

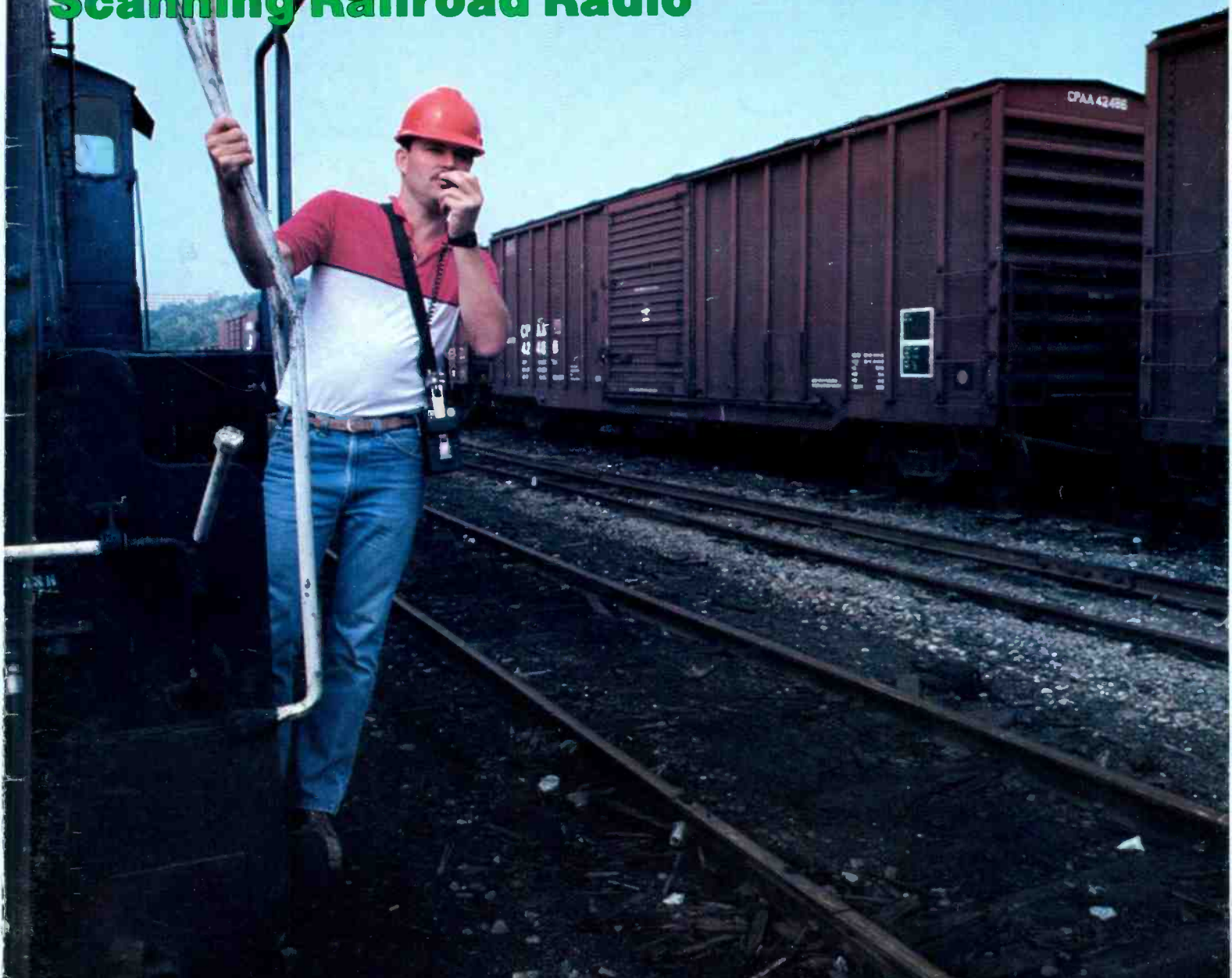
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Scanning Railroad Radio



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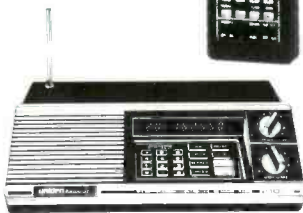
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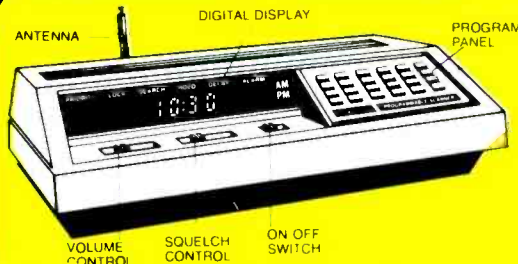
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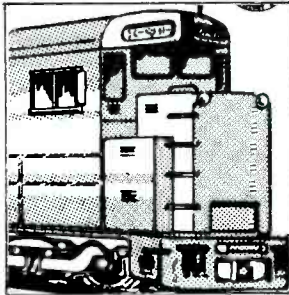
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APRIL 1987

VOL. 5, NO.8



8



18



30

FEATURES

- Scanning Today** 7
Controversial topics involving scanner users. *by Robert A. Hanson*
- Angola's Elusive Voices** 8
Amid guerillas, militias, warfare, and turmoil, the shortwave broadcasters are still operating—although carefully! *by Gerry L. Dexter*
- Selected English Language Broadcasts — Spring 1987** 12
by Gerry L. Dexter
- SCAN Public Service Award** 15
Bank robber's bomb disarmed.
- SCAN Photo Contest Winners** 15
Two winners from The Golden State this month.
- Murphy's Law and Communications** 16
A primer for strong-hearted scanner and communications users. *by Alfred G. Packer, KCO6NX*
- Scanning Railroad Radio** 18
The communications voice that rides across America. *by Lewis Keseberg, KCA6PK*
- What's In A Name?** 26
VIP's as well as important places and things are known on VHF by their nicknames! *by Harry Caul, KIL9XL*
- Radio — A Look Back** 30
Remembering the early days of radio and wireless. *by Alice Brannigan*
- Was Roger Babson America's Most Off-The-Wall Broadcaster?** 40
He was successful, influential, rich and famous—and he thought that he could defy gravity! *by Tom Kneitel, K2AES, Editor*
- A Review: MorseMaster II Morse Trainer** 48
by Philip D. Ingraham, W2OSY

This month's cover: Railroad man uses radio to talk to the "yard" at the Conrail yards north of New York City. Photo by Larry Mulvehill, WB2ZPI.

DEPARTMENTS

Beaming In	4	Communications Confidential	61
Mailbag	6	Pirate's Den	65
Books You'll Like	24	Scanner Scene	66
RTTY	36	On The Line	68
Broadcast Topix	43	Clandestine Communique	70
POP'COMM Products	47	Radar Reflections	71
Better Signals	50	Satellite View	72
Listening Post	52	Communications Shop	74
Emergency	58		

THE MONITORING MAGAZINE

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Additional Random Ramblings

The predictions made in the January issue brought in quite a stack of mail. More readers than I would have expected wrote to say that the concept of limited commercial access to VOA, WWV and NOAA microphones to provide pay-as-you-go financing for those services was a reasonable approach. We'll wait and see if anything ever comes of the idea.

Other readers sent forth a barrage of predictions, dream equipment suggestions, and ideas of their own. A number of these were not only reasonable, they were clever albeit possibly not necessarily original in every respect. While all related to electronics, not all were directly connected to radio communications.

Some of those that are most intriguing ask why scanners, many of which now have built-in digital clocks, don't have automatic on/off timers, and why they don't have built-in cassette recorders. Likewise, TV receivers should have automatic timers and built-in VCR's—obviously this must have occurred to the companies that produce this equipment so there's probably a definite reason why they aren't being produced.

A reader in Idaho notes that VCR's are made so that they can be operated in three speeds; even RTR tape decks can operate with at least two speeds. He wonders why cassette recorders don't have two or three selectable speeds so that those who are more interested in extended recording time than they are in sound fidelity can make long playing tapes, a feature that would be appealing to many scanner owners and communications enthusiasts.

This same reader observes that some company should make audio (only) recording equipment that uses VHS or *Betamax* video cassettes since they will play longer than standard audio cassettes, they're readily available and, in the long run, they'd be less expensive to use, with as much as twelve hours of audio recording possible on a single VHF format T-120 videocassette run in both directions at the SLP speed.

My own hope has long been that some manufacturer will bring out a modern version of the old panoramic adapter (panadapter) receiving spectrum analyzer. For those who don't remember this receiver accessory, it has a CRT that displayed (as spikes on a baseline) all of the signals ± 100 kHz from the frequency to which your receiver was tuned. The last ones made were intended to be used with tube-type receivers so they don't easily interface with solid-state



The venerable RCA Model 77D polydirectional velocity-type broadcast microphone. Would Hams and CB'ers want a reborn version in their shacks?

equipment. Also, they stopped making these gizmos so long ago that they're too long in the tooth for use anymore.

Modern receivers would obviously have to be designed with panadapter output jacks to drive such a unit. As for the panadapter itself, today's technologies and components could surely combine to come up with a super multi-feature whiz-bang unit that could be used for a spectrum viewer, RTTY tuning aid, modulation analyzer, and whatever.

Speaking of resurrecting good ideas from the past, reader Howard Seligman of California wrote to say that he hoped that one of the manufacturers of microphones would produce modern crystal and ceramic communications replicas of famous broadcast mics such as the RCA 77D and RCA 44BX. These are probably the most well known of the types of mics that were used at radio broadcast stations from the mid-1930's until

only a few years ago. Doubtless, many are still in use around the world. Howard's opinion is that many CB'ers and Hams would like to have one of those (or a reasonable facsimile) at their base stations. I'll go along with that!

Information Impact

A few issues ago we ran a letter from a reader suggesting that the "Intelligence Community" might consider recruiting the DX monitoring community to root out information communications "of interest." At that time, I pointed out that numerous agencies receive multiple subscription copies of *POP'COMM* every month. Apparently, there is material in our pages that they feel is useful to their operations.

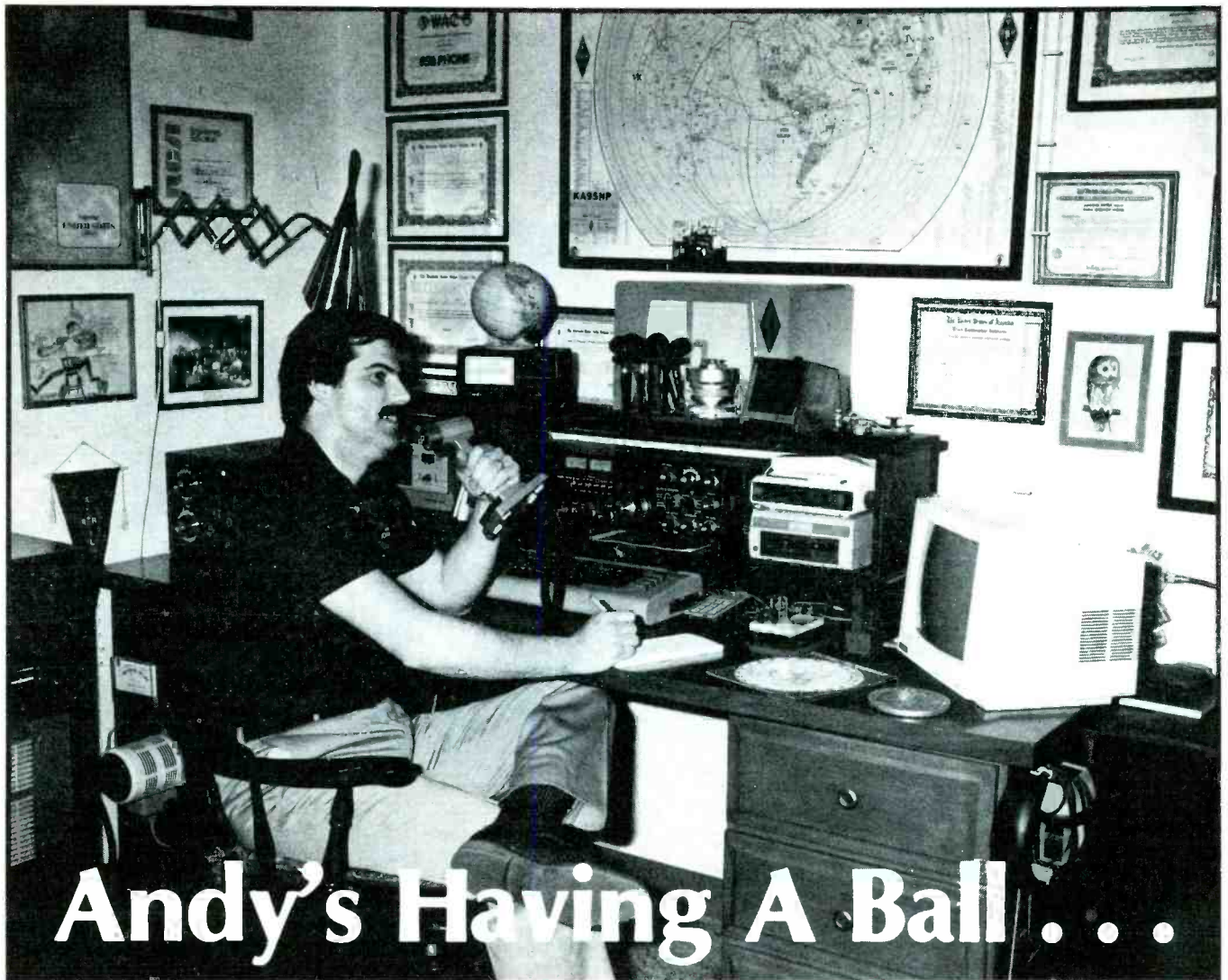
Two things recently made me think back to that letter. The other day I saw a copy of the publication *Cryptolog*, quarterly journal of the Naval Cryptologic Veterans Association (3421 Stark St., Eugene, OR 97404). Graydon Lewis (N7FCO), Editor of *Cryptolog*, suggested that, "If Tom Kneitel and his monitors" team up with various groups within the cryptography hobby (especially those consisting of retired military codebreakers)—"presto, competition for NSA!" Maybe that's one of the reasons the Electronics Privacy Act (signed into law not long ago) frowns upon folks doing private cracking of the many encrypted signals to be monitored on the shortwave bands.

Over the years, *POP'COMM* has picked up a large number of subscribers throughout the world and we receive a surprising amount of mail from readers in Eastern Europe and the Middle East. Interestingly, one particular overseas reader works for one of those governments—he's a military officer with a responsible position. We receive occasional letters from him complaining that his nation's postal service has censors that go through publications that come in from overseas, ripping out pages that contain information citizens aren't supposed to have. In that respect, he reports that his monthly copy of *POP'COMM* invariably arrives with selected pages or entire stories torn out. For instance, Gerry Dexter's October issue story, "Shortwave's Libyan Connection" had two of its three pages missing!

When we hear from him, we send him the missing pages in a sealed envelope—they seem to get through uncensored!

POP'COMM remains, as always, the best source for getting the information that counts!

PC



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MAILBAG LETTERS TO THE EDITOR

The most interesting questions we receive will be answered here in each issue. Address your questions to: Tom Kneitel, Editor, Popular Communications magazine, 76 North Broadway, Hicksville, NY 11801.

The Eagle Flies!

The local media hereabouts reports that the blank discs manufactured into 1 oz. "American Eagle" solid gold bullion coins are being produced by two precious metals firms located in my area. One company is Leach and Garner in Attleboro, the other is the Englehard Corp., five miles from Attleboro in Plainville. I would imagine that these plants must have security forces, but I can't seem to find out the frequencies involved.

