer, Sylvania is American. When you combine this with the English language microfilm, and that there had been SAS activity in the area, you would tend to seriously suspect that any information attempting to imply that the equipment is Eastern Bloc is pure disinformation. More likely it is an example of 1960's British technology.

Other disinformation includes mention of

a wire recorder, since they were generally replaced by tape recording technology by the 1950's. The components in the lower right of the picture are obviously some sort of keypad, but who knows for what? I'm guessing that some SAS exercise lost the secret device (and you can imagine the panic when news of the find was announced in the press, and a local newspaper began demanding answers).

One might speculate that the mystery set is perhaps an early version of the Coder-Burst Transmission Group AN/GRA-71 solid state crypto device. It's still all guesswork, since whatever it was that Farmer Morris' son found, it conveniently vanished; buried more deeply under disinformation than it was under the surface of the topsoil of his field.

There's no more radio, there are no answers. If they ever figured out who lost it in the first place, the only thing we can be relatively certain of is that he finished out his enlistment peeling potatoes or mopping the barracks. But nine years later, they won't even confirm that.

PC

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By Bob Grove
WA4PYQ

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CIRCLE 73 ON READER SERVICE CARD

WBTP: The Radio Station With Almost Everything

What A Promo! The New "FM 104" Was Throwing A Party To Give Away \$500 Gift Certificates, T-Shirts, and Five \$2,000 Cash Prizes. But The Winners Weren't Quite Ready For The Signal WBTP Was Sending Out!

BY TOM KNEITEL, K2AES, EDITOR

When a new broadcaster arrives in town, it hopes folks will notice. But when rock music station WBTP ("FM 104") announced its arrival on the Central Illinois scene, eleven billboards went up around Springfield, Decatur and Jacksonville. Best of all, 545 people received letters inviting them to the Prairie Capital Convention Center in Springfield for WBTP's gala "Prize Give Away Party."

With WBTP due to begin operation last January 2nd, the party was scheduled for December 17th so that winners could use their prizes for the Holidays. Winners, the WBTP invitational letter explained, were "selected at random from a computer clearinghouse list of Central Illinois residents within our broadcasting area."

The party promised food and drinks, \$500 department store gift certificates, and T-shirts to all who were invited. No less than five Grand Prize winners would receive \$2,000 in cash. All they had to do is show up at the Convention Center for the 11 a.m. party, and be able to prove their identity in order to collect.

Operators of some of the other area radio stations reacted with concern at the pending arrival of such an aggressive and well-heeled newcomer to the Springfield area airwaves. One member of the local news media took the trouble, it is said, to call the FCC about the identity of WBTP's licensee. The FCC checked its records and insisted that there wasn't any new FM station authorized in Springfield, and the call sign WBTP was already issued—to a ship!

The Station That Never Was

WBTP was a unique operation. The prize winners weren't the ones doing the collecting, it would be WBTP's operators, namely the U.S. Marshal and the Sangamon Coun-

WBTP

COMING SOON TO A RADIO NEAR YOU

1007 W. Jefferson
Box 222
Springfield, IL 62702

This is to announce the opening of Springfield's newest radio station WBTP. On January 2, 1989, WBTP will be broadcasting on 104 FM. This new station will feature the latest in Rock n Roll music as well as Rock News 24 hours a day.

Currently, WBTP is giving away Christmas shopping sprees as a promotional opportunity. Our marketing research department has selected you as a member of the Central Illinois Community to receive a gift certificate for \$500.00 (Five hundred dollars). You were selected at random from a computer clearinghouse list of Central Illinois residents within our broadcasting area. Your gift certificate is redeemable at a major department store in the cities of Springfield, Jacksonville or Decatur, Illinois.

WBTP is hosting a "Prize Give Away Party" at 12:00 noon on December 17, 1988 at the Prairie Capital Convention Center, 9th and Adams, Springfield, Illinois. There will be food, drinks and prizes all courtesy of WBTP. In order to receive your gift certificate, you must attend the "Prize Give Away Party." The party and gift certificates are for winners only, and winners should arrive at the Convention Center between 11:00AM and 12:00 noon. Please bring proper identification and this prize notification to the party so we can verify that you are a winner. Anyone not attending the "Prize Give Away Party" will forfeit his or her gift certificate.

WBTP T-shirts will be given to all those attending the party and a drawing will be held for five lucky winners to receive a Grand Prize \$2,000.00 (Two thousand dollars) Christmas shopping spree! The Grand Prize drawings will be held at 12:30PM.

Please contact our business office between the hours of 9:00AM to 4:00PM, Monday through Friday at (217) 492-4435 no later than December 15, 1988 so that accommodations can be made for you at the party.

Congratulations, and we are looking forward to seeing you on December 17, 1988.

Sincerely,

JAMES WEST
Station Manager
WBTP - 104 FM

An attractive letterhead and warm invitation told 545 folks to come to the party celebrating the opening of anew broadcast station, WBTP.

Police play Scrooge in area sting

by Anthony Hebron

Federal and local authorities on Saturday posed as Santa and his helpers to lure to a grand "giveaway" area fugitives who have been avoiding prosecution.

But minutes after their arrival, some of Santa's elves acted more like Scrooge — arresting the fugitives just a week before Christmas.

Using an offer of a \$500 gift certificate from a new radio station as bait, authorities arrested 39 fugitives who showed up at a phony "prize giveaway party" at the Prairie Capital Convention Center.

The arrests were made without incident, police seized only a small quantity of drugs and no weapons.

Dubbed FIST (Fugitive Investigation Strike Team), it was the first "sting"-type operation local authorities have used.

Police say about half the fugitives knew they were walking into a trap, but the chance to win \$500 and participate in a drawing for a \$2,000 shopping spree was too enticing.

"I think we did a good job," Sheriff Bill DeMarco said at a press conference after the arrests, adding, "We were able to bring these people home for Christmas."

Of course, many of the fugitives and their relatives and friends didn't enjoy the party's grand finale.

When several fugitives were told they were under arrest, they said, "You mean no prizes?"

Others said, "I knew it, I knew it!"

Some were too stunned to say anything.

"I think it's a crock of bull," Jeffrey Constant of Jacksonville told police. "You got people's hopes up."

Consent was among 16 people invited to the party who had resolved their problems with the law before Saturday's sting. They were released.

U.S. marshals, working with county and city police, sent invitations to 345 fugitives in several central Illinois counties, who were wanted for misdemeanor and felony offenses dating to 1984.

The invitations said that, as a promotion for WBTP, a new rock 'n' roll radio station about to go on the air, they were winners of \$500 gift certificates.

The letters: WBTP stands for "wanted by the police."

To receive their prizes, the fugitives had to attend the party between 11 a.m. and noon. They had to bring identification and the prize notification to the party to verify they were winners.

Those attending were to receive WBTP T-shirts and participate in a drawing to be



State Journal-Register/Greg Melis
 U.S. Marshal John Weston, dressed as a clown, blows up balloons for 7-year-old Lisa Settles, left, and her 3-year-old sister, Desiree, during Saturday's police sting operation at the Prairie Capital Convention Center. The Settles girls attended the party with their mother, Varnessa, and her companion, Robert White. White was arrested and released on bail. At left, officers search and handcuff fugitives. Of the 39 arrests, 25 were for misdemeanors, 12 for felonies and 16 for traffic offenses, body."

among five people winning a \$2,000 Christmas shopping spree.

Police also used 11 billboards in the area announcing the new station.

And 71 people called the number listed on the flyer — which had the FBI federal government telephone prefix — to say they would attend.

Fifty-five people showed up with relatives and friends at the convention center Saturday.

As the fugitives and their relatives, and friends walked into the convention center, they were greeted with a "Ho, ho, ho" from an officer dressed as Santa Claus. The attendees filed one of the center's basement meeting rooms — decorated with holiday ribbons and door coverings, and a "WBTP 104 FM" banner.

Plainclothes officers served sodas while others, wearing WBTP T-shirts and Santa hats or crowns as props, mingled with the crowd.

They were given a half-hour to enjoy themselves eating, drinking, and chatting with the media about how great it was that they were winners.

Some said they were excited about winning something so near to Christmas. The money would come in handy because they didn't have any to spend for Christmas.

Some even said they were anxious to hear the new station.

Eventually, officers announced the station would be on the air on Jan. 2, and they wanted to get all the winners together to give out the

gift certificates.

As each fugitive's name was called out, officers dressed as Santa's helpers escorted them, one by one, to another room to get their prizes.

Many carried little balloons and smoked as they went for their prizes, some with smiles on their faces and announcement letters in hand.

But the smiles turned to frowns when the fugitives were greeted by uniformed officers who said, "Well, congratulations, winner. You are under arrest."

"You're not serious," said one incredulous woman, laughing and shaking her head before her eyes filled with tears.

"You mean it wasn't a real thing for no-

After they were arrested and checked for weapons and drugs, they were taken to a small van or state Department of Corrections bus on the main floor of the center.

Some sat on the bus cursing themselves for being so foolish, or for not resolving their legal problems earlier.

Some of the children and adults in the audience cried after being told their parents, relatives or friends had been arrested.

Police say the majority of the arrests stemmed from failing to appear in court for various offenses.

The most serious crime among those who

Continued on page 2

Although a number of fugitives were rounded up at the headline-making WBTP party, there was criticism of the pre-holiday timing of the sting.

ty Sheriff's Department. Despite the call-sign, the fancy purple radio station letterhead, and the promotional party, WBTP was a covert sting operation of the Fugitive and Investigation Strike Team (FIST).

WBTP, it turns out, stood for the initials *Wanted By The Police*, and the station's 104 frequency was simply concocted from the popular "10-4" signal. The WBTP operation was a complex plan intended to lure into police custody many fugitives who had successfully evaded the law for periods as long as four years.

The invitations sent to the fugitives told them to call WBTP in advance "so that accommodations could be made" for the winners. When they called the number given, they were told to show up alone at the party. From the seventy one calls received at the number, it was determined to position six FIST officers outside the Convention Center, thirty nine inside the hall.

Meanwhile, Back At The Party

When it came time for the WBTP party, it was noted that many winners had shown up with friends and family members (including small children), despite all early efforts to discourage this. In all, fifty five prize winners showed up at the WBTP party.

Inside, the hall was festively decorated and the FIST officers served food while dressed as clowns. One was wearing a Santa Claus suit. An hour later, the WBTP people began to call out the names of winners and ask them to come to the stage. In keeping with the party's festive mood, they started to head to the stage, some carrying balloons along with their invitations and proof of identity. Each winner was helped to the stage by a FIST officer wearing a Santa's Helper costume.

When all of the winners were assembled on the stage, uniformed officers came out and announced they were all under arrest. Some winners were speechless, others said they figured it might be a sting, but they took the chance in the hopes that it might not be. Several still wanted to know the status of the prizes that were announced and if they would later be awarded.

The winners were checked for weapons and drugs (no weapons were found, but some drugs were) and taken away in vans and buses. Family members and friends who were left in the hall were confused or angry. Several small children were upset and crying.

In all, thirty nine fugitives were arrested at the WBTP party, most for failing to have ap-

peared at court to face a variety of misdemeanor and felony charges including DWI, aggravated battery, fraud, retail theft, forgery, aggravated criminal sexual abuse, criminal trespass, drug possession, and others.

The U.S. Marshal and the Sangamon County Sheriff considered the WBTP sting a definite success, as did many within the community. Some criticism about the pre-holiday timing of the sting, and the fact that the fugitives had been humiliated in front of family and friends, appeared later in *The State Journal-Register* newspaper.

There was never another station, though, like WBTP. In fact, there never was a WBTP! Still, it could be said that for a radio station that didn't exist, it met the FCC's requirements of meeting the public's interest, convenience, and necessity. Furthermore, even though it no transmitter, nor an antenna, it sent out a message.

Not a single FCC form was filled out, not a single dollar was spent on equipment, nor even one watt's worth of signal was emitted into the airwaves. Yet, WBTP managed to get far more media coverage and headlines than any broadcaster that has gone to great effort to announce its arrival.

PC

The Merchant Marine Radio Officer Versus "State Of The Art"

*Superseded By Hi-tech, "Sparks" Tries To Prove
He's Still Necessary*

BY RICHARD E. DIXON

Several sea tragedies early in the century, including the sinking of the S/S Titanic with the loss of 1512 lives, prompted the compulsory installation of safety radiotelegraph equipment and radio operators aboard all merchant vessels. Hundreds of thousands of passengers and crewmen have since been spared watery graves. Recently, though, faced with skyrocketing costs, ship-owners have added radiotelegraph equipment and radio operators to their list of non-essentials. Alternatives? So-called state-of-the-art electronic systems.

The FCC and USCG now grant waivers allowing US merchant vessels fitted with marine satellite systems (marisat), SSB and VHF transceivers and EPIRB's (emergency position indicating radio beacons) to operate without radio officers if sailing within 150 miles of the US coastline. Similar waivers are being considered for ships on the Alaskan run. US merchant ships on foreign voyages must still carry radio officers, though the United States has indicated it will disregard a 1987 Geneva decision requiring them. The present outlook for "sparks" is bleak, but don't count him out!

With each day comes more proof that solid-state electronic components can't stand up to the rugged duty they encounter on ships. Power surges, spikes, heat and vibration all contribute to frequent failures. Things happen very quickly during emergencies at sea. Fires break out and main power is often lost, cutting off or damaging communications equipment. With no radio officers aboard it will be up to captains or chief mates to make repairs and do the communicating (When and if they are able to get the gear back on the air). Meanwhile their ship is sinking slowly in the west or dumping goo all over the ocean.

Marisat terminals are the main communications systems used on ships which don't carry radio officers. They're quite remarkable innovations and easy to operate. Tapes containing the information to be sent are pre-punched off the air and placed in the



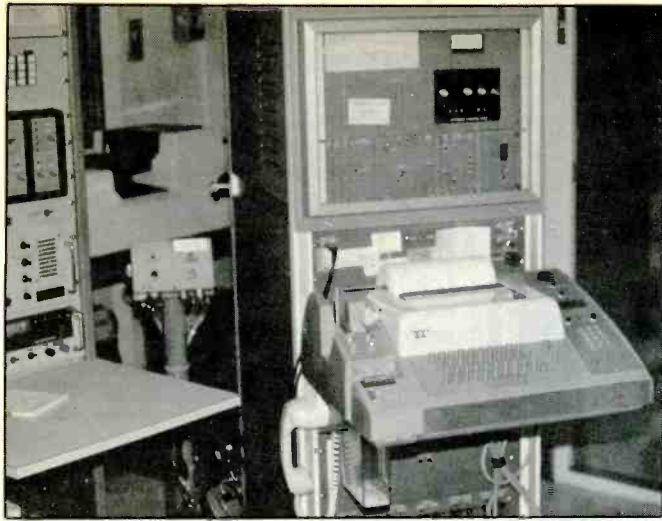
A rare sight on the oceans of the world these days; an American-flagged merchant ship.

tape transmitter. The Marisat operator is then signaled. After she gives the go-ahead indicating that a line is clear, the ship operator punches a key and the contents of the jape appears instantly on the addressed shore telex. Incoming traffic doesn't even require an operator. The terminal is activated ashore, the message(s) transferred, then the ship terminal is shut off by the shore operator. Worldwide coverage is possible through three satellites located 24,000 miles above the Pacific, Atlantic and Indian Oceans. Voice calls may also be made via Marisat, but they're costly; \$10.00 per minute, 3-minute minimum call.

As marvelous as Marisat systems are they are *not* dependable! They contain thousands of the fail-prone solid-state components mentioned earlier. Also, they are

very easy to jam. Marisat terminals, by the way, are included in the distress network set up for non-radio officer ships.

EPIRB's are also included in the vessel distress systems. These are radio beacons which, when immersed in water, emit siren-like signals on 121.5 and 243.0 MHz aircraft distress frequencies. Theoretically, EPIRB signals are picked up by special satellites and relayed to monitoring shore stations, giving pin-point positions of distressed ships. Here again, harsh shipboard usage does nasty things to electronics. Often during annual FCC inspections, EPIRB's have failed to activate when test-dunked. The false alarm rate of EPIRB's is nearly 100% according to FCC and USCG reports. While the CW equipment being superseded has a range of several hundred miles (more when propa-

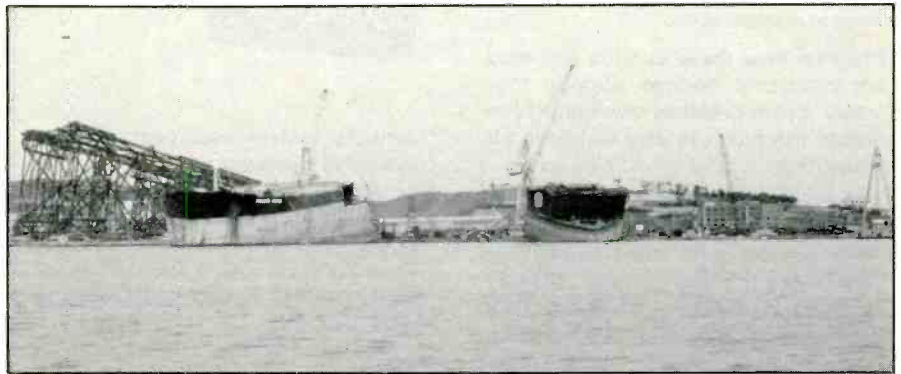


The radio officer's nemesis, a marine satellite terminal (Marisat). The tape transmitter is on the left edge of the keyboard, the controls for calling the Marisat operator on the right. World-wide telex is the terminal's main use, but voice calls may also be made; at \$10 per minute.



This shipboard console contains an emergency battery-operated transmitter and receiver, an auto-alarm (which rings very loud bells in the radio officers cabin if a distress signal comes in while he is off watch), as well as the main MF transmitter, HF transmitter and two all-band receivers.

Korean bone-yard. The last, and sometimes premature, voyage for many good ships. Less than half a mile to the left is the Hyundai automobile factory. Handy.



gation is good), search aircraft would have to be almost directly overhead to pick up EPIRB signals.

A tabulation of the failures of Marisat systems and other shipboard electronics is being compiled by two radio officer unions in hopes of getting the message across to the FCC and USCG (and ship-owners) that regardless of expense or state-of-the-art, modern electronic systems are not completely dependable.

Initially, the prime duty of the "sea-going wireless operator" was to listen for distress signals on 500 kHz, the international distress frequency. He had other duties, too, including sending and receiving CW messages pertaining to the operation of his ship, copying weather broadcasts, etc., but mainly he was an important safety factor. Not only for his own vessel, but for others within radio range who might come in harm's way. All ships were equipped with auto-alarms which responded to distress signals by jangling loud bells on the ship's bridge and in the radio operator's cabin, providing constant monitoring of 500 kHz, even when the operator was off watch. In those days, radio operators didn't hold officer status. Having no in-port duties, "sparks" was usually the first ashore with the gangway and the last aboard before sailing.

During the 50's, sea-going-wireless operators became "radio officers," thanks to unions, and wages and benefits improved tremendously, as did technical proficiency. The two radio unions operate excellent schools which turn out competent techni-

Coastal Stations and Frequencies

	Pacific	Atlantic	Gulf of Mexico
KFS -	San Francisco 6365.5 kHz 8444.5 12695.5 17184.8	WCC - Chatham, Ma 6376.0 kHz 8586.0 12925.5 16933.2	WLO - Mobile 6446.0 kHz 8474.5 12704.5 17172.4
KPH -	San Francisco 6488.5 kHz 8618.0 12808.5 17016.5		WNU - Slidell, La 6389.6 kHz 8570.0 12826.5 16861.7
KLB -	Seattle 6411.0 kHz 8582.0 12916.5 17007.2		KLC - Galveston 6369.0 kHz 8666.0 13038.0 16871.3

Ship Calling Frequencies:

Pacific	Atlantic	Gulf
6277.5 kHz	6271.5 kHz	6275.1 kHz
8370.0	8362.0	8366.8
12555.0	12543.0	12550.2
16740.0	16724.0	16733.6

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cians who are able to maintain and repair ship's communications equipment as well as radars, bridge nav equipment and even some of the complex electronics found in modern ship engine-rooms.

High costs, competition from cheap foreign flags, loss of government subsidies and no cargo preference (even on US imports/exports), have reduced the American merchant marine to a skeleton of its former self. Lately, ships in good shape, some less than ten years old, are being broken up and made into razor blades and Hyundais in the bone-yards of Taiwan and Korea. It's scary to think that if a war came along, heaven forbid, US troops might have to be supplied, maybe even transported, by Liberian, Panamanian or who knows what brands of foreign-flagged ships.

In an effort to prove their worth and save what few jobs remain, radio officers are upgrading technical skills, preventing ship-owners from having to hire expensive shore techs. Aboard some ships they're taking on purser duties at no additional pay. A bit off-beam, but nevertheless a fact, US radio officers from the Radio Officer's Union are manning the Kuwaiti tankers now under American-flag protection in the Persian Gulf. Above all, they have dedicated themselves to convincing all concerned that safety of life at sea will be compromised without them. Will their efforts succeed? Time alone will tell.

Anyone with a CW speed of 10 to 20 words per minute, or who has one of those neat new computer interfaces or CW readers may monitor the comings and goings of US merchant ships. Hear 'em while they're still around!

It makes it handy to have two receivers, but one with memory capability will do. First, tune in one of the coastal stations listed below. If you chose KFS on 12695, for example, and don't hear anything, KFS is probably receiving traffic from a ship. Or you may hear, "CQ CQ CQ DE KFS KFS KFS," with channels KFS is currently monitoring for traffic. This is the station I.D. tape which all coastal stations have. Presence of an I.D. tape indicates no traffic at the moment.

Tune in a ship now on your second receiver or memory, using one of the calling frequencies listed below. (12 MHz). You might hear "KFS" being sent over and over. With two receivers you'll be able to hear KFS's I.D. tape pause when he hears the incoming ship call. The ship operator will then send his or her call-sign and working frequency. (There are lady radio officers, too. Good ones!) If the ship sent "596" to KFS, the ship's actual working frequency is 12596 kHz, which you should now tune to on the second receiver or memory. You have them both now and will hear either a message(s) sent to the ship by KFS, or traffic from the ship to KFS. The ship's name is always included in the message address. Many of the messages you copy will contain the ship's position in the text, which you can pinpoint on your map or globe.

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Total			
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*Shipping charges \$2 per order. Orders processed day received, but please allow 30 days for delivery.



PRODUCTS

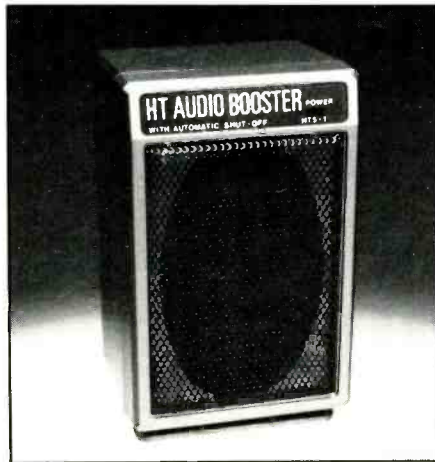
REVIEW OF NEW AND INTERESTING PRODUCTS

Amplified Speaker

Naval Electronics, Inc. introduced the HTS-1 Amplified Speaker with special features for use with handheld radios. The HTS-1 is very compact yet offers big radio sound from its 3.5 inch oval speaker and 10 dB internal amplifier.

Powered from internal batteries or any external voltage from 6-15 VDC through a DC jack, the HTS-1 is truly versatile. It even has a built in NI-CAD battery charger and a special "automatic shut-off" feature that kills power to the amplifier whenever there is no input audio (receiver squelched) to conserve batteries. When manually switched off, the amplifier is by-passed and the input jack is connected direct to the speaker.

The HTS-1 has a tilted base for desk mounting and a special mobile harness is available for mounting the unit on the inside of a car door. A 5 ft. cable with mini-plugs and a stereo to mono converter is included. A free stereo cable is available if two units



are ordered together for use with a walkman or personal stereo system. Cost \$29.95.

For further information contact Naval Electronics, Inc., 5417 Jetview Circle, Tampa, Florida 33634, or circle 101 on our Readers' Service.

Signal Intensifiers Remote Mounted

Electron Processing, Inc. announces a remote-mounted version of their signal intensifier receiver preamplifiers. The RFP-50 model answers the need for a high-quality, yet inexpensive, preamplifier where the amplifying stage mounts at the antenna to take full advantage of potential signals. The separate power unit can be conveniently located inside, near the receiver. RFP-50's provide 15 dB of gain from 1 MHz-1300 MHz with a low 2.8 dB noise figure. Available with choice of BNC, UHF (SO239), or F connectors and powered by choice of either 110 VAC or 12 VDC (\$4 extra),

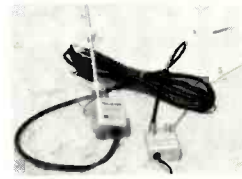
these models are easily tailored to almost any installation. For an additional \$25 per unit, type N connectors are available.

Housed in two rugged 1.25" x 1.25" x 3.5" cast aluminum enclosure and equipped with improved lightning/static protection, the RFP-50 is designed to provide the utmost in reliable service. A one-year RFP limited warranty reflects EPI's assurance of quality.

Prices for RFP-50's start at \$99.95 (BNC, SO239/UHF, and F connectors) with quantity discounts available. For additional information, contact the Sales Department, Electron Processing, Inc. at PO Box 708, Medford, NY 11763, or circle 102 on our Readers' Service.



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CIRCLE 1 ON READER SERVICE CARD

Risky Air Rescue Comms

Enemy Eavesdropping on Military Rescue Frequencies Spells Disaster!

BY LT. COL. DAVID M. FIEDLER

Recently, the Soviet Military journal *Krasnaya Zvezda* (Red Star), which is the official unclassified publication of the Soviet Ministry of Defense, carried an article entitled, "The Hour Before Immortality."

This article details the shooting down and death of Soviet pilot Konstantin Pavlyukov at the hands of Afghan "Rebels". It is important to note that Pavlyukov survived the "shoot down" of his SU-25 ground attack aircraft, but was killed while defending himself and awaiting rescue by the same type of airborne air rescue system currently in use by the U.S. Army and Air Force. This system relies on nonsecure voice and continuous wave (CW) ground to air radio transmissions broadcasting on "international" rescue frequencies to coordinate and guide an airborne (helicopter) rescue force to the downed aviator.

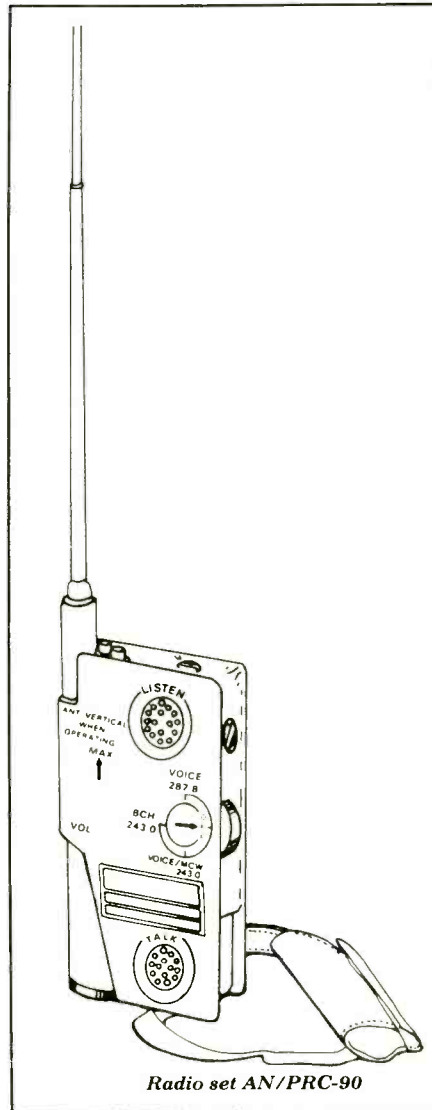
The officer's death was the direct result of an electronic warfare attack (or in Soviet terms, Radio Electronic Combat (REC) on the radio communications equipment used by the technically unsophisticated Afghan "Freedom Fighters" who, using crude but effective methods, were able not only to confuse the airborne rescue force as far as the actual location of the downed pilot (resulting in his death in the ensuing ground fight), but were also able to lure the rescue force via the radio, into a ground air "kill zone" so that the rescue force also did not escape without casualties.

Operating on well known international rescue frequencies, these same tactics were used effectively against U.S. forces during the Vietnam War and show again how vulnerable a means of communications the nonsecure single fixed frequency radio is. It is time for us to learn again from our own and from the Soviets' experiences (*mistakes?*) in this area.