Ethan Carmody
Foxboro, MA

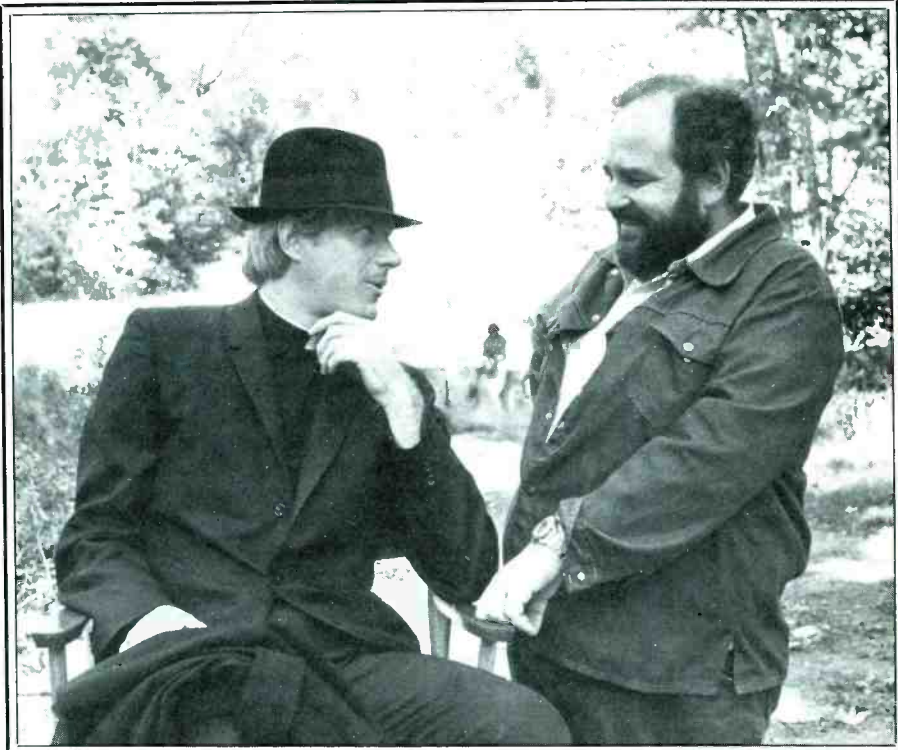
Leach and Garner uses 153.335 MHz; Englehard is on 153.32 and 158.325 MHz. The blank discs (called "planchets") are produced under contract for the U.S. Mint and are made from melted-down gold jewelry, coins (including many South African Krugerrands), and from "scrap gold." Leach and Garner is possibly the largest single gold user in the United States, and therefore stores much gold in various forms, including ingots. As you suspect, tight security must be maintained. At Leach and Garner, there's a tall (and electrified) fence crowned with barbed wire. All entrances are heavily guarded, and throughout the entire facility there are television cameras that watch everything taking place and every person at work. All personnel must pass through sensitive metal detection devices during the normal course of their activities. Better not give out these frequencies, Ethan!—Editor

Confusing Terminology

In POP'COMM's monthly RTTY loggings section, I notice that some stations are reported with coded transmissions and others with encrypted transmissions. There's apparently a difference but I don't understand what it is.

Steven McCullough
Dover, DE

In the context the words are used in our pages, a coded transmission is one where, for the sake of brevity, convenience, or uniformity, the text of a message has been transposed into an abbreviated or coded form. In such instances, as with some meteorological and hydrological broadcasts, the messages are intended to be reconstituted into plaintext by the use of charts and tables available to the general public. An encrypted transmission is one that, for the primary purpose of maintaining privacy or secrecy, has been transposed into a code or cipher system that is intended to be understood



Tom (photo right) finally seeking salvation? Not quite! The "priest" (photo left) is costumed actor Ed Begley, Jr. (of TV's *St. Elsewhere*). The photo was snapped while Tom was visiting Begley, a friend of his, during a motion picture filming in *Movieland*.

only by the station to which the message is addressed.—Editor

Signs Of The Times

In the year that I've been subscribing to POP'COMM, I don't recall seeing any photos of its illustrious Editor. Most other magazines have photos of their editors all over the place. In January you ran a photo of Ed Noll, and I've seen several of Alice Brannigan. Now it's your turn to step in front of the camera, Tom. Don't be so camera shy! And while you're at it, what's your Zodiac sign, moon sign and rising sign?

Terry Lynne Pargett
Las Vegas, NV

That's a switch—most readers suggest that I don't come out of the woodwork to pose for photos. At least one reader recently suggested that I step in front of a Boeing 747. The official POP'COMM seer advises that I'm an Aquarian with blood pressure rising. At the full moon, my first signs are fangs, bat wings and a Transylvanian accent—the usual stuff.—Editor

Splitsville

In some of the federal agency scanner listings that have appeared in POP'COMM, there are frequencies such as 164.8875 and 166.4625 MHz. My scanner (a Bearcat

300) will program only VHF frequencies that have no more than three digits after the decimal point, such as 154.115, 155.695, 151.505 MHz. How can I monitor these split frequencies that lie between the regular scanner channels? My guess is that only scanners using plug-in crystals can receive these channels.

H. A. Lansky
North Miami Beach, FL

The channel spacing for federal frequencies in the 162 to 174 MHz band is arranged so that some turn up between the channels that can be programmed into many scanners. When you try to program in something like 164.8875 MHz, the scanner digital readout will show 164.885 MHz (which is 2.5 kHz below the frequency you tried to program). This will cause you no problems in monitoring the communications in your area on 164.8875 MHz. The 2.5 kHz frequency difference is insignificant; you'd also be able to monitor from 2.5 kHz above your desired frequency (by programming in 164.89 MHz). Many frequency listings show VHF frequencies only to 3 decimal places even if the actual frequency is one of those longer ones because of the confusion that has traditionally surrounded such matters. Just program in the frequency you want to monitor and let the scanner work it all out.—Editor

OFFICIAL NEWS COLUMN OF THE SCANNER ASSOCIATION OF NORTH AMERICA

Computer-Aided Dispatching

Many members have written with inquiries about "CAD" . . . variously called Computer-Aided or Computer-Assisted Dispatching. Quite a few cities now have CAD or have announced that they will be installing it soon. There are a great many concerns about CAD. And they are by no means confined to scanner owners!

The police and firemen who will have to live under the new system naturally suspect automated systems, often with very good reason. (Recently Chicago sued a large two-way radio manufacturer over a multi-million dollar dispatch system that has never worked right.) Citizens hope that a computer snafu won't someday mean that they won't get the help they need. (After all, we could be talking about life or death here.) Dispatchers, especially, worry that they will be left with the blame if something goes wrong with the system that is supposed to "make their life easier." (As one fire alarm dispatcher put it, "It's nice, I suppose, that a CAD system will generate all kinds of reports and statistics. But will it get the right fire engines to the right places at the right times?")

Scanner owners, of course, worry that they will know less about what is going on once a CAD system is in place. (In fact, many worry that they will be completely in the dark, shut out by a series of digital bleeps!)

SCAN has been reviewing CAD systems now actually in operation so that we can give you a "real life" look at CAD, not speculation. We hope to bring you much of that information in the months ahead through the pages of *POP'COMM*. In the meantime, it might be interesting to discuss some of what we've learned.

While there is no telling what the digital revolution will bring in the future, most of the systems we have seen in operation so far are still voice dispatched and *all* used voice to one degree or another. Another thing we learned was that CAD itself is a very imprecise term. CAD to one department is a personal computer with a list of homes who have children, elderly, etc. It's a very useful tool when the dispatcher gets a call for help at that address. For another department, however, CAD is a very complex system that moves men and equipment around the city to balance response times, generates analysis reports, automatically alerts neighboring districts to the possibility that there will be need for assistance— you name it!

How well do they work? Well, apparently from the comments we have received and some of the lawsuits we have heard about, some work and some don't. Whether the complex systems are too complex, or just going through a shakedown phase, only time will tell. The bottom line, however, seems to be that CAD is here to stay and will be growing in the future.

Speaking Of Dispatching . . .

The role of the dispatcher is something most scanner owners come to quickly appreciate. When we hear a cool, measured response in the middle of a crisis, we know that we are listening to a true professional. Few of us, however, comprehend everything a dispatcher must contend with. If each of us could spend a day or two in the role of a dispatcher, or even sitting next to one listening in, we'd have a much better understanding of what's going on "behind the scenes" when we hear those calls come over our scanners. But that is simply not possible.

In our interviews with dispatchers and our search for more information, we have come across a fascinating book titled, *Police Communications Guide For Dispatchers*. Even reading the chapter headings in this book gives a sense of the complexity of the job. Included are chapters on Philosophies (such as dealing with reporters, local government etc.), Law For Dispatchers, Radio Proce-

dures (including numerous types of codes and handling road blocks, etc.), Telephone Procedures (including tracing calls) . . . well, you get the picture. Dispatching is a lot more than just pushing the mic button and saying "ten-four." Yes, there's even a chapter on CAD, but my favorite is one titled "What To Do When Everything Else Goes Wrong!"

This is not a book for general public. It was written as a training guide for dispatchers. It is not written with a story line and it is not the type of book you'll ever find at your local book store. But it is 211 pages of straight talk for dispatchers that we feel many scanner owners will find fascinating reading. Therefore, we've made arrangements with the publisher to have it available through SCAN at special member discounts. A self-addressed stamped envelope will bring details. Write: SCAN Dispatcher Book, P.O. Box 414, Western Springs, IL 60558.

Scanner Radio Helps A Friend

Recently a SCAN member wrote us with a "little story," but I believe that it is really a big story about what scanning is all about. Most of all it is involvement in our communities. We listen to our scanners because we really do care about what is happening around us and the welfare of our fellow citizens. We care about the policeman or woman out there at 2 a.m. Sunday morning. We care about the firemen and the people who are inside that burning house over on 4th street. And SCAN member Willis Good cared about his neighbor when he heard that an ambulance was dispatched to that address. He raced over to his neighbor, who was suffering a heart attack. He helped out and took care of locking up the house so his neighbor's wife could accompany her husband to the hospital in the ambulance. The scanner report was the alert he needed to be there to help. Willis Good calls it a "little story," but I believe it is *the* big story of scanning. Mr. Good did not write us because he wanted recognition in this column. He wrote to us because he would like to see more stories like this about scanning in *POP'COMM* and so would we! But it is up to you, our members, to let us know. Write and tell us about your experiences as a scanner radio user. Your fellow scanner enthusiasts want to know about your experiences with a scanner.

ECPA Continues To Cause Consternation

Letters were received from several members last month about the legality of various converters and decoders under the new Electronic Communications Privacy Act. One member had a voice inversion decoder used to listen to his local police who used this type of scrambling system. The other was interested in purchasing a converter he had seen advertised so he could hear the new 800 MHz frequency bands on his scanner. Both queries represent different and interesting questions in light of ECPA.

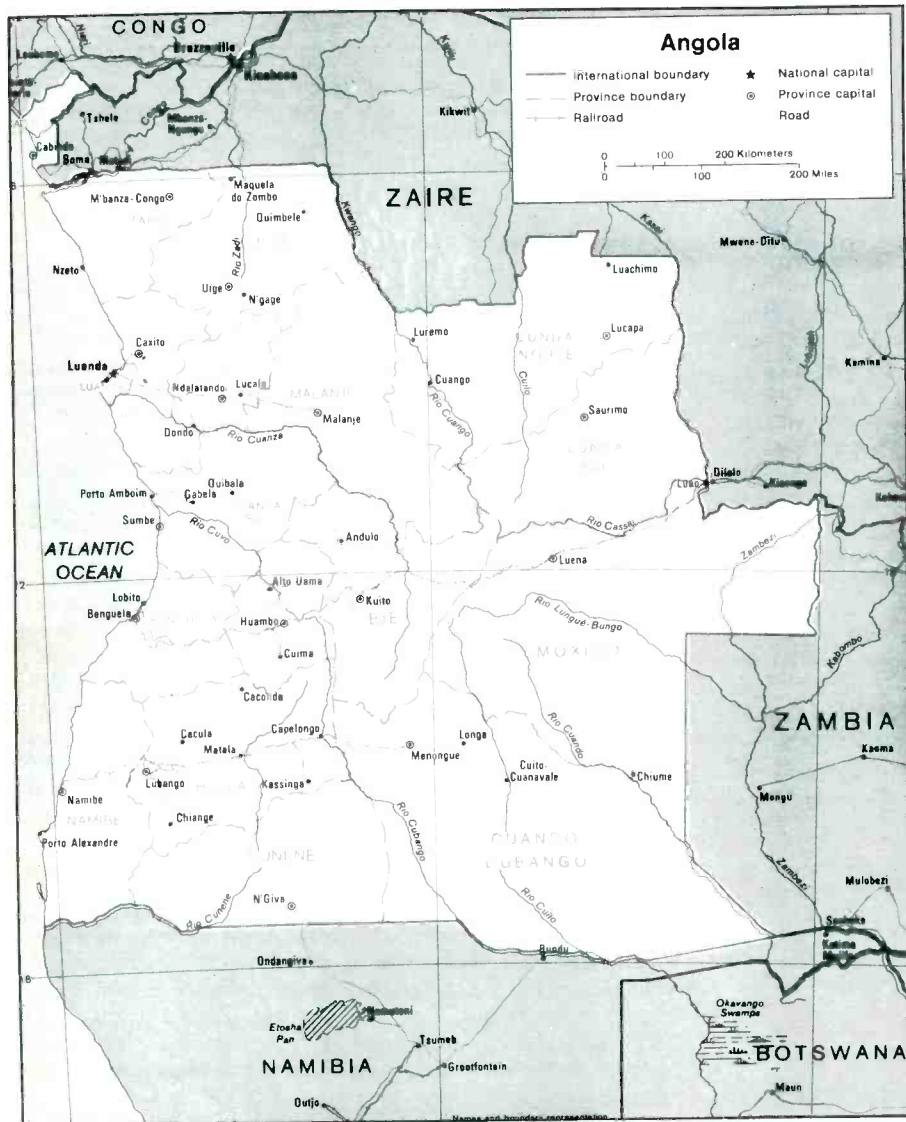
In the case of the scrambling decoder, it appears that ECPA is clear on the fact that they are illegal. But not so fast! Our member tells us that he is on good terms with his police and that they like the fact that local citizens are listening in and, in fact, have told people where to go buy the descramblers! It seems they think the system offers them some protection from "outsiders," but they have no objection to local citizens monitoring the communications. The best advice we could offer our member was to get a letter from his local Police Chief indicating that fact. Now, doesn't that raise a very interesting dilemma for regulating descramblers? If you are in a similar situation and are able to get a letter from your local law enforce-

(Continued on page 69)

Angola's Elusive Voices

**Amid Guerillas, Militias, Warfare And Turmoil,
The Shortwave Broadcasters Are Still Operating –
Although Carefully!**

BY GERRY L. DEXTER



and stations that don't exist anymore. The Angolans, once frequent and friendly visitors to the shacks of DX'ers have changed, just as the country from which they broadcast has changed. Things aren't the way they used to be.

DX'ing Angola on the shortwave broadcast bands today is one of the most challenging assignments the serious DX'er can undertake. Not a game for the faint of heart or the impatient. The rules have been changed from what they were twenty years ago and you cannot move your marker around the board as easily as you could back then. Even then it was never really what most people would call easy; it was more at that just-right level between too easy and too difficult.

Before we look at the radio aspect it may be helpful to look at some history and some of the players in the current Angolan drama.

Angola was settled by the Portuguese in the late 1400's and, initially, the Portuguese had good relations with the ruler of the northern area, the King of the Kongo who reigned from the town which is now M'Banza-Kongo.

The Portuguese slave trade led to internal strife and revolts and then the eventual decline of the Kongo Kingdom. Meantime, the Portuguese were expanding their influence and moving south to found the Angolan capital of Luanda. Slaves continued to be a major export for the next three centuries with some 3 million sent to the plantations of Brazil during the period.

After World War II, Portugal re-dedicated itself to the colonization of Angola. The winds of independence gearing up for a sweep through Africa stirred such visions among native Angolans, too. The discontent over Portugal's refusal to consider an eventual independence for Angola sparked two movements, both of which began wars for independence in 1961. The Popular Movement for the Liberation of Angola (MPLA) and the National Front for the Liberation of Angola (FNLA) enjoyed some early successes. But the Portuguese regrouped and managed to reduce guerrilla activity to fairly low levels and maintain stability within the colony. In the late 1960's, yet a third group, the National Union for the Total Independence of Angola (UNITA), began a guerrilla war, but, like the other two, enjoyed little success.

The cold, brief afternoons of a Midwest winter were the best times to hear them up on the 31 meter band. The slow and melodious Portuguese, the deep, rolling gongs used as interval signals and the splendid music brought all sorts of wonderful images to mind as you sat there, looking out the window at your world of white.

They were the stations of colonial Angola—Radio Clube de Angola on 9630, Radio Diamang on 9615, Radio Clube de

Mocamedes on 9515, A Voz de Angola on 9660.

Later in the afternoon, as the sun slipped below the horizon, you could drop below 31 meters, down to 41 and 60 and often hear Radio Comercial on 7150, Radio Clube Cuanza Sul on 4840 and, deep into the evening, the sign-on of Radio Clube de Lobito, Radio Clube do Malange, Radio Ecclesia and the others.

That's all history now, memories of days

Even so, the guerrillas struggled on—down but not out. The campaigns dragged on and the discontent in Lisbon over these colonial wars became a contributing factor in the sudden overthrow by the armed forces of the regime of dictator Marcelo Caetano in 1974. One of the first acts of the new government was to grant “immediate” independence to all the Portuguese colonies.

In January, 1975 the Portuguese and the three liberation movements worked out a scheme providing for a shared power transitional government, elections, with full independence to follow in November. But, by the summer, that arrangement had collapsed and the three factions were fighting each other for power.

The struggle became a “superpower” game as the Soviet Union backed the Marxist MPLA and the United States supplied arms to both the FNLA, led by Holden Roberto, and to UNITA, headed by Jonas Savimbi. We know, of course, who won. On request of the MPLA, Cuba sent combat troops to Angola in September and by February, 1976 had about 15,000 there. Meanwhile, the U.S. Congress was voting to end U.S. assistance to the other groups, who were pro-West in their outlook. The South African forces that had been fighting alongside the FNLA and UNITA also withdrew. By March, the MPLA had established its control over most of the country.

The FNLA continued a less and less effective guerrilla campaign in the north while leader Roberto went into exile. UNITA retreated to the southeast, there to carry on a guerrilla campaign of its own.

In the ten years since then, the MPLA has had its own squabbles and has had to put down at least one internal coup attempt by disaffected members of the government. The MPLA has supported a 1977 invasion of neighboring Zaire by the Front for the Liberation of the Congo. It allows the South-west African People's Organization (SWAPO) to operate from bases within Angola which has resulted in raids by South African Defence Forces into Angolan territory.

The Cuban force has reached some 30,000, with perhaps another 10,000 military and civilian advisors from Cuba, the Soviet Union and East Germany. Angola's army is said to be about 45,000 with about 65,000 in the People's Militia. There continues to be stress within the government that is reportedly tired of the war—and of the Cubans. Regional military councils were set up throughout the country in 1983 and have the power to seize the goods and personnel and try crimes against the state.

The FNLA has several times been said to be down and out due to its own internal squabbles but is, according to some sources, rebounding, and what is apparently a splinter group opposed to Roberto's leadership—the Military Committee for the Resistance in Angola (COMIRA), has been formed.

UNITA, under Savimbi, has been far more successful. It has slowly but steadily gained ground and now controls a healthy hunk of the south, albeit outside the provin-

Regional Shortwave From Angola

Station	City	WRTH/86	RDI/87	1986 Loggings
ER do Huambo	Huambo	3345	3346v	3345.3
		5060	5061v	5061.9
		7160	-	-
ER da Huila	Lubango	3994	3994	-
		4820	4820v	4820.3
		-	4952	4952
ER da Lunda-Norte	Luachimo	4770	4770	-
ER do Kuando-Kubango	Menongue	4780	-	-
ER do Uige	Uige	4848	-	-
ER do Lunda-Sul	Saurimo	4860	-	-
		6115	-	-
		9616	-	-
ER do Zaire	M'Banza Kongo	4885	4885	4883
ER do Bie	Kuito	4896	4895	-
ER de Malanje	Malanje	4941	-	-
ER de Cabinda	Cabinda	4970	4969.8	4970
ER de Lobito	Lobito	5044	-	-
		7172	7172	7192.9
ER do Moxico	Luena	5192	5191	5192
ER do Namibe	Namibe	5405	5405	5405.4
ER de Benguela	Benguela	-	5043.8	5043.5
		6152	6152	6151.7
		7260	-	-
ER do Kuanza-Sul	Sumbe	7285	-	-

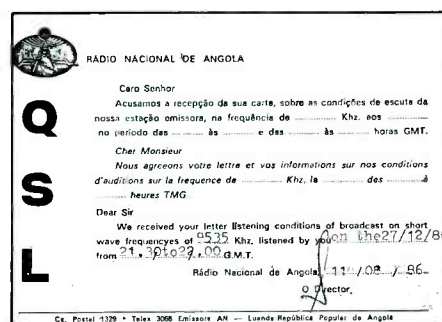
cial capitals. UNITA claims to have 35,000 troops and receives support from South Africa, fed through the border Angola shares with Namibia. All this, despite UNITA's strong stand against South Africa's apartheid policies. It can also be assumed that UNITA is receiving aid in various forms from the U.S., whether covertly from the government or from private sources.

Unlike most African countries, Angola had quite a few operational stations on shortwave during its colonial period, providing the DX'er with a number of targets to chase. With independence, civil war, and then a Marxist government, the picture changed considerably. Private stations such as Radio Diamang were taken over by the government and either closed down or converted into government-run regional outlets.

But the chaotic situation in Angola along with neglect of technical facilities has caused many of the stations to go off the air while many of those which do remain on the air manage only sporadic activity, often with wandering frequencies.

The main station, Radio Nacional de Angola at Luanda, is the most easily heard of the Angolans. Yet, even with powers ranging to a listed 100 kilowatts, many listeners will find it a good trick just to receive Radio Nacional to say nothing of hearing it at good strength.

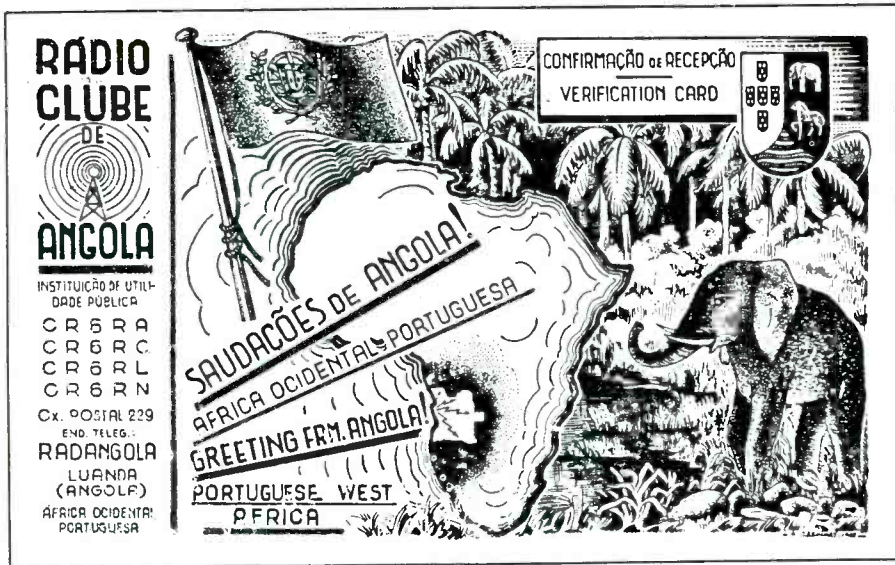
The Home Service “A” program is sched-



A recent QSL card from Radio Nacional, Luanda. (Courtesy J.D. Stephens, AL.)

uled for 24 hours per day, carried on 4946 'round the clock, from 0500 on 7215, and from 2300 to 0530 on 5440. The “B” program is aired 0530 to 2300 on 5440, 7245, 9535 and 11955 (the latter sometimes running only until 1800). 9535 and 11955 are sometimes heard in the U.S. during the daytime. At night, 5440 sometimes provides fairly good reception.

Radio Nacional's International Service is listed for weekdays in English from 2100-2200 and 2200-2230 on Sundays with equal length periods of French following English. Frequencies are 7245, 9535 and 11955 but the station's foreign service seems a sometimes thing.



Radio Clube de Angola was a private broadcaster in Luanda. (QSL courtesy Al Quaglieri, NY.)

“Liberation” programs are generally carried between 1600 and 1900 daily in various languages. There is more time in this three hour period than there are known programs to fill it. SWAPO’s Voice of Namibia program is aired daily from 1630 to 1730 in various languages, including English. And the African National Congress has its anti-South Africa “Radio Freedom” broadcast daily at 1730, Sundays at 1830. In the past, Luanda has also given over time to the Voice of Palestine/Voice of the Palestine Revolution and the POLISARIO Front’s Voice of the Free Sahara, but the current times of these features, or whether they are even carried, are not known.

Radio Nacional’s 100-kilowatt transmitters on 11955, 9535 and 7245 appear to be fairly stable from a frequency standpoint, but perhaps not consistently active. From there, however, all bets are off. The 3355 channel has wandered as high as 3580. 9660, reported inactive in the 1986 *World Radio TV Handbook*, has been heard by

some monitors within the past months.

Luanda, over the last year or so, has improved its QSL policy considerably and replies now often arrive via registered mail. The address is: Radio Nacional de Angola, C.P. 1329, Luanda, People’s Republic of Angola. The verification signer is Luiza Fancony, Director of Programs.

If broadcasting from Luanda seems a little shaky, radio from the provinces positively shakes. At last report only about half of the regional stations were known to be active, and many of those, it seems, only occasionally. Frequencies also vary. Transmitter powers are 1, 5 or 10 kilowatts, although there is one—Emissora Regional da Huila—with 25 kilowatts. Signal strengths are rarely very good and getting positive ID is difficult, especially since many of the stations often relay the news from Luanda on the hour which can confuse the distant listener into thinking it’s a Luanda ID.

The best time to look for the regionals is at their morning sign-on times—0400, 0430,

0455 or 0500, and, less often, during the winter period, up to sign-off which, for most, is at 2300.

Most of the station names reflect the province which the station serves, i.e., Emissora Regional do Zaire is intended to serve the province of Zaire, just across the border from the Congo. There are 18 such provinces and 16 of these are, or are supposed to be, served by a regional shortwave station. The two without are Cunene in the south central part of the country and Bengo, which is just south of Luanda. In colonial days there was a transmitter at Dondo (in Bengo province) where Radio Diamang was a private station providing entertainment for employees of the Daimang Company, a mining concern. It’s not known what happened to this facility.

To give you an idea of what’s listed as against what’s actually being heard we have provided a list of the Angolan regional broadcasters. The frequency columns cover the listings in the *World Radio TV Handbook*—which represents something closer to an “official” government list. This is compared to the listings in the 1987 edition of *Radio Database International*, based more upon actual monitoring and this, in turn, compared with what DX’ers have reported over the past few months.

Checking this list it is soon seen that only the regionals in Huambo, Huila, Zaire, Cabinda, Lobito, Moxico, Namibe and Benguela have seen activity over recent months and these logs, incidentally, include observations made by DX’ers living in Africa.

There’s no getting around the fact that DX’ing these stations is tough. You’ll have to plan on checking the frequencies regularly in the late afternoons during the winter months and late in the evening between 0400-0500.

Regional outlets have become very poor verifiers under the MPLA government. This may, however, be due as much to the disruption of mail and other services in the countryside as it is any reluctance to answer listener mail. But, given the problems, it’s probably smart to hedge your bets a bit and send any report on a regional to Radio Nacional in addition to the station direct. Luanda seems to know which regionals are operating where, and has provided a few QSL’s on behalf of regional stations recently.

Should you decide to accept this Angolan DX assignment, you must also accept the fact that it will be a long-term journey. As long as the present political/guerrilla war situation continues we must assume that the radio situation will not change very much.

Indeed, it may be years after any of these issues are resolved, before broadcasting in Angola gets back on its feet and the ducks at least hold a steady course long enough for us to take a shot at them. Meantime, seeking the DX out of Angola is not a challenge to be approached without knowing and appreciating something of what you’re up against. It will take patience. Plan on years.

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Selected English Language Broadcasts

Spring 1987



BY GERRY L. DEXTER

Note: This list of English language broadcasts was accurate at the time of compilation, but stations often make changes in the hours and frequencies of their broadcasts with little advance notice. Hundreds of broadcasts are aired in English on the shortwave bands every day, many of them directed to a North American audience. This is a representative sampling and not intended as a complete reference. Some broadcasters air only a part of their program in English during a given hour, or may run the English segment into the following hour. Times are UTC. Numbers in parentheses indicate a starting time for English that many minutes past the hour.

Time	Station/Country	Frequencies	
0000	Radio Beijing	9550	
	Kol Israel	5885, 7465, 9435	
	Radio Kiev, Ukraine (30)	6020, 6035, 7165, 9765, 11790, 11860	
	BRT, Belgium	5910	
	Vatican Radio (50)	11845	
	Radio Korea	15575	
	Radio Sofia	6070, 11720	
	Radio Portugal (30)	9680	
	Spanish Foreign Radio	6125, 9630	
	Radio Berlin Int'l	6080, 9730	
	Radio Canada Int'l	5960, 9755	
	Radio Havana Cuba	6090, 9740	
	KVOH, USA	9852.5	
	BBC, England	5975, 6120, 7325, 9515, 9590	
	0100	Kol Israel	5885, 7465, 9435
		RAI, Italy	5990, 9575
		Voice of Nicaragua	6015
Voice of Greece (30)		7430, 9420	
RAE, Argentina		9690, 11710	
Voice of Germany		6040, 6085, 6145, 9545, 9565	
Radio Prague		6015, 6055, 7345, 9740, 11990	
Spanish Foreign Radio		6125, 9630	
Radio Baghdad		11750	
Radio Austria Int'l (30)		6155	
AFRTS, USA		6030, 11790	

Time	Station/Country	Frequencies
0200	Radio Budapest	6020, 6110, 9520, 9635, 11910, 12000
	Kol Israel	5885, 7465, 9435
	Radiobras, Brazil	11745
	HCJB, Ecuador	15155, 9870, 6230
	Radio Budapest	6025, 6110, 9520, 9835, 11910, 12000
	Christian Science Monitor, USA	9745
	Radio Korea	15575
	Radio Tirana (30)	7065, 9754
	Radio Cairo	9475, 9675
	Radio Bucharest	5990, 6155, 9510, 9570, 11810, 11940
	Radio RSA, South Africa	5980, 6010, 9615
	Voice of Free China	5985, 9680
	Radio Netherlands (30)	6165, 9590
	Swiss Radio Int'l	6135, 9625, 9725, 9885, 12035
	Radio Polonia, Poland	6095, 6135, 9525, 11815, 15120
	Radio Berlin Int'l	6080, 9730
	0300	Radio New Zealand
Radio Kiev, Ukraine		6020, 6035, 7165, 9765, 11790, 11860
TGNA, Guatemala		3300
TWR, Netherlands Antilles		9535
Radio Tirana (30)		7065, 9754
Voice of Greece (40)		7430, 9420
Voice of Germany		6045, 6185, 9545, 9565
Radio Portugal		9705
Voice of Free China		5985, 9680, 11825
Radio Polonia, Poland		6095, 6135, 9525, 11815, 15120
Radio Prague		5930, 6015, 6055, 7345, 9740, 11990
HRVC, Honduras		4820
Radio France Int'l (15,45)		6175, 7135, 7175, 9535, 9790
Radio Austria Int'l		6155
Radio Earth, USA		7400

Time	Station/Country	Frequencies	
0400	Voice of Nicaragua	6015	
	Radio Belize	3285	
	Radio Botswana	4820, 7255	
	TIFC, Costa Rica	5055	
	Radio Bucharest	5990, 6155, 9510, 9570, 11810, 11940	
	Radio Budapest	6025, 9520, 9585, 11910, 15160	
	Radio Canada Int'l	5960, 9755	
	Swiss Radio Int'l	6135, 9725, 9885, 12035	
	Voice of Turkey	9560	
	RAE, Argentina	9690, 11710	
	Radio New Zealand	15150, 17705	
	Radio Havana Cuba	5955, 5965, 6090, 6120, 6140, 9740	
	Radio France Int'l (15,45)	6055, 6175, 7135, 7175, 9535, 9550, 9790, 9800	
	0500	HCJB, Ecuador	6230, 9870, 11910
		Voice of Germany	5960, 6120, 6130, 9690
Spanish Foreign Radio		6125, 9630	
Radio Netherlands (30)		6165, 9715	
Voice of Nigeria		7255	
0600	GBC, Ghana	4915	
	Radio Korea	6060, 9570	
	Radio Cook Islands	11760	
	Radio Havana Cuba	9525	
0700	BRT, Belgium (15)	9880	
	BBC	5975	
0800	Radio Japan	5990	
	Christian Science Monitor	6030	
	SIBC, Solomon Islands	9545	
	ELWA, Liberia	4760	
	Voice of Free China	5985	
0900	CFRX, Canada	6070	
	Radio Netherlands	9630, 9715	
	HCJB, Ecuador	6130, 9745, 11925	
	BRT, Belgium	9880	
	Radio Australia	6080, 9580, 9655	
1000	GBC, Guyana	5955	
	Voice of Malaysia	9750	
	TWR, Monaco	7105	
1100	Radio Australia	6080, 9580, 9655	
	AFRTS, USA	6030, 9530, 9590	
	BBC	6195, 9515	
1200	Radio New Zealand	9600, 11780	
	Radio New Zealand	9600, 11780	
	SLBC, Sri Lanka (30)	11835	
	Voice of Vietnam	9840, 12035	
	Radio Korea	15575	
	Radio Beijing	9535	
	All India Radio	15320, 15395, 17387	
	Radio Japan (30)	6120	
	TWR Netherlands Antilles (10)	11815, 11855	
	VOIRI, Iran (15)	11790, 15084	
Radio Singapore	5052, 11940		
Radio Pakistan	17660		
Voice of Vietnam	9840, 12035		
Radio Pyongyang	9750, 9977		
Radio Beijing	9535, 11650		