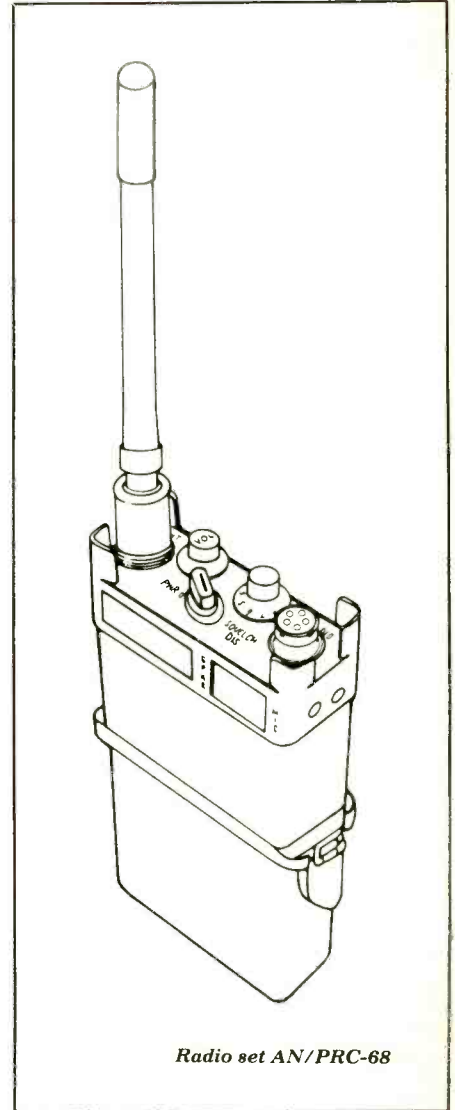
The tactics employed against downed flyers and their would be rescuers by both the Vietcong/NVA and the Afghans consisted basically of the following:

a. Capture (or construct) identical or compatible radio equipment to the equipment being used by the opposing force.

b. Monitor the opposing forces radio nets in order to attain knowledge of operational procedures, pro-words methods of employment and language. Well trained linguists are very useful for this purpose and all major



Radio set AN/PRC-90



Radio set AN/PRC-68

intelligence organizations have them. Monitoring itself is a very simple matter in this case since there is only one fixed frequency to monitor and no encryption to deal with. Searching of large portions of the radio spectrum is simply not required, due to the construction of our present air rescue radio equipment.

c. Supplement the knowledge gained by monitoring the rescue radio traffic with information obtained from common intelligence sources such as:

(1) unclassified/classified doctrine and tactics documents gathered by spies, and sympathizers within the enemy force.

(2) Captured documents and manuals.

(3) Prisoner interrogation.

(4) Knowledge of enemy doctrine and tactics gained from combat experience.

d. Set up "Kill zones" (which are basically a box in space covered by hidden ground weapons) and await the opportunity to lure the opposing force into the zone with bogus radio transmissions that match similar

transmissions from actual downed flyers, or as in this case, wait for an actual shoot down in the area and use the situation to best advantage by diverting and attacking the rescue force. This is done by transmitting voice traffic and direction finding signals simulating the downed airmen in accordance with the knowledge gained from the intelligence effort.

This process is made very easy for our potential enemies to use against us since U.S. forces have used and continue to use the AN/PRC-90 emergency locator transceiver to rescue downed airmen and have for many years. This radio is fixed tuned to preset international emergency aircraft radio channels for voice, modulated CW (MCW), and beacon transmission. The AN/PRC-90 is issued to aircrew members for communication with search and rescue aircraft, vehicles, and ships equipped with compatible equipment.

It is very simple for the aircrew member who is not well trained in radio techniques to use since it has only two fixed channels and three modes of transmission. It is obvious from the experience of Lt. Pavlyukov and many other flyers (including U.S. personnel) that this type equipment must be replaced with tunable secure radio equipment for military use or the results will be fatal.

Until this happens, U.S. aviators must be well trained (which they are not now), to take a few simple precautions that will increase the probability of being rescued after a "shoot down" by reducing the threat of electronic warfare attacks. They are:

a. Do not use the radio (in any mode) until the last possible moment. Remember modern direction finders work quickly on almost any form of transmission, and jammers or imitators must first acquire the operational frequency before they can operate.

b. When using the radio keep all transmissions as short as possible.

c. Supplement radio transmissions with visual signals such as colored smoke, mirror flashes, flares, flags, markings and light if possible.

d. Coordinate prearranged "pick up" points with rescue forces if possible so little actual communications is necessary.

e. Get off radio communications and on some other means as quickly as possible.

While all of the above actions will help increase the probability of downed flyers being rescued using present known fixed frequency equipment, it is still no substitute for proper technology and radio procedures as the death of Lt. Pavlyukov attests. The AN/PRC-90 is not suitable any longer for its intended mission. (At least not for U.S. Army aircrews.) Its replacement must have at least the following characteristics:

a. A wide selection of available channels that can be changed very easily and often just as we do in all other tactical radio nets so that specific nets and their uses will be hard to identify by unauthorized stations.

b. A speech security capability in order to

deny intelligence to unauthorized monitoring stations.

c. A rugged and reliable construction capable of surviving in the aircraft even after crash landing.

d. Compatibility with current airborne speech security and radio equipment that also have a direction finding capability (i.e., AN/ARC-114 and KY-58).

e. Simple to operate by non-communications personnel under high stress situations.

Fortunately, we do not have to look far for equipment with this capability, it is already in the inventory. The AN/PRC-68 small unit transceiver (SUT) and its derivative, the AN/PRC-126, has the capability now. At present, this radio is being used by infantry squads and platoons for low level communications. It weighs just 46 ounces and can be tuned to any one of 2000 channels, 920 of which are compatible with the current family of FM airborne transceivers (more with SINCGARS).

With the addition of the SVM-2 or SVM-2A, crypto device speech security is achieved that is compatible with already on board aircraft COMSEC equipment (KY-57). The signals can also be located accurately using the FM homing circuits in these same aircraft radios (i.e., the AN/ARC-114) on the same number of different channels (920). The radio is also fully compatible with all current and future and ground FM tactical radios which is a significant advantage over the AN/PRC-90 which does not have this capability.

Who says that all rescue efforts will come from the air? The ability to coordinate ground and airborne rescue forces simultaneously, and to aid in reinfiltration of our own lines by being able to contact ground

forces on their radio nets is critical to a downed flyer, as is the ability to all for and direct or lift covering ground fire support.

The direction of signals from the AN/PRC-68 can also be determined by our ground forces using standard radio (i.e., the AN/PRC-77 and the standard AT-784/PRC direction finding loop antenna). This cannot be accomplished when the downed flyer is using the AN/PRC-90 radio set that only operates on a fixed frequency in the international aircraft bands. Lack of capability is certain to cause tragic and unnecessary losses in combat situations because the downed flyer could not coordinate with ground and airborne forces in the area.

The use of the standard existing AN/PRC-68/AN-PRC-126 as an aircrew survival radio while it may not solve all of the similar communications problems that U.S. Army pilots have that caused the death of this Soviet pilot, is certainly an improvement over current equipment with an even greater potential to increase aircrew survivability. Not to use this equipment for this purpose leaves our airmen in an extreme risk situation that we cannot afford. The Signal Corps must do all in its power to make sure no airman's life is lost because his rescue communications could not do its job. We must also see that forces engaged in rescue operations cannot be lured to destruction by a clever enemy understands our communications equipment and its weaknesses better than we do.

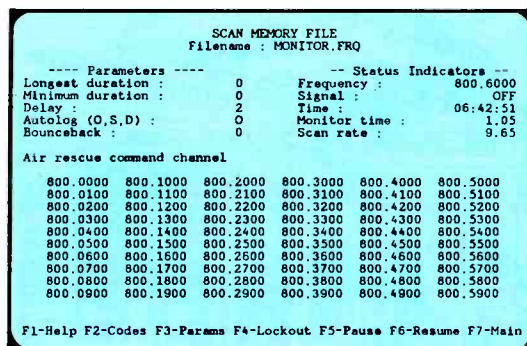
Lt. Col. Fiedler, a member of the National Guard, has served in Regular Army and National Guard Signal, infantry, and armor units in both CONUS and Vietnam.

Fiedler is presently the chief of the Fort Monmouth Field Office of the Joint Tactical Fusion Program, and is the assistant project manager for Intelligence Digital Message Terminals. He is also the director of systems integration for the JTFP. Concurrently, he is the chief of the C-E Division of the New Jersey State Area Command, NJARNG.

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CIRCLE 52 ON READER SERVICE CARD

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

New Experimental Licenses

The Commission, by its Office of Science and Technology, Frequency Liaison Branch took the following actions:

KA2XVI, Chromatics International, experimental operations—to train Avon representatives prior to certification of Class B computing device known as Avon Color-mate II system. In area of Springdale, OH.

KA2XWC, Woodward-Clyde Consultants, on various frequencies at 100 kHz intervals beg. 158.720-158.920, 159.020-159.920, 160.120, 216.500, 217.700, and 217.800 MHz to provide communication essential to seismic studies. Mobile in all areas of the U.S.

KA2XWU, Antenna Products Corp., on frequencies 230.0, 352.975 and 399.975 MHz—for use in connection with U.S. govt. contract. In Mineral Wells, TX.

KA2XWV, Contraves Goerz corp., on frequencies 34000, 34100, 34200, 34300 and 34400 MHz for testing radar under development. In Pittsburgh, PA.

KA2XWW, Femco, on frequencies 286.45, 286.50, 286.80 and 286.90 MHz for development of 286 MHz radio transmitter module for shipment to Republic of China. Located in High Point, NC.

KA2XWX, Insurance Institute For Highway Safety, on frequencies 24150, 24500, 10525 and 10000-10500 MHz to research high speed radars. Throughout U.S.

KA2XWY, Northrop Radio Services,

Inc., on frequencies 314.6 and 382.6 MHz under U.S. govt in Mojave, CA.

KA2XWZ, Panasonic Industrial Co., on frequencies 151.715, 151.775, 169.45 and 171.905 MHz for pre-production testing of low power wireless microphone radio system. Used at Lancaster, OH; Farmers Branch, TX; Wilmington, DE.

KA2XXA, Rockwell International Corp., on various frequencies between 2810 and 23404.0 kHz—experimental operations required by the Drug Enforcement Administration in Richardson, TX.

KA2XXB, National Association of Broadcasters, on frequency 1660 kHz for testing of medium wave directional antennas for broadcast use in Beltsville, MD.

KA2XXD, Northrop Radio Services, Inc., on frequencies 118-136, 225-339.9, 960-1215, 1090, and 915-9500 MHz for purpose of modifying F-86 aircraft as required by U.S. govt. contract. Airborne in U.S.

KA2XXE, Robert Bencivenga, on frequencies 2-3, 156-162, 2900-3100, 5460-5650, 9300-9500 MHz, 14-14.05 GHz, 4134 kHz and 8241.5 kHz—to test equipment after repairs. In Smithtown, NY.

KA2XXF, John Nagle, on frequency 1258.25 MHz to provide video while developing robots essential to research project.

KA2XXG, Antenna Products Corp., on frequency 2,165, 8,050, 15,620 and 29.800 MHz for use in connection with U.S.

govt. contract in Mineral Wells, TX.

KA2XXH, TRW Electronic Products, Inc., on frequencies 3.206, 6.950, 10.182, 13.930, 20.950, 38.50 MHz—to technically demonstrate equipment, testing of equipment prior to type acceptance and to perform limited market studies of tactical HF/VHF equipment.

KA2XYA, State of Alaska, on frequency 148.000-148.490 MHz, station for radio-telemetry to monitor the locations of movement of wild animals for management research project.

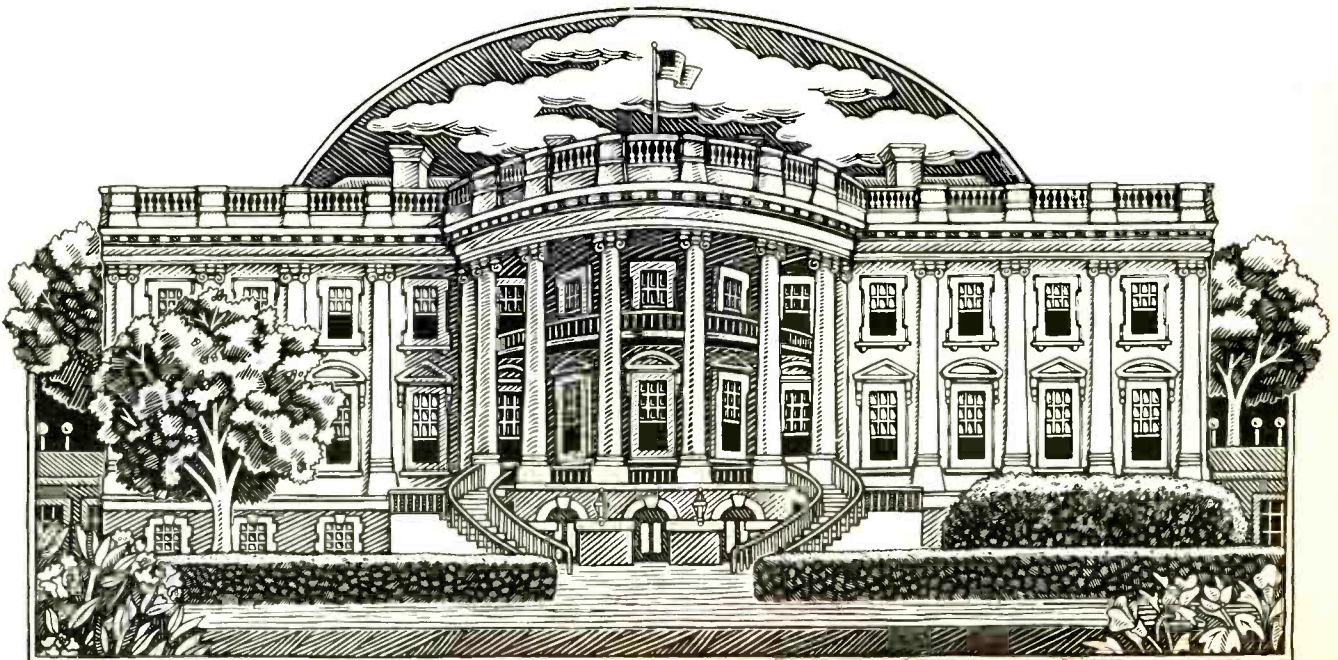
KA2XYB, Hewlett Packard Co., freq: (various), station for the development and experimentation of a medical telemetry system in Waltham, MA.

KA2XYC, Digital Radio Networks, Inc., freq: 928.0125-9283375 MHz and 928.00625-928.343375 MHz, station for the development of a new nationwide network system. Mobile within U.S.

KA2XYF, CNR, Inc., freq: 2-30 MHz to perform on-the-air tests to verify performance of HF-frequency hopping communication system. Station in Needham, MA.

KE2XEO, State of California, freq: 401.7895 MHz, station used for the GOES SATellite Data Collection Platform. Located in Chico, CA.

KE2XEP, State of California, freq: 401.7895 MHz, station for GOES Satellite Data Collection Platform. Located in Rainbow, CA.



KA2XYD, Integrated Data Systems, Inc., freq: (various), new station for oil and gas exploration and energy related research and development.

Permit Additional use of VTS Channels in New York and New Orleans

The Commission amended its rules to allow Vessel Traffic Services (VTS) channels in the port areas of New York City and New Orleans, LA, to be used by eligible users for other than VTS operations, pending possible future use for VTS communications.

Operated by the U.S. Coast Guard, VTS systems are ship movement reporting systems designed to prevent damage to ships, bridges, and other structures in U.S. navigable waters. These systems are also used to minimize environmental damage associated with navigational accidents.

Effective July 30, 1988, The Coast Guard discontinued its VTS systems for the port areas of New York and New Orleans, thereby leaving VHF marine channels 11 and 14 in New York, and channels 11, 12, and 14 in New Orleans, idle. The Coast Guard continues to use channel 12 in New York for anchorage management services. Since the Coast Guard took this action because of budgetary constraints, it stated that it might re-establish the New York and New Orleans systems if funding becomes available.

In the meantime, the Commission will allow eligible users to be licensed on channels 11 and 14 in the New York VTS radio protection area, and channels 11, 12 and 14 in the New Orleans VTS radio protection areas. Channel 11 is designated for commercial communications and channels 12 and 14 for port operations communications. Since the Coast Guard still uses channel 12 in the New York VTS area for anchorage management services, it remains unavailable for port operations communications in the port area of New York.

Because re-establishment of the two VTS systems is a possibility, licenses for Coast stations will be granted only on a provisional basis, contingent on a continuation of current Coast Guard policy. The Commission emphasized that it may rescind or not renew such licenses if the VTS systems are re-established.

The Commission said that this action was in the public interest because it permits greater use of the maritime VHF spectrum in two busy port areas, and promotes safety and other public benefits.

Non-Commercial Communications on Channels 79 and 80 on Great Lakes

The FCC amended its maritime rules to permit noncommercial vessels to share the maritime commercial channels 79 and 80, on the Great Lakes only.

The original proposal called for this shar-

ing on a nationwide basis.

There has been a longstanding problem of congestion on VHF frequencies assigned for noncommercial use by recreational and other vessels not required to be equipped with radio. The Michigan Steelhead and Salmon Fisherman's Association requested the two additional VHF channels be made available for noncommercial maritime communications on the Great Lakes. Because the shortage of VHF noncommercial frequencies appeared to be nationwide, rather than limited to the Great Lakes, the Commission proposed to permit Channels 79

and 80 to be used for both commercial and noncommercial communications nationwide. These two channels had been available only for commercial communications.

The Commission noted that the comments received indicated clearly that sharing of channels 79 and 80 on a nationwide basis would not work and might add to the present congestion in areas such as New York, New Orleans, the Mississippi River and the intercoastal waterways.

The Commission determined, therefore, that the sharing should be limited to the Great Lakes at this time. **PC**

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KRH50 and KRH51 are callsigns for the U.S. Embassy in London, England. The first callsign is used with Morse Code transmissions over shortwave radio, and the second, with radioteletype transmissions.

On a recent trip to London, I paid a visit to the embassy at Grosvenor Square (figure 1) wanting to learn some details about its radio stations. I entered the embassy lobby not expecting much in the way of information. But what the heck, I thought it would be worth a try anyway.

When asked about the embassy's HF radio stations, a spokesman in the embassy press office said, "We consider that to be sensitive information . . . We don't divulge details." I heard what I expected to hear.

Fortunately, I had my camera with me (not inside the embassy, where it was checked with security guards), and I snapped some photos of the antenna system on the roof. The views (figures 2 and 3) were of the front and rear of the embassy building. Thinking that the camera might not be able to capture the wires of the shortwave antenna, I drew it (figure 4).

The embassy is divided into six sections, Political, Economic and Commercial, Consular, Public Affairs, Administrative, and Defense.

Two of these sections, Political and Defense, would appear to have need for a shortwave radio facility at the embassy. A brochure about the embassy building says the Political Section "observes, analyzes, and reports on political, labor and politico-military developments in the United Kingdom, and on Britain's relations with other countries. These reports, sent to the Department of State as well as all other interested agencies in Washington (note these words —Ed.), are a basic ingredient in the formulation of American's foreign policy."

In reference to the Defense Section, the brochure says it is headed by the Defense Attache along with the representatives from the Air Force, Army, and Navy. It "is responsible for liaison with British Defense and military leaders and with the U.S. military commands in the United Kingdom."

During the week I spent in London, on a personal tour not in conjunction with POP'COMM, I saw many embassy buildings, most of which appeared to be devoid of rooftop antennas.

I walked past the Omani Embassy and saw the log periodic beam antenna that was pictured with this column in the February 1988 POP'COMM. This antenna was very wide when seen from the east side of the building. It appeared to be much bigger than in the magazine photograph that was sub-

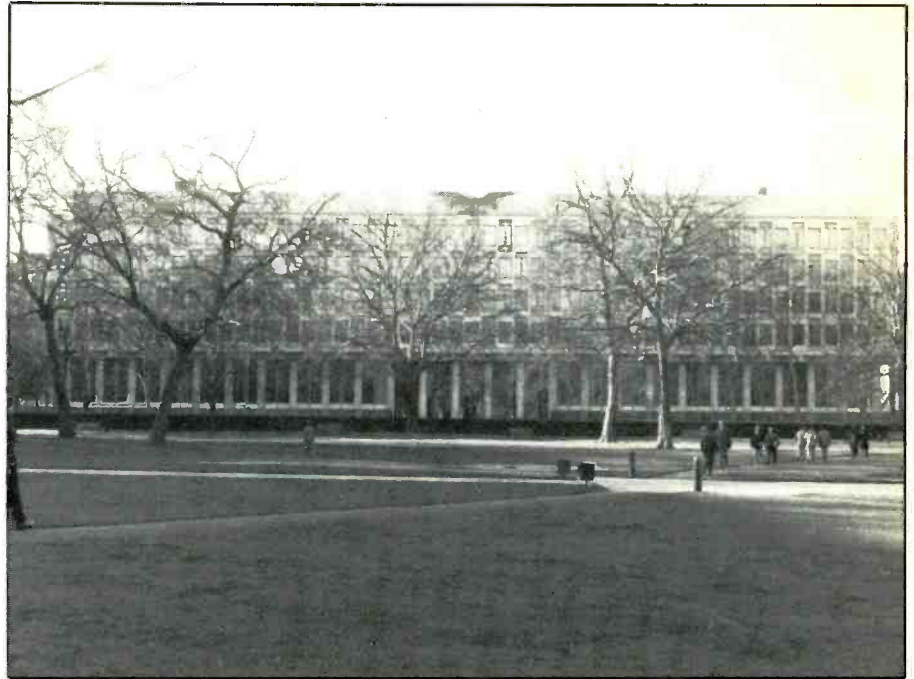


Figure 1



Figure 2

mitted by a reader from London.

A few blocks away was the Bulgarian Embassy, which has a dense antenna farm atop the roof. I saw more antennas here than I spotted anywhere else and I wondered why any sane bird would want to fly overhead

and risk crashing into one of them. I have drawn arrows on the photograph (figure 5), showing the ends of the longwire antenna as seen from the rear of the building. This antenna was similar in appearance to the one spotted above the U.S. Embassy.



Figure 3

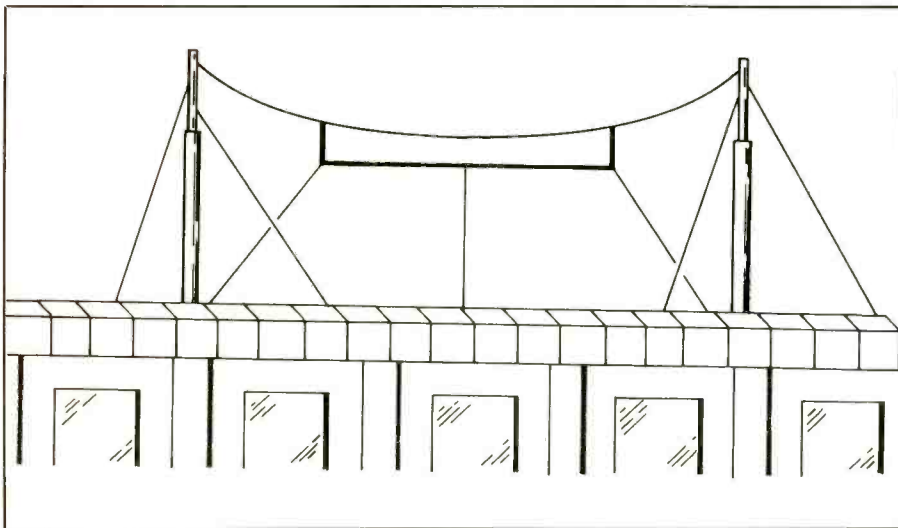


Figure 4

Dallas Williams of Colorado, a longtime contributor of loggings to this column, intercepted a RTTY broadcast last January of "Radio Truth," a pirate HF radio station that claimed to be broadcasting from somewhere off the coast of America." This is the first pirate radio station RTTY broadcast to come to my attention, although we have seen transmissions from foreign clandestine groups.

The printout Dallas submitted appeared to be an editorial by "Radio Truth" stating that the United States would do well to learn from the Israelis about combating terrorism. This editorial "has been a reply to letters to Radio Truth," the printout read.

The transmission continued with, "This is the teletype broadcast of Radio Truth, broadcasting from somewhere off the coast

of America. Radio Truth is part of the Voice of Democracy and the satire broadcast of The Voice of Communism." Radio Truth then provided a Post Office Box address in Battle Creek, Michigan for replies. This address had been popular in the past as a mail drop for several AM HF pirate stations, but it is now defunct.

The RTTY broadcast was intercepted by Dallas on 13998.2 kHz at about 0615 UTC on a Friday (2315 MST, Thursday, where he lives), with a setting of 425/60N. he said the signal "was quite strong," but "the shift varied a bit as the mark signal drifted up and down." Terrific logging, Dallas, and a ribbon of TTY tape to you for sharing it with us.

Tom Kneitel reports picking up a test transmission in FEC from station KMI, operated by AT&T in Dixon, CA. This was at

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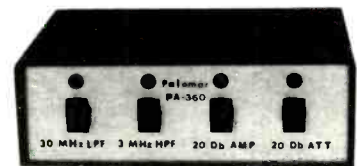
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0249 while the station was checking out its new Sitor equipment by calling CQ, sending foxes, etc on 8086 kHz. Announcement said that the station was being put into service to send info to ships and aircraft, presumably similar in intent to east coast counterpart service on 8053 kHz. Asked for reception reports and comments on KMI's sigs to be sent to Paul Newland, AT&T Bell Labs, Room 1G623, Crawfords Corner Road, Holmdel, NJ 07733.

J.M. of Kentucky always sends us loggings that are a quite out of the ordinary. This month is no different. One of his unusual intercepts he reports is a transmission at 150 bauds. See his logging at 8302. He remarks, "This is the highest speed baudot I've seen," to which I agree.

One day recently, Kenneth MacLeod of Washington State turned on his ICOM IC-R7000 scanning receiver and tuned to 171.155 MHz, where he picked up a 1200-baud packet radio transmission of the U.S. Coast Guard. He monitored NAVH, USCGC Point Benett and NMW47, USCG, Bellingham, WA., exchanging traffic between 0130 and 0200 UTC.

Ken would like to hear from any of you who may have piked up similar transmissions on 171.155 MHz where you live. You may write to him at P.O. Box 2495, Friday Harbor, WA 98250.

The ARRL has complained to the USN about their encrypted RTTY signals on 14024 kHz in the 20 meter ham band. The USN has apparently been unresponsive to the complaints.



Figure 5

Abbreviations Used In The RTTY Column

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

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

- 122.5: CFH, Canadian Forces, Halifax, NS w/plaintext wx at 0215, 340/75R (Tom Kneitel, NY).
- 518: NMF, USCG Boston, MA w/NTM's & wx 2245-2305; NMG, USCG New Orleans w/similar xmsn at 0300; NMN, USCG Portsmouth, VA w/similar 0130-0210; NMR, USCG San Juan, PR w/same 0040-0059. All were FEC mode (Tom Sundstrom, NJ).
- 247.5: PBC32, Goeree Isl. Navrad, Holland w/RYRY, 75 bauds at 2155 (Jan Wraith, England). Welcome back, Ian!-- Ed.
- 3073.5: DHN27, Greleng Meteo, FRG w/CQ & RYRY at 0238, 850/100N (Kneitel, NY).
- 317.5: CSY, Santa Maria Aero, Azores w/RYRY, 425/50 (Don Schimmel, WV). Time not given-- Ed.
- 3229.3: KAWN, Carswell AFB, TX w/wx data at 0110, 850/75N (Fred Hetherington, FL).

- 3266.8: LRB83, TELAM Buenos Aires, Argentina w/nx in SS at 0115, 850/50R (Hetherington, FL).
- 3517: GNI, Niton R., England w/ARQ phase sig & CW ID at 0157 (Ed.).
- 3543: Un-ID w/ARQ tfc in EE at 1956 (J.C.B., England).
- 3844: Un-ID w/RYRY, 50 bauds at 2250. Any idea who? (Wraith, England). In NA this is freq is inside a crowded ham band and that's mostly why can be heard between 3.5 & 4 MHz-- Ed.
- 4004.5: LRO2, TELAM Buenos Aires, Argentina w/nx in SS at 0210, 785/50R (Hetherington, FL).
- 4178.5: 3UP c/g 3MM on ship channel w/multiple callups for 1 hr. Sent RYRY/SGSG at 0111, 850/75 (Michael Ricks, PA).
- 4343: WLO, Mobile R., AL w/tfc list in FEC at 0142 (J.M., KY).
- 4442.8: RGC72, Kiev Meteo, USSR w/coded wx at 0217, 1030/50R (Ed.).
- 4555: FDY, French AF, Orleans, France w/RYRY & le brick at 0609, 375/50R (Richard Gleitz, PA).
- 4843: OWE, un-ID Danish sta, w/RYRY DE OWE ZA12 at 0630, 850/50R (Gleitz, PA). It's Katup R., Denmark-- Ed.
- 4996: E50Z, un-ID sta, w/RYRY at 0705, 250/50R. Whatzit? (Gleitz, PA). Ya' got me!-- Ed.
- 5043.6: Un-ID w/foxes & counting at 0140, 850/50N. Believe it's ONY27, NATO in Belgium (Hetherington, FL).
- 5160: IER20, Italian finance guard, Rome w/tfc in II at 1930, 50 bauds (Wraith, England).
- 5187: ETD3, Addis Ababa Aero, Ethiopia w/coded wx 0026, 50R (Harold Manthey, NY).
- 5240: 40C2, TANJUG Belgrade, Yugoslavia w/nx in EE at 0243, 425/50R (Ed.).
- 5317.7: 5AF, Tripoli Aero, Libya w/RYRY at 0220, 350/50R (Hetherington, FL).
- 5335: RDM79, Tbilisi Meteo, USSR w/coded wx at 0041, 425/50N (Manthey, NY).
- 5421.3: NMG, USCG New Orleans, LA w/NTM's & uncias tfc to a ship at 0357, 170/75R (Ed.).
- 5457: Un-ID w/RYRY at 0539, no ID, 500/50R (Dallas Williams, CO).
- 5460: VOA Tangier, Morocco w/nx in AA at 0345, 425/75N (Ed.).
- 5546.7: Un-ID w/tfc in SS at 1045, FEC (Hetherington, FL).
- 5734: RFLIG, French mil., Cayenne, French Guiana w/tfc to RFLIA (Martinique) at 1035, ARQ E 850/72 (Hetherington, FL).
- 5740.3: HZN46, Jeddah Meteo, Saudi Arabia w/coded wx at 2357, 850/50N (Ed.).
- 5879: COU, un-ID Cuban w/RYRY at 0250, 350/50R (Gleitz, PA).
- 6330: CFH, Canadian Forces, Halifax w/coded wx at 1237, 425/75R (Ait Blair, CA).
- 6340: NOJ, USCG Kodiak, AK, & NMJ1, Juneau, AK w/tfc at 1815, 170/75N (Ken MacLeod, WA).
- 6455.1: UDK2, Murmansk R., USSR w/msgs in

- RR at 1010, 170/50R. Usually runs CW, 1st time noted w/RTTY! (Hetherington, FL).
- 6495: WNU, Slidell R., LA w/tfc list at 1401, FEC (Blair, CA).
- 6835: GFL22, Bracknell Meteo, England w/coded wx at 0057, 425/50R (Ed.).
- 6902: KAWN, Carswell AFB, TX w/coded wx at 0750, 850/75N (Blair, CA).
- 6915: BAP46, XINHUA Beijing, PRC w/nx in EE at 1512, 1000/75R (Blair, CA).
- 6943: STX, ASECNA Nouadhibou, Mauritania w/tfc at 2100, 50 bauds (J.C.B., England).
- 6963: NBTC, USCGC Aquidneck w/g NMG at 0130, 170/75R (Daryll Symington, OH). Welcome back, good to see your loggings here again!-- Ed.
- 6972: YOG59, Agerpress, Bucharest, Romania w/nx at 1935, 475/50 (J.C.B., England).
- 6975: 6VU38, ASECNA Dakar, Senegal w/RYRY at 0400, 425/50N (Ed.).
- 7340: 7OC, Kharmaksa Aero, S. Yemen w/RYRY at 0420, 700/50N (Williams, CO).
- 7402.5: JMG3, Tokyo Meteo, Japan, w/coded wx at 1240, 850/50R (Blair, CA).
- 7407: CML5, PTT Havana, Cuba w/foxes & count at 0009, 425/50R (Kneitel, NY).
- 7461: Un-ID w/coded wx at 2120, 425/50R. Headers were: SATN40 HTDA. Is it HSD at Bangkok? (J.M., KY). My best guess is 5HD, Dar-es-Salaam Aero, Tanzania. The SA in SATN means aviation reports (METAR's), the TN stands for Tanzania. HTDA is the code designator for the airport at Dar-es-Salaam-- Ed.
- 7554: KJL412, maybe NY Telephone Co. testing TTY eqpt at 1920, 170/45R (J.M., KY).
- 7565: YIX75, INA Baghdad, Iraq w/nx in AA at 1340, 425/50R (J.M., KY).
- 7577: NMG, USCG New Orleans, LA w/msg for NGEI at 1630, 170/75R (J.M., KY).
- 7586: Un-ID w/5F tfc to DAA534, KKR772, etc. at 0443, 850/50N (Bob Logan, TX). That 5F tfc was wx data & DAA534 was the circuit ID & xmsn seq #. The DAA indicates it's 6VY41, Dakar Meteo, Senegal-- Ed.
- 7792.4: GYA, RN London, England w/freq chart at 2059, 850/75R (Ed.).
- 7887: 4UZ, UN Geneva, Switzerland w/tfc to UN in NY City at 0334, 425/75R (Gleitz, PA).
- 7890: ROQ3, Novosibirsk Meteo, USSR w/coded wx at 0348, 500/50R (Gleitz, PA).
- 7955: LRN85, DyN Buenos Aires, Argentina w/nx in SS at 2345, 850/75N (Ed.).
- 7961.3/7962: Un-ID w/foxes at 2350, 270/50R (Ed.).
- 8070: ZRH, Cape Town Navrad, RSA c. 0021 w/foxes, 850/75R (Kneitel, NY).
- 8135: XVM2, Hanoi, Vietnam w/RYRY at 1559, 500/50R (Blair, CA).
- 8137.5: 7QZ32, Lilongwe Aero, Malawi w/RYRY at 0442, 400/50R. Sometimes uses callsign FWLL (Williams, CO).

8175: Un-ID w/crypto + "za Viena" header at 0814, 500/75N. Izzit Yugo MFA? (Williams, CO). No, it's MFA Sofia, Bulgaria; see 16015 kHz intercept-- Ed.

8299.5: UIVZ, Kosmonaut Vladislav Volkov, a Soviet spaceflight tracking ship, w:/fc for UAT at 0225, 170/50N. Was heading back to retrofire position off Togo (Gulf of Guinea), from Lus Palmas (Canary Isls.) (Ricks, PA). Excellent report!-- Ed.

8302: Un-ID w/nx & sports in GG at 1510, 170/150R (J.M., KY). Can any reader offer positive ID? Possible Ruegen R., GDR-- Ed.

8449: NRPW, USCGC Mesquite wkg NMN at 1442, 170, 75R (Symington, OH).

9078: Y7A37, MFA Berlin, GDR w/RURY at 0715, 425/100N (Ed.).

9153.5: Un-ID w/4L grps at 0918, 500/50N. Who uses 4L grps? (Williams, CO). The SS/YL on 9074 kHz (AM mode), for one-- Ed.

9159.6: 5UA, ASECNA Niamey, Niger w/RURY at 0345, 425/50N ("Bunky," IL).

9187.5: FJY8, DIPLO Paris, France w/nx in FF at 0710, 425/50N (Ed.).

9190: RDDZ75, Moscow Meteo, USSR w/coded wx at 0708, 1000/50R (Ed.).

9210: CLN251, Havana, Cuba w/RURY, faxes, & counting at 0323, 425/50R. ID'ing as "GLOBE (2821) HAV." Klingenfuss decided not to list this regular (Kneitel, NY).

9287: TLO, ASECNA Central African Republic w/RURY at 0054, 425/50R (Manthey, NY).

9318: DHJ51, Greleng Meteo, FRG w/coded wx at 0703, 425/100N (Ed.).

9391: SOJ239, PAP Warsaw, Poland w/RURY & ID in FF at 0648, 425/50R. Nx in FF 0700 (Ed.).

9402.5: OST, Oostende R., Belgium w/ARQ phasing sig & CW ID at 0645 (Ed.).

10222: CML28, PTT Havana, Cuba w/telegrams to USA at 0200 (David Ford, TN). Settings?-- Ed.

10283: RFLI, French mil., Fort de France, Martinique w/ZNR msg, otherwise idling. Was ARQ-E3 425/48 at 0020 (Sundstrom, NJ).

10380: RBW43, SAM Muzhansk, USSR w/ffc in RR at 1015, 600/50N (Ed.). Same w/telegrams at 2245, 500/50N (Williams, CO).

10423.5: YMA7, Ankara Meteo, Turkey w/RURY at 0511; coded wx 0516, 770/50R. Was //3550 kHz (Ed.).

10435: ZAY, ATA Tirana, Albania w/nx in FF at 1558, 425/50N (Ed.).

10463.4: Y7A45, MFA Berlin, GDR w/RURY at 0522, 425/50R (Ed.).

10475: CNM34, MAP Rabat, Morocco w/nx in AA at 1606, 425/50R (Ed.).

10496: MKD, RAF Akrotiri, Cyprus w/RURY's & faxes at 2154, 170/50 (J.C.B., England).

10543: Y2V54, ADN Berlin, GDR w/nx in EE at 1230, 425/50 (J.C.B., England).

10551.5: GFL23, Bracknell Meteo, England w/coded wx at 0953, 425/50R (Ed.).

10579.4: HMF46, KCNA Pyongyang, N. Korea w/RURY at 0947, 500/50N (Ed.).

10650: BJ223, Wuhan Meteo, PRC w/coded wx at 0648, 425/50R (Ed.).

10795: JAG50, KYODO Tokyo, Japan w/nx in EE at 0532, 425/50R (Ed.).

10805: NA Buenos Aires, Argentina w/nx in SS at 0154, 425/75 (Ford, TN); Same at 0907, 850/75R (Ed.).

10844: Possibly CLPI, MFA Havana w/contin RURY at 0507, mgs in SS then ret to RURY at 0526, 350/50N (Ed.).

10859.8: YAD4, PTT Kabul, Afghanistan w/RURY & counting at 0448, 1000/50N; w/telexes at 0535 to ATS61 (10535 kHz) (Ed.).

10884: Un-ID w/RURY at 0304, 425/45. Think it's a Cuban mil circuit to Angola. Some stuff on 10885 at 0319 (Schimmel, WV).

10893: WWJ77, FHWA Brownwood, TX; & WWJ82 in Lincoln, NE trying 300 baud packet ops at 1545, but no joy (J.M., KY).

11004: NBA, USN Balboa, Panama w/RURY & SGSG of 1350, 850/75R (J.M., KY).

11005.7: 7OC, Kharmaksar Aero, S. Yemen w/RURY at 0150, 850/50R ("Bunky," IL).

11027: 9RL310, Kinshasa Aero, Zaire w/RURY at 1556, 425/50N (Blair, CA).

11100.2: CAK, Santiago Aero, Chile w/RURY at 0101, 850/50N (Williams, CO).

11123.5: 5YE, Nairobi Meteo, Kenya w/coded wx at 0000, 425/75 (Ford, TN).

11133: BZG41, XINHUA Beijing, PRC w/RURY at 1344, 425/50R (Ed.); Nx in FF at 1509, 425/50R (J.M., KY).

11155.2: Un-ID w/faxes & counting at 0649, 900/50R (Williams, CO).

11450.4: RDD77, Moscow Meteo, USSR w/coded wx at 0145, 850/50R ("Bunky," IL).

11460: Y7A49, MFA Berlin, GDR w/RURY, 100 bauds at 1615 (Wraith, England).

11476: HMF52, KCNA Pyongyang, N. Korea w/nx in EE at 0511, 250/50R (Ed.).

12065: EPD, Teheran Aero, Iran w/RURY at 0200 ("Bunky," IL).

12074.2: Un-ID w/very quick brown faxes at 2220, 850/75R ("Bunky," IL). USN-- Ed.

12075: VVD62, New Delhi Meteo, India w/coded wx at 1645, 140/50N (Blair, CA).

12192: Un-ID (poss Cuban) w/RURY w/o carriage returns or line feeds at 0250, 425/45R (Williams).

12202: DFZG, MFA Belgrade, Yugoslavia w/text in EE at 0723, then crypto 0930, 425/75N (Williams).

12212.3: YZ07, TANJUG Belgrade, Yugoslavia w/nx headlines in EE at 0412, 425/50R (Kneitel).

12228: SNN299, MFA Warsaw, Poland w/RURY & 5F t/c at 0532, 250/75N (Williams, CO).

12251: Y2V32, ADN Berlin, GDR w/RURY at 1808, 425/50R (Sundstrom, NJ).

12315: RW57, TASS Moscow, USSR w/nx in EE at 0634, 425/50R (Williams, CO).

12317: NADY, USS Shreveport (LPD-12) w/faxes & counting to NAM at 1424; NNWI, USS Whidbey Island (LSD-41) w/faxes to NAM at 1843. Both 850/75R (J.M., KY).

12771.5: PTT Moscow, USSR w/ffc to Karachi at 1057, TDM 425/96B (Ed.).

12808: GYA, RN London, England w/freq chart at 1041, 850/75R (Ed.).

13200: CAI7E, Hanga Raa R., Easter Island w/SS t/c at 0120, 800/50N (Blair, CA). Nice catch-- Ed.

13366.5: 5YD, Nairobi Aero, Kenya w/RURY at 2133, 425/50R (Ed.).

13399: DFZG, MFA Belgrade, Yugoslavia w/RURY at 0632, 425/75N (Williams, CO).

13400: LZG3, BTA Sofia, Bulgaria w/nx in EE at 1310, 500/50R (Ed.).

13491: 4MT2, Maiquetia Aero, Venezuela w/coded wx at 0621, 200/50N (Williams, CO). ITU lists callign 4MT2 as Caracas-- Ed.

13580: HMF36, KCNA Pyongyang, N. Korea w/nx in EE at 0455, 250/50R (Kneitel, NY).

13541.5: SON254, PAP Warsaw, Poland idling in FEC for 10 min at 1340 (Sundstrom, NJ). Maybe no news is good news-- Ed.

13770: VOA Tangier, Morocco w/nx in FF at 1139, 425/75N (Ed.).

13803: RCR78, Khabarovsk Meteo, USSR w/coded wx at 0258, 1000/50R (Ed.).

13865: Un-ID Soviet, possibly URD, Leningrad R. w/telegrams in RR, 0542-0610, 500/50N. Gramd listed Leningrad in headers & were sent to addresses in Moscow (Ed.).

13867: 5F grps at 1310, 990/50R (Kneitel, NY).

13886: TAD, MFA Ankara, Turkey w/nx in Turkish at 2138, 850/75R. Strong sigs. Off 2148 w/o s/off (Ed.); Un-ID w/telex in un-ID lang at 1755, 850/75R (J.M., KY). This is same sta I got, the lang was Turkish. In the copy that J.M. sent in, the key word that ties it to MFA Ankara is "disisleri"-- Ed.

13895: Y2V47, ADN Berlin, GDR w/nx in AA, 425/50N (Ed.); Same w/nx in EE at 1809 (Schimmel, WV); Likewise at 1820 (Symington, OH).

13914.7: Un-ID w/mucho SS t/c, ARQ at 2230, no s/off (Ed.).

13934: CLPI, MFA Havana, Cuba w/5F t/c to Embacabas in Ghana & Niger at 1805, 925/50N (Ed.).

13949.8: CLN414, PTT Havana w/telegrams to USA at 1805, 50R (Ed.).

13998: FTN99, DIPLO Paris, France w/nx in FF at 1801, 425/50N (Symington, OH); same at 0930 (Ed.).

14361: Un-ID w/5L grps, nothing in intra or exit to help identify, at 0448, 500/75N (Williams, CO).

14370: SAM, MFA Stockholm w/circular to embassies at 1935, ARQ/425 (Hetherington, FL).

14452: HMF57, KCNA Pyongyang, N. Korea at 1239 w/nx in FF, 250/50R (Kneitel, NY).

14497.5: CSY, Santa Maria Aero, Azores w/coded wx at 1930, 425/50N (Ed.).

14498: SUC, Cairo Meteo, Egypt w/coded wx at 1855, 425/50N (Ed.); same sta reported on 14500 w/RURY at 1603, 850/50N (Logan, TX).

14508: D4B, Sal Aero, Cape Verde w/coded wx at 1836, 850/50N (Ed.).

14542: MKK, RAF London, England w/RURY's & faxes at 1830, 170/50R (Ed.).

14560: JYF2, PETRA Amman, Jordan w/RURY at 0816, 425/50R (Williams, CO).

14573: JANA Tripoli, Libya w/nx in AA at 1617, 425/50N (Ed.).

14605: RFH1, French Navrad, Noumea, New Caledonia w/controle de voie at 2120, TDM 850/96A (Hetherington, FL).

14676: Un-ID Cuban diplo w/RURY, SS & crypto t/c at 1320, 500/50N (Hetherington, FL).

14716.6: RFH1, French Navrad, Noumea, New Caledonia w/controle de voie, TDM 850/96A&B (Hetherington, FL). Time not given-- Ed.

14751: 5KM, Bogota Navrad, Colombia w/RURY to PWZ, 350/75R (Blair, CA).

14756: CARMA001, un-ID w/RURY at 0001, 290/75N (Kneitel, NY).

14764: A9M70, GNA Manama, Bahrain w/nx in AA at 1725, 425/75R (Ed.).

14785: ATP65, MEA New Delhi, India w/nx in EE at 1435, 425/50R (Ed.).

14786.5: 9PL, Kinshasa Aero, Zaire w/coded wx at 1637, 425/50N (Blair, CA).

14794.5: FTO79A, AFP Paris, France w/nx in AA at 1359, 425/50R (Ed.).

14800.5: Y2V24A, ADN Berlin, GDR w/nx in EE



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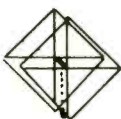
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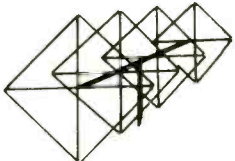
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at 1727, 425/50N (Ed.).
14818: Y7A60, MFA Berlin, GDR w/5L t/c at 1729, 425/50N (Ed.).
14831: 9KT33, KUNA Safat, Kuwait w/nx in EE at 1433, 350/50R (Ed.).
14835: 9I 33, KUNA Safat, Kuwait w/nx in AA at 1401, 350/50R (Ed.).
14901: CLN451, PL Havana, Cuba w/RVRY & foxes at 2010, 425/50 (Ford, TN).
15020: SANA Damascus, Syria w/nx in EE at 1620, 530/50N (Sunds rom, NJ).
15680: Un-ID w/5F t/c to another sta on freq at 1724, 425/50N (Ed.).
15752.2: CNM66, MAP Rabat, Morocco w/nx in FF at 1636, 425/50R (Ed.).
15780: RWM71, TASS Moscow, USSR w/nx in EE at 1600, 425/50N (Sundstrom, NJ); same at 1441 (Ed.).
15830: RUZU, SAAM Maladzezhnaya, Antarctica w/RVRY at 1452; aero wx 1500, 500/50R (Ed.).
15845: SUA289, MENA Cairo, Egypt w/nx in AA at 1505, 350/50R (Ed.).
15890: RB179, TASS Moscow, USSR w/RVRY at 1551, 425/50R (Ed.).
15897.5: OLS4, CTK Prague, Czechoslovakia w/nx in EE at 1420, 425/50N (Ed.).
15910: CLP1, MFA Havana w/Prensminrex nx & circulars to embacubas in Africa & Latin America at 1548, 425/75N; to Panama/Nicaragua at 2219, 100N (Ed.).
15911: Y7A61, MFA Berlin, GDR w/RVRY at 1523, 350/100N (Blair, CA); same at 1415, 425/100N (Ed.).
15925: RPT32, TASS Moscow, USSR w/nx in FF at 1239, 425/50R (Kneitel, NY).
15930: RB178, TASS Moscow, USSR w/RVRY at 1556, nx in FF at 1601, 425/50R (Ed.).
16015: Pass a Bulgarian diplo w/crypto to Viena (Vienna, Austria) & a 5F msg at 0741, 425/75N (Ed.).
16020: Un-ID USSR diplo w/5L t/c & crypto at 0728, 425/75N, fall at 0738 by RHA42, APN Moscow w/nx in AA, 425/100R (Ed.).
16040: RTT40, APN Moscow, USSR w/nx in AA at 0726, 425/100R (Ed.).
16050: RCE54, TASS Moscow, USSR w/nx in EE at 0720, 0956 & 1505, 425/50R (Ed.).
16085: RND71, APN Moscow, USSR w/nx in EE at 0759, 425/100R (Ed.).
16106.7: Egyptian embassy, Washington, DC w/t/c in AA & EE to Khargia Cairo at 1758, ARQ (Ed.).
16136: RB172, TASS Moscow, USSR w/nx in EE at 1557, 350/50R; BZR66, XINHUA Beijing, PRC w/nx in EE at 0802, 425/75R (Ed.).
16145: RWM77, APN Moscow, USSR w/nx in EE at 0804, 425/100R (Ed.).
16190: RGW26, TASS Moscow, USSR w/nx in FF at 1459, 350/50R (Blair, CA).
16225.8/16257.5: Un-ID w/nx in EE from ADN & TASS at 1532, 425/50R (Ed.).
16243: Y7A64, MFA Berlin, GDR w/nx in GG at 0808, 425/50N (Ed.).
16250: RME22, APN Moscow, USSR w/nx in EE at 0811, 425/100R (Ed.).
16265: Un-ID USN commsta w/crypto t/c, 75R at 2122 that QRM's an ARQ sig here. The ARQ sta is possibly SDK3, STA Stockholm, but its t/c can't bet thru the USN sigs (Ed.).
16308: Y7A66, MFA Berlin, GDR w/5L t/c at 1400, 300/50N (Ed.).
16325: Y2V23, ADN Berlin, GDR w/nx in AA at 0820, 425/50N (Ed.).
16330: CLP1, MFA Havana w/crypto after ZZZZZ to CLP4 at Harare, Zimbabwe, 2119, 50N (Ed.).
16370: GMZ, MFA Prague, Czechoslovakia w/5F t/c, 75 bauds at 1509 (Wrsnith, England).
16394.2: RIFMR, an Italian naval sta somewhere, to RIFMCA w/t/c re COMGRUPNAVCSST DIECI etc at 0734, 850/50R. Included were personnel rosters (Williams, CO). Good logging, Dallas!-- Ed.
16700: Y410, GDR stern trawling factory ship Bodo Uhse clg Y4AB w/t/c for Rastok Fischkombinat at 1637, 170/50R. Vessel is part of ROS 312 USA-Schelf fleet operating off the NJ coast (Ricks, PA).
16702: UKZW, Soviet oceanographic research vessel Professor Gagarinskiy w/t/c for UPB at 0353, 170/50N asking about getting fuel at Hilo, HI (Ricks, PA).
17100: YWM, Moracabo Naviad, Venezuela w/t/c in SS to NBA at 1710, 850/75N (Ed.).
17183: Y5M, Ruegen R., GDR w/nx & sparts in GG at 1330, 170/50N (Sundstrom, NJ).
17390: 3VA74, TAP Tunis, Tunisia w/nx in FF at 1703, 500/50N (Ed.).
17434.5: Y2V37, ADN Berlin, GDR w/RVRY at 1351, 425/50N (Ed.).
17440.3: IGP in Italy w/bank transfers to Tokyo, Japan, ARQ at 1859 (Manthey, NY). Is IGP a callsign or the initials of the operating agency? Could this be IRP54, per next item?-- Ed.
17440.5: IRP54, Italcable(?) Rome, Italy w/nx in II, FEC at 1831-1928. Was not ANSA (Ed.).
17502.2: RFLI, French mil, Fort de France,

Martinique w/non protege msgs at 2222, ARQ-E/72. Nx & plaintext wx in FF start 2300 (Ed.).
17525: OLV3, CTK Prague, Czechoslovakia w/nx in EE, good sigs at 1345, 425/50R (Sunstrom, NJ).
17570: RBX42, TASS Moscow, USSR w/nx in FF at 1318, 425/50N (Kneitel, NY).
18122.4: MKK, RAF London, England w/RVRY's & foxes at 1443, 170/50N (Ed.).
18279.4: HBD20, MFA Berne, Switzerland w/nx in FF & GG, ARQ at 1253 (Ed.); same w/circulars in FF & GG at 1330, ARQ (Kneitel, NY).
18295: SDU9, STA Stockholm, Sweden w/msg to Vietnam at 1332, TDM 425/96B (Sundstrom, NJ).
18342.5: VOA Greenville, NC w/American Republic File nx in EE at 1611, 425/75N (Ed.).
18388.6: 5AF, Tripoli Aero, Libya w/RVRY at 1641, 425/50R (Manthey, NY).
18496: CNM80, MAP Rabat, Morocco w/nx in EE at 1307, 425/50R (Ed.).
18644.5: 9KT356, KUNA Safat, Kuwait w/nx in AA at 1427, 425/50R (Ed.).
18669.5: FTS67, AFP Paris, France w/nx in FF at 1622, 425/50 (Schimmel, WV).
18670.5: FTS67, AFP Paris, France w/nx in EE at 1642, 350/50N (Ed.).
18696: CNM82, MAP Rabat, Morocco w/nx in FF at 1608, 350/50N (Ed.).
18697.5: DFS70, DPA Hamburg, FRG w/nx in EE at 1631, 425/50 (Schimmel, WV).
18760: J5W, French embassy, Rabat, Morocco w/t/c in FF, 5L t/c & crypto at 1540, 425/100 (Schimmel, WV).
18786: FTS78, DIPLO Paris, France w/nx in FF, 425/50 (Schimmel, WV). Time not given-- Ed.
18809.9: SAM, MFA Stockholm, Sweden w/nx in Swedish, 1630, FEC/425 (Ed.).
18860.5: ZAT, ATA Tirana, Albania w/RVRY at 1453, then nx in EE at 1501, 1000/50N (Ed.); Same at 1702 (Schimmel, WV).
19234.7: Un-ID meteo sta w/wx at 1700, 850/75N (MacLead, WA).
19322: OMZ, MFA Prague, Czechoslovakia w/telexes in Czech & EE at 1455, 425/75N. One was to "CufIt Havana" (Cuban Fleet) from Oceanshipping Praha, re Czech bulk carrier M/V Bratislava would be loading sugar at Cuba. Was 425/75N at 1455 (Ed.).
19324.5: KAWN, Carswell AFB, TX w/coded wx at 0112, 850/75N (Kneitel, NY); same w/plaintext wx synopsis at 1549, 850/75N (Ed.).
19360: KAWN, Carswell AFB, TX w/coded & plaintext wx synopsis at 1912-2000, 850/75N (Blair).
19388: Y7A76, MFA Berlin, GDR w/5L t/c to Damascus at 1408, 170/100R (Ed.).
19390: Y7A76, MFA Berlin, GDR w/RVRY at 1555, 425/50R (Ed.).
19433: Y7A77, MFA Berlin, GDR w/many msgs to Managua at 1435, 425/50N (Ed.).
19505: RCD36, PL Moscow, USSR w/nx in PP at 1252, 425/50N (Ed.).
19747: 6VU79, Dakar Meteo, Senegal clg CQ & RYRY at 0117, 850/50N. Announced //6VU73 & 6VY41 (Kneitel, NY).
19865.5: YZJ4, TANJUG Belgrade, Yugoslavia w/nx in Serbo Cooat at 1615, 425/75R (Ed.).
19941: KNY32, Bulgarian Embassy, Washington, DC w/visa requests to MFA in Sofia, telexes in Bulgarian & crypto after DDDDD. Was 425/75N at 1534 (Ed.).
20021.6: Italian Embassy, Tunis, Tunisia w/5F t/c to MFA Roma & Beirut, ARQ at 1404, off 1411 (Ed.).
20078: FTU8B, DIPLO Paris, France w/nx in FF at 0122, 425/50N (Kneitel, NY).
20112.6: CLP1, MFA Havana w/t/c to Embacuba Angola at 2122, 500/50N (Williams, CO).
20187.5: IRS41, IINA Rome, Italy w/nx in AA at 1442, 425/50N (Ed.).
20327.5: 6VK221, PANA Dakar, Senegal w/nx in FF at 1500, 425/50N (Sundstrom, NJ).
20332: KNY32, Bulgarian Embassy, Washington, DC w/crypto after DDDDD from "OT Vaxington" (Washington), a 5F msg from "OT Otava" (Ottawa) & crypto from "NS Hark" (New York). Xmsn also had visa requests, including 1 from a man from "Qikago, Illinois" (Chicago, IL). Went from 1622-1657, 425/75N. Addressed to MFA "Sofiy, Bwlgariy" (Ed.).
20372: IRS23, ANSA Rome, Italy, w/nx in EE at 1524; FF at 1617, 425/50N (Ed.).
20619: OMZ, MFA Prague, Czechoslovakia w/nx in FF to Czech Embassy in Montreal at 1502, 425/75N, also telexes to Washington for relay to Asia & S. American posts. Off 1517 (Ed.).
20699: Maybe CLP1, MFA Havana w/contin RVRY at 1621, 1000/50N. RY's interrupted by occasional DIME's or "SUBE 2 22045" (GSY +2 kHz to 22045). Nothing heard around 22045. Off in CW w/QRX's at 1637 (Ed.).
22562.1: GKE7, Partishead R., England w/t/c at 1925, ARQ (MacLead, WA).
22888: DFZG, MFA Belgrade, Yugoslavia w/RVRY & garbled t/c (crypto?-- Ed.). them more RYRY. Was 425/75N at 1503 (Manthey, NY).
23072: Un-ID w/crypto at 1927, 425/100N (J.M., KY).

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Just when I was beginning to think that all the pirate variations had been done . . . comes a letter from Dallas Williams in Colorado who reports on his reception of a station calling itself **Radio Truth**, "broadcasting from somewhere off the coast of America" and continuing that it was "part of the Voice of Democracy and the satire broadcast of the Voice of Communism" and giving the now defunct Battle Creek, MI mail drop address. The kicker was the transmission was in radioteletype! (0617 to 0632 close on 13998.2. The transmission talked about terrorist acts in recent years and noted that voice versions were aired between 5.8 and 5.9, 7.4 to 7.55, 15.4 to 15.6 and 21.450 to 21.6. Single sideband voice broadcasts were also announced for 14335, 15040, 21455 and 28995. **The Voice of Communism/Voice of Democracy** are, indeed, pirate stations which have been active in the past. Most interesting! If you are equipped to monitor RTTY, I suggest you watch 13998 for possible future activity. And thanks to Dallas Williams for sending this in.