Time	Station/Country	Frequencies
1300	Radio Tashkent, Ubeq SSR	9600, 11785
	NBC, Papua New Guinea	4890
	Radio Finland Int'l	11945, 15400
	Radio Bangladesh (30)	12030, 15525
	Radio Australia	9580
	Voice of Kampuchean People	11938
	Radio Ulan Bator	9615, 12015
	Radio Austria Int'l	15320
	All India Radio	11810, 15335
	Radio Finland Int'l	11945, 15400
	BRT Belgium (30)	15590
	Radio Korea (45)	15575
	Radio Norway (Sunday)	6040, 9590, 15185, 15310
	Swiss Radio Int'l	9535, 12030
	Radio Pyongyang	11655
Radio Canada Int'l	9650, 11955	
FEBE Philippines	11850	
UAE Radio	11940, 17775, 17865	
Voice of Vietnam	10040, 12020	
1400	Radio Sweden Int'l	9645, 15345
	Christian Science Monitor	21570
	Radio Korea	9750, 15575
	Radio Finland Int'l	11945, 15400
	Radio Japan	5990
1500	Radio Norway (Sunday)	9530, 9710, 15310, 15315
	Radio Pyongyang	9750
	Radio Canada Int'l	11955
1500	Radio Japan	17785
	SLBC, Sri Lanka	15425
	FEBA, Seychelles (15)	11865, 15325

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	Radio Veritas, Philippines	15150
	Voice of Indonesia	11790, 15150
	Voice of Greece (40)	11645, 15630, 17565
1600	UAE Radio	15320, 15435
	Radio Norway (Sunday)	9590, 15310
	Radio Canada Int'l	11955, 15390, 17820
	BBC	9515, 15260
	RFI, France	9860, 11705, 11805, 15315
	Radio Moscow	11840, 13665
	BSKSA, Saudi Arabia	9720
	BRT, Belgium (30)	9905, 11695
1700	RAE Argentina	15345
	Radio Norway (Sunday)	9590, 11850
	Radio Havana Cuba	9695
	Radio Nacional, Equatorial Guinea	9553
	Voice of Nigeria	11770
	Radio Surinam Int'l	17755
1800	Christian Science Monitor	11755
	Radio Sofia (30)	9740, 11735, 11835
	Radio Kuwait	11675
	Radiobras, Brazil	15265
	Radio Discovery, Dominican Republic	15045
	Kol Israel	9835, 9860, 9930, 11655
	Radio Canada Int'l	15260, 17820
	Radio Jamahiriya, Libya	15450
1900	Africa No. 1, Gabon	15475
	Radio Canada Int'l	15260, 17820
	HCJB, Ecuador	11740, 15270, 17790
	Voice of Nicaragua	15120
	VOIRI, Iran	9022, 9770
2000	All India Radio	9910, 11620
	Kol Israel	7410, 7465, 9435
	Radio Kuwait	11675
	BBC	15400
	Radio Moscow	7310, 9580, 11840
	Radio Algiers	17745
2100	Radio Sofia (30)	6070, 7115; 7155
	Radio Canada Int'l	11960, 15325
	Radio Damascus (10)	7455, 9950
	Swiss Radio Int'l	9885, 11955, 12035
	Radio Nacional, Angola	9535
	Voice of Nigeria	15120
	AFRTS, USA	9700, 11805, 15345
2200	Kol Israel (30)	5885, 7410, 7465, 9435
	BRT Belgium	5910
	Radio Sofia (30)	6070, 11720
	Radio Norway (Sunday)	9525, 9605
	Radio Yugoslavia (15)	9620
	BBC	5975, 6120, 6175
	Radio Tirana	7065, 9480
	Radio Mediterranean, Malta	6110
2300	Radio Japan	9645
	Radio New Zealand	15150, 17705
	Radio Sweden Int'l	6045, 9695
	Radio Vilnius, Lithuania	6035, 7165, 9765, 11790, 11860
	Radio Canada Int'l	9755, 11710
	Radio Berlin Int'l	6070, 6125, 6165
	Radio Pyongyang	11735, 13650
	Voice of Turkey	9560
	Radio Thailand	9655, 11905
	Radio Prague	6055, 9630
	Voice of Vietnam	9840



Bank Robber's Bomb Disarmed

A man walked into the Society Bank of Eastern Ohio in Jackson Township, Ohio, one afternoon and handed the bank manager a note announcing a hold-up.

The suspect didn't have a gun, but he did tell the bank manager that he had a bomb in the attache case he was carrying. He then opened it and threw a switch which caused a light in the case to start blinking. The suspect also held what appeared to witnesses to be a remote control device that also had a blinking light.



Standing left to right are: Special Agent James Bentley, F.B.I.; Lt. Robert D. Zarle, Summit County Sheriff's Dept.; and Detective Richard Headley, Summit County Sheriff's Dept., all of Akron, Ohio.

SCAN PUBLIC SERVICE AWARD

The robber left the bank after the bank manager produced an undisclosed amount of money, but there was still a problem for the people in the bank and nearby.

After a "normal" robbery, police are primarily concerned with gathering evidence and trying to find the person or persons who committed the crime. But in this case, there was a more urgent concern: the suspect had left the attache case in the bank.

Jackson Township Police and Fire Departments arrived at the bank and requested assistance from the Summit County Sheriff's Department Bomb Squad (Stark County, where the robbery occurred, does not have a bomb squad). While waiting for the bomb squad to arrive, the local police and fire departments worked to clear nearby buildings and close area streets. Another

concern was the bank's location near the busy Belden Village Mall, a crowded shopping center.

Summit County Sheriff's Lt. Robert Zarle, Summit County Sheriff's Detective Richard Headley and FBI Special Agent James Bentley approached the attache case and examined it as best they could. The case appeared to hold eight sticks of dynamite, what looked like a remote controlled radio device, and a booby trap that prevented the attache case from being moved.

The men examined different strategies for solving the problem at a nearby command post that had been set up. Because of what seemed to be a large amount of explosives and the heavy crowds and traffic nearby, it was decided to wait over seven hours until the mall would be closed before taking further action.

Summit County Sheriff David Troutman told the Akron *Beacon Journal* that there were several reasons the bomb had not been deactivated immediately. He said the entire area was secured, and the men who examined the bomb determined that there was no timing device and that there was only a slim possibility of an explosion.

Nearby, Everhard Road was also closed during this period, slowing shopping traffic in and out of the shopping mall. The mall remained open until 9:30 p.m., when all the stores closed. The 30 people who worked in the two-story bank building had already been evacuated.

About a half-hour after the mall had been closed, the Summit County Bomb Squad shot the device with a water cannon, knocking the bomb into several pieces and rendering it harmless. Nothing exploded, and no one was injured. According to the *Beacon Journal*, another FBI agent said that the bomb was a fairly sophisticated device that could have caused considerable damage if it had exploded.

The successful disarming of the bomb was a testimonial to the cooperation between several different law enforcement agencies, and the dedication, performance and courage of Summit County officers Zarle and Headley, and FBI Agent Bentley. For their efforts, they will receive the SCAN Public Service Award, which consists of a special commendation plaque and a cash prize. For making the nomination, W. Richard Mulhearn, assistant sheriff and director of corrections in Summit County, will also receive a commendation plaque. Congratulations to all of you.

Best Appearing

Christian Gulker of South Pasadena, CA writes that he finally finished setting up his listening post after remodeling the family room. And a nice listening post it is! A nice photo too, but that's no surprise since Christian is a professional photographer.

The equipment here includes a Regency MX-5500 scanner, Realistic PRO-2020 and PRO-30 scanners, ICOM IC-R70 receiver, Sony tape recorder, AEA CP-1 computer interface coupled to an Apple IIe computer with Epson printer and Team 1200 Baud



SCAN PHOTO CONTEST WINNERS

modem. The drop-down door becomes a desk when down and gives the area a neat appearance when covering the equipment.

Three scanner antennas and a longwire antenna are used with this set-up, all grounded with a heavy aluminum bus strap to a waterpipe. Static discharge units are used in the antenna downleads.

Christian says that the Regency and PRO-30 scanners are normally in his car, along with a Kakusai UHF transceiver. He uses them often in his job as a newspaper staff photographer in Los Angeles.

Best Equipped

Our best equipped scanner shack also comes from the Golden State this month. Bill Adams, a San Jose, CA scanner en-



thusiasm, writes that he has monitored radio communications with a scanner for 10 years.

His present equipment, shown here, includes a Bearcat 210XL scanner, Bearcat Thin Scan, MacDonald scanner, Realistic PRO-47 scanner, Bearcat 220 scanner, Regency HX-1000 scanner and an IBM PC used for storing frequencies. That's a lot of scanning power!

Bill says that he is particularly interested in monitoring hostage and barricade situations. To do this effectively, more than one scanner must be used to lock in on different frequencies so that transmissions are not missed.

An April Issue Special!

Murphy's Law & Communications

A Primer for Strong-Hearted Scanner and Communications Users

BY ALFERD G. PACKER, KCO0NX

We thought that, this being April, it would be an appropriate time to examine Murphy's Law ("If anything can go wrong, it will") in its complex applications relating to communications monitors and users. Some examples: a power-operated mobile antenna will always jam in the retracted position. And, only the most difficult-to-obtain and install components (chips, power cords, mike cords, IF cans, etc.) will ever require replacement, especially the day before a cross-country vacation jaunt.

However, it is fairly easy to make Murphy's Law, like Ohm's Law, work for you. While the latter can be used only to determine relatively stupid and useless quantities (such as amps, volts, ohms), Murphy's Law can provide accurate and practical solutions to a number of vexing problems.

For those owning pocket calculators, Murphy's Law can be expressed by the equation: $E = I \times R$. More simply, E (Emergencies encountered) equals I (the number of Incidents that can possibly go awry) times R (the Reasons why they can).

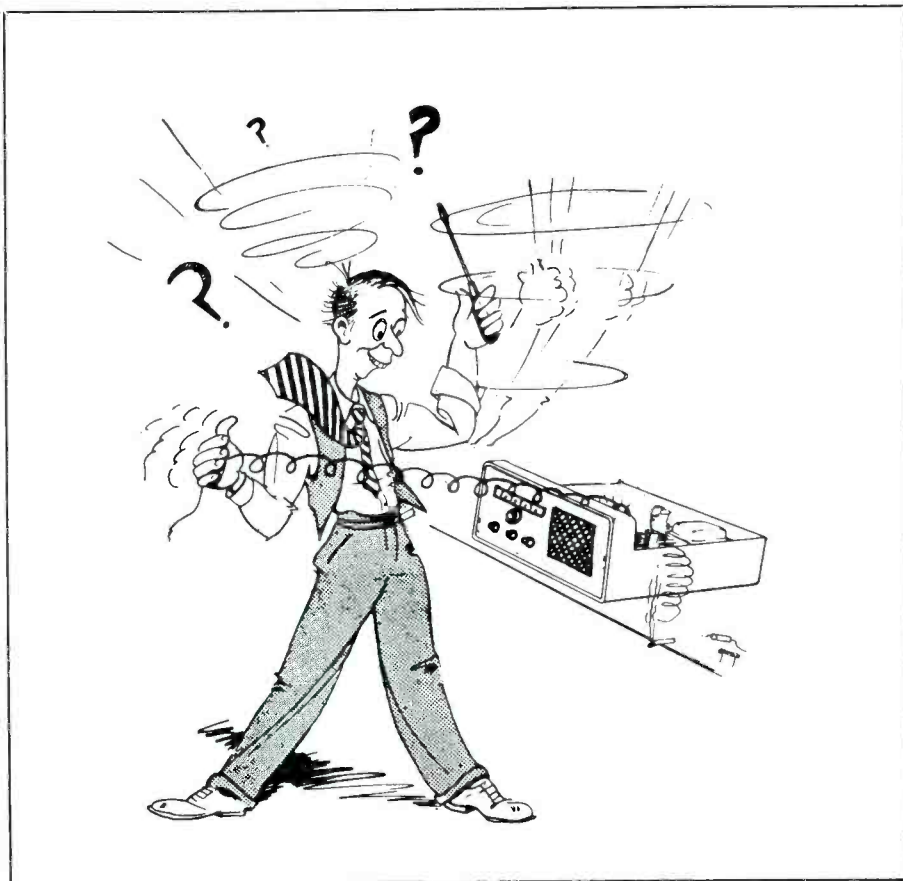
Thus, if you own a communications device containing 435 components, each of which can malfunction four different ways, you can be reasonably certain of having 1740 problems during the planned service life of the device. This doesn't take into account the possibility of having multiple simultaneous malfunctions. It would take a computer, or at least a pocket calculator with reasonably new batteries, to figure all the combinations ($1740 + 1739 + 1738 \dots$ etc.). But Murphy's Law can provide shortcuts leading towards bracing yourself for potential disasters.

Here are some of the corollaries to Murphy's Law:

1. The smallest amount of antenna whip that can be trimmed to peak an antenna will exactly equal the minimum amount to begin detuning the antenna.

2. The only burst of radio noise you will encounter will coincide with the identification announcement of a station you've been trying to identify for at least two hours.

3. The length of the coax needed to reach from a rooftop to the receiver on your



desk will either be one foot more or 24 feet less than the length of the cable you have purchased for the purpose.

4. The amperage of line fuses available at all local suppliers may be found by taking the required value and multiplying by five.

5. The most convenient place to store your magnetic-mount mobile antenna is next to your storage box for pre-recorded tape cassettes.

6. In any mobile communications installation, the hot wire will always manage to become grounded—but only if the circuit is incorrectly fused. If proper fuses are used, the ground wire will detach.

7. The best-looking mounting position for a mobile whip will cause the antenna to be efficient only towards stations located

sideways from the vehicle. The most efficient mounting position will always be in the center of a sunroof.

8. The probability of mobile equipment theft is directly proportional to the amount of time and money invested in the unit and its anti-theft devices. The amount of time required for the theft is inversely proportional to the complexity of the mount. A CB or scanner will be stolen the only time the owner neglects to lock it in the trunk.

9. A CB'er giving the first local *Smokey Report* will invariably be the first one pulled over by an unmarked patrol car.

10. A radar detector will never fail to detect spurious signals. Actual radar traps may sometimes be temporarily missed, but will always be detected within a split second of

entering within clocking range. The guaranteed effective range of any given radar clocking device may be defined as the distance from your vehicle to that device.

11. The best frequencies to monitor in your scanner will consist of those that all local monitoring enthusiasts and communications shops can't seem to find out.

12. When you have a technical question, the next available clerk in the electronics store will always be the expert on Compact Disc players.

13. SSB was invented to provide a use for your receiver's clarifier control. Adjustment of this control causes voices to vary between the sound of Alvin the Chipmunk and a 33 rpm record played at 22 rpm. Proper adjustment will be achieved at the exact moment the transmitting station leaves the air.

14. State-of-the-art technology is defined as the design of the receiver or scanner announced the week after you purchased the earlier model.

15. CW is invariably sent at precisely 5 wpm faster than your ability to copy same.

16. The number of different baud rates that can be discovered while tuning around for RTTY signals will be four times the number of different baud rates your demodulator can handle. Signals found to be sent at standard baud rates will also be encrypted.

17. The possibility of Postal Service damage or loss to a QSL card is directly proportional to the rarity of the country of origin.

18. Stations that announce a "no-QSL" policy will institute that policy the day after your reception report is mailed.

19. The most likely international shortwave broadcasting frequency to be selected by one of the major world broadcasting services is the frequency that you've been checking nightly for six months in order to hear that rare Asian (European, African, Latin American, or Middle Eastern) station.

20. Station announcements of shortwave broadcasters come only at the lowest point of signals affected by deep fading.

21. The contents of any drink accidentally knocked over will head directly towards a receiver or scanner on your desk. Secondary targets are log books, QSL's, or other documents. The arrival time of the liquid will immediately precede your ability to deflect the flow or remove the target.

Obviously, the applications of Murphy's Law are limitless. Armed with the knowledge that a piece of communications equipment dropped from a height of four feet will always land on the only rock left in an unmowed lawn, or that the rare DX station you just discovered using a new frequency will invariably be reported in POPCOMM by no less than six other DX'ers who heard it there last month, you are at least able to have good reason to realize that you're not alone in your frustration.