WOLF is the call of the new station which is supposed to go on the air sometime this spring in Western New York. Initially, Saturday and Sunday evening programming is planned over a low power FM band transmitter. Format will be largely soft rock.

I've been absolutely deluged with reports this month (that's not a complaint!) and the only way I can get everything in is to condense them.

Voice of Tomorrow, the half pirate/half clandestine racist station, was noted by Stu Nadd (NY) around 2110 on 6240, announcing 1616, 7410 and 15040 as well. Claimed the studios were in Providence, RI, transmitter in Baltimore. Announced its address as P.O. Box 314, Clackamas, OR 97015. Heard at 1940 on 7410.5 by Brian Breton (NH), on 7410 at 1918 by Fraser Bonnett (OH), 6241 at 2229 by Pat Murphy (VA). The usual "Tomorrow Belongs To Me" theme and wolf call interval signal.

The Voice of Elmer Fudd was heard by Murphy (VA) on 26.086 at 2100-2142 with humorous songs on the "Uncle Stevie Show." Said they'd be on every weekend.

United World Radio was found at 0315-0344 on 7412 by Dave Molinelli (IL) with rock music and spoofs. Address was given as c/o T.A.G.A.R., Room 258, Union Building, Stony Brook, NY 11794.

WJBI was heard by Steve Rogovich (VA) to 0629 closing on 1620 with old rock. Played the national anthem at sign off. Ray Babecki (NJ) heard the station at the same time, claiming 1,000 watts and announcing a location on Staten Island. Noted with ID as "WJBI, 1620, the Voice of New York,

To: MR. F. BONNET Of: KETTERING, OH

This Is To Confirm
Your Reception Of



WENJ

New Jersey's Best Pirate

On: 12-31-88 Time: 2050 U.T.C

Power: 45W Freq: 7415

Antenna: 1/2 WAVE DIPOLE

Issued By: JACK BEANE

Q.S.L.# 1

Fraser Bonnett in Ohio is one of many who've received this paper QSL from WENJ, but it looks as if Fraser got the first one issued.

broadcasting on 1,000 clear watts. We are conducting equipment maintenance tests." Claimed to be located in central New York state with directional north-south antennas, reports Jim Kalach (CT). Jim says the station requested reports be sent to the National Radio Club but I would very much doubt the NRC is involved in any way. William Wyllie (MA) heard them at 0546 and Zachary Bortolot (CT) at 0519.

WROX was logged by Nick Terrance in New York on 7415 LSB at 2345. Many Id's as "WROX from the Northeast to the world." Format of satire and folk music.

WRFT—Radio Free Texas was heard by Jim Smith (MO) at 0413-0430. Jim didn't mention a frequency, but I'd guess 7415. That's where Robert Ross (ONT) heard them on 0430. Jim says they announced a schedule of Sunday and Thursday nights (Monday/Friday UTC) and Grant Barrett (MO) says they have a nice yellow and blue QSL card.

Seems virtually everyone heard **WENJ**. Stu Nadd at 2045 on 7415 announcing an 800 number. Dan Spooner (MA) had them on 6240 at 2341 also mentioning 1620 and 108 FM. Robert Ross had them at 1933 on both 6240 and 7415.5. Joe Burke (NY) found them on 7417 at 2240 giving a phone number. Pat Murphy called announcer Jack Beane and subsequently got a QSL for his 7415 reception. So did Gene Fuller (CT). Steve Rogovich had them from 2006-2100 and Stephen Naylor (NH) at 2200. Steve checked his phone bill and found his call went to Perth Amboy, NJ. Joe Wright (MA) had them at 2125 on 7416 and notes use of the "J-rock" slogan. John Bensch (NJ) also QSL'd them and wonders if the call may stand for West Edison New Jersey." Walter R. Talbot II (PA) had them at 2015 on 7410. Address given as P.O. Box

5074, Hilo, HI 96720.

Steven Naylor (NH) found **Radio Con-dofish** at 0200-0230 on 27.035 (CB Channel 7) with the "Lucky 7 Show" which Steve says has been going out on Sunday nights for some months. Rock, rhythm, comedy records and ad parodies, but no address given.

Falling Star Radio noted by Pat Murphy at 0507 on 6242 with requests for donations and "counterculture" materials to the Hilo, HI address. Heard by Dan Spooner (MA) several times on 7415, mostly between 0400-0600. Address given as P.O. Box 1659—Gracie Station, NYC, NY 10028. Steve Rogovich heard them on 6240 from 0422 to 0500 sign off with a "theme" broadcast on preventing and avoiding violence. Signed off with the William Tell Overture. Robert Ross had them from 0000 sign on at 6242.

Radio Clandestine showed up on the unusual frequency of 6110 noted by Joe Wright (MA) from 1947 to close at 2013 with late 60's rock and comedy; hosted by R.F. Burns.

Weekend Music Radio from Scotland was heard by Steve Rogovich from 1853-1940 on 15045.

It's obvious that the pirate world has been busy at both ends—transmitting and receiving!

Pirate fans may be interested in the **1989 Pirate Radio Directory**, written by George Zeller. This 56-pager has details on about 50 North American shortwave pirates active last year, including frequencies, formats, addresses and how to DX and QSL pirates. Price is \$6 (plus \$1 shipping) from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147.

Keep those reports flowing in and I'll see you again next month!

PC

27 MHz COMMUNICATIONS ACTIVITIES

The Sparkomatic RA-400 CB rig is a good, basic, no-frills mobile unit selling at a relatively low price. Still, it's not all that much of a barebones unit as you might imagine a rig with a list price of \$59.95. It's offering all-channel, full-power operation, extremely compact size, LED digital channel display, plug-in microphone, received signal and modulation indicators, and an instant Channel 9 pushbutton. You can also buy this unit complete with a mag mount antenna (Model RA-500, \$69.95 list price).

Looks like a good little rig for any number of mobile applications where you need quick, full-power comms and don't want to shell out a lot of greenstamps. Comes from Sparkomatic Corporation, Milford, PA.



The Sparkomatic Road Alert RA-400 mobile rig.

You Wrote To Say

From Cheyenne, WY comes a note from John Gardner who recalls that in the column last September we mentioned using a Valor 300 rubberized shortie antenna for roof mounting on metal-skin motor homes in order to avoid tuning problems with antennas located on the mirror mounts. He liked our suggestion and asked if we had any further thoughts on such an installation.

The Valor 300 (which fits into standard mounts) can be placed on the RV's roof railing towards the rear of the vehicle so that it cuts down on engine hash. Although the antenna is amazingly flexible (Valor describes it as "literally unbreakable"), it will nevertheless shear off at the base if a low hanging tree branch whacks it within its bottom inch or two. Best way to reduce this possibility is to mount it towards the rear on the driver's side.

Also note that, being only 15 inches tall, the trade off with this flexible antenna is that

it is neither going to receive nor send out a signal as well as a standard mobile whip. On the other hand, being mounted on top of a vehicle that's almost 11 feet high offers some advantages. So long as you're mainly interested in using your CB for getting traffic conditions and smokey reports, or shout up a REACT Team, within a five mile radius, then it should prove satisfactory. If you're looking to work DX, you'll be disappointed.

Many dealers sell Valor antennas. The company's address is 185 West Hamilton St., West Milton, OH 45383.

On the subject of mobile antennas, G.L. Milner, Providence, RI wrote to say that he's seen the manufacturers' literature on the Wilson 1000 and Signal Engineering Goldenrod 45 mobile antennas and they both appear to offer dazzling results. Wants to know if anyone has reported in with first

hand field reports on either or both. I can report that thusfar we have heard from several readers who have had glowing words of praise about the Wilson 1000. You can take that to the bank!

Richard S. Grove, SSB-36V, of San Francisco asks us to remind you to shop around carefully and not to forget mail order dealers when pricing CB rigs and accessories. He notes that prices can vary widely. In fact, Richard had purchased a Cobra 2000 locally, only to find one that could have been obtained from several other sources for less. One mail order dealer was offering it for \$50 less than he paid.

Operating and Operators

Mel, HI-321, of Honolulu, HI comments on our January mention of the Botswana



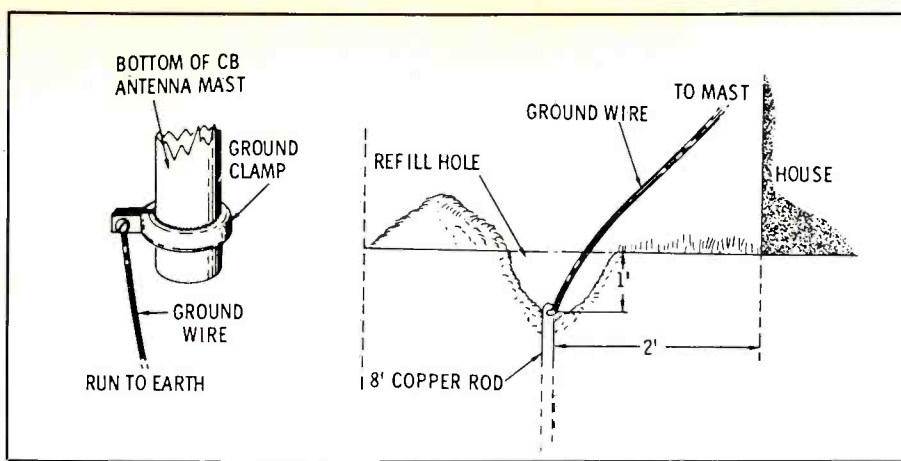
You don't often see a QSL from Botswana. (Courtesy Mel, HI-321.)

AM-2, 18, 24
SSB-37L, 38L

"LITTLE JOHN"
10 X-RAY 92
OLD BUZZARD 4014

JOHN A. LOVE III
P.O. BOX 278
GREEN BAY, VA. 23942

"Wanna swap QSL's?" says John, SSB-92D.



Grounding your antenna against lightning strikes.

DX'pedition. He reports that he copied that station (105-AT-0) last October and did receive the QSL from this rather rare African location.

Speaking of DX, the column received a lengthy letter from CB'ers Adelheid and Michael Schrotner, P.O. Box 884, Berlin 1064, German Democratic Republic. We are always amazed to find where this magazine has readers! The ID's used at the station there are 46-GDR and also 46-AT-102, monitoring 27.555 MHz USB. These folks belong to almost 200 QSL and DX groups from 39 nations, and have collected more than 8,000 QSL's over the last ten years. In addition to 27 MHz operations, they are avid SWL's.

Andres J. Garcia, SSB-36H, of New York City, NY was surprised to read in the February column about the operator in Alberta who was asking about the mystery station on CB Channel 6. This is the station with the OM operator that appears to be talking to himself. Andres observes that he has a vacation home overlooking Lake Bomoseen, VT and where he copies this same station with an amazing signal at times, both AM and SSB. He agrees that the guy just babbles on, and on, and on, in a monologue containing occasional pauses!

Gregg A. Pohl, the Information Director of the Southern Oregon Rural Radio group tells us that they are looking for area operators (SSB) to hold roll calls on behalf of the organization. Contact Gregg and the SORR at P.O. Box 227, Chiloquin, OR 97624. Or look for them on the lower side of 39 at 8 p.m. (local) on Sunday nights.

We never cease to hear from folks who enjoy card swapping, although they don't always seem to be all set to go into action along those lines. Recently, though, a good looking QSL showed up from John A. Love III, SSB-92D and 10-X-Ray-92, P.O. Box 278, Green Bay, VA 23942. He's got the cards plus a hankerin' to exchange them with other operators. You're invited!

Sorry to have to note that longtime 27 MHz operator Herbert J. Durnavent, SSB-3245A, of Sacramento, CA passed away

recently. Herb had been a member of the SSB Network since 1977. He will be missed.

Grounding

Guess I don't have to point out that during this time of the year the weather tends to produce lightning. Since lightning wants to strike the highest grounded point in a given area, a CB antenna could be a prime target, which could result in a fire in your home, or loss of your home's electrical system, damage to your equipment, and (most importantly) harm to persons in the home that received the unexpected lightning bolt.

The electrical path can occur from the antenna elements, through a coil at the antenna base, down the shield of the coaxial cable, then to the transceiver chassis. Unless the electrical path is detoured to a path other than that just described, there's a problem that's sure to happen. There are several

ways to provide for ground protection from lightning.

In the most simple grounding arrangement, a heavy wire is run from the transceiver case (if it is metal) to a cold-water pipe or to the screw that holds on the cover plate of the a.c. wall outlet. This is, if your CB rig doesn't have a 3-prong wall plug that accomplishes this on its own.

Commercially available lightning arrestors are available from several sources (Alpha-Delta, Radio Shack, and Cushcraft immediately come to mind). These will detour any direct strike on your antenna to a point outside of your home. A homebrewed ground can also be made and should do a good job.

Items are available where electrical supplies are sold. First is a length of bare wire, like #8 aluminum or #10 copper. One end of the wire is attached to the lower end of the antenna mast with a grounding clamp (see diagram). The wire is led down, as straight as possible, towards ground below. Avoid kinks as well as unnecessary turns or loops.

The wire will be fastened to a ground rod after some preparation. The rod is a standard 8-ft. copper rod driven into the earth (as shown in the diagram) at least two feet away from the house. Furthermore, the top of the rod should be buried at least one foot below ground level. For this reason its convenient to locate the point where the rod will be driven into the earth, and (before the rod is hammered in) first dig a hole just over a foot in depth. Then, hammer the rod down until its top is barely visible in the hole. This permits the ground wire to be attached. If the rod has no provision for fastening a wire, a grounding clamp should be used. Finally, fill in the hole and pack down the earth until its firm. **PC**

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CIRCLE 49 ON READER SERVICE CARD

GETTING STARTED AS A RADIO AMATEUR

"Intruder alert! Intruder alert! Nonamateur transmissions have been detected on all HF ham bands. Request immediate mobilization of nationwide monitoring network. All nonamateur transmissions shall be catalogued, analyzed and summarized on a regular basis."

Sound like something from one of the latest techno-thrillers? Well, it's not. It's all in a day's work for the 30-or-so hams who are a part of the ARRL Interference Reporting System, AIRS for short.

AIRS started operations in 1983, replacing the old "Intruder Watch" program. AIRS has three main objectives: (1) to report nonamateur stations causing harmful interference to amateurs; (2) to establish a record of vigilant protection of the amateur bands; and (3) to develop band occupancy data and accommodate an occasional special study.

Nonamateur transmissions *do* show up on all HF ham bands on a daily basis. With the amount of "assignable" radio spectrum dwindling fast, it's important that we not create the impression that the ham bands are up for grabs. Hams have lost frequency allocations in the past. Just last year, the FCC took steps to reallocate 220 to 222 MHz to land mobile interests (as this column is being written, the FCC action is being actively fought by the ARRL and others).

What kinds of nonamateur signals find their way onto the amateur bands? Shortwave broadcasters, military RTTY, fishing beacons, maritime stations, over-the-horizon radar, open carriers, free-band type SSB conversations, spurs from malfunctioning transmitters, and many others. Fig 1 lists a few recently-reported suspect signals. Several hundred nonamateur transmissions are reported to the FCC every month through the AIRS program.

Because the International Telecommunication Union (ITU) divides the world into three regions (see the Ham Column, February 1988 for a complete description of ITU regions and frequency allocations), and some ham bands share frequencies with other interests in *some* regions, weeding out unauthorized nonamateur transmissions is difficult. Some high frequencies, however, are allocated exclusively to the amateur service on a worldwide basis: 7050 to 7100 kHz, 14,000 to 14,250 kHz, 21,000 to 21,450 kHz, and 28,000 to 29,700 kHz. Intruder hunting in these segments is more clear cut.

A Day In The Life

Gib Gibson, W7JIE, is a typical AIRS monitor. He's a retired government worker

Selected AIRS Interference Reports

FREQ (kHz)	UTC	CALL/ID	REMARKS
1804.27	0052		CW, Beacon-like signal with letter "O".
7000	1431		Iraqi wobble jammer.
7007	1625	UMS	CW, RTTY. Maritime station signing normal traffic.
7019.7	0425		Encrypted RTTY, unprintable.
7070	0230		Wobble jammer.
7082	2245		Broad warble jammer on top of weak AM broadcast.
14,074	1414	VRQ	CW, traffic handling.
21,032	0450	UMS	CW, RTTY from eastern Siberia.
21,255	0150	WNU	US maritime coastal station running CW traffic. Probably a harmonic.
28,058	2118		LSB, Spanish CB-type QSO.
28,125	1500		SSB, truck drivers talking, profanity.

Fig 1 - A small sample of an AIRS interference report. Some information has been intentionally left out.

who lives in Washington—an active ham with a passion for the challenge, mystery and "clandestine feel" of intruder hunting. Gibson, pictured in Fig 2, starts each monitoring day at 5 am. First he gets in a quick read of the morning paper, and then it's time to go hunting! Gibson's favorite bands are 40, 20, and 10 meters. As shown in the photo, he uses Kenwood R-5000 and R-2000 receivers, and a Yaesu FT-757 amateur transceiver in his listening efforts.

During our morning conversation, Gibson was simultaneously monitoring two non-amateur RTTY stations. I could hear them "deedle-eedle-eedling" in the background.

"They're probably Soviet maritime RTTYs," he says, "and probably won't be on frequency for more than a few days." It's tough to track them that way. Because ITU member countries are essentially free to commence military communications on any frequency, they often "plop" down a signal in the ham bands, stay for a while, and then move on. Some out-of-band shortwave broadcasters (clandestine broadcasters, for example) behave similarly.

In addition to the frequencies listed in Fig 1, Gibson offers *POP/COMM* readers these frequencies: 14,141, 14,170, 21,032, and 21,284 kHz. These are usually occupied by Soviet maritime RTTY stations. Other commonly-occupied frequencies (mostly RTTY) include: 14,024 kHz (Moscow), 14,180 kHz (Tashkent), and 18,154 kHz (this Cuba-to-Angola piccolo will not be an official "intruder" until the 17-meter band is no longer a shared band).

Because international cooperation in matters of radio spectrum allocation is so touchy (and involves many governmental agencies and diplomatic channels), it's of-

ten difficult to see the positive results that come from all this monitoring. Two recent successes include: the silencing of some illegal fishing beacons off the coast of Florida, and "long-distance" engineering assistance to a Tahitian shortwave broadcaster. In the first example, authorities clamped down on several fishing beacons operating in the 160-meter ham band. The beacons, used by commercial fishing operators to mark fishing areas, had been imported from Japan, where the beacons are perfectly legal. In the second example, an out-of-band signal was traced to a Tahitian shortwave broadcaster. Several components in the transmitter were damaged, causing the unit to emit spurious signals on the 40-meter ham band. As soon as the transmitter was fixed, no more phantom signal. Incidentally, I think you'll be interested in tracing the "chain of command" necessary to correct the problem. They are, in order: monitor, coordinator, FCC Treaty Branch, US State Department, London, Singapore, Tahiti, station attendant, blown filter in transmitter replaced, and finally, a thank you note! That's a lot of shuttle diplomacy!

More direct intruder monitoring methods may evolve in the future. For example, according to Gibson, the New Zealand government has authorized one ham station, ZL6IW, to transmit on any ham band, using any emission (for the purpose of tracking nonamateur signals). When a nonamateur signal is detected, ZL6IW can do more than just monitor the station—he can usually talk back, thanks to his sophisticated array of transceivers, RTTY decoders/decrypters, and other gear. This contact is often enough to drive away most of the squeamish non-amateur stations. The tactic has also been



Fig 2- Gib Gibson, W7JIE. Gib is an active AIRS monitor. He tries to get in a little "regular hamming" every day. Gib has been running QRP, or low power (about 10 watts output).

effective on foreign military and maritime stations.

Gibson has this parting advice for hams who encounter nonamateur signals: "Don't waste your time trying to jam nonamateur transmissions. A 1500-W ham signal, although powerful in its own right, is no match for a 50-kW RTTY signal. Besides, you'll probably create some interference of your own." (Not to mention that jamming any

signal, intruder or otherwise, violates FCC rules for amateurs!)

For an application, or detailed information on the AIRS program, contact Luck Hurder, KY1T, at ARRL HQ. And don't forget to write me at ARRL, Dept. PCN, 225 Main Street, Newington, CT 06111. Keep your letters and photos coming. I'll be using a lot of the latest material in future columns. **PC**

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CIRCLE 67 ON READER SERVICE CARD

ANTENNAS AND SIGNAL IMPROVING ACCESSORIES

Using Antenna Bridge To Adjust An Indoor Wire Antenna

Single-wire indoor antennas can be resonated with an antenna bridge to better match the wire to the receiver and obtain the most favorable pick-up on a given band, or several bands. Reception can be further improved by finding the most favorable physical location for the antenna by moving it about and checking results against a reference. Sometimes, the resonant frequency changes as you shift the physical position of the antenna wire, but usually not enough to have a serious effect on signal level. Indoor performance is often influenced by the surroundings of the antenna wire. Watch out for any significant change in level up or down as you seek the best spot for a permanent installation. Don't forget, if you have enough space, a longer wire can be resonated on two bands, fundamental and third harmonic. Also, the added length quite often helps on adjacent bands as well.

By proper connection of the antenna meter, such single-wire antennas can be resonated with, or without, a ground attached to the receiver. The receiver finds a ground by way of its power cord when a more direct ground is not available. This article demonstrates how the antenna bridge can be connected to make resonant measurements for both single-wire against ground as well as dipole-connected indoor arrangements.

How To Connect The Antenna Bridge

A two or three position coaxial switch is an effective device to use in making the right connections for the resonant measurement of a single-wire antenna, Fig. 1. Use about a 2-foot length of coaxial cable that can be connected between the coaxial switch and the receiver antenna terminals, Fig. 1. The output terminal of the coaxial switch connects to the bridge while the single-wire antenna is connected to input terminal B and, the switch is set to position B, Fig. 2A. The other end of the short, two foot, length of coaxial cable that attaches to terminal A is connected to the antenna input of the receiver. This cable's sole purpose is to bring the receiver ground up to the switch and antenna bridge. Its inner conductor is out of the circuit because the coaxial switch is set to position 2, not position 1. Remember, the coaxial switch must be set to position 2 to make the antenna resonance measurement between the antenna wire and receiver ground. Also, to test antenna on the receiver

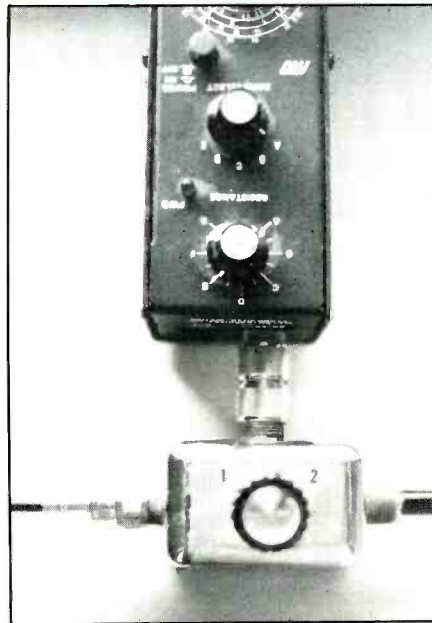


Fig. 1- Hook-up to measure single-wire resonate frequency.

er you must go back to a coaxial switch normal connection position, Fig. 2B.

More details on antenna bridge use for receiving and transmitting antennas is given in my book, "Easy-Up Antennas for Radio Listeners and Hams," which can be purchased from the Popular Communications Book Shop. Refer to the advertisement in this issue.

The quarter wavelength and three-quarter wavelength dimensions for the various shortwave broadcast bands are repeated again in Table 1. Perhaps, if you have already installed one of the single-wire antennas as described in recent issues of POP' COMM, you can now check out the resonant frequency with the use of an antenna bridge. If the reading is more than 10-15 percent off, it could be helpful to lengthen, or shorten, the wire accordingly.

An interesting harmonic antenna is one

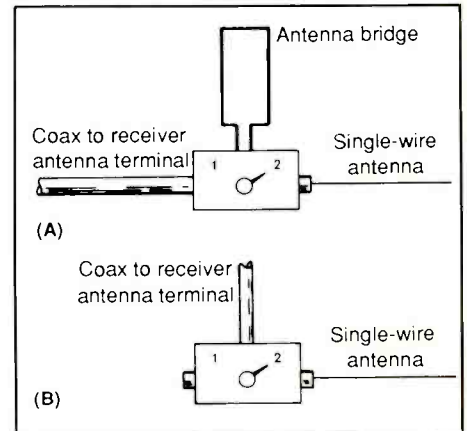


Fig. 2- Measurement of single-wire antenna resonance (A) and application of single-wire antenna to receiver (B).

that is cut into the 41 meter band which has a near third harmonic resonance on the 13 meter band, Fig. 3. I usually strive for a quarter wave resonance on 7.2 MHz. especially for good nighttime listening on the 41 meter band. This is a relatively short antenna. The 13 meter band is becoming more active because of more favorable sunspot conditions. After sunrise signals are good on the 13M band and results often extend well into the day depending upon propagation conditions. When the band is open some early evening signals are also readable. You may wish to favor the 13M performance by setting it to exact resonance in the 13 meter band if you find the resonant point too far off. Usually the addition of a short length will not have any adverse results on the 41 meter band pick-up.

You can make something of a universal single-wire antenna by adding a clip-on section of approximately 15 feet. To obtain third harmonic resonance on 19 meters, which is an excellent all-day DX band, trim the add-on with the use the antenna bridge for a 15.3 MHz dip. This antenna length is close to a quarter wavelength on the 60 me-

Table I - $\lambda/4$ and $3/4\lambda$ Resonant Lengths

Band	13	16	19	21	25	31	41	49	60	75	90
$1/4\lambda$	10'10"	13'3"	15'3"	17'	19'10"	24'1"	32'6"	39'	48'	59'	71'
$3/4\lambda$	33'7"	41'	47'6"	53'	61'5"	75'	—	—	—	—	—
Feet											

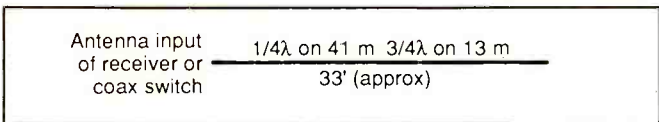


Fig. 3- Antenna wire resonant on two bands—not bad on adjacent bands.

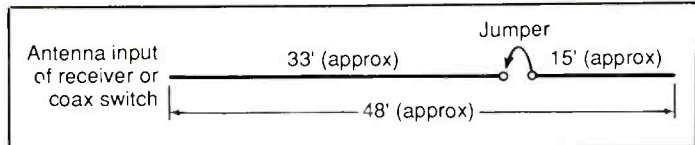


Fig. 4- Universal single-wire resonates on 4 bands.

ter band. Wire works well on 16M, too, another good DX band. Thus, with the single clip-on, you can obtain multi-band resonant results and come up with something of an all-band antenna with the exception that the clip must be opened or closed depending upon which pair of bands you wish to favor.

Combined Use For Bridge, Tuner and Loading Coil

An antenna bridge in conjunction with a tuner and/or loading coil can be used for a variety of functions in all-band reception. One application is to come up with a reasonable system to improve low-band results without making the antenna wire excessively long. In a test we laid down, an antenna that resonated on the 75M band, by adding to a 48-foot length wire in use; kept adjusting until we hit 3.9 MHz using the antenna bridge. Because of the apartment plan, the wire had an odd configuration as shown in Fig. 5. Keep it hidden and positioned mostly along the base of walls.

The antenna wire did not resonate close enough on 75M using the quarter wavelength dimension listed in the table. A cut-and-try procedure was needed and a section of wire had to be added. Just how much change is an unknown quantity depending upon your own apartment plan. Certainly the antenna bridge was a big help in obtaining good resonance right on the band. The presence of the DW German station on 3995 verified the results. There was a general improvement in performance on the tropical bands. The higher-frequency bands were good and little different from that noted with the 48-foot length.

Tuner Helps

It is on the tropical bands and lower fre-

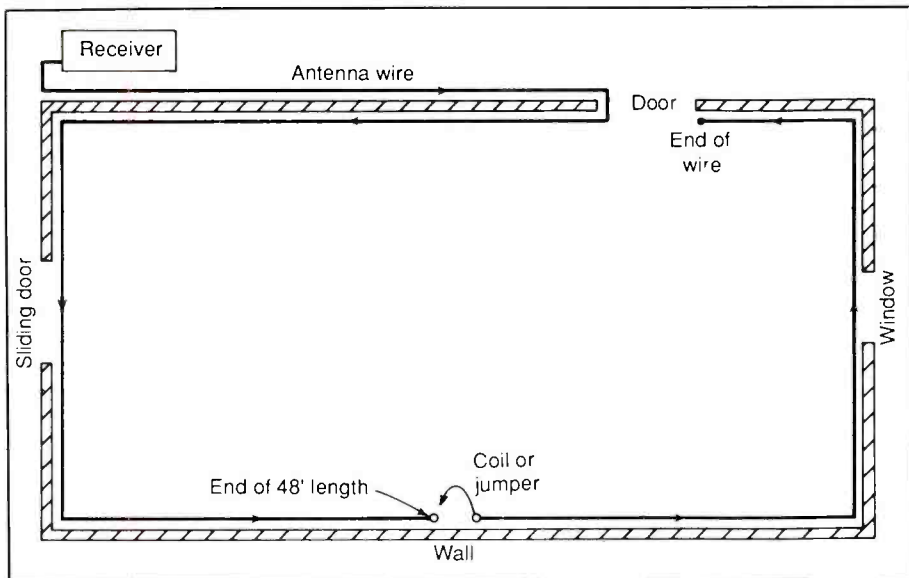


Fig. 5- 75M resonant antenna.

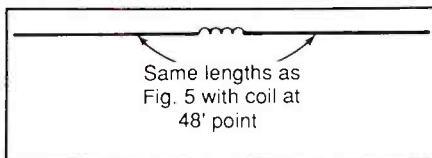


Fig. 6- Loading coil to lower resonant frequency 90M band.

quencies that a tuner is especially effective. The addition of the Grove TUN-3 to the installation improved the pick-up on the 90 and 120 meter bands as well as the intervening frequencies up into the 160M ham band.

The next step in our checks was an evaluation of the effects of small loading coils on

the resonant frequency of the 75M wire. I found a good source for such coils in the Radio Shack inductor packet 273-1601 (\$1.98). It contains a set of 9 single-layer coils about 1 inch long and 1/8 inch in diameter that can be used singly or in series groups to resonate the single 75M wire on lower frequencies even up into the high-frequency end of the broadcast band. In our test a single coil loop, Fig. 6, moved resonance to the low frequency end of the 90 meter band. The coil was connected between 48' point and the wire added for 75M resonance. Three of them connected in series, Fig. 7, placed resonance at the center of the 120 meter band. More on using these loading coils for various purposes will follow.

PC

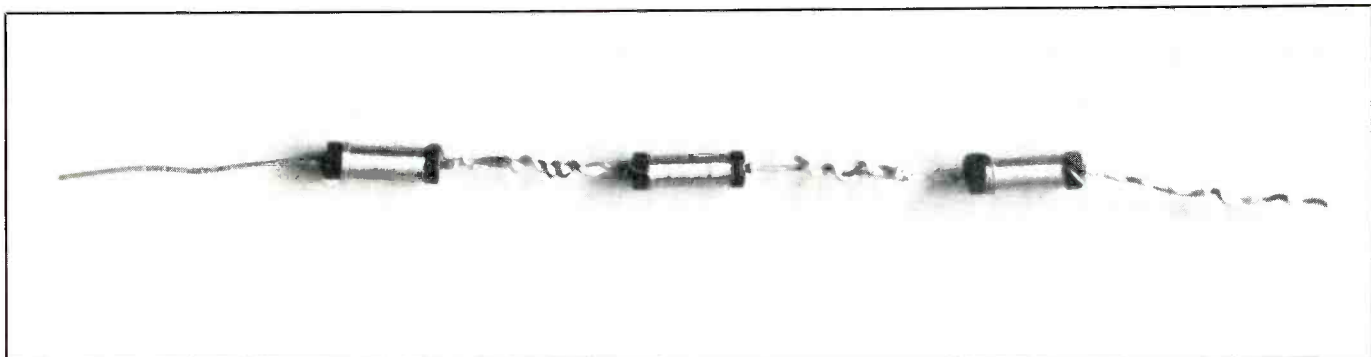


Fig. 7- Coils for increasing electrical length of single wire antenna. Three coils hit 120M band.

BROADCAST DX'ING

BY KARL ZUK

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

If you want to really DX television, get out your scanners! It could be the TV DX opportunity of a lifetime!

This year, we will reach a sunspot maximum, predicted to be the strongest since the 1600's. In days of old, frustration reigned, because even the finest castles did not have DX shacks. But you do, so enjoy!

The sun has not been very active since 1980. The earth is now being bombarded with particles from the sun that are activating the ionosphere more than anytime in recent history. Last month, we talked about the effects of TV and FM skip off the ionosphere's E layer. When the sun is incredibly active, the next highest region, the F2 layer, becomes active, sometimes enhancing reception up to 60 MHz or higher. When this happens, television can skip from 2000 or more miles away. But why do you need a scanner to DX television?

No Standard Is Standard

Unfortunately, there are four major standards of broadcasting television: NTSC (North America and Japan), SECAM (France and the Communist bloc countries), and PAL, and its sister PAL-M (in Britain and many places in the rest of the world.) To add to the confusion, TV channel frequencies are not standard, either. Channel 2 in the USA is on 54 to 60 MHz, but in Western Europe, it is found on 47 to 54 MHz. This is why your scanner might be the key to your finest TV DX.

Wait For The Buzzer

Since your North American NTSC standard television receiver cannot tune European and Australasian TV channels, the next best thing is to intercept the signals with your scanner. The sound carrier, thankfully, uses FM modulation worldwide. The video signal will sound like the familiar buzz you might hear if your TV is not tuned in, and the station transmits something white, like lettering. This buzz will probably be your first indicator of F2 skip. Enter the picture and sound frequencies of the area you would like to catch, and be very patient. An efficient antenna wouldn't hurt.

Broadband Yagis, cut for the 6 meter ham band, or 30 to 50 MHz public service

Frequencies For Overseas TV

	Video	Audio
North America Channel 2	55.25	59.75
Western Europe Channel E2	48.25	53.75
French Channel F2	52.40	41.25
Australia	51.75	46.25
Soviet Channel R1	49.75	56.25
New Zealand	50.75	45.25

band, might be good choices. Your best chances are the lower video frequencies, especially 48.25 MHz. Due to transmission offsets, these may vary slightly. West Germany has been found on 48.245 MHz, and other Europeans show up on 48.255 MHz. Norway has been received on 48.26 MHz. When these video carriers start to show strength, try the matching sound frequency, and roll your tape recorders.

The best time to listen is between 0900 and 1300 Eastern time, when the sun is shining over Europe and North America. West Coast DX'ers have a much longer haul to Australia, New Zealand, and possibly Korea. Japan is out of the race because its lowest TV channel is broadcast between 90 and 96 MHz, way out of the range of F2 skip. This frequency allocation might have been intentional.

Japan and its surroundings, for unknown reasons, are most susceptible than any other place in the world to the effects of E skip, and higher transmission frequencies would avoid its effects. All those Japanese DX'ers must hate this! West Coast DX'ers, watch from dusk, to an hour or two later, local time, and pray. It's a long way to Sydney, but it can happen!

If you want to actually see what is coming in, there are several ways to do it. Possibly the best, most frequently agile, way is to use a communications receiver with a video output option, such as the ICOM R-7000. This would provide you with continuous tuning.

There are several domestic sources of multi-standard televisions capable of overseas TV DX'ing. Apple Labs, of Jackson Heights, New York, and Instant Replay, of Miami, Florida, both offer TV's and VCR's

capable of handling almost any TV system and frequency standard. The Unisonic 2 inch micro TV is another multi-system set, and probably the most available. It has even been offered on The Home Shopping Club on TV.

Large cities, like New York and Los Angeles, have electronics specialty stores that sell televisions and appliances for export, and they should have televisions for foreign standards as well. A few domestic TV's and VCR's will tune to frequencies below our channel 2. Experiment in showrooms by switching a cable-ready set to the HRC channel standard (used in some cable TV systems), and see if it will tune channels zero and one. These are channels below our channel two, useful for foreign DX.

Varactor tuners are best, because unlike digital tuners, they can be continuously tuned and do not automatically chase after other signals, like an automatic fine tuning circuit does. Always turn your AFT switches off! Also, keep in mind that this frequency range is used by cordless telephones that are often not frequency stable, and they may become your worst enemy!

Be patient and watch consistently. Rich Turcsany, of Stratford, Connecticut, has already logged several European signals this season, using a scanner and a Unisonic XL-990 multi-standard portable TV. Although it's rare, Korea has been seen on the West Coast. Another idea: look for a tag sale by someone who has lived in Europe. If they brought their TV from the homeland, and found they could not use it to watch North American television, you could pick up a receiver for a song! Look out for F2 TV skip! Don't miss this rare DX action that only comes once a decade!

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KFFN	AZ	Sierra Vista	100 was KTAZ	KAIG	LA	Gretna	750 was KKNO
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WMCI	IL	Mattoon	101.3 new	KAFX	TX	Huntington	1260 was KDFX
KDST	IA	Dyersville	99.3 was KXIX	WORL	FL	Eatonville	1270 was WBZS
KAPH	KS	Kingman	99.3 was KBLV	WYAK	SC	Surfside Beach	1270 was WXMB
WCMI	KY	Catlettsburg	92.7 was WKQI	KOTY	WA	Kennewick	1340 was KTCR
WWPN	MD	Westernport	92.7 was WEFS	KIDN	CO	Pueblo	1350 was KRYT
WCCT	MA	Harwich	90.3 new	WAJD	FL	Gainesville	1390 was WZRZ
WGFM	MI	Cheboygan	105.1 was WQLZ	WEED	NC	Rocky Mount	1390 was WEWD
KLTW	MT	Great Falls	100.3 new	WSPB	FL	Sarasota	1450 was WWKY
WVIL	NJ	Villas	98.7 new	KXXL	MT	Bozeman	1450 was KUUB
WPLJ	NY	New York	95.5 was WWPR	WWHT	SC	Charleston	1450 was WXCH
WYTN	OH	Youngstown	91.7 new	KSLI	UT	St. George	1450 was KSGI
WYNN	SC	Florence	106.3 was WJMX	WVBS	NC	Burgaw	1470 was WXBG
WBPR	SC	Georgetown	97.7 was WGMB	WLXR	WI	La Crosse	1490 was WLFN

Co-Channel Eliminators

In the February issue of *POP'COMM*, I mentioned a method of eliminating co-channel interference by using two antennas and a phasing unit, on TV and FM frequencies. Your letters poured in asking for more details, so here they are! If you have trouble eliminating a nearby local station from your DX, this could be the answer.

Microwave Filter Company of East Syracuse, New York, makes such a unit, their model 2903. It comes in six versions: Channels 2-6, FM, Channels 7-13, UHF channels 14-48, UHF channels 49-83, and a model for cable TV channels A through I (120-174 MHz) that you could use for aircraft and VHF public service high-band DX'ing. The unit has two controls: one for attenuation and one for phase. Using this device, you invert the phase of the incoming offending signal from one antenna. It is combined with your master antenna, aimed at the signal you want to see or hear, with the use of a directional coupler, like a Jerrold DC-8. These are available through electronics stores specializing in wiring commercial buildings, like hotels and offices, for television.

As you manipulate the phase cancellation device, you will see the offending signal get cancelled from the final product, and you'll have a nice clear picture, or sound, of your wanted station. Not only can you eliminate co-channel and some adjacent channel interference with this system, you can also eliminate ghosting and noise sources as well. It's only drawback is its steep purchase price of about \$500.

There Is Hope

There are other ways of inverting phase, to create the same effect, without re-mortgaging your home! General Radio used to

manufacture phase inverting "trombones" which are now available on the surplus market. Although these are much larger in size, and need an outboard attenuator to feed the right amount of cancelling signal to your master antenna, they can provide the same effect for less cost.

Picture one element of an FM double folded dipole turnstile antenna, with an added slider that can be moved up and down the element to find resonance. To find the point of ull 180 degree phase reversal, you would aim two antennas at the same source and combine them. One antenna would have the trombone in line with the "hot" side of the feedline, before being combined with a directional coupler to the master antenna. Move the slider very slightly up and down the trombone until you find the maximum amount of phase cancellation for that particular frequency. Then add an attenuator to the phase-reversed signal, so you can control the amount of cancellation to the master antenna, and point that antenna toward the offending source and adjust for clearest signal. You'll like what you see and hear . . . and you created the system!

Strange Signals

Interesting things are going on via AM radio too. The National Association of Broadcasters (NAB) is testing two new types of anti-skywave antennas on 1660 kHz, using the callsign KA2XXB, and powers of up to 5 kW. They are searching for methods to decrease or eliminate skywave propagation on the new 1600 to 1700 kHz AM expansion-band that will be occupied with broadcasters in the next few years. These antennas are designed to maximize the power transmitted via groundwave, for local reception. Unfortunately, they will eliminate, at least in theory, the skywaves that produce great DX'ing fun when conditions are right. They

are a potential good QSL'er, because their entire project depends on receptions from distant places, so keep listening!

If you live nearby the nation's capitol, check out WWHD-TV on UHF Channel 58. Operated by The Advanced TV Test Center, Incorporated, this special experimental station is the first place you can see a high definition television (HDTV) system being tested on the air in North America. It is compatible with current television sets, buy you need a special set to see the improvement of this new system.

Another strange way to DX is by harmonics. You'll bag stations you could never hear on their primary frequencies. Taylor Haynie, of Belton, South Carolina writes that he received WPHB, Philipsburg, PA on 2520 kHz, and WAOC, St. Augustine, Florida on 2480 kHz. I've heard WVIP, Mt. Kisco, New York on 2620 kHz, and WCOU, Lewiston, Maine on 2480 kHz. It's possible to hear second harmonics between 1080 and 3200 kHz, and although they are much weaker than the primary signal, they make great DX catches.

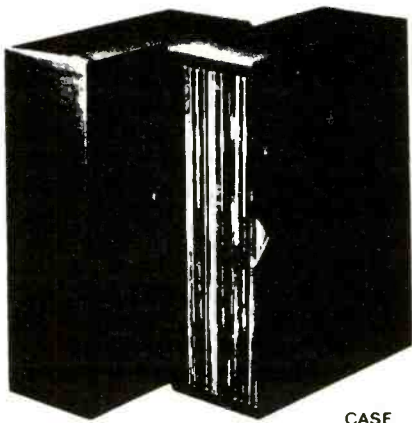
What Goes Up . . .

DX can happen at the strangest times. Howard Johnson, of Hazelton, PA, sent in a newspaper clipping about WBRE-TV, Channel 28, in Hazelton-Wilkes Barre-Scranton, PA. During repairs, their 749 foot tower fell and crumbled, leaving Channel 28 open to DX'ers.

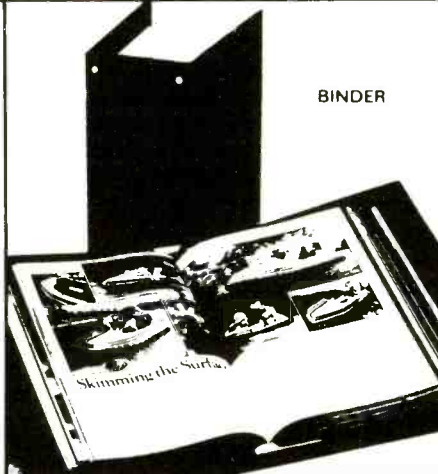
Similarly, Channel 68, in New York City, had a failure of their transmitter's overload protection circuits, and their transmission line melted and took the station, and most of the FM radio stations also transmitting from The Empire State Building, off the air for hours due to heat damage.

Temporarily open frequencies often mean new DX loggings, if you are ready for

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them. Also, catch AM stations who are lazy or careless in changing their antenna patterns and powers at sunrise and sunset. All you need is a few seconds to hear that wanted ID.

Zap The Dog!!

Probably the strangest signal I've ever DX'ed was for the dogs, literally! I heard an unidentified signal around 555 kHz day and night. I traced it to a house nearby, and after further investigation, learned that what I was hearing was a system called "Invisible Fencing." This is a device that transmits a signal, from a piece of wire buried in the ground, on an "unused" frequency, between 500 and 600 kHz. Your dog wears a special collar that emits a tone when the signal strength reaches a certain level due to the dog's proximity to the transmitting antenna wire buried around the edge of your lawn. If the dog goes further, it gets a "restraining correction" shock via electrodes on a special collar it wears. Let's hope that when AM skip comes in the dog doesn't get zapped endlessly!

I want to hear your comments and print what you send in, but you have to write me! If you want a personal reply, please enclose a self-addressed stamped envelope or postcard. Write to Karl Zuk, Popular Communications, 76 North Broadway, Hicksville, New York 11801. Bumperstickers, photos, coverage maps, QSL's, logos, clippings and stories are all welcome. Until next month, good DX and happy trails!

PC

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Telephone Fraud, Scams

Advice that has stood the test of time—if it sounds too good to be true it probably is—is the basis of a public education campaign led by the Alliance Against Fraud in Telemarketing.

The AAFT, coordinated by the National Consumers League, emphasizes that consumers can take some simple steps to avoid being a victim of telemarketing fraud, according to NCL Executive Director Linda Goldner. Goldner said consumers should know the organization they are dealing with on the telephone and understand the offer being made. That kind of checking around will help the consumer avoid becoming a victim of one of the AAFT's list of top ten telemarketing fraud scams. The list, starting with the most common fraudulent offer, includes:

1. Offers of prizes to get consumers to buy water purifiers or vitamins;
2. Penny Stocks;
3. Office supplies;
4. Subscriptions;
5. Credit Repair;
6. Precious metals including rare or other coins, and "gold in the ground" schemes;
7. Travels scams;
8. Business ventures and;
9. Cellular telephone lottery applications.

Goldner said, "The variety of these top nine scams demonstrates the scope of fraud in telemarketing. Consumers need to be aware that these boiler room operations exist and how to deal with them so that they can reliably conduct business on the telephone when they want to. That is why the Alliance Against Fraud in Telemarketing came together—to teach consumers safeguards against fraud while working to eliminate as many of the scams as possible."

The AAFT is a cooperative effort among consumer groups, trade associations, consumer protection offices, labor unions, industry and state and federal agencies to combat fraud through combined efforts and education.

James Baldwin, president of the North American Securities Administrators Association, said, "Estimates show that small investors lose \$40 billion a year to con artists and swindlers. An increasingly large portion of these ripoffs are being committed over the telephone."

Those sentiments were echoed by James H. McIlhenny, president of the Council of Better Business Bureaus. McIlhenny said,



"Telemarketing has become a large and important part of the American marketing system."

McIlhenny continued, "While the vast majority of those engaged in telemarketing are honest and legitimate, it has unfortunately attracted numerous scam artists and swindlers who, through high pressure tactics, dishonesty and outright lying, manage annually to steal millions of dollars from consumers."

Chief Postal Inspector C.R. Clauson said the postal inspection service is working with AAFT because some of the telemarketing fraud schemes are initiated through the mail. He said the USPS inspectors have been "cracking down on boiler room operations resulting in more arrests of individuals than in the past for violations of the mail and wire fraud statutes."

Credit cards are a popular medium of payment for telemarketing scams, according to AAFT member Dennis Brosan, security director of VISA International. He estimates annual losses of VISA member

banks to be as high as \$40 million.

"Unfortunately, legitimate telemarketers are painted by the devil's brush in this type of fraud," said Brosan. "These are complex law enforcement issues and VISA is working closely with the U.S. Secret Service, FBI, Postal Inspectors and other federal agencies to put a stop to this criminal activity."

Telemarketing fraud is a serious concern of members of the Direct Marketing Association who do business via the mail, telephone and through magazine, newspaper and broadcast advertising, according to Richard Barton, DMA senior vice president. Because fraudulent telemarketers reach consumers the same way DMA members do, Barton said the organization provides guidelines for "screening of advertisements and ethical business practices for telemarketers and direct mailers and we enforce those guidelines among our members."

For more information about AAFT, write to Alliance Against Fraud in Telemarketing, 815 15th St. N.W., Suite 516, Washington, D.C. 20005.

PC

SCANNER SCENE

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

We've received some interesting letters at Scanner Scene this month, but the most interesting was literally an "inside" look at communications at a state prison in Virginia. One of our readers, Bill, who is incarcerated at the Augusta Correctional Center in Craigsville, Virginia, sent in a list of frequencies used by guards at the lockup. Unfortunately, prison officials learned of his knowledge of their radio system and he was placed in isolation and classified as an "escape risk." Prison officials also confiscated all his notes on correction frequencies as well as surrounding towns' frequencies. He's filing in court a violation of his rights, contending that the frequencies are public information.

In any event, here is a look at the radio system at the Augusta Correctional Center in Virginia. The facility's F-1, 460.530 (an odd assignment, but possible if only low power is used in accordance with an FCC rule for surveillance communications), is used by "master control," which is the dispatch center. F-2, 453.050, is used by personnel for non-priority traffic. F-3, 453.050; F-4, 458.050; and F-5, 458.275, are used by various personnel such as maintenance, administration, security and wardens. In addition, 39.12 is used for communications from one prison to another.

William says that the Department of Correction uses five-channel General Electric portable radio for "master control," control booths in cellblocks, guard towers, administration, security, maintenance and outside security "gun gangs." Department vehicles use two Motorola multichannels mobile radios, one for facility communications and the other for a statewide radio system. "Master control" has two base stations, too. One is for regular facility communications on UHF and the other is for statewide radio systems, probably the 39 MHz frequency. Officers at the facility also have "manned" alarms on their radios. If an officer has an accident, the system relays to "master control" the location of the officer and his or her identity. If you'd like to write to William about scanners, or other radio-related topics, write to: William K. Smith, KA3MFN, Augusta Correctional Center—152541, P.O. Box 1000, Craigsville, VA 24430.

Steve Fleckenstein of Middletown, NY has started a scanner and shortwave oriented computer bulletin board that he's calling the Red Onion Express, after a freight train that passes through his area. The BBS has separate scanner and SWL conference areas as well as file areas that contain receiver reviews, modification tips, local and federal frequencies and logging programs. In



This is Hyannis, Mass., listening post of Scott A. Halligan. Scott can regularly hear Boston, 80 miles away, on UHF and 800 MHz.

addition, the BBS carries current copies of "Sweden Calling DX'ers" and bulletins from the American Radio Relay League. The system, which can be accessed at (914) 342-1819, uses a "ringback" system. To access, call the line and let the phone ring twice, hang up between the second and third ring. Wait twelve seconds then call back. The modem should pick up on the second or third ring. If an answering machine picks up on the third ring, the modem will override the announcement after five seconds. This feature allows Steve to use the same line for voice or data communications. The line operates from 7 p.m. to 6 a.m. EST on Monday through Friday and 24 hours on Saturday and Sunday. On Monday, 300 or 1200 baud can be used. If you have a computer, call and see what the Red Onion Express has to offer on scanning.

We received word that a new scanner club is being formed in Worcester County, Massachusetts, and nearby areas of New England. A GMRS repeater on UHF is available to those interested in joining the club. If you are interested, send your name and address to: Scanner Club, P.O. Box 515, Millbury, Massachusetts 01527-0515. Another scanner related organization, Philadelphia Notification Network, also is looking for new participants in southeastern Pennsylvania, southern and central New Jersey and Northern Delaware. The group

also operates a UHF repeater system to allow other participants to contact one another with what they are hearing on their scanners and radios. If you want to find out more, send a self-addressed, stamped envelope to: PNN, P.O. Box 144-PC, Rosemont, NJ 08556-0144.

David Wyatt, the President of Benjamin Michael Industries, Inc., said POP'COMM had an incorrect address in a recent issue for their firm, which sells the BMI Nitellogger automatic tape recorder activator for unattended scanner listening. If you want to find out more about the popular Nitellogger device, call (312) 884-7077, or write to: Benjamin Michael Industries, Inc., 1139 E. Tower Road, Schaumburg, IL 60173.

M.L. Stuyck of Baton Rouge, LA., said he bought a handheld scanner for listening to race communications at NASCAR stock car races in the Southeast. He said he is trying to find a list of frequencies used by racing crews as well as race officials. POP'COMM has covered race communications in the past, however, the frequencies used by race crews changes from season to season and even from race to race sometimes. Most crews use UHF business band channels, but some crews are starting to use 800 MHz business band channels as well. There is a good source of race frequencies. I've been a member of the Frequency Fan Club for more than a year, as I like to listen to various

races in New Jersey and Pennsylvania. Frequency Fan Club is strictly for auto racing fans who like to listen with their scanners at races. The club publishes periodic update sheets after major races and has been doing so for more than two years. In fact, the club now has about 1,500 members across the country. The club also operates a 24-hour member-only frequency hotline number for updates between issues and during speed weeks. Handheld scanners and accessories, such as special headsets, also are sold by the club. For more information on this group, write to: Frequency Fan Club, P.O. Box 991, Mulberry, FL 33860. Oh, and by the way, the club says NASCAR uses the following frequencies: Channel 1, 464.500; Channel 2, 464.775; Channel 3, 464.900; Channel 4, 469.500; Channel 5, 462.025; Channel 6, 467.025; and scoring, 467.800.

George E. Speck of Fort Worth, Texas, wrote to say that in his area, the hospital used to be heard on one MED channel, while the ambulance would be heard on another frequency on emergency calls. However, he said he started hearing both the hospital and the ambulance on the same MED frequency which was once used just by the hospital. Apparently, a repeater was placed on the air, George. A repeater relays what it hears on one frequency onto another, which allows extended mobile to mobile coverage. In most areas of the United States, the MED channels are used on a simplex basis. The hospital operates on the base frequency, 462.950-463.175, and the ambulances operate on the mobile frequencies, 467.950-468.175. Some areas do use repeaters for MED operations. Be sure to check both the base and mobile frequencies in your areas; otherwise you may be hearing only half the action. George also advises that the CareFlite helicopter in Dallas uses MED-10, 462.975, as its dispatch channel.

Scott A. Halligan of Hyannis, Mass., has been enhancing his 800 MHz listening with some add-on help he'd like to pass along. He added a Winegard UHF-TV distribution amplifier to his cable, in addition to the extended UHF reception technique mentioned in the November 1988 issue of POP²-COMM. He says that he can hear the Boston police and fire department, which are 80 miles away with a readable signal of +3 to +5 on his ICOM R7000. He also can hear the Metropolitan District Commission Police out of Boston on 858.7125 and 800 MHz frequencies out of Plymouth, Mass., about 40 miles away, with a +7 on the R7000's S meter.

We'd like to hear from you here at Scanner Scene. Send along photos of your shack, dispatch offices, towers or antenna farms, as well as QSL cards. We welcome your questions, comments, listening tips, frequency lists and updates and code lists. Write to: Chuck Gysi, N2DUP, Scanner Scene, Popular Communications, 76 North Broadway, Hicksville, NY 11801. **PC**

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- CW—Morse Code broadcasts at approx. 15 wpm
- Facsimile—Weather charts on high frequency long-range frequencies
- AM—Double sideband voice on WWV time tick frequencies
- Radio teleprinter—RTTY on high frequency long-range channels

Three principle VHF weather channels are found in the United States:

- WX1—162.550 MHz
- WX2—162.400 MHz
- WX3—162.475 MHz

These are easily tuned in with many ham 2-meter sets, inexpensive weather cubes, and most programmable scanners. Most of these 24-hour weather stations offer a range of 75 miles.

Long range SSB voice weather warning transmissions are broadcast daily by United States Coast Guard stations. You will need a shortwave set capable of upper sideband reception. Any worldwide ham rig with a general coverage receiver will tune in these Coast Guard channels clearly:

- 4393.4 kHz
- 8760.8 kHz
- 13,144 kHz
- 17,290 kHz

Weather reports are also broadcast by the long range AT & T high seas radio service:

Frequency (kHz)	Location of Transmitter	UTC
4403.9	San Francisco	0000
4403.9	San Francisco	1200
13,107	San Francisco	0000
13,107	San Francisco	1200
4363.6	Miami	1300
8722	Miami	1300
13,116.3	Miami	1300
17,232.9	Miami	1300
8722	Miami	2300
13,116.3	Miami	2300
17,232.9	Miami	2300
4388.4	New Jersey	1200
4749.9	New Jersey	1200
4388.4	New Jersey	2200
4749.9	New Jersey	2000



The following equipment would allow you to receive weather reports digitally:

- AEA PK-232 packet controller
- MFJ #1278 multi-mode data controller
- Universal Radio data controller
- Hal data controllers
- Kantronics digital-mode controllers

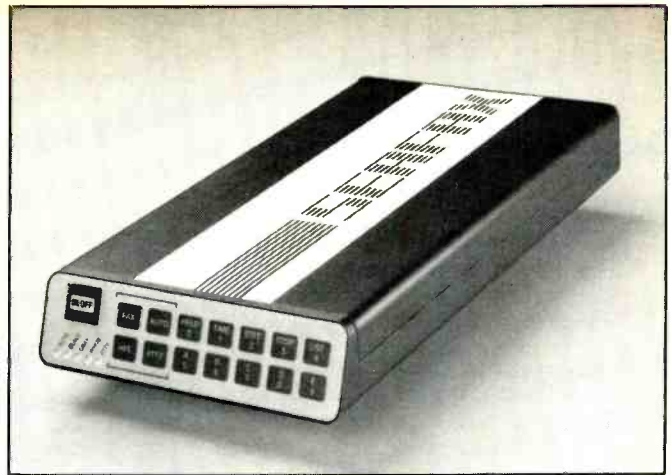
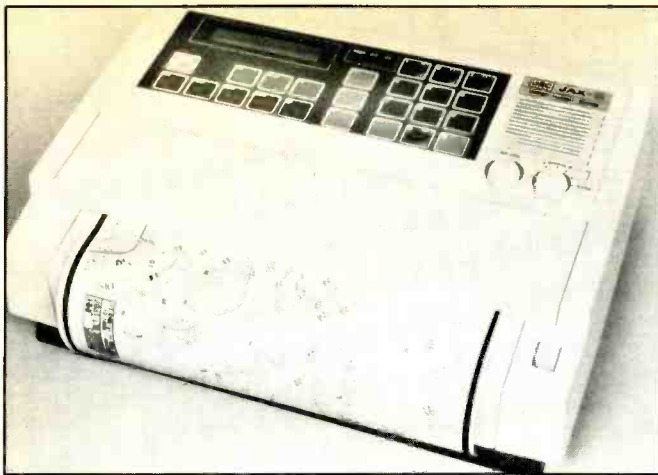
These companies are the leaders in amateur radio shortwave controller—there are literally hundreds of manufacturers of devices, but these are the least expensive, easiest to operate, and simplest to hook up to a

shortwave receiver or ham set.