Always remember that the time you spend actively pursuing hobby communications is not deducted from your overall lifespan. That makes Murphy's Law a bit easier to take.

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73	74	75	76	77	78	79	80	81	82	83	84
85	86	87	88	89	90	91	92	93	94	95	96
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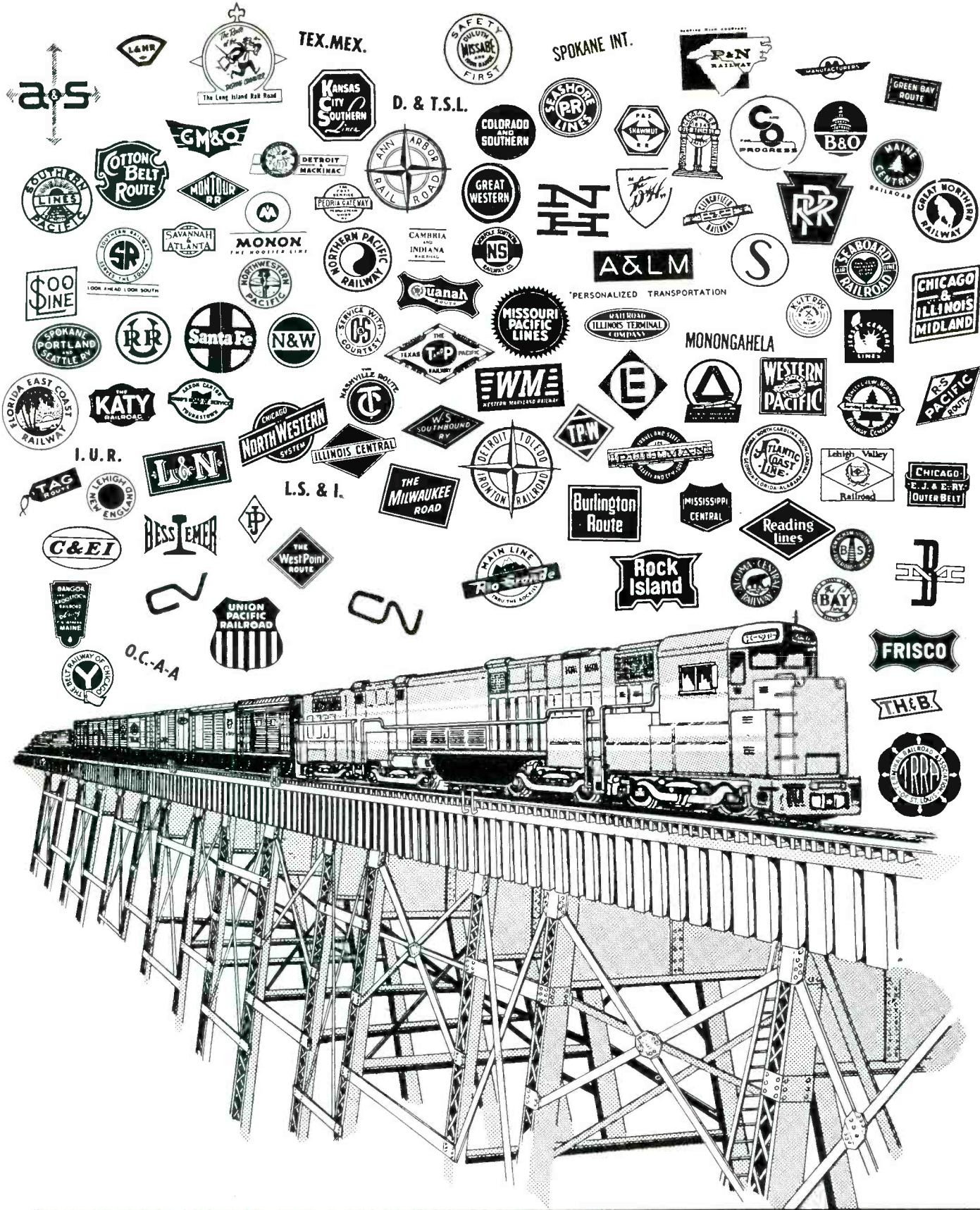
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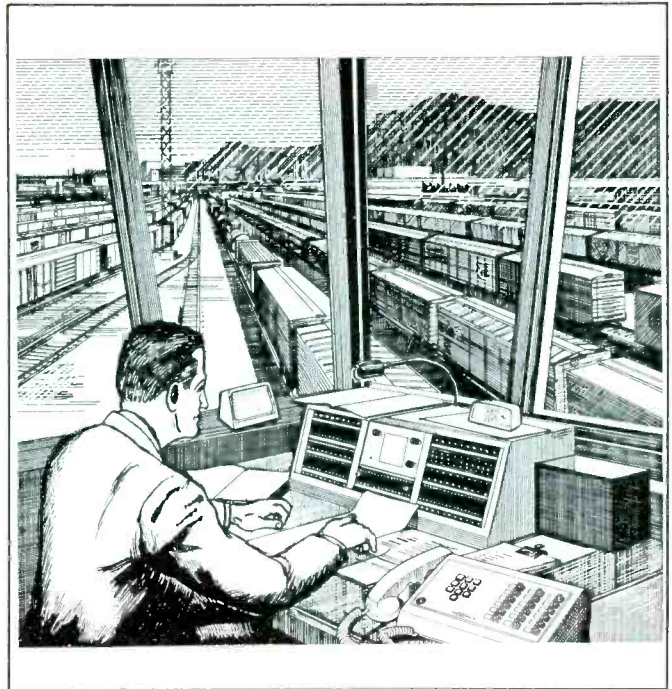
Scanning Railroad Radio

The Communications Voice That Rides Across America

BY LEWIS KESEBERG, KCA6PK



A conductor views the train ahead from the cupola of a Santa Fe caboose, using two-way radio to communicate with his and other train crews. (Photo courtesy Santa Fe Railway.)



In the closing years of the 1940's, the nation's larger railroads began testing radio's potentials for saving lives, transit time and thousands of dollars in damage claims.

End-To-End

The first use was a natural: communications from the caboose of a mile-long freight train to the locomotive. This type of operation is now referred to as end-to-end communications.

The railroads were quick to realize that there were positive results from the use of radio. A subsection was formed within the Communications Section of the Association of American Railroads (AAR) to set up standard specifications for a "Railroad Radio" transceiver. These specs included all FCC requirements plus additional details for optimum packaging, size limits, mounting method, and a 23-pin power/control interface connector with circuit assignments. These specs have remained basically the same over the years, thus allowing new and older equipment from various manufacturers to be completely interchangeable, permitting quick, no-fuss replacement.

Specifications

Railroads primarily operate their communications systems under FCC Part 90 Subpart E governing Land Transportation Radio Services. If you plan to monitor the railroads with your scanner, there are some things you'll want to know in order to get the most from your listening.

Most railroads take advantage of the VHF band on frequencies that are assigned to the

Railroad Radio Service. This is on channels spaced at 15 kHz intervals between 160.215 and 161.565 MHz. Normally this is FM simplex operation with 35- to 40-watt transmitters using vertically polarized antennas.

Additionally, there are some channels (25 kHz spacing) between 452.325 and 452.475 MHz, plus 452.775, and from 452.825 to 452.95 MHz in the UHF band (plus the paired frequencies 5 MHz higher). UHF "offset" frequencies available for assignment in the Railroad Radio Service are: 452.3375, 452.3625, 452.3875, 452.4125, 452.4375, 452.4625, 452.4875, 452.7625, 452.7875, 452.8125, 452.8375, 452.8625, 452.9125, 452.9375, and 452.9625 MHz

(plus the matching frequencies 5 MHz higher).

In certain selected metropolitan areas there are Railroad Radio Service frequencies available in the UHF-T band. These are shown in Table 1.

Some railroads and railroad service companies use standard "Business Band" frequencies instead of, or in addition to, frequencies assigned to the Railroad Radio Service.

VHF band mobile units are usually installed in the trains themselves, but they may also be handhelds, or installed in vehicles used in and around terminals, rail yards, or along the railroads' right-of-way.

VHF band mobile units are generally

Table 1

UHF-T Band Railroad Frequencies

Boston, MA	472.4625 to 472.5375; 472.5875 to 472.6875; 472.7375; 472.7875.
Chicago, IL	472.4625 to 472.6125; 472.9375.
Los Angeles, CA	472.4625 to 472.7875; 508.4625 to 508.7875.
New York, NY	472.4625 to 472.6125; 478.5125 to 478.4875; 478.6875.
Philadelphia, PA	502.4625 to 502.7875
San Francisco, CA	484.4625 to 484.7875; 490.4625 to 490.5625; 490.6125 to 490.8625; 490.7125; 490.7625.
Washington, DC	496.4625 to 496.6125.

In a selected few metro areas, some UHF-T band channels are assigned to the Railroad Radio Service. These channels are shared with other radio services such as Motor Carrier and Automobile Emergency. In addition to channels listed in Table 1, matching channels exactly 3 MHz higher than those listed are also available for assignment. Assignable frequencies occur in increments of 25 kHz (i.e., 472.4625, 472.4875, 472.5125, etc.).



If you look carefully you can see the drop-down train-wheels in front of the tires of this radio-equipped M-of-W truck riding the rails as it performs its jobs.



A fast-moving train races along next to U.S. 1 in Florida as it hurries northward near Miami, Fla. The train's communications can be easily monitored for miles around.

heard for 5 to 10 miles, while base stations with gain antennas on towers should be heard up to 20 or miles, depending upon terrain.

All In The Name

Railroad units seldom identify by their official FCC callsign. Instead they're usually heard using the railroad name and specific train, unit, or vehicle identification such as: "UP (Union Pacific) caboose 1545," or "BN (Burlington Northern) diesel 5445," or "Santa Fe train Number 44," "Conrail extra 905," or "LR tower."

With today's trains covering great distances, sometimes over the tracks of several different railroads, the transceivers in many trains are equipped with as many as twelve channels and may have scanning capabilities.

Yard Radio

For years, train switching in yards and terminals required relaying hand signals to the switching locomotive. Now, direct radio communications between trainman and locomotive engineer advise speed, direction, distance to coupling, etc. A typical reception from the portable might be, "Five cars—three cars—one car—that will do—coupled; back 'em up."

From his "glass tower" office, the yardmaster can monitor the total yard, and issue special instructions or changes by radio, direct to the ground foreman. A typical transmission might be, "Sou 456, pull track 15, shove 10 cars to 5 (track), rest on scale (track)."

Another yard employee, called a "carman," uses his portable radio while inspecting made-up trains to report problems, request assistance for making repairs, etc., as well as to advise the train engineer when to "set up" and "release" the air brakes for tests

just prior to making a cross-country trip. He might instruct, "SP carman to engine on 7 track, set your air."

Again, in some yards, a "car checker" reads the car numbers of an entering or leaving train to a recording clerk in an office. Yards equipped with hump facilities use radio for "humpmaster" communication with the "pin-puller" and the "trim engineer." The humpmaster is normally one floor below the yardmaster in a hump yard tower, which also has glass walls.

Nonvoice use of radio is the remote control and speed control of special slow-speed hump locomotives. This is accomplished by either a steady coded tone or by short bursts of digital information. This use of radio is mostly in the UHF band.

Portable Radio

As mentioned, the railroads make use of

a large number of handheld portable radio units. Most all freight trains carry a unit for use at times when a crewman must walk the train for inspection, do out-of-yard switching, etc. These units are normally of low RF power (2 to 3 watts), with a range of 1 to 3 miles, depending upon terrain and transmitting locations. Often, a repeater station is located near the center of a railroad yard, because of shielding effected by the many rows of steel boxcars.

Train Dispatcher

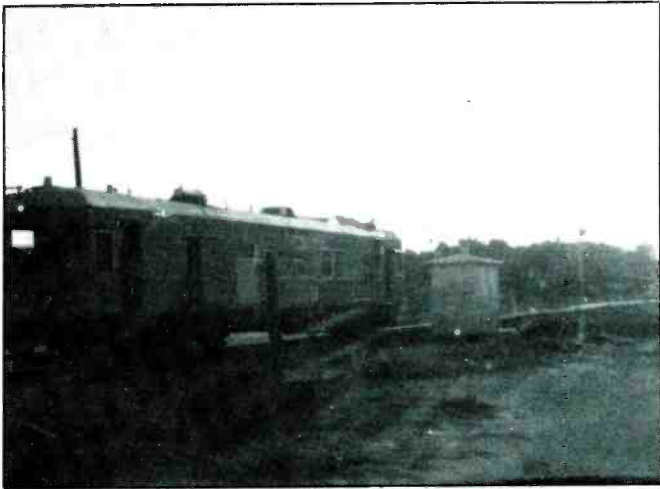
More and more railroads are installing some form of Total Radio Control (TRC) for system-wide coverage by the dispatchers and chief dispatchers. A TRC system is composed of many wayside stations, 10 to 30 miles apart, connected by wire, carrier or microwave voice communications channels to a central dispatch location.

Table 2

Railroad Frequency Sampler

Atcheson, Topeka and Santa Fe	160.275, 160.47, 160.695
Birmingham Southern	160.29, 160.815
Burlington Northern	160.38, 160.455
CN Rail	160.785, 161.025
Conrail	160.89, 161.19
Grand Trunk Western	160.935, 161.01
Kansas City Southern	160.23, 161.13
Missouri Pacific	160.26, 160.515
Richmond, Fredericksburg and Potomac	160.335, 160.515
Southern Pacific	160.86, 160.965
Union Pacific	160.53, 161.115
Western Railway of Alabama	160.95, 161.10

This sampler shows typical assignments for several railroads, although the larger railroads in the above listing actually have many more frequencies than are shown here. Your scanner placed in search/scan mode between 160.215 and 161.565 MHz will undoubtedly turn up many frequencies used in your area. A search through certain UHF and UHF-T band channels may discover even more!



Sperry's self-propelled car tests the condition of the rails by means of electronics gear installed in the bright yellow one-car "train."



A small freight station sports a VHF yagi on its roof.

TRC allows a dispatcher to remotely control any way station or stations for push-to-talk, channel selection, radio monitoring, etc. These functions are normally performed by Touch-Tone control, and may be heard by tuning into a dispatcher-controlled station. Most commands or functions are verified back (again by Touch-Tone) to the dispatcher for status and indication.

When a train crewman desires to contact the dispatcher, a short tone burst (e.g., 2200 Hz) is sent from the train radio to the nearest wayside station. This is decoded and the dispatcher advised. Before the dispatcher has time to respond, a dispatcher notification/verification is returned by a short tone burst (e.g., 1800 Hz) transmitted back to the calling train. Following this will be voice communication between train personnel and dispatcher.

Two possible problems may be experienced when monitoring for TRC. First, most end-to-end communications are on the same channel, while train-to-wayside may be a cross-channel operation. Second, the distance between train and way station may allow monitoring only the train or only the way station.

Mobile Agent

During the past few years, more and more small freight offices have closed and converted their method of operation to "traveling agents" with radio-equipped vehicles. These agents, who travel between shippers, may be heard talking to local trains, way stations or headquarters via special radiotelephone exchange systems.

Rapid Transit

Railroad radio also includes some of the metropolitan rapid transit operations such as NYCTA of New York (160.305 and 160.695 MHz); BART of the San Francisco/Oakland area (160.860 MHz); WAMATA of Washington, D.C.; and

MARTA of Atlanta. Some of these operate on UHF channels.

Special Agents

In polite circles, railroad police are known as Special Agents. On smaller railroad lines, Special Agents will use the one or two channels available for all communications. However, on major railroads having many channels assigned, Special Agents have one or more channels set aside for their exclusive use. Communications on these frequencies can be every bit as eventful and exciting as those of any large-city police department!

Railroad Related Operations

Not all railroad communications are from the railroad themselves. Many communications-using organizations operate in close conjunction with the railroads. Such users include regulatory agencies, engineering and consulting companies; locomotive and rolling stock manufacturers, service and sal-



A diesel rolls in to a station. Your scanner puts you right in the seat next to the engineer!

vage companies; track laying, testing, and repair companies; independent owners of rolling stock and yard switching locomotives; even regulatory agencies.

For instance, the Texas State Railroad Commission (in Odessa) operates away from Railroad Radio Service frequencies on 39.94 MHz. The Rail Constructors, Inc. of Tacoma, WA are on 464.125. The Safety Railway Service, which sells and leases used locomotives and rolling stock in Texas, operates on 457.5375 and 461.225 MHz. These are only a few examples of many such railroad-related communications activities to be found on frequencies other than those used by the railroads themselves.