These digital controllers may allow the following reception of high frequency weather reports:

- SITOR, simplex telex over radio
- CW, continuous wave Morse Code
- Facsimile, charts and photos
- RTTY, radio teleprinter
- NAVTEX, RTTY printouts

There are hundreds of frequencies in the high frequency spectrum for digital weather reception, using your home computer, for



these broadcasts. The National Oceanic & Atmospheric Administration, Suitland, Maryland 20233 is your best source for information about a specific mode of weather information you may wish to receive.

Because of budget cuts, this agency, under the direction of the U.S. Department of Commerce, may no longer send out that 200+ page book entitled "Worldwide Marine Weather Broadcasts", listing radiotelegraph, radio telephone, radio facsimile, VHF, and radio teleprinter broadcasts for the entire world. However, NOAA, or your local National Weather Service office, may provide you with the frequency data books you need that will give you the low-down on where to tune in for digitized weather charts and printouts.

WWV Time/Weather. I bet many of you didn't know that you can pick up regional weather broadcasts on the WWV time tick service on the following frequencies:

2.5 MHz	10 MHz
5 MHz	15 MHz
	20 MHz

Impending storm warnings are broadcast between 15 and 20 minutes past the hour, and between 45 and 50 minutes before the hour—every hour.

These broadcasts are so strong, you can tune them in with almost any kind of short-wave receiver. Give it a try.

If you live near a seacoast, the United States Coast Guard is also a valuable reference source for marine VHF weather broadcasts. Tune channel 22A, 157.100 MHz. Contact your local U.S. Coast Guard agency for a schedule of VHF weather reports in your area.

If you live near an airport, you may receive airmen's weather, plus aviation advisories, constantly. An inexpensive scanner, capable of AM aircraft band reception, is all you need. Begin searching up from 108 MHz to 130 MHz, and chances are it will lock onto 24-hour airport weather information.

Why don't we list all of the weather frequencies in this column? Simply too many!

In fact, Popular Communications Magazine offers several shortwave listener and scanner guides that specifically list weather service broadcasts. Pages and pages of information are available.

As an emergency communicator, you must be weather-wise and know impending weather conditions instantly. This information is available if you know where it is, ahead of time. Make it a practice to tune into the weather, daily, so when you really need it in a hurry during times of disaster, it will be at your fingertips.

FAX Frequencies Weather and News Pictures

Location	Call	Freqs.	Remarks
Andrews AFB	AFA	4793.0, 6912.5, 10185.0, 12201.0, 15620.5	Wash. D.C.
Andrews AFB	AFA	17670.5, 19955.0, 23068.5	Wash. D.C.
Barroada Guam	NPN	4975.0, 14826.0, 18620.0	USN/USCG
Boston MA		8502.0, 12750.0	
Boston MA	NIK	8500.1, 12748.1	ICE-1600Z
Boston MA	NMF	7530.0	Metro
Edmonton Canada	VFE	21830.0	CG Radio
Forbisher Canada	VEF	4262.0, 7710.0, 12667.0, 15644.0	
Halifax Canada	CFH	4271.0, 6329.0, 9890.0, 13510.0	
Havana Cuba	CLN324	11406.0, 16175.0	NX-PIX
Hawaii		4802.5, 9440.0, 13862.5, 13627.5	
Honolulu HI	KVM-70	5037.5, 7770.0, 9982.5, 11090.0, 16135.0, 23331.0	1230-2200Z
Keflavik Iceland		9318.0	
Kodiak AK	NOJ	4268.0, 8459.0	1700-2300Z
La Jolla CA	WWD	8646.1, 17410.6	See Skeld
Mobile AL	WLO	6852.0, 9157.5	Norfolk VA
NAVCOMMSTA USN	NAM	4975.0, 8080.0	NEWS-PIX
New York NY	WFX	10340.0, 11461.0, 18508.4, 19849.5	
New York NY	WFN	20798.5, 22925.0	NEWS-PIX
Norfolk VA		16410.0	
Norfolk VA	NMN	10865.0	USCG
Orkney Island	LOK	6454.0	ICE-PIX
Pearl Harbor HI	NPM	4855.0, 9396.0, 13862.0, 21837.0	4855.0 = LSB
Resolute Canada	VFR	7714.0	
San Francisco CA	NMC	4346.0, 8682.0, 12730.0, 17151.2	USCG
Vancouver B.C.	CKN	4268.0, 6946.0, 12125.0	
Washington DC		14671.5	

Weather FAX Charts

Station	Freq (kHz)
Norfolk, VA	3357, 4975, 8080, 10865, 16410, 20015
Halifax	4271, 6330, 9890, 13510, 17560
Mobile, AL	6852, 9157.5, 11145, 17447.5, 23440
San Francisco	4344.1, 8680.1, 12728.1, 17149.3
La Jolla, CA	8646, 17410.5
Esquimalt	4268, 6946, 12125



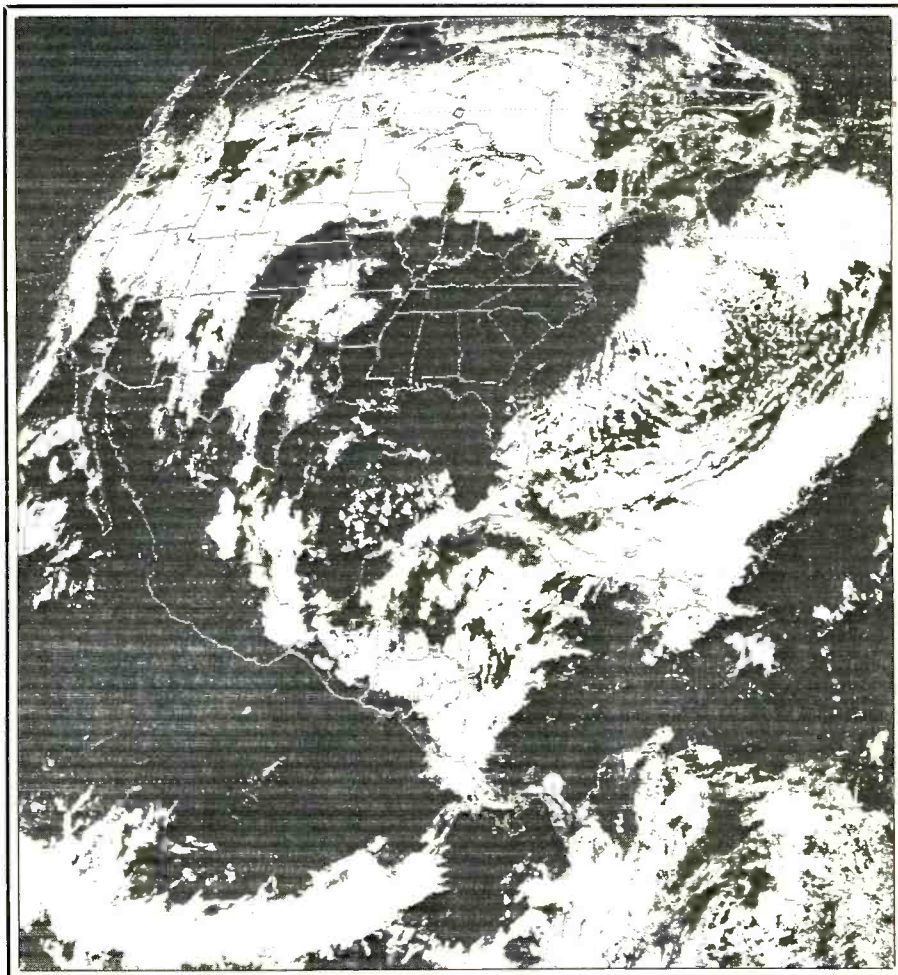
INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Your Station Equipment

I recently received a letter from Wes Johnson of Waycross, Georgia. Wes was intrigued by the intercept of the voice communications from the Mir space station which was featured in the December 1988 issue. He, like many of you who only visit us occasionally here at Satellite View, was surprised that such exotic signals could be intercepted with a scanner and an omnidirectional antenna. Space communications generally VHF and above frequency bands, and like their terrestrial counterparts, deal with line-of-sight communications. The advantage of being in space is that there is nothing to interfere with signals to and from the spacecraft during the time it is within the access range of your ground station. This means that most low earth orbit satellites transmitting on a frequency you can tune on your receiver or scanner will be heard as it passes over your station. The Soviet space station Mir is no exception. I know several satellite sleuths who don't even use an outside antenna and quite successfully monitor spacecraft in Low Earth Orbit (LEO). However, I recommend a vertical antenna and a pre-amp connected to good, low loss coax.

Mir uses wide band FM (WBFM) for its normal downlink communications. It also transmits in narrow band FM on the two meter Ham band. It transmits telemetry (TLM) on 143.625 MHz when it is not being used for voice communications. TLM is simply information about spacecraft, its location, onboard systems, etc. It is usually sent to ground stations in a data format of some sort. It can be CW, RTTY, or other secured formats designed especially for the spacecraft users. Info tech specializes in equipment for the SWL interested in toying with these formats. I say toying, because most secured formats are complicated enough that you will not be able to break them. Plus, many of the simple formats are of little use unless you have the formulas to make the information you gather useful. Of course, this is one specialized area of the hobby. Geoffrey Perry of the Kettering Group has been quite successful in pursuing.

Various satellite services use different transmission modes. For example, Amateur Radio satellites use CW, SSB, and a data mode known as Packet. (Packet is an error-free data mode used by Amateurs), military satellites use a digital mode or encrypted voice (usually FM), TV and telecommunications satellites use several formats including Time Division Multiplexing

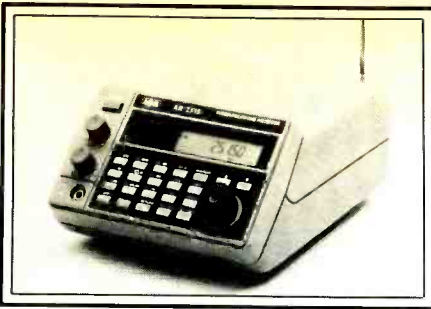


(TDM) and Frequency Division Multiplexing (FDM). I hope this answers most of your questions, Wes.

Now that you have a rough overview of the diversity of space communications, let's look at what equipment is available. I have already mentioned that I think a wideband vertical antenna like the disccone is a very good choice for the satellite sleuth. It will cover the widely spread satellite bands you will be interested in and with the addition of a pre-amp, will enable you to hear almost anything in LEO. Quality coax like RG-11 or Belden 9913 will keep signal loss, which becomes a problem above 150 MHz, to a minimum. A pre-amp for any band you have a special interest in will also be a help. As you gain experience, or get a Ham license and want to work with satellites, you

may want to get a beam antenna with azimuth and elevation controls so you can learn to track the spacecraft. This will add to the fun and improve signal strength.

Now comes the fun part, or the hard part, depending on how you look at it. Your choice of a receiver or scanner. Two factors, as always, will determine your choice; your interest and your budget. If you already have an HF rig which will tune SSB, you can try your hand at tuning the Soviet Amateur satellites on the 10 meter band (29 MHz). If you have a scanner, review the band coverage it has. You may have access to a few satellite frequencies already. A scanner with continuous coverage is ideal. These units, like the Yaesu FRG 9600, have selectable bandwidths and modes. This enables it tune wide or narrow band FM as well as SSB.



A look at the high-tech AR-2515 receiver. Available through ACE Communications, Inc.



The ICOM R-7000 receiver.



YAESU's FRG-9600 is another top-of-the-line receiver.

This is important if you want to tune the Amateur transmissions from the Mir space station and occasional space shuttle flights, you can use a scanner which tunes the two meter band (145 MHz).

Let's take a close look at several receivers now on the market. The Yaesu FRG 9600 covers 25 to 905 MHz. This is a very versatile receiver as it covers most of the Amateur satellite bands, weather, navigational and land mobile satellite bands. It also covers manned spaceflight frequencies used by the Soviet and American space programs. You can even look for transmissions from the Navy and Air Force from the FleetSat-Comm satellites near 265 MHz. It offers selectable bandwidth plus AM, FM and SSB modes.

The ICOM R-7000 is another top-of-the-line receiver. It has continuous frequency coverage from 25 to 1,000 MHz and from 1025 to 2000 MHz. It has six selectable bandwidths, from .1 to 25 kHz. Its advantage is its frequency range. It reaches up to the TLM, radiolocation and L-band which is

the hiding place for telecommunications satellites.

The PRO-2004, by Radio Shack, covers 25 to 520 MHz and 760 to 1300 MHz. This is an AM/FM only receiver, though it does have wide and narrow selection for FM. This is a very popular scanner. A pre-amp is recommended for satellite work.

There are two new receivers on the market which are the first of what I expect to be a whole new generation of receivers. They cover both HF and UHF/VHF. They are the Kenwood RZ-1 and the AR-2515 by ACE Communications. The AR-2515 covers 5 MHz to 1500 MHz. It has selectable bandwidths and an optional SSB package. Kenwood's RZ-1 covers 500 kHz to 905 MHz. It is an AM/FM only receiver and is designed for use in your car. I am sure it would work nicely in the house, as well. Each of these receivers is more than up to the job, but remember, if your scanner covers the 2 meter ham band, or 118 to 174 MHz, you can start tuning satellite frequencies in this range to get the feel for it.

Weather satellites are perhaps the most popular and chased after spacecraft, second only to TV satellites. I know several Amateurs and SWL's who have all but given up other aspects of the hobby to concentrate on these birds. Unlike other utility satellites, it takes more equipment, most of it specialized, to receive and display video from weather satellites. For example, you need a receiver capable of accepting signals up to 50 kHz wide, which is more than most of the receivers mentioned here can do. Therefore, a special weather satellite receiver is preferred. Vanguard has two models available. One is crystal controlled, the other is continuous coverage of the 137 MHz weather satellite band. Hamtronics also has

a receiver in kit form available, as well as a selection of pre-amps and other accessories.

Both the U.S. and Soviet Union have several low altitude polar orbiting weather satellites that use the 137 MHz band. Europe, Japan and the U.S. also have geostationary weather satellites. They transmit WEFAX near 1671 MHz. You can still get by with a vertical antenna if you use a good pre-amp for the low altitude satellites. The diagram below shows possible equipment configurations for weather satellite stations.

You can display video from weather satellites in one of three ways. With a dedicated terminal and printer, a terminal (interface) and a computer with appropriate software will enable you to display weather photos on a TV monitor. The old fashioned way, using an audio recorder and an electrostatic printer, is a third and still reliable way of displaying this information.

For the best pictures, a good, dedicated terminal like the Universal M-7000, or DGM FAX 1000 is preferred. These units use a hardcopy printer to display weather maps. The 7000 will also display on a video monitor screen with some loss of resolution. If you want to use your computer to display video, you will need a unit like the PK 232 and appropriate software. If you are already into RTTY and other data transmission modes, it's very easy to move this type of satellite sleuthing.

Even though chasing the satellites is not unlike any other aspect of the hobby, generally speaking, it can introduce you to new and interesting areas, like tracking. Whether you do it manually, or by computer, it can be fun. We will take a close look at some of the computer tracking programs on the market in the near future . . . See you next month. **PC**

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LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Well folks, they slipped one past us. Another new US shortwave station came on the air, but there had been virtually no advance publicity about this one. KJES began tests at the end of January on 11730, 15140 and possibly other frequencies as well. At this writing, not much is known about the station except that it is owned and operated by Missionary Radio Evangelism and operates from Vado, New Mexico. Reception reports can be sent to 3720 Greenwich Drive, Vado, NM 88072.

Meantime, the new Herald Broadcasting (Christain Science Monitor) station, WSHB at Cypress Creek, South Carolina was testing the first of its 500 kW transmitters. Assigned frequencies include: 6005, 6175, 7315, 9535, 9770, 11700, 1915, 13760, 15155, 15225, 17640, 17710, 17720, 21460 and 21770 at various times of the day and night. With that kind of power, you should pick them up with no trouble.

There's word of still more shortwave activity coming in the United States. WNIR (News and Information Radio) would relay the programs of National Public Radio, although it would be a privately owned, non-profit enterprise.

New Covenant Educational Ministries has just received FCC approval to put a 100 kW station on the air from Jacksonville, FL. And the Cuban-American National Foundation, unhappy with the "mild" approach taken by the government's official Radio Marti service, wants to put an anti-Castro station of its own on the air.

Apparently Radio Denmark's external service will be rescued by the Danish government which will take responsibility for funding the programs and may later also provide money for transmitter facilities—which probably means paying for relays over Radio Norway and perhaps Radio Sweden facilities, too.

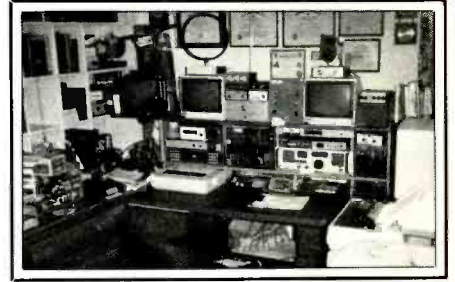
Watch for the new relay of Spanish Foreign Radio which is supposed to be on the air from Costa Rica by the end of the year. The transmitters will also carry a "Radio Costa Rica International" type of service.

If you haven't heard Radio Jordan yet, the station's new half million watt transmitters will also carry a "Radio Costa Rica International" type of service.

The suspense surrounding the future of Radio New Zealand has ended, and on a happy note, too. About a year from now, the station should be able to retire those weary 7.5 kW clunkers it's used since WWII and go on with 100 kW. Plans call for a schedule running 11 hours per day in English and Pacific languages. They hope to have it ready in time to celebrate New Zealand's 150th anniversary.



Frederick E. Gilbert of Memphis, TN operates from this attractive listening post.



This superbly equipped monitoring post belongs to William Bowers in Stafford, TX. It includes 3 top quality general coverage receivers, 3 scanners, state of the art RTTY decoding equipment, monitors and printers, several audio filters, tape recorder and computer. Inside and outside there are over a dozen different types of antennas in use!

Mail Call: Gregory Baker writes from Laurel, MD that he's not too pleased with the format changes at the BBC. He enjoyed the "steadiness and consistency of the BBC news." "Now," says Greg, "Radio Newsreel" is 'Newsreel' and the brass band playing 'Echos of Empire' has become a synthesizer version. The BBC is an institution which should not be played with," says Gregory. Agreed. One day, the only real musical instruments left will be those in museums, except for guitars, of course.

Mike Decerbo of Trumbull, CT needs addresses for Radio Prague (Vinohradska 12, 12099 Prague 2) and Radio Budapest (Brody Sandor 5-7, H-1800 Budapest.) For large and/or government broadcasters, the station's name and city of location will usually get the letter through.

Michelle Shute in Pensacola, FL says he finished her international broadcasting class



A new station last year was the Voice of the Mediterranean, operated by Libya and Malta over the DW relay facility on Malta. Robert Fletcher of Long Island City, NY got their QSL.



Here's the entire staff of the Voice of Free China and the building where they work.

which she says focused almost entirely on the political side of broadcasting and completely the hobby/monitoring aspects. On the last day of class they got to ask questions to the directors of Radio Marti and Radio Liberty using a telephone conference call.

Brian Avery in Portsmouth, NH suggests we run some station addresses from time to time. Guess we just assume everyone has a copy of the WRTH, Brian, so we do not think about the address question as often we should. We'll try and plug a few in here and there, especially for new stations.

That covers it for this time. Don't forget to send in your loggings (on one side of paper only, with your last name and state abbreviation after each and with some cutting room between each.) Also needed are photos of you in your shack, spare QSL's, comments, questions, schedules, observations, clippings and so on. Thanks for your interest and support.

**Worldband Broadcast Loggings
All Times Are UTC
English Except as Noted**

Alaska: KNLS, 9750 at 1545 w/pops & ID as New Life Station (Garcia, MD).
 Albania: R. Tirana, 7045/19500 at 0630 (Rogers, OK); 7300/19760 at 2330 (Borenstein, NY).
 Algeria: RTV Algerienne, 9509 at 1845 in FF (Garcia, MD); 17745 at 1830 in FF (Rogers, OK; & Maywoods DX Team).
 Angola: R. Nacional, 4953 at 0400 in PP (Kunkel, CA); 11955 at 1633 in PP. Many ID's (Gilbert, CA).
 Antigua: DW relay, 9605 at 0300 (Garcia, MD); 15355 at 2055 in GG (Hutchison, ONT).
 Ascension Isl.: BBC relay, 11860 at 0755; 15400 at 2215 (Reynolds, MO).
 Australia: VLW9, Perth, 9610 domestic svc at 1450 (Garcia, MD).
 R. Australia (Darwin site), 7120 at 1029 in CC & EE (Garcia, MD); 9580 at 1300 (Atkinson, OH); 9655 at 0700 (Rogers, OK).
 Austria: R. Austria Int'l., 9875 at 0000 s/on, into GG (Avery, NH); at 0030 (Rogers, OK); 15450 at 1233 (Zarko, MS).
 Bangladesh: R. Bangladesh, 9775 at 1445 in Bengali, ID, address & off at 1459 (Garcia, MD).
 Belgium: BRT, 9925 at 2000 (Rogers, OK).
 RTB, 9925 in FF w/sports at 1945 (Garcia, MD).
 Belize: R. Belize, 3285 at 1100 s/on in SS Aquí Radio Belize..., anthem, pops, time checks (Garcia, MD).
 Benin: ORTB Cotonou, 4870 in FF at 2217 (Maywoods DX Team).
 Bolivia: R. Nueva America, LaPaz, 4795 at 1130 in SS & Quecha, rx pgm Mensaje de Vida Eterna (Garcia, MD).
 Brazil: R. Gaucha, Porto Alegre, 6020 at 0827 in PP (Kunkel, CA).
 R. Educadora, Bahia, 6020 in PP w/sports at 2325 (Garcia, MD--who also contributed all of the following loggings from Brazil, except as noted).
 R. Bandeirantes, Sao Paulo, 9645 at 2310 in PP w/commercials.
 R. Clube Paranaense, Curitiba, 6040 at 2300 in PP w/commercials.
 R. Nacional Tabatinga, Benjamin Constant, 4815 in PP at 0845.
 R. Rural, Santarem, 4768 (nominal 4765) at 0815 in PP w/pops.
 R. Globo, Sao Paulo, 11805 at 0010 in PP w/ID as Radio Globo International.
 R. Dourados, Dourados, 3375 at 1035 in PP w/pops, ads.
 R. Guabira, Porto Alegre, 11875 in PP at 0115, soft mx, commercials, time checks.
 R. Cultura, Campos, 4955 at 0905 in PP.
 R. Universo, Curitiba, 11905 at 0015 in PP w/pops & commercials.
 R. Nacional Macapa, 4915 at 0855 in PP w/rx svcs, dedications.
 R. Relógio Federal, 4905 at 2355 in PP w/nx, time checks, commercials.
 R. Cultura Sao Paulo, 17815 at 2205 (Garcia, MD); 6170 at 0719 in PP (Shute, FL).
 Burkina Faso: R. Burkina, 4815 in FF 0653 (Gilbert, CA).
 Burma: Burma BC Svc., 4725 at 1258-1412 (Kunkel, CA). Assume in Burmese-- Ed.
 Canada: RCI, 4801 at 0130 w/national nx, some

FF (Garcia, MD); 5960 at 3020 (Reynolds, MO); 17815 at 1915 w/nx (Atkinson, MD).
 CKZU Vancouver, 6160 at 1015 w/wx & pops (Garcia, MD).
 CHNX Halifax, 6130 at 1230 w/nx & commercials (Northrup, CT).
 CFCX Montreal, 6005 at 1220 w/mx & commercials (Northrup, CT).
 CFRX Toronto, 6070 at 0200 (Rogers, OK).
 Central African Rep.: RTV Centrafricaine, 5034 at 2207 in un-ID lang (Maywoods DX Team).
 Chad: RNT N'djamena, 4904 at 2153 in un-ID lang (Maywoods DX Team).
 Chile: R. Nacional, 15140 at 2340 in SS w/Con versando en la Noche (=Talks in the Night) (Garcia).
 China, Peoples' Rep.: R. Beijing, 9690 at 0300 (Borenstein, NY); 7770 (via Mali relay) at 0014 (Meece, OH); 9945 at 1020 in CC (Baker, MD); 11675 at 0115 w/national nx (Decerbo, CT).
 Xizang PBS, Lhasa (Tibet), 4960 in CC w/apera at 1155 (Garcia, MD).
 CPBS, Pgm. 2 list, Xiun, 5193 at 1210 in CC; 11610 at 0159 in CC w/mx, anthem. Listed as Pgm. 1 (Garcia, MD).
 Colombia: La V. do Yopal, 5049 at 0300 in SS w/songs & ID (Mierzewski, PA).
 Caracol Bogota, 4755 in SS at 0450 (Rogers, OK); 0704 (Gilbert, CA).
 La V. del Cinaruco, 4865 at 0400 in SS (Davis, MA); 0700 (Gilbert, CA).
 Costa Rica: R. Impacto, 5030 in SS at 0440 (Rogers, OK).
 TIFC/Faro del Caribe, 5055 at 0335 w/Focus on the Family (Decerbo, CT).
 R. For Peace Int'l., 21555 at 2120 w/various features (Neff, FL); 21560 at 1930 (Zamora, ND).
 Cuba: R. Havana, 9655 at 0502 (Meece, OH); 11725//11795 in AA at 0300 (Zirkelbach, CA); 11875 at 1457 in SS (Reynolds, MO).
 Czechoslovakia: R. Prague, 6055 at 0315 (Garcia, MD); 7345 at 0120 (Avery, NH); 9530 at 0100 (Rogers, OK).
 Dominican Republic: R. Clarin, back on 11700 at 1150 in SS w/LA mx, nx (Tuchscherer, WI).
 E. Germany: RBL, 7260 at 1945 in II (Decerbo, CT); 11785 at 0428 (Zarko, MS); 15240 at 1600 (Rogers, OK).
 Ecuador: R. Quito, 4920 at 0210 in SS (Maywoods DX Team).
 HCJB, 6230 at 0545 w/nx (Gilbert, CA); 11775 at 0230 (Decerbo, CT); 15155 at 0100 (Meece, OH).
 R. Radio Sangay, Macas, 3322 in SS w/pops at 0017 (Garcia, MD).
 R. Popular, Cuenca, 4800 at 0825 in SS (Garcia, MD).
 Egypt: R. Cairo, 9475 at 0215 (Rogers, OK); 15210 in AA at 1906 (Maywoods DX Team); 17699 at 1815 in AA (Garcia, MD).
 Equatorial Africa: R. Nacional, Malabo, 6249 in SS at 0510 til QRM'd by Vatican R. s/on (Kunkel).
 R. Africa, 9852 at 2230 to 2300 off (Kunkel).
 England: BBC World Svc., 25750 at 1310 w/Newsdesk (Meece, OH).
 AFRTS feeder, 9334 in SSB at 1815 (Garcia, MD); 5228/5374.5 LSB at 0305 (Kneitel, NY). Does anybody have a mailing address for this facility?-- Ed.
 Finland: R. Finland, 9635 at 0340 (Avery, NH); 11945 at 1315 w/headlines, Canadian mailing address (Garcia, MD); 15400 at 1400 (Reynolds, MO).
 France: RFI, 3965 at 0450 at mx, time sigs, YL w/FF ID (Mierzewski, PA); 11965 s/on in FF/PP, nx in PP (Garcia, MD); 15260//17620 at 1630 (Rogers, OK); 15300 to Africa at 2000 (Robinowitz, MI).
 French Guiana: RFI relay, 11670 in SS at 0540 (Hutchison, ONT); 0320 (Avery, NH); 11870 in SS at 0135 (Garcia, MD).
 Gabon: Africa #1, 4830 in FF at 2213 (Maywoods DX Team); 15475 in FF at 1945 w/African mx (Zirkelbach, CA).
 AWR (via Africa #1), 17890 at 1230 w/rx pgms (Garcia, MD).
 RTV Gabonaise, Libreville, 4777 in FF at 2145 (Maywoods DX Team).
 Ghana: GBC, 3366 at 2140 (Maywoods DX Team); 4915 at 0709 w/nx (Gilbert, CA).
 Greece: V. of Greece, 7430 at 0310 in Greek (Borenstein, NY); 9420 at 0134 (Zarko, MS); 11645 at 0130 (Avery, NH); 11645//15630 at 1535 (Decerbo, CT).
 R. Makedonias, Thessaloniki, 11595 in Greek at 1645; also 9935 at 2145 (Garcia, MD).
 VOA relay, Rhodes, 15150 in AA at 1150 (Garcia, MD).
 Guam: TWR, 11650 at 1550 w/rx talks (Tuchscherer, WI).
 AWR, 11980 at 1617 w/drama, ID & address as POB 310, Hong Kong (Tuchscherer, WI).
 Guatemala: TGNA, 3300 at 0300 w/rx talk (Rogers, OK).
 Union R.-AWR Guatemala, 5982 at 1100 in SS w/rx mx, ID as La Voz de la Iglesia Adventista en America (Garcia, MD).
 R. Kek'chi, 4845 in a local indian lang w/SS ID at 0202 (Garcia, MD).