Owning a scanner anywhere near a large metropolitan area such as in the so-called "Northeast Corridor," or near Los Angeles, San Francisco, Chicago, St. Louis, Pittsburgh, Atlanta, Kansas City, Houston, New Orleans, Seattle, Columbus or similar will probably produce activity on a great many channels. In fact, perhaps only in the most remote areas of the nation will there be slim pickings on the railroad frequencies.

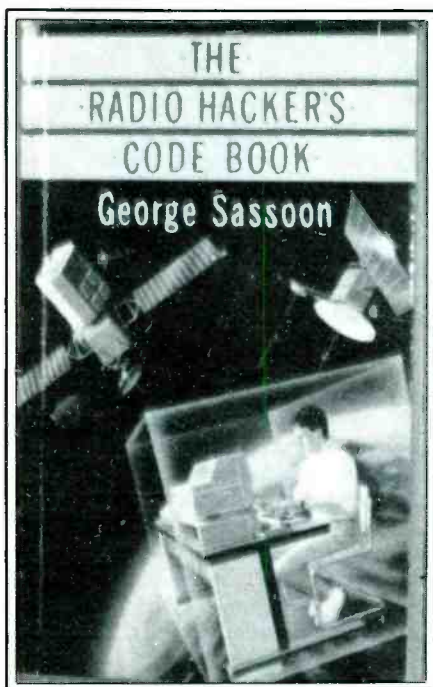
Rail-Scan, the most comprehensive communications directory, covers 863 large and small railroads and related support companies, including traction and municipal rail transit companies; industrial, logging, mining, switching, and terminal railroads; railroad police; manufacturers and many other companies. This book lists more than 4,200 frequencies used by American and Canadian companies. Addresses, car code letters, track mileage, and other information is also given. This book is \$7.95 (plus \$1 postage/handling to addresses in USA/Canada/APO/FPO). If your local scanner supplier doesn't carry *Rail-Scan*, it may be ordered directly from the publisher, CRB Research, P.O. Box 56, Commack, NY 11725.

Get those scanners tuned up, gang. These frequencies are definitely hot.

PC

BOOKS YOU'LL LIKE!

BY R.L. SLATTERY



Calling All Radio Hackers

The possibilities that open up for a person who owns both a communications receiver and also a personal computer have been mentioned in our pages from time to time. *The Radio Hacker's Code Book*, by George Sassoon, is a 239-page book that goes into intricate detail on this subject.

Of all of the things to be heard on the shortwave bands, encrypted messages are perhaps the most baffling and provocative. There is no shortage of such messages as they come from certain news agencies, the United Nations, oil rigs, corporations, banks, weather stations and many others.

Sassoon's book, when used with suitable hardware, permits the reader to understand the innermost workings of numerous encryption and other transmission systems. The book explains Baudot Code normally used for RTTY transmission and discusses various aspects of receiving RTTY signals. It then delves into non-Baudot Codes such as ARQ/FEC. After that you'll learn about the Vernam cipher, ASCII, stream-encryption using pseudo-random binary noise, auto correlation, Hellschreibers, FAX, numbers stations, the RSA cipher, block-substitution ciphers, reverse encryption, and all sorts of other related topics. The theory of prime numbers, factoring algorithms and such are dealt with in a straightforward manner and there are plenty of examples and samples, even some tests to see how well the reader can cope with the codes.

And, most importantly, there are many program listings in BASIC and Z80 assembler. This is really quite a fascinating workbook of applied codesmanship, put together by an author who speaks with authority on computers, shortwave receiving, and encryption. One thing we especially liked was the author suggesting that his readers keep abreast with *POP'COMM* for learning the latest interesting frequencies to monitor. Obviously this author is a man of taste, knowledge, refinement, and experience!

The Radio Hacker's Code Book is available at \$13.95 plus \$2 postage and handling from Gilfer Shortwave, P.O. Box 239, 52 Park Avenue, Park Ridge, NJ 07656. We liked this book. Anybody with an interest in the mysteries of shortwave will find it both interesting and useful.

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KEN CORNELL, W2IMB

Ken Cornell Strikes Again!

For those who are into exploration of the ELF, VLF, LF and other frequency ranges below 1600 kHz, Ken Cornell (W2IMB), has a special treat. This treat is the new 5th Edition of his popular *Low and Medium Frequency Scrapbook* series. "LOWFERS" and other devotees of these frequencies will welcome this news inasmuch as Ken Cornell is regarded by many as the guru of such matters.

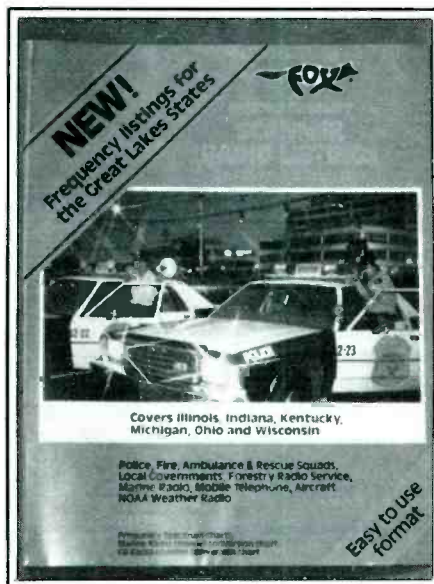
Cornell describes the book best as containing "simple receivers, converters and preamplifiers; active and loop antennas; coils and coil winding; solar flare detection; tube and solid state transmitters for the non-licensed radio bands; and the latest FCC rules covering same." We couldn't describe it any more accurately than Ken did himself.

This is a 138-page large format (8½ × 11 inch) book filled with information, charts,

schematics, tables, the latest FCC rule revisions, and all manner of equipment and additional information sources. For the experimenter, it's a genuine cornucopia. The author does, however, assume that the reader has some basic understanding of schematics and basic electronics theory. In other words, while you don't have to be a communications engineer to get the most from the *Low and Medium Frequency Scrapbook*, knowing the difference between a buffer and a buffalo would be an asset.

Cornell's information on coils and coil winding as well as loop and active antennas for the LF bands is excellent and covers areas that have elicited the most inquiries of Ken's earlier books in this series. All in all, this is a welcome addition to the series, coming at a time when interest in LF communications has been on the increase.

This book is available at \$15 per copy (postpaid) from Ken Cornell, 225 Baltimore Avenue, Point Pleasant Beach, NJ 08742.



Great Lakes Area Scanner Directory

The states of Illinois, Indiana, Kentucky, Michigan, Ohio and Wisconsin are the target areas for the new Regional Scanner Listings directory compiled by Fox.

This is a rather thick 412-page volume listing frequencies, call signs, locations for police, fire, ambulance, rescue squads, local governments, forestry conservation, mobile telephone, weather, and marine communications. Also included are frequency spectrum charts, maritime channel data, etc.

Weighing in at a hefty 2 lbs., this is a large

format (8½ × 11 inch size) book that will increase the enjoyment and excitement of using a scanner throughout this large six-state area, from the smallest village to the largest metropolitan area.

As with the previous regional (Southeastern states) directory from Fox, standards are high. Information has been put together by a careful combination of FCC licensee information, data supplied by area scanner users, and by direct on-scene monitoring with portable gear.

It's impressive, to say the very least, and easily the largest amount of this type of data ever collected in one book for this area. Whether you're mostly monitoring from home, or if you're on the go, or if you're planning a vacation through the northcentral part of the nation, this new *Fox Great Lakes States Regional Scanner Directory* will tell you what you need to know.

The book is only \$12.95 plus \$2 postage/handling (to addresses in USA/Canada/APO/FPO) from CRB Research, P.O. Box 56, Commack, NY 11725.

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What's In A Name

VIP's, As Well As Important Places And Things, Are Known On VHF By Their Nicknames

BY HARRY CAUL, KIL9XL

Many members of the news media, as well as scanner owners, know that President Richard Nixon was known as *Searchlight*, President Jimmy Carter was the *Deacon*, while President Ronald Reagan is *Rawhide*. President Lyndon Johnson spent a number of years as *Volunteer*, and John F. Kennedy was tagged with the moniker *Lancer*.

CB "handles"? No, it's all part of the Secret Service name game, used to identify the First Family, top administration officials, and presidential candidates as their arrivals, activities, and departures are noted in walkie-talkie jargon.

The people who make up these nicknames work for the White House Communications Agency (WHCA) and are reticent to talk about them inasmuch as they are intended to mask the true identities of the persons and places to which they refer. These strange nicknames, it is said, are all contained in a "list" maintained by the government, a list that they won't show to the general public.

"The List," is actually a book of callsigns put out by the Military Communications Electronics Board of the Department of Defense. It contains hundreds of words that are defined as being "easily understood and pronounceable and have no undesirable connotations" and form the pool of acceptable nicknames for VIP's whose movements must be noted discreetly by the U.S. Secret Service, whose job it is to accompany and protect them.

Who christened Carter *Deacon*, and Reagan *Rawhide*? Do WHCA personnel agonize like nervous parents of a newborn child for a name that will suit the personality, family background, or other relevant factors?

A WHCA spokesperson (who declined to give his own name) once responded to such a question by stating that the nicknames are assigned by "sheer whim."

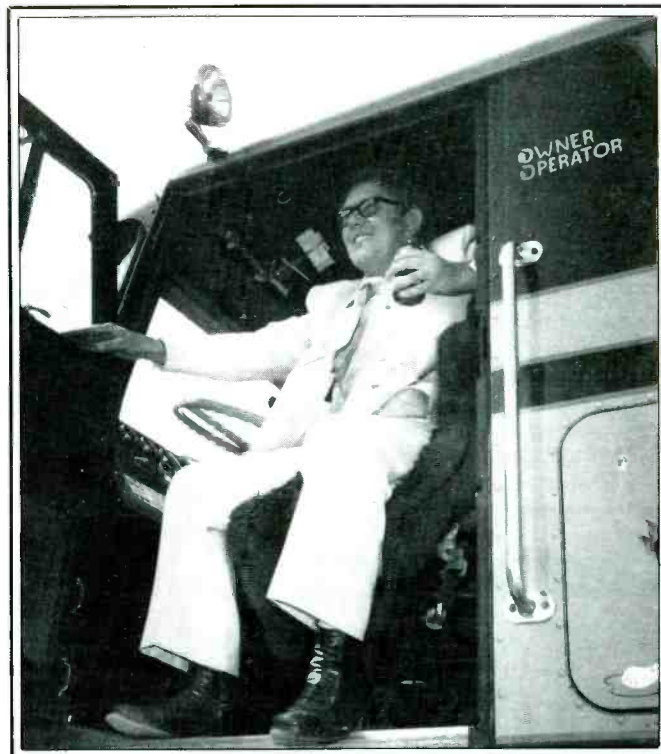
"There is no method. When someone needs a name we go to the list and choose one that is easy to pronounce and decipherable and has not been used recently."

"Really, not too much thought goes into the naming," he said. "Words are chosen to keep transmissions short and sweet and be easily identified over the radio circuit."

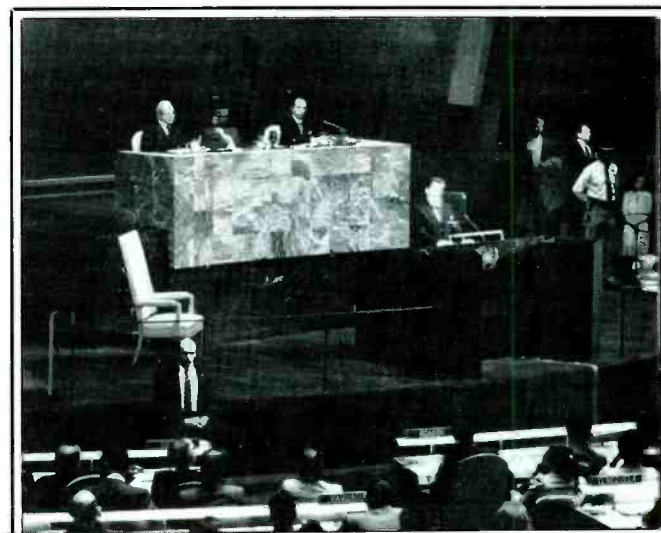
Despite such assertions, some aliases appear to go beyond random selection. Kennedy's *Lancer* certainly fit the Camelot theme of his administration. *Deacon* for Carter, the Sunday school preacher, sounded too perfect to have been a coincidence. And asking anybody to believe that the selection of *Rawhide* to refer to Ronald Reagan was left to chance is stretching credulity past the snapping point. Also, note that members of the Carter Family seem to line up under the initial "D" while members of the Reagan family appear to have been assigned nicknames commencing with the letter "R."

Still, the WHCA spokesperson insists, "it's all a matter of chance." Then, facetiously, he confided to a reporter, "I sit in a dark closet when the moon is full and the first word that pops into my head after I've been beating it with a brick . . ."

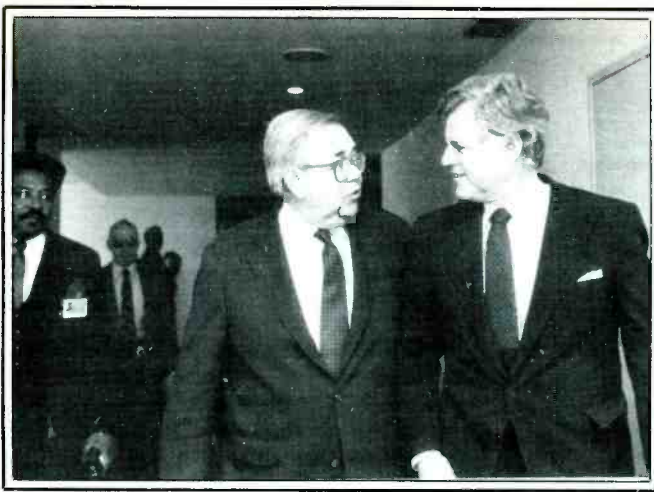
It isn't possible to keep every one of these nicknames under wraps because news reporters and others regularly overhear the transmissions that mention the words. An agent at the Los Angeles Secret Service office, in 1984, confirmed that *Rawhide* was the



Brother Billy Carter was known by many names over the airwaves.



"Rawhide" addresses the U.N. General Assembly. (Photo courtesy of the United Nations.)



The communications-equipped security officer, left, keeps tabs on Senator Edward M. Kennedy—brother of President “Lancer”—and B. Morse, Director of the U.N. Office for Emergency Operations in Africa. (Photo courtesy of the United Nations.)

name for President Reagan, stating, “I don’t think that one’s too secret, I think that I have even seen it published in the Los Angeles Times.”

The WHCA claims that when a nickname gets too publicized it’s time for a change, especially where the President is concerned. Indeed, some nicknames do seem to get changed from time to time, although Ronald Reagan’s *Rawhide* has outlasted at least three such handles for Vice President George Bush—*Timberwolf*, *Sheepskin*, and *Snow Storm*!

In actuality, individual nicknames have long appeared in the media and in radio club newsletters. Listings of groups of these names have circulated privately and freely for years among scanner buffs and members of the news media. In early 1984, a scanner enthusiast in Long Beach, CA published an eight-page listing of these names along with the frequencies on which they might be monitored, although the frequencies had previously appeared in the national media (such as *CB Magazine*, September 1980 issue, and elsewhere).

When the California listing was published, Al Joaquin, a Secret Service technical supervisor from Los Angeles, was quoted in the *Long Beach Press-Telegram* (issue of 14 January 1984) as saying, “It’s not illegal (to publish) the radio frequencies unless it’s for profit. We can’t prevent publication.”

Another Los Angeles Secret Service technical supervisor, Bill McClary, was quoted in the *Press-Telegram* as saying that the frequencies are assigned by the Interagency Radio Advisory Committee, a kind of Federal Communications Commission for federal agencies that decides who gets what frequencies.

McClary said (in Bob Andrew’s *Press-Telegram* story), “there are already books out listing our frequencies, so it’s not illegal and it’s nothing new, either.” The newspaper claimed that “most of the security personnel contacted about the booklet consider it more of an eavesdroppers’ handbook than a major breach of security.”

Jeff S. Arnold, Assistant Special Agent in Charge of the Long Beach office of the Naval Intelligence Service observed, “There would be no classified information (broadcast) on those frequencies. What (any listeners) would get would be the same type of thing you would hear if you just used a regular police scanner and listened to all the police calls.” He stated that classified information is transmitted only on special channels that, in most cases, also use scramblers and other devices to maintain security.

In regard to the scrambling devices, a few months after the Long Beach listing was published, on July 30, 1984, UPI carried a story with a Santa Barbara dateline to the effect that “the White House has applied some high-tech tricks of the military to thwart news agencies and others who may try to eavesdrop on the Secret Ser-

vice and White House Staff when President Reagan ventures beyond the Oval office.”

The story mentioned that “news agencies monitor the White House frequencies when Reagan is in Washington and on the road to keep track of his movements and quickly detect any sign of trouble. The practice, which is not illegal, angered the White House last fall when reporters were able to hear and record a radiotelephone conversation between Reagan and a gunman holding hostages at Augusta National Golf Club where the President was spending the weekend.”

The UPI story claimed that a White House spokesman, Mark Weinberg, said that the move to scrambled transmissions was “not in response to any specific incident,” but had been “a long-standing goal of the White House Communications Agency.”

President Reagan, of course, has been reported by the national media as having problems hearing scrambled transmissions. Less than three months after Weinberg revealed the high-tech scrambling, *The New York Times* (issue of September 21, 1984) told of how Sen. Patrick J. Leahy (of Vermont) was recalling his adventures in preparing for a phone patch from Air Force 1, the Presidential aircraft.

Leahy was told by the Secret Service that President Reagan would not be using a scrambler because the device made it harder to hear and thus the Senator should avoid using names or titles on the open line. “Call him *Rawhide*,” the agents instructed.

Leahy reacted to those instructions by commenting, “You feel kind of silly getting on the line and saying: ‘Well, how is Mrs. *Rawhide*?’”

As it turns out, there may well be some scrambled transmissions but much of the communications traffic appears to be sent “in the clear.” This is possibly because President Reagan isn’t the only one who has difficulty understanding the garbled results of the voice scramblers used by federal agencies. The agents themselves seem reluctant, unable, or downright unwilling to scramble their transmissions except under the most critical conditions.

CB Magazine’s September 1980 issue suggested listening on 164.65, 164.8875, 165.2125, 165.375, and 165.7875 MHz for these transmissions. These are undoubtedly only a few of many frequencies that might be put to use within the general range of 164.35 to 167.03 MHz. A scanner placed in *search/scan* mode might locate additional frequencies actually used.

The official list of nicknames for VIP’s as well as important places and things, everchanging as it is, remains sequestered and unavailable to general view. We have, however, sorted through club newsletters, the news media, and the “Long Beach” listing to assemble a roster of the previously published nicknames covering from about 1960 to the present.

To be sure, nothing in our list is official. No claims are made for accuracy, completeness, its current or future status. Certainly some of the information is outdated or otherwise incorrect, and everything is subject to change the next time the moon is full.

Of course, newsmen often have their own pet nicknames or handles for VIP’s, quite unofficial! For instance, during the Carter years, one flippant reporter in the field used to call his editor on the two-way radio and refer to *President Skippy*. Another member of the Carter clan was referred to only as *Brother Budweiser*.

Now, a list of those nicknames would be a real treat!

VIP’s & Related Matters

Callsign	Possibly/Probably Relates To:
Acrobat	Andrews AFB, Camp Springs, MD
Angel	Air Force 1 (aircraft)
Apollo	
Backseat	Secret Service (Uniformed Div.) motor scooter units
Bagpipe	Secret Service (Uniformed Div.) liaison units
Bandbox	Secret Service (Uniformed Div.) executive protection & White House units
Barefoot	
Baseball	Secret Service (Training Div.)

Beehive	Secret Service (Technical Development Division)	Dasher	Jimmy Carter
Bellhop 1	Secret Service (Eclipse motor-scooter units)	Deacon	Jimmy Carter
Bellhop 2	Secret Service (White House motorscooters)	Deckhand	Jeff Carter
Bigtop	Secret Service (Treasury Security Division)	Derby	Jack Carter
Birdseye	Dept. of State	Diamond	Chip Carter
Biscuit		Digger	James Carter IV
Blackboard	Secret Service (Protective Intelligence Division)	Dog Pound	Press aircraft (Carter Admin.)
Blacktop	Secret Service (Uniformed Div.) Foreign Mission units	Dragon	Walter Mondale
Blowtorch	Secret Service (Uniformed Div.) Executive Prot. Svc. CP & Communications Shop	Driftwood	Carter home, Plains, GA
Blueprint	Secret Service (Technical Security Division)	Duchess	Sarah R. Carter
Boardwalk	Secret Service (Foreign Mission Protective Security HQ)	Dusty	Jason Carter
Bookstore	White House Communications Center	Dynamo	Amy Carter
Brimstone	Reagan Ranch, California	Electric	National Emergency Command Aircraft
Broadside	Dignitary Protection CP (NYC)	Elm	Camp David, MD (cottage)
Buckeye	Camp David, MD (cottage)	Fadeaway	Secretary of State
Buckshot	Special Coordination Center (NYC)	Falcon	Presidential air cover unit
Bulldog	Dignitary Protection CP (DC)	Fan Jet	John Block
Bungalow	Secret Service (Uniformed Div.) Foreign Embassy Div. substation	Fencing Master	Secretary of The Treasury
Cableboy	Advance team (Carter Mexico City trip)	Finley	Secretary of Defense
Cactus	Camp David, MD	Fireplug	Secretary of Labor
Caliber	Portable communications package	Fireside	Secretary of State's residence
Calico	Eleanor Mondale	Fire Truck	James Edward
Cameo	Joan Mondale	Fist Fight	Secretary of Health & Human Services
Candlestick	VIP portable communications center	Flag Day	Speaker of the House of Rep.
Cannonball	RADM J.A. Chaney (Liason to Joint Chiefs, Carter Admin.)	Fliver	William French Smith
Caravan	VP follow-up car (Carter Admin.)	Flying Fish	Secretary of The Interior
Carbine	CCT Anacostia NAS, DC	Foghorn	State Dept. Security Division
Carbine 1	Portable communications package	Footprint	Senator Strom Thurmon
Carbon		Forefinger	Jan Pierce
Cargo	Mrs. Mondale vehicle (Carter Adm.)	Foreward Look	Neil Aldrigger
Carnation	CCT, Ft. Ritchie, MD	Foxcraft	Terrell Bell
Carousel	Air Force 2 (aircraft) (Carter Adm.)	Fraction	State Dept. security vehicle
Carpet	Army Garage, White House	Fullback	
Cartwheel	NSA, Ft. Meade, MD (Ops. Control Center)	Gimlet	Presidential follow-up vehicle
Castle		Halfback	Secret Service office
Cavalier	Walter Mondale	Handshake	Z. Brezezinski (Carter Admin.)
Cedar	Menachem Begin	Hawkeye	Secret Service garage, DC
Cement Mixer	White House Situation Room	Headlight	Firetruck
Centurian	Theodore Mondale	Hedgehog	Counter-sniper response team; individual members designated by a numeral after this word
Challenger	Presidential nightwatch	Hercules	Treasury Dept. switchboard
Champion		Hilltop	Ambulance, Exec. Prot. Svc.
Chandelier	Dept. of State	Hobnail	Presidential Protective Div, White House
Chariot	VP Walter Mondale vehicle	Horsehide	White House Communications Agency Duty Officer
Checkerboard	Advance team (Carter Admin.)	Horsepower	Nixon Office, NYC
Checkmate	Advance team (Carter Admin.)	Hotshot	Surveillance helicopter, NYC
Chessman	William Mondale (Carter Admin.)	Hudson	Eugene McCarthy
Christopher	Bebe Rebozo (Nixon Admin.)	Huntsman	Emergency Escape Aircraft
Citadel		Instructor	John F. Kennedy
Clam Chowder	Ron Nessen (Ford Admin.)	Kneecap	Jimmy Carter (pre-Deacon)
Claw Hammer	Gen A. Haig, (Nixon Admin. Chief of Staff)	Lock Master	Rosalynn Carter (pre-Dancer)
Clothes Brush		Lotus Petal	Presidential helicopter (with President aboard)
Cloudburst	WHCA, Anacostia NAS, DC	Marine 1	John Anderson (pre-Stardust)
Cloverleaf	VP Residence, DC (Carter Admin.)	Miracle	
Coach House	Dulles Airport, VA	Muscle	
Cobweb	VP Office, DC	Mustang	
Companion	Blair House, DC	Nighthawk	Presidential helicopter (Pres. not aboard)
Corkscrew		Pacemaker	VP staff communications network
Cowpuncher	Air Force 1 (aircraft)	Packman	Jack Ford
Crossbow		Passkey	Gerald R. Ford
Crown	White House Communications Center, DC	Patroller	VP helicopter
Crystal	Chassiah Begin Milo	Pavillion	VP office
Curbside	Washington National Airport, DC	Peninsula	New Senate Office Building, DC
Daily	Prince Charles	Penrod	Gerald R. Ford (pre-Passkey)
Dancer	Rosalynn Carter	Pesod	Susan Ford
		Pinafore	Betty Ford
		Pin Cushion	Rayburn Office Building, DC
		Pivot	Bethesda Naval Hospital, MD helicopter pad
		Playground	Peragon, DC helicopter pad

Pork Chop	Old Senate Office Bldg., DC
Professor	Longworth Bldg, DC
Punch Bown	Capitol Building, DC
Push Button	
Radiant	Dorio P. Reagan
Rainbow	Nancy Reagan
Rainbow Trail	
Rawhide	Ronald Reagan
Redwood	Gary Hart
Register	
Reliant	Ronald P. Reagan
Rhyme	Maureen Reagan
Ribbon	Patti Reagan Davis
Riddler	Michael Reagan
Ridgeline	Reagan residence, CA
Ringside	Madison Square Garden, NYC
Roadhouse	Waldorf-Astoria Hotel, NYC
Roadrunner	WHCA communications van
Rob Roy	
Rosebud	Maureen Reagan
Rose Bush	
Sandstone	Reagan Residence, CA
Sawhorse	Presidential physician (Carter Administration)
Scarlet	Keke Anderson
Searchlight	Richard M. Nixon
Sheepskin	George Bush (pre-Snowstorm, etc.)
Signature	see Marine 1
Skymaster	Andrews AFB, MD CP
Smelter	
Snapshot	Howard Baker
Snowbank	Barbara Bush
Snow Storm	George Bush (pre-Timberwolf)
Spectator	
Springtime	Mamie Eisenhower
Stage Coach	Presidential limousene
Staircase	First Family Detail Office
Starburst	John Anderson
Stardust	John Anderson
Starlight	Pat Nixon

Store Room	Truman Library/Household, MO
Storm King	Nixon residence NY & NJ
Strawberry	Rosemary Woods (Nixon Admin.)
Strutter	
Sunburn	Edward Kennedy
Sundance	Joan Kennedy
Sunflower	Ethel Kennedy
Sugarfoot	
Sunshine	Ron Nessen (Ford Admin.)
Swordfish	Phillip Crane
Tailor	
Thunder	Rev. Jesse Jackson
Tiller	Dorothy Bush
Timberwolf	George Bush
Tinkerbell	
Tool Room	VP Office, Old Senate Bldg., DC (in DC)
Tower	VP lead vehicle
Tracer	VP follow-up vehicle
Tracker	
Traffic	
Trail Breaker	VP official vehicle
Tranquility	Barbara Bush
Transit	
Trapline	Neil Bush
Treasure Ship	Air Force 2 (aircraft)
Tripper	J. Bush
Tumbler	George Bush, Jr.
Tuner	Marvin Bush
Victoria	
Volcano	Ladybird Johnson
Volunteer	LJB Ranch, TX
	Lyndon B. Johnson, later B. G. Josiah Blessingame
Walnut	
Warehouse	Sheraton Center Hotel, NY
Welcome	J.R. Haldeman (Nixon Adm.)
Whaleboat	Ron Ziegler (Nixon Admin.)
Windstone	Reagan residence, CA
Wisdom	J. Ehrlichman (Nixon Adm.)
Woodcutter	Henry Kissinger (Nixon Adm.)

PC

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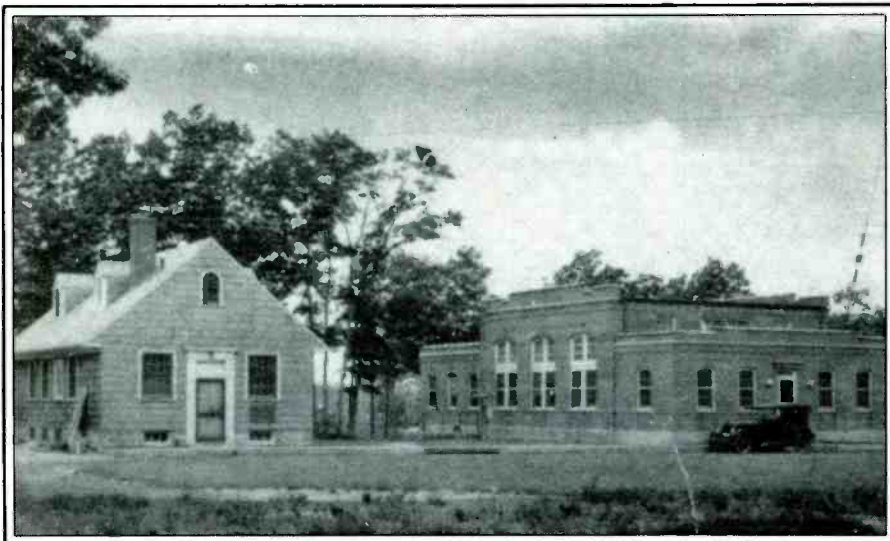
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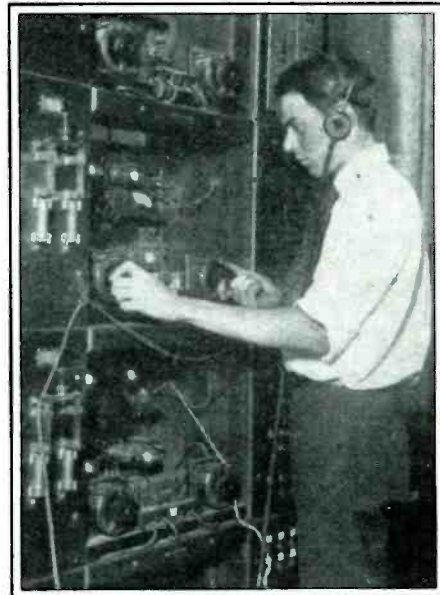
Radio – A Look Back

Remembering The Early Days of Radio and Wireless

BY ALICE BRANNIGAN



This postcard shows the RCA receiving station at Riverhead as it looked in 1930.



In this 1923 photo of a technician at work in the RCA receiving station, the receivers were constantly adjusted for best reception. The frequencies used were between 15 and 30 kHz in the early pre-shortwave days.

A chance to compare the same installation as it looked at different periods of time is a rare treat, and that's what we have this month. Reader B.H. Harvey of Mio, MI sent in a 1930 postcard showing a view described as the "radio receiving station of the Radio Corporation of America, Riverhead, L.I." That got me thinking about where I had seen something previously about this station. My files revealed that a view of RCA's Riverhead receiving station had appeared in *POP'COMM* back in June of 1984. Going to the source of the photo that ran in 1984, *POP'COMM*'s Editor, Tom Kneitel, I was fortunate enough to obtain several views that had never before been published.

Riverhead is near the eastern end of Long Island, NY and the huge RCA receiving station there was built in the 1920's as the facility to RCA's gigantic international transmitting station, "Radio Central," at Rocky Point. These two sites were constructed fourteen miles from one another in an effort to prevent the high-powered phone and CW transmitters from interfering with the receivers. Both facilities had many longwave and shortwave transmitters and receivers in simultaneous operation with Riverhead's receivers remote controlled from Rocky Point. This twin installation was highly complex and was considered to be somewhat of a technological miracle for its day.

Both the Riverhead and Rocky Point RCA stations were like small villages, having paved streets lined with numerous build-

ings. Radio Central was active at least into the 1950's but eventually it became obsolete. The stations were abandoned at some point and were later torn down with the large acreage being given to New York State as nature preserves.

Tom Kneitel's photos were taken in the late 1960's, long after the station had been abandoned. Interestingly, the structures shown in the 1930 view are seen as they looked almost forty years later. Tom's photos also show a large steel tower supporting a giant parabolic dish antenna that was used during the final period of the station's active existence.

Tom recalls that the whole place was quite eerie and looked like an Old West ghost town when he visited the spot. Good thing he had his camera because neither the facility nor the road that went to it presently exist!