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 America/n
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/lous
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel frequencies

R. Tezulutlan, 4835 at 1310 w/mx & ID (Neff, FL).
 Guyana: GBC (tentative), 5950 at 0700 w/BBC nx (Kunkel, CA). Don't miss Alice Brannigan's history of this station elsewhere in this issue-- Ed.
 Honduras: HRVC, 4820 at 0330 w/Back to God Hour (Neff, FL).
 R. Luz y Vida, 3250 at 0355 (Maywoods DXT).
 Hong Kong: BBC relay, 11775 at 1745 (Garcia)
 Hungary: R. Budapest, 9835 w/nx & off at 0057 (Avery, NH).
 India: AIR, 9910 at 2110 (Reynolds, MO); 11620 (Aligarh site) at 2100 (Maywoods DX Team); 11830 Delhi @0127 s/on (Kunkel, CA).
 Indonesia: V. of Indonesia, 11790//15150 at 1700 in SS w/nx (Garcia, MD).
 Iran: VOIRI, 9022 at 0400 w/IS, un-ID lang (Robinowitz, MI); 15084 in (presumed) Farsi at 1530 (Rogers, OK); 0400 (Gilbert, CA).
 Iraq: R. Baghdad, 9515 at 0302 w/mx (Borenstein, NY); 2045 in AA on 15230 (Garcia).
 Israel: V. of Israel, 9435 at 0000 w/nx (Zirkelbach, CA); 11585 at 1745 w/nx in Ladino (Borenstein, NY); 11605 at 2241 w/Letter from Jerusalem (Zamora, ND).
 Rashuth Hashidur home svc in Hebrew, 15615 at 1845 (Garcia, MD).
 Italy: RAI, 9575 w/nx at 0108 (Reynolds, MO); 21690 in II at s/on 1700 (Garcia, MD).
 Japan: R. Japan, 5960 (via Canada) at 0300 (Reynolds, MO); 9685 (via French Guiana) in JJ at 2215 (Garcia, MD).
 Jordan: R. Jordan, 9540 in AA at 1900 (Garcia, MD); 9650 at 1551 w/rock, time pips, nx (Shute, FL); 1938-2124 relayng local 99 MHz FM (Baker).
 Kenya: V. of Kenya, 4934 at 0250 w/mx & YL anncr, an OM w/nx (Kunkel, CA).
 Kuwait: R. Kuwait, 9840//11665 at 1430 in AA (Gilbert, CA); 11665 at 2050 w/rock mx (Decerbo, CT); 15495 at 1515 in AA (Garcia, MD); 15505//15545 at 1600 (Rogers, OK).
 Lebanon: V. of Lebanon, 6550 at 0504 in AA but spinning American discs (Shute, FL).
 Liberia: VOA relay 3990//6035 at 0400 & 0645 (Kunkel, CA).
 ELBC, 6090 at 0500 s/on (Kunkel, CA).
 ELWA, 11830 at 2120 w/commentary (Garcia).
 Lithuanian SSR: R. Vilnius, 7165 at 2310 w/Events & Views (Meece, OH); 7400 at 2300 w/Around Lithuania (Decerbo, CT).
 Luxembourg: R. Luxembourg, 15353 at 1900 in FF w/calls, pops, commercials, contest winners (Garcia, MD).
 Mali: RTV Malienna 4783//4835 in FF at 0708 (Gilbert, CA); Sundays (only) 7110 at 0658 w/IS & s/on 0700 in FF (Kunkel, CA).
 Malta: R. Mediterranean, 6110 at 2231 (Reynolds, MO).
 Mauritania: ORT Mauritanie, 4845 at 2211 in FF (Maywoods DX Team); To 0001 close (Garcia, MD).
 Mexico: R. Huayacocotla, 2390 at 2325 in SS w/mx & ID, many mentions of Huayacocotla (Shute).
 R. Universidad de Sonora, Hermosillo, 6115 at 0540 in SS (Gilbert, CA).
 R. Educacion, 6185 in SS w/Argentine mx at 1245 (Garcia, MD).
 XEQQ, 9680 at 0100 in SS w/latin pops, ID, commercials (Garcia, MD).
 Monaco: TWR, 7105 at 0730 w/rx pgm to 0815 fade (Kunkel, CA).

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SIDE REJECTION: 40-45 DB True
BACK REJECTION: 40 DB True
WEIGHT: 28 lbs.
LENGTH: 8 Feet
SWR: 1:1
HORZ. to VERT. SEPARATION: 20-25 DB
WIND SURVIVAL: 100 MPH
POWER MULTIPLICATION: 40X
AUDIO GAIN: 18 DB
WIND LOAD: 2.8

'Strictly for DX' DX Antenna JG - 4V

SPECIFICATIONS:
TYPE: Horiz & Vert.
Polarization: Single Feed
GAIN: 15.5 DB on DX
FRONT TO BACK RATIO: 50 DB True
SIDE REJECTION: 45-50 DB True
BACK REJECTION: 35 DB True
WEIGHT: 24 lbs.
LENGTH: 12 Feet
SWR: 1:1
WIND SURVIVAL: 100 MPH
POWER MULTIPLICATION: 50X
AUDIO GAIN: 18 DB
WIND LOAD: 2.8

ALL CANADIAN INQUIRIES CONTACT:

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CIRCLE 44 ON READER SERVICE CARD

Montserrat: V. of Germany relay, 9565 at 0150 s/off (Hutchison, ONT).

Mongolia: R. Ulan Bator, 12015 at 0859 w/world nx, talk (Garcia, MD).

Morocco: RTV Marocaine, 17595 at 1635 (Decerba, CT); 15335 at 1830 w/mx (Rogers, OK). In EE?—Ed.

Mozambique: R. Mozambique (tentative), 3211 at 0312 in PP, but faded 0327 (Kunkel, CA).

Namibia: R. Southwest Africa, 3290 at 0415 (Maywoods DX Team); 4930 at 0925 w/big band mx (Garcia, MD).

Netherlands: R. Netherlands, 5955//9755 in Dutch at 0810 (Kunkel, CA); 6165 at 0228 (Reynolds, MO); 13770 at 1442 (Rabinowitz, MI); 21685 at 1910 (Zamora, ND).

Netherlands Antilles: R. Netherlands Bonaire relay, 17605 in AA at 1825; 21685 in EE at 1850 (Garcia, MD).

TWR, 11930 at 0303 (Neff, FL).

New Zealand: R. New Zealand, 9850 at 1054 to close 1105 to Australia w/domestic svc relay (Baker, MD); 17705 at 0245, nx 0300 w/Fiji Report (Zirkelbach, CA). Did they say what ever became of Jimmy Snuka?—Ed.

Nicaragua: V. of Nicaragua, 6100 in SS w/nx at 1205 (Garcia, MD).

Niger: La Voix du Sahel, 5020 at 0628 in FF (Maywoods DX Team).

Nigeria: R. Nigeria, Kaduna, 4770 at 2220 (Maywoods DX Team); 0602 w/nx (Gilbert, CA).

FRCN, Lagos, 4950 at 0433 w/IS, drums & time sig 0500 (Kunkel, CA).

N. Korea: R. Pyongyang, 9325//9640//9977 at 1700 w/anthem, IC, IS, pgm sked (Zirkelbach, CA); 9977 at 1032 in Frican (Baker, MD); 11735//13650 at 2300 (Rogers, OK).

N. Marianas: <YOl Saipan, 11900 at 0830 w/mx (Rogers, OK); 17780 at 0500 w/nx (Zirkelbach, CA).

Norway: R. Nairway, 9620 at 0158 in Norwegian (Garcia, MD); 9650 at 0357 closing in EE & Norwegian (Gilbert, CA); 15310 at 1600 (Rogers)

Oman: R. Oman, 17735 w/domestic svc in AA at 1427 (Garcia, MD).

Pakistan: R. Pakistan, 9460 at 0100 s/on in Bangla; 11570 at 0100-0145 (Kunkel, CA); 17760 w/nx & commentary 1100-1119 close (Garcia).

Paraguay: R. Nacional, 6025 at 2245 in SS w/soft mx, time check, but QRM from R. Netherlands (Garcia, MD).

Peru: R. Huari, 3280 at 1000 s/on w/personal msgs, pops (Garcia, MD)—who submitted all of the following Peruvian loggings).

R. Altura, Chaupimarca, 3340 at 1015 in SS w/folk mx. Tentative logging.

R. Oyon, 3449 at 1040 w/ID *Aqui musica poro amanecer por Radio Oyon* & greetings.

R. Cutervo, 6691 in SS w/pops, time check, ID at 0240.

Philippines: VOA relay, 11760 at 2200-2230 w/Asian nx (Tuchscherer, WI).

Poland: R. Polonia, 6135 at 0559 w/IS, into FF (Shute, FL).

Portugal: R. Portugal, 9600 at 0232 (Neff, FL); 9635 at 2300 in PP (Garcia, MD); 15250 at 1930 in PP (Maywoods DX Team).

Qatar: QBS, Doha (tentative logging), 11820 at 1800 in AA (Garcia, MD).

Romania: R. Bucharest, 5990 at 0231 (Rabinowitz, MI); 9510 at 0400 w/nx (Rogers, OK); 9570 at 0200 w/nx (Avery, NH).

Rwanda: DW Kigali relay, 9640 in GG w/classical mx at 0244 (Garcia, MD).

Saudi Arabia: BSKSA, 15060 in AA at 1645 (Rogers, OK).

Senegal: ORTS on 4890 at 0652 w/mx, talk in FF (Gilbert, CA).

Seychelles: FEBA, 7275 at 0110-0200 w/ID 0130 (Kunkel, CA); 11865 at 1600 w/nx (Garcia, MD); 15300 at 0344 w/IS, ID & into AA (Shute, FL).

Singapore: SBC, 11940 at 1600, ID, time check, nx, wx, ID, anthem & off 1604 (Zirkelbach, CA).

S. Africa, Rep. of: Radio RSA, 9580 at 0135 w/sports, nx (Atkinson, OH); 9615 at 0200 w/nx (Borenstein, NY); 11870 at 0030 in SS to 0045 close (Garcia, MD); 17745 at 1934 in FF to 1956 close (Tuchscherer, WI); 21590 on beam to Africa & UK at 1415 (Zamora, ND).

Radio 5, 4880 at 0300 w/mx (Rogers, OK); 11880 s/on at 0510—can be as late as 0520 (Kunkel, CA).

S. Korea: R. Korea, 15575 at 2330 s/on w/freqs, into nx (Garcia, MD).

Spain: REE, 9675 in AA at 2055 (Garcia, MD).

Sri Lanka: SLBC, 9720 at 1600 w/Salvation Army pgm. The //6005 very weak (Kunkel, CA).

Sudan: Nat'l. Unity R., 9435 in AA at 1355. Tentative logging but many mentions of Sudan.

Swaziland: TWR, 3200 at 0259 s/on; 3240 at 0259 much weaker; 9730 at 0425 w/ID (Kunkel, CA).

Sweden: R. Sweden, 9695 at 0235 (Gilbert, CA); 11705 at 0234 (Neff, FL).

Switzerland: Swiss R. Int'l., 3985 at 0800 w/ID, nx; 9535 at 1850 w/DX pgm (Garcia, MD); 9885 at 0425 (Gilbert, CA).

Syria: R. Damascus, 12085 at 2005 w/ID, nx (Rogers, OK).

Tahiti: R. Tahiti, 11825//15170 at 0400 w/mx (Rogers, OK) In FF or Tahitian?—Ed.; 15170 at 0610 in Tahitian w/island mx (Zirkelbach, CA).

Taiwan: VoFC (via WYFR), 5985 at 0316 (Borenstein, NY); 9680 at 0330 (Davis, MA).

Togo: RTT, 5047 at 0529 s/an w/ID in FF (Kunkel, CA).

Tunisia: RTT Tunis, 7425//12005 at 2200 in AA. Bit of RTTY QRM both freqs (Tuchscherer, WI).

Turkey: V. of Turkey, 9445 at 0333 (Gilbert)

Ukrainian SSR: R. Kiev, 7165//15180//15455 at 0040 w/Ukraine Today (Meece, OH); 7400 at 0030 (Decerba, CT); 11780 at 1800 (Garcia, MD); 13645 at 0300 w/IS, ID, nx (Tuchscherer, WI).

U.A.E.: UAE Radio, 11955 at 1615 (Garcia, MD); 11965 at 2306 w/nx, IC, talk (Neff, FL); 15300 at 2000 in AA (Rogers, OK).

UAE Radio, Abu Dhabi, 9595 at 2317 w/severe QRM from BBC. Did use this name in ID (Shute, FL). If they changed station name from former V. of the UAE, would be a bit confusing—Ed.

U.S.A.: KUSW, Salt Lake City, 9815 at 0300 w/freemform rock mx format (Baker, MD).

WINB, 15145 at 2245 w/ID & address (Meece, OH); 15290 at 1955 w/organ mx, presumed s/off 2000 (Rabinowitz, MI).

WMLK, 9645 at 1830 w/seaman (Garcia, MD); WCSN, 11680 at 2005 (Decerba, CT).

U.S.S.R.: R. Moscow, 6810//7105//7195//7390 at 0334 in SS; 15475 at 0717 (Zarka, MS); 6810 is a sput or phantom freq—Ed.

Ulan Ude R., 4795 at 0330-0400 in RR (Davis, MA).

Radiostansiya Rodina, 13165//13645//15455 at 0200 in RR (Rabinowitz, MI).

R. Peace & Progress, 9480 at 0300 (Hutchison, ONT); 17645 at 1415 (Meece, OH).

Vatican: Vatican R., 6250 at 0630 s/on & rx svcs (Kunkel, CA); 9605 at 0050 w/Pope's daily msg (Reynolds, MO); 9645 at 2100 w/nx (Garcia, MD); 15120 at 1545 (Rogers, OK).

Venezuela: R. Tachira, 4830 at 0400 in SS (Davis, MA).
R. Maturin, 5040 at 0903 in SS w/ID, anthem, Shute, FL).

R. Rumbos, 4970 at 2022 in SS (Maywoods DX Team).

Ecas del Torbes, 4980 at 1035 in SS w/mx, talk (Neff, FL).

R. Las Andes, 6010 at 0955 w/LA pops, commercials in SS (Garcia, MD—also remainder of Venezuelan loggings).

R. Cadena Mundial, 5050 at 0815 w/pops, lottery results, time checks, commercials in SS.

R. Mara, 3275 at 0100 in SS.

R. Occidente, 3225 at 0040 w/commercials, time checks in SS.

R. Continental, 4090 at 1045 w/SS ID, time check, commercials, mx.

Vietnam: V. of Vietnam, 9840 at 1615 w/mx, talks (Zirkelbach, CA); 10010 at 1619 w/nx (Gilbert).

W. Germany: VOA relay, 3980 at 0530 in EE & Polish (Mierzwinski, PA).

V. of Germany, 11865 at 0058 w/freq annc't (Garcia, MD).

Yemen Arab Rep.: R. Sana'a, 9780 at 0425 in AA (Gilbert, CA).

Yugoslavia: R. Yugoslavia, 6100 at 2020 w/mx, into GG at 2029 (Garcia, MD); 9620 at 0122 w/talk (Shute, FL); 9660 w/nx at 2204 (Zamora, ND); 11735 at 0110 to close 0142 (Avery, NH); 15325 at 1300 (Reynolds, MO).

Many thanks to the following in the party:
Bob Birkelbach, Pleasant Hill, CA; Warren L. Gilbert, Sherman Oaks, CA; Brian Avery, Portsmouth, NH; John Tuchscherer, Neenah, WI; Rev. J.D. Hutchinson, Belleville, ONT; Michelle Shute, Pensacola, FL; George Neff, Tampa, FL; Ronald W. Atkinson, Ashland, OH; Rolan Kunkel, Morgan Hill, CA; Larry W. Zamora, Grand Forks, ND; Mark Meece, West Chester, OH; George Zater, N. Biloxi, MS; Lowell Rogers, Ponca City, OK; Frank Mierzwinski, Mt. Penn, PA; Maywood DX Team DX'pedition to Crab Orchard, KY; D.N. Davis, Pittsfield, MA; Sander J. Rabinowitz, Farmington Hills, MI; Mike Decerba, Trumbull, CT; Mark A. Northrup, Danbury, CT; Cliff Reynolds, Hazelwood, MO; Gregory Baker, Laurel, MD; Dave Borenstein, Centereach, NY; Tom Kneitel, NY.

Until next month—good listening!



TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

A reader signing the initials "F.N.G." writes from suburban Chicago to ask if a cellular mobile telephone (CMT) has any ham radio applications or known conversions. The question arises because a car with ham radio license plates was spotted parked at a shopping mall and the only communications gear inside the vehicle looked like a CMT.

Of course it may well have been a regular CMT that happened to be installed in a vehicle owned by a ham. Or, it might have been a Kenwood RC-10 remote control handset (for a ham transceiver) which has the same general appearance as a CMT. On the other hand, a CMT could be modified for ham use.

A CMT-to-ham conversion could be feasible for use in the 902 to 928 MHz Amateur band, where the standard repeater inputs are from 907 to 910 MHz, with the outputs at 919 to 922 MHz, 100 kHz channel spacing, according to the ARRL band plan. Besides shifting the operating frequency of the CMT band, other significant modifications would have to be made since there no longer would be any reason for the CMT to search/scan at 30 kHz increments seeking an available working frequency, and there wouldn't be any reason for it to shift from one frequency to another during a contact. It's been done, although I don't know if that's what F.N.G. spotted.

Speaking of modifications, Al Kirkendall of St. Louis, MO raises the question of whether a CMT can be modified to function like a standard scanner for receiving CMT channels. I can tell you this, I have a Mitsubishi 800 and have been told by someone at Mitsubishi International that there are various modes it can be placed in during servicing and one of them will cause the unit to act like a scanning receiver. No, I didn't ask for instructions for getting it to do that trick, however, I would imagine if that if one CMT can do this, then most of them can. Might be worth looking into by those who wish to pursue the concept.

In the December issue *Mailbag* answer concerning the Realistic PRO-2004 search/scan capabilities, I had advised a reader that the unit wouldn't search/scan in 30 kHz increments above or below the 870 to 890 MHz band. A letter from Jorge L. Rodriguez of Gainesville, FL advises that this is true only on units having serial numbers below 630000. Units with a higher serial number will search/scan in 30 kHz steps from 868.95 to 895.98 MHz. We appreciate this additional information!

New Services

Ericsson (of Stockholm, Sweden) was awarded a \$19-million contract for its Mobil-



tex voice and sat comms system from Cintel, Inc., Canada's national non-wireline cellular service provider. Mobiltex allows fleets of vehicles to exchange data or text messages with a control center and with one another. This kicks off in Montreal, Toronto, and Windsor, then expands nationally to 32 other cities.

Bell Atlantic Mobile Systems began expanding its cellular service to many rural areas of Pennsylvania, New Jersey, Maryland, Virginia, and Delaware.

NYNEX Mobile Communications predicts that by the end of 1989, there will be between 2.5 and 3-million cellular service subscribers nationwide, and the number of NYNEX subscribers in the Northeast will nearly double to 200,000. That company also estimated that more than \$3-billion in phone calls will be from/to CMT's in 1989, with 62% of CMT subscribers using their phones for personal reasons at least half of the time. Women, who now account for one out of every five NYNEX's subscribers and are buying/using CMT's with increasing frequency.

NYNEX, which primarily serves the New York-New Jersey metro area, predicts that equipment and service prices have now stabilized and can be expected to remain about

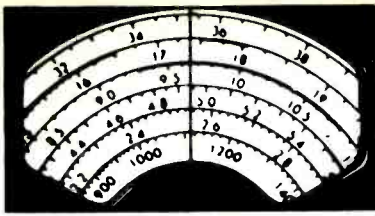
the same for the next several years. They see a trend towards a smaller, sleeker, and lighter CMT featuring one-touch speed dialing and hands free operation as an industry norm.

A survey made by US West Cellular, a CMT service provider in 25 western cities including Phoenix and Tucson, indicates that CMT's show a trend away from being perceived as luxury items for the elite. They are more likely to be seen as becoming necessities for the active business person. They found that 81% of users have mobile units, with the rest of the CMT's being handhelds. The highest volume of users are involved in the various aspects of the construction industry. More than 75% of the CMT customers are businesses that employ less than 100 people. More than 28% of the CMT users have their equipment installed in trucks. Interesting stats.

Hardware

Alpine's 9511 is a sophisticated CMT offering full power and 832-channel operation. Some of the standard features include full hands-free operation, multiple phone numbers allowing you to cut down on roam-

(Continued on page 73)



COMMUNICATIONS CONFIDENTIAL

BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

I am still getting settled-in at my new West Virginia QTH, but I finally located my antenna materials and with an assist from my son-in-law (he climbed the towers), I now have three longwires, an off-center dipole and a VHF/UHF antenna connected to my monitoring position. A vertical whip and another dipole are yet to be installed in the near future.

A query from Irv Hohenstein, Spain asks about the "Victor Lima Bravo 2" transmissions. Irv, that ID has been identified as being part of the Israeli Mossad (intelligence agency) operations. See Kneitel's *Guide To Embassy and Espionage Communications* book for more info and a complete roster of frequency and various ID's used by Mossad.

Michael R. Watson, CA reports hearing the sweeping type signal that I and others have observed during the past year. While this signal has not been positively identified, it may very possibly be the USAF Over-the-Horizon Radar?

First-time contributor, Ron Pecora, OH, says he uses a DX-440 with a 75-foot longwire. He enjoys listening to lake freighters on VHF and he lives right on Lake Erie. He wonders if such vessels use any HF for long distance comms? Ron, here are some Great Lakes HF channels: 2514, 2550, 2582, 4369.8, 2118, 2158, 2206, 4075, 8783 and 8796 kHz. Stations heard include WMI, Lorain, OH, WLC Rogers City, MI and WBL Buffalo, NY.

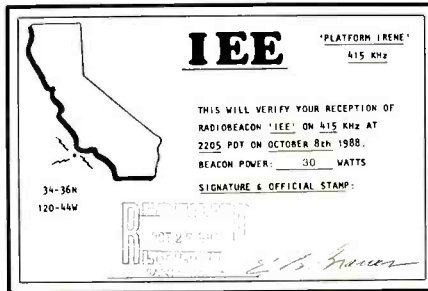
Gary Vendetti, NJ sent in another batch of loggings and indicated he had lost an antenna during heavy winds.

Ronnie Rome of Louisiana says he has been a scanner buff for about ten years, but recently he got into HF monitoring. He is using a R-71A receiver with the wire antenna that came with the receiver plus an outside dipole.

After a long absence, George Osier sent in some loggings and commented that if any readers are interested in sharing information on time stations, they can write him at the following address: George Osier, 814 Morris Street, Ogdensburg, New York 13669.

Robert Berman, NY advises he monitors all types of utility stations using Kenwood R-5000 and military BC-348Q receivers, universal M-600 and M800 RTTY demodulators, and an MFJ 1024 Active Antenna.

Andy Gordon, CT wrote saying he had received another nice Navy QSL and patch, this time from the *USNS Monol*, YAG61. The vessel is involved in "secret" operations

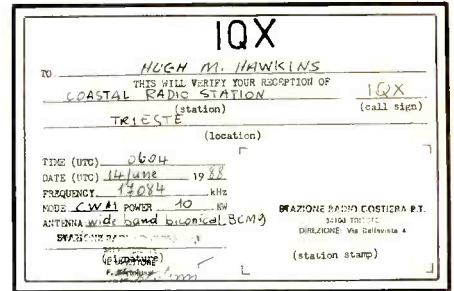


Steve McDonald, BC, Canada had his PFC returned along with a personal letter, antenna diagram and descriptive brochure of Oil Platform "Irene." This helicopter beacon is heard almost nightly in BC and has been logged in Hawaii and Arizona. Their 30w signal propagates very well. QSL address: UNOCAL Oil & Gas Division, UNOCAL Corp., 3201 Skyway Dr., Suite 104, Santa Maria, CA 93455.

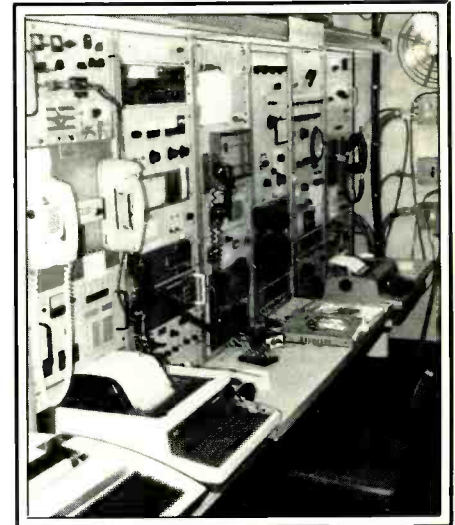
with US & NATO submarines. Andy also identified NNNØCXO3 as the MARS callsign for a Coastal Surveying Craft working off of the *USNS Harkness*, T-AGS-32. The *Harkness* supports coastal surveying craft, amphibious survey teams and helos as part of extensive military hydrographic and oceanographic surveys. NNNØCXO is the *Harkness*' MARS callsign. CXO3 may also be used by shore parties.

Interesting information on Soviet space-flight tracking ship CW nets was developed during preparation for the launch of the Soviet space shuttle BURAN. Tom Roach, CA and Sam Ricks, PA teamed up to monitor this activity. Sam wrote, "We tentatively identified the Soviet Navy tracking ship *Marshall Nedelin*'s callsign as RMLP. This callsign appeared on the civilian tracking ship nets and a Soviet naval base frequency. Reports in the Soviet press identified the *Nedelin* as a BURAN tracking ship stationed off the coast of Chile. These tracking ship nets were active daily for many months prior to the BURAN launch.

The CW tracking ship nets pass telemetry data, plain text messages, and position reports between tracking ships in the North and South Atlantic. Usually the *Akademik Sergei Korolev* assigns ship-to-ship RTTY frequencies to various tracking ships to relay tracking data on the MIR orbital space complex, press reports, political speeches, and Kriptogrammas.



This PFC was returned to Hugh Hawkins by the Trieste Coastal Station, IQX.



Radio Officer Walter H. Treftz sent this picture of the Radio Shack on the *S.S. Capella*, his previous ship. He is now serving on the *S.S. Inger*. The installation is rather extensive with some 30 equipment items (not all shown) making up the communications layout of the vessel.

Weather observations from Soviet ships underway in the North Atlantic, relayed to the hydromet ships in CW, later turn up as ship reported coded weather reports on aviation weather RTTY broadcasts, such as CFH, Canadian Forces Meteo Center, Halifax, NS. It would be interesting to find out if other utility monitors have picked up similar Soviet weather reporting nets in other oceans. I have heard Soviet Hydromet ships working out of ports such as Mombasa, Kenya; Singapore; and various Pacific coast ports in Mexico."

NAHARADIU
1-14-I SOBE NAHA-CITY OKINAWA JAPAN

Dear Sir

Thank you for your QSL report and confirmed your details.
This is the coast station NAHARADIU with call sign JCX.

QTH Control station Lat 26-12-12N Long 127-41-12E
Transmitting station Lat 26-13-52N Long 127-46-57E

Freq(KHZ)	Power(KW)	Antenna	Operation Hour(UTC)
500/442	2.7	T	H24
6470	1	Z	2300-1300
12667.5	1	Z	2400-0800

Service Radiotelegram service for ships.
Service Area East China Sea.South China Sea.Borneo Sea.
History Coast station Naha Radio was established on the 11th Nov. 1923.
Then we opened the marine radio service with medium wave and long wave. We began high frequency service on the 1st Sep. 1965.

Many thanks for your report and listening our station.

Yours sincerely
Radio officer

N. Nagamine



MEMO

This JCX QSL was received by Milan Seifert, Korea.

George Osier, NY logged a number of HF Single-Letter Beacons (SLB's) and here is his list:

kHz	Letter	UTC
5374.6	I	0318
6803.5	O	0308
8136.5	U	0321
8144.1	K	0323
10285.4	V	0400
10643.5	C	0411
10643.8	O	0416
11155	D	0435
12149.5	I	0458
12150.5	D	0500

Readers' attention is invited to POP' COMM December 1984, January and February 1985, and June 1986 for the excellent series on SLB's authored by William I. Orr, W6SAI.

Ute Intercepts
All Times Are UTC

- 201: Beacon BV, Bartlesville, OK at 0135; Beacon X, Saskatoon, Sask at 1239 (Pearce, TX).
- 233: Beacon GRE, Greenville, IL at 0329; Beacon OKS, Oshkosh, NE at 1310 (Pearce, TX).
- 265: Beacon NGF, Kaneohe Bay MCAS, HI at 0540 (Dryoff, MA).
- 323: Beacon BSD, St. Davids Head, Bermuda at 0236 (Pat O'Connor, NH).
- 329: Beacon PMV, Plattsmouth, NE at 0156 (Pearce, TX).
- 330: Beacon TAD, Trinidad, CO at 0922 (Szalony, CA).
- 343: Beacon PJG, Neth. Antilles at 0423 (O'Connor, NH); Beacon ALM, Alamogordo, NM at 0543 (Szalony, CA).
- 353: Beacon HOT, Miguertote, Venezuela at 0445 (O'Connor, NH).
- 356: Beacon TIM, Demerara, Guyana at 0454 (O'Connor, NH).
- 365: Beacon MAJ, Mineral Pt., WI at 0548 (Dryoff, MA).
- 367: Beacon CUU, Chihuahua, Mexico at 0549 (Dryoff, MA).
- 405: Beacon SC, Hong Kong at 0525 (Dryoff, MA).
- 500: 9YL, North Post R., Trinidad in CW at 0353 c/w an un-ID ship (O'Connor, NH).
- 514: Beacon HYD, Coeur D'Alene, ID at 0547 (Dryoff, MA).
- 2093: Fishing vessels chatting in USB at 0003. Although this is supposed to be an intership freq (only), it's apparent that the families of some of the fishing boat skippers have (illegal) sets operating here from their homes in order to stay in contact (Tom Kneitel, NY).
- 2182: NMF2, USCG Group Woods Hole, MA w/g M/V Eagle re SAR for crew members of M/V Lloyd Bermuda. See Communications Confidential loggings

Our thanks to Sam and Tom for the informative analysis.


Some beacon QSL addresses were forwarded by Steve McDonald, BC, Canada. Here they are: Beacon TVY (371 kHz), Tooele, Utah—Mercury Aviation Services, 4363 North Airport Road, ERDA, Utah 84074; Beacon AK (341 kHz), Oakland, CA—FAA Oakland NAV/COM, PO Box 2309, Airport Station, Oakland, CA 94614; Beacon H (314 kHz), Langara Is-

land, BC, Canada—Telecom Area Manager—West Coast, Canadian Coast Guard, Transport Canada, 411-100 Park Royal South, West Vancouver, BC V7T 1A2; and Beacon CB (312 kHz), Cape Beal, BC, Canada—same as for Beacon H above.

I must again ask that contributors please allow two or three spaces between items. Interesting and valuable intercepts are sometimes mutilated and lost when items are cut apart for sorting. Thanks!


SYDNEY VOLMET

FLIGHT SERVICE,
INTERNATIONAL AIRPORT,
SYDNEY, AUSTRALIA



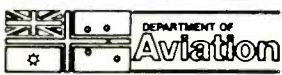
2065 KHz

6676 KHz



11387 KHz

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SUPERVISOR-FLIGHT SERVICE
BOX 211 P.O. MASCOT,
N.S.W. AUSTRALIA 2020

This confirms your reception report of SYDNEY VOLMET, which broadcasts aerodrome weather reports on MELBOURNE, SYDNEY, BRISBANE, TOWNSVILLE, ADELAIDE, CAIRNS DARWIN and PERTH You were tuned on 11387 KHz (3kw tx)
Date and time: 0190634 UTC

Bob Combs

The Sydney VOLMET station sent this attractive QSL to Bob Combs, CA.

in May '89 issue for details of this sea disaster. Hrd at 0109 as NMF2 asked Eagle to watch for possible survivors in water (Berman, NY).

2670: NNGR, USCGC Tamaroa wkg M/V Eagle re transfer of 2 rescued Lloyd Bermuda crew members to CG cutter. Hrd at 2155 in USB (Berman, NY).

2714: 5XH & N3G in QSO via USB at 0159. QSY to 2716 (Symington, OH).

2714.9: NHTM, USS Bowen (FF-1079) clg Norfolk Tug Control at 1120 w/req for tugs while departing (Gordon, CT).

2716: USS Santaquin (YT8-824), a tugm wkg Little Creek Harbor Control at 0040 w/radio check; CZCW, HMCS Ottawa (DDH-229) clg QHM Halifax at 2225; NNWI, USS Whidbey Island (LSD-41) clg Moorehead City (NC) Port Control (Gordon, CT).

2815.2: IDR, Rome Navrad, Italy w/VVV marker in CW at 0304 (Osier, NY).

3000.5: An illegal comms network of fishing boat skippers in USB at 0014 (Kneitel, NY).

3186: KWS78, (apparently) U.S. Embassy, Athens, Greece w/CW marker at 0304 (Osier, NY).

3238.5: 5L grps in CW at 0022 (Kneitel, NY).

3253: CG a/c 1503 wkg USCGC Tamaroa re M/V Lloyd Bermuda sinking off NJ coast. A/c was a C-130 w/9-POB (Berman, NY).

3485: New York R. w/aviation wx, USB at 1416 (Pecora, OH).

4314: LZW, Varna, Bulgaria w/CW marker at 0348 (Osier, NY).

4367: Vessel Cape Cod w/patch to un-ID sta arranging for harbor pilot, USB at 2326 (Pecora)

4373: X5F/Giant Killer (USN Virginia Capes, VA) in USB w/coded data on a/c tracking. Many stas in this net. Other similar nets on 3130, 6723, 6742, 6835, & 11252 kHz. This is Fleet Area Control & Surveillance Facility (FACSFAC). Heard 0518 (Fernandez, MA).

4407: WOM, Miami R., FL in USB wkg vessel **Severign of the Seas** w/patch (Rome, LA).

4592: Beonpole & Pancake in USB discussing frags (in coded form) then "going green" (scrambling) (Fernandez, MA). Time?-- Ed.

4594: YL/GG in AM-mode running 3/2F (X2), 5F (X2) till 0744 when the 3/2F grps slowly evolved into 5F grps. Early on, the spaces in the 3/2F grps were very pronounced, but slowly decreased until they became 5F grps. Finish at 0748 w/"Ende" (Fernandez, MA).

4623: NGR, Kato Souli, Greece in CW at 0256 w/call market (Osier, NY).

4624: VEB2, possible Canadian un-ID sta at 0258 w/usual 2 sec time pips. But at 0259 a phasing type of sig appeared like an RTTY mark & space. At 0300 switched back to usual pips (Osier, NY).

4670: YL/EE in AM-mode w/VLB2 xmsn at 1850 (Hohenstein, Spain). An Israeli Mossad xmsn-- Ed.

4739: 92T 26 A7A A7A etc., repeated in CW at 0402 (Osier, NY).

5135.4: OUW & RSK, un-ID stas calling in CW. Really terrible fists, may be a training net. Exchanged few words in SS (Ed.).

5320: NBTC, USCGC Aquidneck in USB at 0115 wkg CG New Orleans then went to RTTY on 6963 kHz (Symington, OH).

5376: Beacon U in CW at 0311 (Kneitel, NY).

5616: Airflight Virgin 006 wkg New York R. in USB at 0442 (O'Connor, NH).

5680: Several Canadian stas incl Edmonton Military, Ground Search, Cold Lake seemed to be conducting a SAR. QSY'd 9293.5 kHz at 0100 (Gordon, CT).

5696: CG a/c Rescue 1503 wkg USCGC Tamaroa at 0028 re Lloyd Bermuda SAR ops (Berman, NY).

5729: RAF Upavon, England at 0830 in SSB w/xmsn similar to USAF Skyking tfc except w/colors as codes for conditions (Fernandez, MA).

5873: YL/SS in AM-mode at 0838 w/5F grps (Fernandez, MA).

6222: Ops aboard sailboats chatting re sailboat race off TX coast (NW Channel) (Pecora, OH).

6315.6: UMDL, Soviet supertanker Kuzbass sending wx & pos report to EREU, Soviet hydromet wx ship Ernst Krenkel, at 0522 in CW. Soviet ships in N. Atlantic send wx obs daily at 0505 in this active hydromet network, many ships report in (Ricks, PA).

6464: VIS3, Sydney, Australia in CW at 1341 w/call marker & VVV (Osier, NY).

6496.5: PCH35, Schevenigen R., Holland in CW/RTTY w/marker (Fernandez, MA). Time?-- Ed.

6577: YL/SS w/5F grps at 0200 on this ICAO channel. New York R. told the #'s sta to clear the freq. Another ATC sta said he thought it was a tape. NY agreed but was upset anyway at the squatter on freq, observing that the YL/SS was using the channel more & more often. The #'s caused lots of QSY'ing & repeated msgs (Willmer, MI).

6599.3: YL/SS in AM-mode w/5F grps, but didn't seem like an authentic #'s xmsn. It was live & sounded like a cheap CB type sig. The #'s were read off like a shopping list. Xmsn ended with a string of

Abbreviations Used For Intercepts	
AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/led/cation
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)

tones, dead carrier, then off 0355 (Scolzo, PQ).

6627.6: 2 OM/SS in USB at 1049 w/1 sending msg in EE & spelling out most of words in text using phor-tics. Msg was some kind of thank you note from an un-ID Latin American mil unit to an un-ID American mil unit. Mentioned climate & friendly people in Southern California, also San Diego quite often (Fernandez, MA).


6746: YL/EE in AM-mode at 1220 w/CIO2 xmsn. Began w/word "Message" (X3) "Group 5" (X3) then into 5L grps. Throughout the week the final character in the ID changed. Mossad tfc (Scolzo).

6787.5: Un-ID sta in CW at 0306 w/5L grps (Osier, NY).

6863: Un-ID sta in CW, auto sent, at 1218 w/5F grps. Cuts 0's as T's (Ed.).

7820-7900: Is this the USAF's answer to the Russian Woodpecker Over-the-Horizon-Radar? Sweep stays on for about 15 sec with pronounced tone change every 5 sec. After 2 mins, moves on to another band of freqs. Sigs were powerful & sounded like a humming buzz on FM. Possible site for the radar is in ME. Supposedly in final testing stages ready to be operational by year's end (Fernandez)

7918: YL in USB mode at 0444 w/5L grps. Same



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Scanning Today (from page 8)
effective. ANARC states that the ECPA does not require the Commission to take action at this time. ANARC cites the Commission's July 17, 1987 *Memorandum Opinion and Order* regarding the Washington Legal Foundation (WLF) petition in which the Commission stated the ECPA has not been in existence for a sufficient time to determine if the legislation and voluntary efforts will not be adequate to achieve the security of protected communications.¹¹ Some cellular commenters believe that manufacturers should be prohibited from marketing devices capable of receiving communications protected by the ECPA. They support a requirement that certain frequencies be blocked.

Discussion

8. We do not believe that technically blocking frequencies is a desirable approach. As pointed out in the *Notice*, although the ECPA prohibits interception of certain classes of communications, the frequencies on which these communications are transmitted can be used for unprotected transmissions as well. In addition, the ECPA does not prohibit the manufacture and sale of scanners or any receiver based solely on the ability to receive specific frequencies.

9. With respect to the issue of labeling, we agree with some of the commenters that, in some instances, a warning label, by calling attention to a prohibited activity, might encourage it. We are also persuaded that given the complexities of the ECPA it is impractical for a single label to provide sufficient information to properly advise users of the legal requirements. Furthermore, we note from the comments in this proceeding that some manufacturers are voluntarily taking steps to comply with the intent of the ECPA either by informing users of ECPA provisions or by redesigning equipment to omit certain frequencies.

10. In view of the above considerations, we believe that regulatory action is not necessary at this time. Therefore, the proposed labeling requirement is not being adopted.

sounding voice as in Mossad xmsns (Sabo, CA).

8152: M5B in contact w/UBQ & FT at 0106. UBQ said wasn't possible to establish a "UHF Alligator." Requested come up on "papa echo delta papa victor papa undergo." (Willmer, MI).

8368.5: UJKD, Soviet salvage tug **Strogij** (ex-Silny) in CW at 0425 clg URB2 (MacDonald, BC).

8417: Soviet Academy of Sciences spaceflight tracking ships in CW ship/ship net at 0308 included UUVO, **Kosmonaut Vladimir Komarov**, & U15Z, **Akademik Sergei Korolev**. Other freqs: 12627 & 18637 kHz (Ricks, PA).

8-60: PJP, Juncao, Brazil in CW at 0330 w/VVV marker (Osier, NY).

8515: 5AT, Tripoli, Libya in CW at 0430 clg CQ (O'Connor, NH).

8521: VIS26, Sydney, Australia in CW at 1210 w/VVV marker (Symington, OH).

8843: American 72 in USB at 0554 w/pos & wx info to Honolulu (Symington, OH).

8903: Gama Aeradio, Zaire in USB at 2048 wkg Bangui, CAR (O'Connor, NH).

8967: AIE, Andersen AB, Guam in USB at 1225 w/coded t/c (Symington, OH).

9352: Beacon A in CE at 0718. Sent very slowly every 1.5 sec (Fernandez, MA).

11243: Alpha 4 in USB at 1750 wkg Black Knight Control advises "in position" (Symington, OH).

11300: Gulf Air 7052 & Kuwaiti 1809 in USB at 0014 wkg Jeddah Aeradio (Ricks, PA).

11532: YL/SS in AM-made w/4F grps at 2122 (Fernandez, MA).

12336.2: C6ZU, the liner **M/V Sogafjord** enroute Vancouver/Alaska in USB at 1740 w/patches via KMI (MacDonald, BC). See this month's Books You'll Like for info on directories of cruise liners-- Ed.

12413.7: WPVD, container ship **SeaLand Integrity** in USB at 1534 w/patches thru WOL (O'Connor, NH).

12416.8: C6DY, passenger/gen cargo ship **Regent Star** (ex-Rhapsody, ex-Statendam) in USB at 1714 wkg KMI (MacDonald, BC).

12537.5: UOIJ, Soviet gen cargo ship **Svanetiya** clg UFB, UKEN, bulk carrier **Uelen** clg UFB, both in CW about 0002 (MacDonald).

12570: UBLV, Soviet reefer side trawler **Mednogorsk** in CW at 1538 wkg UFN (MacDonald, BC).

12709: FJP23, Noumea, New Caledonia in CW clg CQ at 0440 (O'Connor, NH).

13106: Un-UD coastal sta handling USB patches from ships. At 1958 fra a Norwegian cruise liner. At 1647, in LSB, a patch re stocks, advertising, salaries, in amounts running into the millions!! (Pecora, OH). Maybe they were dealing in Bolivian Pesos at 2,230--US\$1-- Ed.

13125.6: Cape Town International Radiotelephone at 0505. Opr announced freq list in EE. Contacted an un-ID ship w/conversation in Afrikaans (Rome)

13144.2: WOM, Miami R., FL at 0439 in USB wkg cruise liner **M/V Rotterdam** w/patches (Rome)

13241: SAM 56974 in USB at 2305 w/Secretary of State aboard. Wkg Andrews AFB (Lamar, FL).

13360: GPA5, Portishead R., England in CW/RTTY at 0335 (Fernandez, MA).

14384.5: Canadian Forces Amateur Radio Service (CFARS) stas CIW91 at Laht, FRG noted at 1909 wkg CIW610; CFARS sta VEV9 at Valcartier, PQ contacting VXV9, Golan Heights, Syria. All USB w/patches (O'Connor, NH).

14405: AFA2KC, the NCS wkg other USAF MARS stas w/AFA, AFB, AGA prefixed calls for net check in, USB at 1706 (Symington, OH).

14441: MARS stas w/suffixes PPE & CVQ in USB at 2012. QSY'd to 13974 kHz, then to 14483 where they were finally able to run a patch, USB at 2014 (Pecora, OH).

14441.5: NNN0CBH, USS **Bunker Hill** (CG-52) wkg NNN0XEN at 1830; NNN0NZP, USN Auxiliary **Manob 1** (YAG-61) clg any stateside MARS sta at 2100-- the **Manob** conducts research for the Naval Mine Defense Lab, Panama City, FL; NNN0NOT, Com Fleet Electronic Warfare Support Group deployed on USS **Vulcan** (AR-5) wkg NNN0FAB at 0010 (Gordon, CT).

14556: Un-ID sta in auto CW at 2303. Weag sigs w/echo. 4F grps using letter T as cut 0. Suddenly kicked up speed at 2340. Seemed strange but at times there was an unusually long delay between characters as if tape puncher had hung up before each character (Ed.).

16463.1: GSXU, HMS **Andromeda** (Frigate F-56) in USB at 1852 w/patches thru GK162 (O'Connor)

16591: Tanker **Exxon Charleston** wkg Exxon Travel to arrange flights, USB at 1617 (Pecora, OH).

16707: URRX, Soviet reefer **Arvid Pelshe** sending position & wx to EREU, Soviet hydromet ship **Ernst Krenkel** at 1705 in CW. Another active net w/many ships reporting in w/wx obs. // freq is 12607 kHz at 1705 daily (Ricks, PA).

16720.8: UBDF, an un-ID Soviet ship in CW at 1258 sending VVV & calling R. Odessa (Kneitel, NY).

16804: IMBH, Italian ship **Punta Bianca** in CW at 2007 wkg WCC (O'Connor, NH).

16835: CMU967, Soviet **Navrad**, Santiago, Cuba clg RMLP, Soviet Navy spaceflight tracking ship

Marshall Nedelin at 0109 in CW. Ship was in Pac off Chilean coast during launch of Soviet shuttle **Buran**. RMLP also noted in CW tracking ship net an 8417 kHz (Ricks, PA). Nice going!-- Ed.

17066: URD, Leningrad, USSR w/tracking data from Science One, Moscow for UZZV, spaceflight tracking ship **Kosmonaut Georgij Dobrovolskiy** in CW at 1630. Ship was 1,500 mi. S of Easter Isl. (Ricks, PA).

18027: SAM 56974 w/Secretary of State aboard running patches thru Andrews, LSB at 2105 (Lamar).

18312.5: Sta. repeating letter X in CW at 1700. At 1701 it stopped & sent four 5F grps & the letter X, then at 1703 resumed sending X's. Off 1705 (Ed.).

18384.8: Un-ID sta at 1546 w/auto CW sending callup of 753 011 (Ed.).

20063.5: Un-ID CW sta w/4F & 5F grps w/cut 0's (Vendetti, NJ).

20678: NNN0CVD, USS **Santa Barbara** wkg NNN0KRQ at 1805 in USB, then QSY 20936 kHz (Symington, CH).

23695.7:2 OM/EE at 1750 in USB, OOP in contact w/un-ID sta on freq re some type of xmsns, pass RTTY as one sta told other to make sure he had button in 85 Hz position. One station then came up on RTTY. OOP then asked HIJ if he copied T03 and he said he reported negative copy (Ed.).

23770: RT, jammer in CW at 1546 (Vendetti)

23940: ZM, jammer in CW at 1543 (Vendetti).

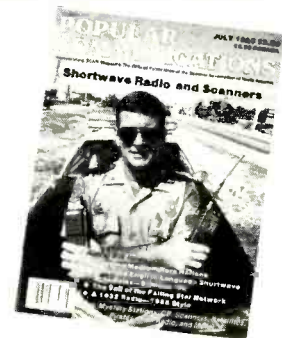
24579: TUR, un-ID sta in CW at 1556 (Vendetti, NJ). Traffic?-- Ed.

26124: Un-ID sta in CW at 1525 w/5L grps (Vendetti, NJ).



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CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

BY GERRY L. DEXTER

Radio Patria Libre, the anti-Columbian station, is in the news again this month. This time, though, it's not because of when or where it's being heard but because it's not being heard! During the couple of months it was active the station was heard with very good signals but it's now gone from the shortwave dial. The station, which had been "DF'd" to a location within Colombia, was being searched for by the Colombian military. Apparently, its location was found and the station put off the air, although so far we haven't had any reports to confirm that. Radio Patria Libre was the third attempt by guerrilla forces in Colombia to get something going so it seems reasonable to expect there'll be more attempts in the future. Just in case there might be a reappearance of Patria Libre, you may wish to keep a watch for this one around 0030 to 0100 in the vicinity of 6765.


The situation in Southern Africa is in a state of flux, with peace talks, agreements on Namibia and the withdrawal of Cuban troops. The same seems to be the case in the clandestine radio area, too. On the Media Network program, expert monitor Richard Ginbey in South Africa reports several developments.

Radio Paz y Progreso (Peace and Progress— no relation to the Soviet version) is apparently a new name for the former *Voz de Verdade* (Voice of Truth) which has broadcast to Angola for a number of years. The new version has the same schedule as the one last announced for Verdade: 4950 at 2000-2100 and 0600-0700.


A station broadcasting to Cuban troops in Angola which we've known simply as *Cubanos en Africa* (6045 at 1700-1800 and 0500-0600) now has two brothers. Radio Carina del Sol is said to be on the air from a transmitter in Lubango, Angola on Sundays from 0700-0800 on 9565. Another station, Radio Sibonet (or "Siboney?"), supposedly from South Africa, airs at 1800-1900 on 6100.

The Voice of Namibia used to be just a clandestine program aired by the Southwest African People's Organization (SWAPO) over three or four government stations within Africa. Apparently, there is now a separate station with that name, reportedly broadcasting from Lubango at 0400-0600, 1800-2000 on 4885, 4950 and variable 5030 and 1030-1230 on 9575. On weekends, 1300-2000 on 4885, 4950 and 5030. Given a little luck that 0400-0600 segment might be possible in North America.

After putting up with extremely strong interference from a utility station right next door, Radio Caiman has moved from 9960 to 9965 and is back in the clear again (that's



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Radio Farabundo Marti is trying to raise money for FM transmitters through benefit concerts and other events.

the only thing about this station which is clear!) The "ute" interference, according to pirate and clandestine radio authority George Zeller, was from a frequency division multiplex station of the AFRTS carrying AP and UPI news feeds on 9961—which sounds like so much noise if you haven't the equipment to decode it.

One of the more diligent clandestine hunters, Robert Ross of London, Ontario, checks in with some nice logs: Radio Farabundo Marti was found on 6700 at 1210 in Spanish with full ID; Radio Patria Libre on 6763 at 0044-0100 in Spanish; the Voice of Democratic Kampuchea at 0410 in Kampu-

chean on 17680 (that's via Radio Beijing facilities) and Radio Iran Toilers on 10869.7 in Farsi at 0241. Nice work, Robert!

Well known European DX'er and write on radio, Michael Schaay of Holland supplies a headquarters address for the Eritrean People's Liberation Front and its station: EPLF National Guidance Department, Information Branch, Voice of the Eritrean Masses, Sahel Eritrea, P.O. Box 671, Port Sudan, Sudan. Note: that is a bit of a name change for the station. We've always known it as the Voice of the Broad Masses of Eritrea (or, as one wag once put it—"Voice of the Massed Broads . . .")

DX'er Terry Krueger in Florida reports an anti-Noriega program on *Radio Impacto* on 5030 around 0407. This is carried with the station's "Una Voz de Centroamerica y el Caribe y el Mundo" newscast around 0400-0430. The feature is a commentary by Mayina Correa who, technically, is still a Panamanian senator, though now in exile in Miami. The report is a telephone feed. The logging, as well as Jeff White's background info, appeared in the DX South Florida bulletin.

The games continue in the area between 6.5 and 6.8 MHz during our evening hours. Several clandestine DX'ers have noticed a new transmission in the area which may be another fake *Radio Venceremos*, or possibly something entirely different. So, in between 6.5 and 6.8 we have this new one, the real *Venceremos*, *Radio Farabundo Marti*, and one or two music jammers. And none of them stay on the frequency very long, making it extremely difficult to track them and determine which one has moved where. It's a real test of monitoring skills!

And speaking of *Radio Farabundo Marti*, representatives are out and about in the U.S. these days, trying to raise money to buy five portable FM broadcast transmitters and associated equipment so the station can be broadcast to a local El Salvador audience—since most there don't have any access to shortwave. The station is trying to raise nearly \$50,000 to cover the cost of the proj-

ect. Thanks to Terry O'Laughlin in Wisconsin for sending info about fund-raising efforts in Madison, Wisconsin.

The November/December 1988 issue of *Africa Report* had an article by Karl Maier entitled "Between Washington and Pretoria" which stated that South African military intelligence produced the programs of the "Voice of Free Africa" which later became the *Voice of the Mozambique National Resistance*, the Renamo station. Maier says the programs were transmitted "from

the Hillbrow Post Office tower in Johannesburg." The station has been off the air for several years though Renamo reps have hinted at a return.

That does it for this time. Remember, we need your informational input—your clandestine loggings, articles you may run across about clandestine broadcasting, or the groups which operate the stations and anything else which might have a bearing. Your help is much appreciated!

'Til next month—good hunting!

PC

Telephone Enroute (from page 67)

er fees by registering with no less than four different service providers, in four different cities, a signal strength indicator, 100 number memory and calling card memory. There's also a mute ("hold") button to temporarily deactivate the microphone during a conversation. The 9511 can interface with the vehicle's stereo system by shutting it off when ever the CMT is in operation, then turns it back on when the CMT is disengaged. It can also be wired into the vehicle to beep the horn and flash the headlights when a call comes in and the vehicle is unoccupied. The CMT can be electronically locked with five programmable access modes.

A beep lets you keep track of how long

you're gabbing, just in case you have a tendency to forget that the meter is running. There's also a Model 9709 transportable kit that allows the CMT to be taken anywhere and run from its own internal rechargeable battery pack. Has its own antenna. There's an optional battery charger. The Alpine 9511 weighs 2.2 lbs, with the control unit weighing 1 lb.

For more information, contact Alpine Electronics of America, Inc., P.O. Box 2859, Torrance, CA 90509, or circle 102 on our Readers' Service.

This column is always pleased to hear from readers with questions, hints, information, news clippings, anecdotes about CMT use, etc. We would like to hear from CMT manufacturers and cellular service providers.

Beaming In (from page 5)

messages with a kid that I had spent the last five years trying to avoid.

A meeting was set up at the neighborhood radio store. If Big Mickey showed up, I'd just buy some antenna wire and leave. But Big Mickey never materialized. The Mickey of the heterodyne was of the female persuasion, fifteen years old, and was instantly acknowledged as my dream girl.

After that, we spent almost every day together. One day we visited all of the military surplus radio stores that lined both sides of New York's Cortlandt Street. Another day we took the tour of the NBC studios at Radio City. Evenings were reserved for CW contacts.

After we had gotten our code speeds to the point where messages could be exchanged at about 5 w.p.m., one night our contact was abruptly joined by another CW station obviously trying to break into our communications. The other station was persistent and kept pushing to be recognized. Turned out to be a fellow named Larry. He had built his Meissner receiver in shop a year before I did and had been studying for his ham ticket for several months. It was apparent that his CW abilities were far better than Mickey's or mine. A meeting was set up for the next day.

Larry turned out to be seventeen. I recognized him from the neighborhood, but had never met him. He confessed that he had

been monitoring our CW contacts for several days and was hoping that we would welcome him in as a regular member of the network. Although I hadn't envisioned my private CW contacts with Mickey to be a network, she extended him a cordial invitation.

You might be able to guess the rest. Within days, Larry had appointed himself Net Control Station. Moreover, he was flaunting his obnoxious CW prowess by sending fancy signals like SK, AR, commas, and question marks. What's worse, he suggested that Mickey might like to study CW with him. I wasn't invited to the classes. Frankly, it was only a matter of a week or so before I was the only active member of what was once the nightly CW network.

Ever the optimist, I called CQ on the silent frequency every night. A few days later I finally called it quits with one last desperate SOS.

For many months afterwards, I saw Larry and Mickey together, although I discreetly walked on the other side of the street. They must have been up to 25 w.p.m. by then. I was still stuck at 5 w.p.m., and couldn't help tuning in the old frequency every once in awhile in the hope that I'd hear some CW there. I didn't.

I've heard of guys who drove Plymouths and lost their girlfriends to guys who drove faster cars like Corvettes, Maserattis, and Lamborghinis. I'm probably the only guy in the world who lost his girl to someone with a faster CW speed!

PC

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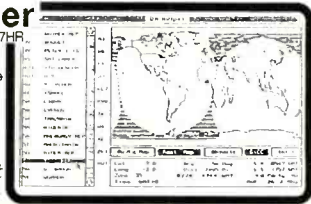
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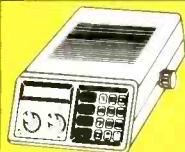
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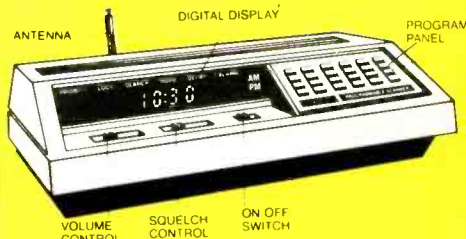


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Sophisticated microprocess-controlled circuitry eliminates the need for crystals, instead, the frequency for each channel is programmed through the numbered keyboard similar to the one used on a telephone. A "beep" acknowledges contact each time a 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.)



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Optional Accessories

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- VC-20 VHF converter • VS-1 Voice module • DCK-2 for 12 volt DC operation
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