A Good Sport

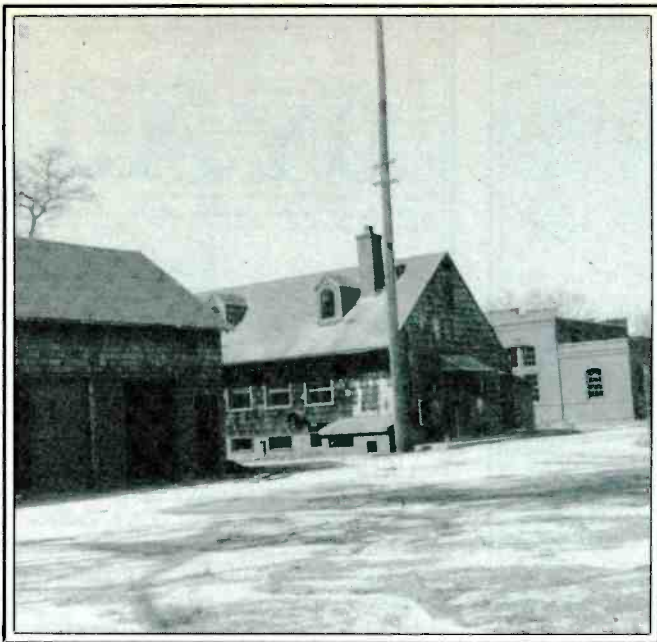
New York City has had no less than three different Madison Square Garden sports arenas. The present MSG is the home of the MSG cable-TV network and may, itself, be slated for replacement in the near future even though it is only a few decades old.

The previous MSG, the one that once stood on Eighth Avenue at 49th Street, was torn down when the present one was built at a site a few miles away. Not many, however, recall that at one time it had its

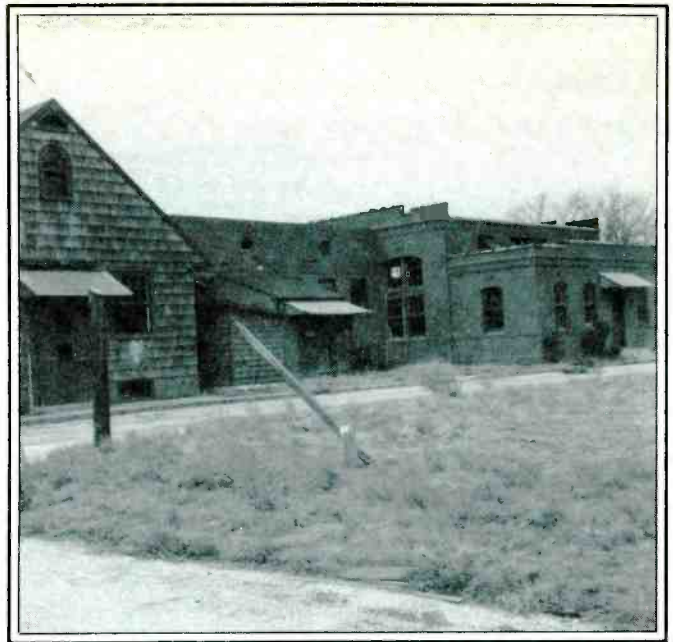
own on-site broadcasting station that had the callsign WMSG! The station was used primarily for broadcasting the events that took place in MSG such as boxing and other sports events, the circus, rodeos, horse shows, bike races, etc.

Station WMSG commenced operation in 1926, starting on 1410 kHz with 500 watts. By the end of the year, WMSG had hopped over to 990 kHz. The year 1929 found WMSG on 1350 kHz and running only 250 watts; it was sharing time with three other stations, WBNY, WCDA, and WKBQ, an arrangement which didn't seem very well suited to the purpose of WMSG. By 1932 the station was sold to new owners, the New York Metropolitan Broadcasting Corp. that owned WBNX, a new time-share station on 1350 kHz. WBNX called itself "The Voice of the Bronx" (The Bronx is a borough of New York City); WMSG became known as "The Twin Voice of the Bronx." The stations operated from 9 a.m. to 6 p.m. with WMSG callsign being announced for a few hours during the midday portion of the programming. Clearly, WMSG was heading towards oblivion.

A year later, WBNX/WMSG was still sharing time with WCDA (an Italian-



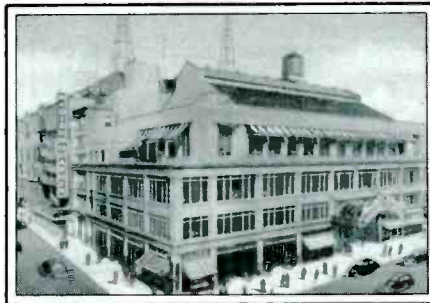
This late-1960's photo shows the abandoned RCA facility, in fact the identical buildings seen in the 1930 postcard.



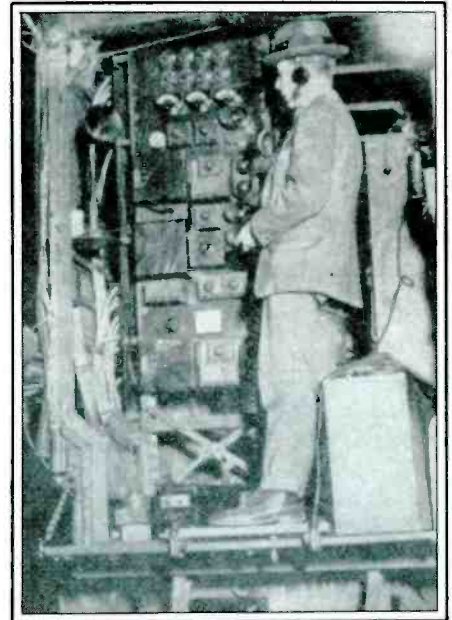
This 1960's view of the abandoned RCA station looks like a ghost town from the Old West.



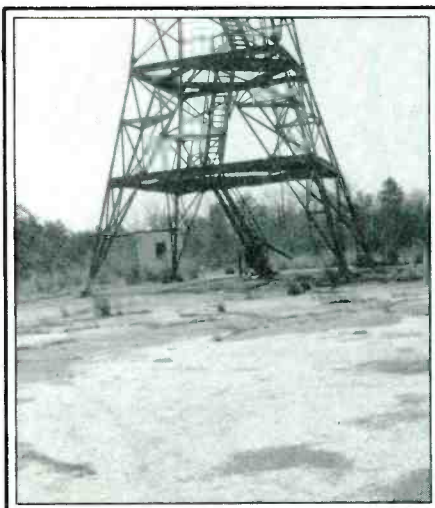
A rusting microwave tower loomed over the old RCA station in the 1960's.



This picture postcard of Madison Square Garden shows the two WMSG broadcasting towers on the roof.



In 1924, before WMSG operated from Madison Square Garden, this mobile van was used for a remote pickup control room for the broadcast of a political speech. The program was sent by landlines to a local station.



The base of the abandoned RCA microwave tower shows the ravages of time and neglect. Patches of grass grow through holes in the concrete.

language station) and with WAWZ (a religious station). WBNX's owners bought out WCDA and the whole conglomeration became licensed under the name of the Standard Cahill Corp. Within months the owners were using only the callsign WBNX, a station that later moved to 1380 kHz and is still in operation.

Our 1930 photo of WMSG shows the "Garden" as it looked with the twin transmitting towers on the roof. These towers were taken away in the early 1930's, long before the building itself was razed. My records show that prior to WMSG, broadcasts took place from Madison Square Garden by means of remote pickup vans that fed the programs to broadcasters by landline.

Ship Shape

On July 4th, 1923 the German passenger Liner S.S. *Albert Ballin* made its maiden voyage from Hamburg to New York. This was a 20,815-ton, 620-foot vessel that carried a crew of 415 and more than 1,500 passengers.

A photo we have of the radio shack of the S.S. *Albert Ballin* was taken during that first

voyage and shows Chief Radio Operator Wilhelm M. Hannemann proudly displaying the equipment that carried the callsign DDNY. More than just telegrams, DDNY was prone to advertising itself by broadcasting musical interludes from the ship's grand ballroom, thus making it one of the world's first high seas broadcasting ships.

Listeners of the early 1930's reported DDNY at times on 4413, 8328, 8830, and 13040 kHz.

Horst Siemer, of Bonn, West Germany, sent us this photo and asked if we could find

TELEPHONE WESTCHESTER 7-0801

BROADCAST STATION

WMSG
1350 Kilocycles

Sales Manager:
THOMAS F. CAREY

Program & Music Director:
GEORGE ROBERTS

LOCATED AT
THE NEW YORK COLISEUM
1100 EAST 177th STREET NEW YORK CITY

April 11, 1932

Mr. Joseph Leo Hueter

Dear Mr. Hueter:

We are pleased to verify your reception of W M S G on April 8, 1932 at 11:37 P. M.

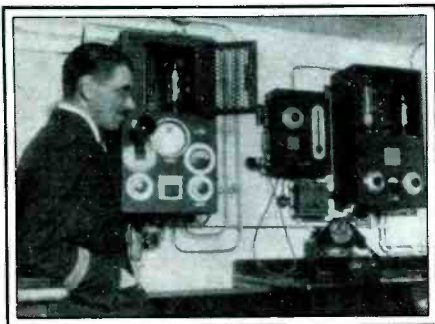
Trusting you enjoyed our program, as much as we enjoyed your letter, we are,

Very truly yours,
W B N X - W M S G

Sue Royal
Sue Royal
Secretary

SR:S

WMSG sent out these QSL's in 1932. This one was supplied to us by Joseph Hueter.



Station DDNY as it looked in 1923 on the maiden voyage of the S.S. Albert Ballin, one of the first "broadcasting" luxury liners.

out the ship's callsign and anything else about the vessel and what became of the S.S. Albert Ballin. The callsign we found in *Radio Station Treasury*, which also provided the operating frequencies. Information as to what eventually became of the vessel took a bit of digging and provided a rather unusual story.

In 1934, after a collision with the German tugboat *Merkur* (the entire tugboat crew of seven drowned), the *Albert Ballin* was lengthened to 677 ft. and modernized throughout. Under pressure from the Na-

tional Socialist (Nazi) government, in 1935 the vessel's name was changed to the S.S. *Hansa*, at which time its callsign was changed to DHAO. When the war broke out, the *Hansa* was turned over to the German Navy. In March of 1945, while engaged in an evacuation from Gotenhafen (now Gdynia), the ship hit a mine in shallow water off Warnemunde. The passengers were rescued but when an attempt was made to tow away the ship, it sank.

Four years later, the Soviets raised the wreck and spent four years rebuilding and refitting the ship, renaming it the *Sovietskiy Soyuz*, and assigning the callsign UQSU. Almost immediately the vessel suffered a bad explosion and fire and had to spend another year being repaired before entering into passenger/cargo service on the Vladivostok/Kamchatka run. In 1971 it was rebuilt at Hong Kong and, so far as I can determine, the ship is still in service and flying the Soviet flag.

Not many large passenger vessels in service today can lay claim to such a curious history, or such a pedigree of callsigns!

Early Broadcaster

When broadcasting stations first began operating en masse, during 1922-23, sta-

DEPARTMENT OF PHYSICS
ST. OLAF COLLEGE
9YAJ Member A. R. R. L.
Northfield, Minn.

Radio: Your CW signals heard here *marked Apr 20*

Availability: *5:50* - *Steady* - *Waves*

TRANS: *5:50* - *Steady* - *Waves*

RECEIVER: *5:50* - *Steady* - *Waves*

ANTENNA: *5:50* - *Steady* - *Waves*

REMARKS: *do it up soon. Hope*

Pse QSL. Wl. QSR any time. Station manned 10:30-12:00 nightly. CUL-

DIRECTOR SKIFFER, "VS"
- NIKKIS GLASOE, "AG"
PAUL OWENS, "JO"
SIGMUND HAMMER, "H"
LLOYD SEILSET, "L"

Broadcaster WCAL had another personality—as station 9YAJ it could conduct two-way communications.

tion WCAL in Northfield, MN was among the pack. This station was a function of the Physics Department of St. Olaf College, Manitou Heights, Northfield. Operating on 833 kHz with 500 watts and the slogan "The College On The Hill," programs consisted of lectures, sacred music, and Norwegian religious services. History records that in those early days, WCAL also had another side to its personality.

When WCAL's facilities and technical staff weren't broadcasting on 833 kHz, the station changed hats and, under the special callsign 9YAJ, it ran 20 watts (CW and phone) on 800 kHz and 1500 kHz for experimental purposes. The station could also run 1 kW synchronous spark and 500 watts nonsynchronous spark on the same frequencies. The antenna used by WCAL/9YAJ was an eleven-wire fan, 90 feet high, with a counterpoise. Every night from 10:30 p.m. until midnight, 9YAJ would communicate with Amateur Radio operators to test its equipment and learn about signal propagation.

In 1925, WCAL switched to 890 kHz, and by 1929 (it's 9YAJ days long past), the power was increased to 1 kW and its operations took place on 1250 kHz where it split

MINNESOTA BROADCASTING CORPORATION

100 Main Tower 219 Main 1250 Kilocycles 100% MODULATION

MINNEAPOLIS, MINN. November 10, 1931.

Dear Sir:

This letter is to verify your reception of Station WRMH at 12:15 and 12:08 P.M. C.S.T. on Monday October 26, 1931.

We appreciate very much hearing from our distant listeners, and hope you may continue having success in picking up distant broadcasts.

Thank you for your letter.

Yours very truly,
Minnesota Broadcasting Corporation

By: *Marj Ballin*

WRMH

WRMH once shared time with WCAL on 1250. Here's a QSL letter from WRMH from that era (1931).

Why Are We Giving Away Such Famous Nationally Advertised First Quality Designer Jeans As

★ Calvin Klein ★ Jordache ★ Sasson
each pair for **\$1** SUPER DISCOUNT COUPON
only a everytime you buy another pair at our regular
low retail price? Currently only \$28 a pair.

Until midnight June 25, 1987 — we will give you these booklets of ten \$1 coupons for only **\$10** Per Booklet Of Ten \$1 Coupons Good for any 10 Famous Designer Jeans. Values of \$280 or more!

- Super Discount Coupons Are Guaranteed Redeemable One-By-One Or As Many As You Like At A Time.
- No Need To Use Up Your Coupons All At Once, If You Don't Want To — Coupons Are Redeemable Until January 10, 1989.

As part of a nationwide publicity campaign, an innovatively bold, pioneering North Carolina firm will give away one million (1,000,000) Guaranteed Super Discount Famous Designer Jeans Coupons Booklets for the Shocking Publicity Price of only \$10 a booklet to every person who reads this publicity campaign ad and writes to the company/ address (below) before midnight, June 25, 1987.

You absolutely must send this Original Publicity ad along with your request. No copies or Photostats accepted.

Please note that — even though the company's astonishing price of \$10 per coupons booklet will expire on the above mentioned June 25, 1987 date — however, you will be allowed a much longer time period to redeem your super Discount Famous Designer Jeans Coupons. A \$280.00 value.

The company guarantees that it will promptly, redeem all coupons sent in for redemption — all the way up until January 10, 1989. That's plenty of time for you to use up all your coupons. Also you are permitted to transfer your coupons to someone else to redeem, if you wish. These Super Discount Coupons make excellent gifts too.

Each Super Discount Coupons Booklet contains 10 coupons, which can be redeemed for 10 pairs of the famous nationally advertised Calvin Klein, Jordache and Sasson Designer Jeans. No seconds, or irregulars. All are new first quality designer jeans that sell for up to \$40 or more at many local stores.

These are the same popular, nationally advertised Designer Jeans Super Discount Coupons Booklets you may have already heard about.

Now, you can own all the fashionable, designer name jeans, that you want. You too can enjoy the fabulous savings that Super Discount Coupons bring.

Don't risk missing out by responding too late! These are the fastest selling, and most sought-after Super Discount famous Designer Jeans Coupons ever sold by this most enterprising North Carolina firm.

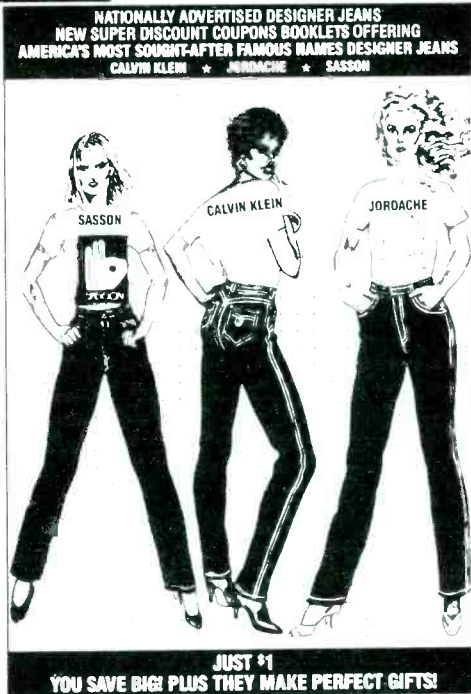
These popular, Nationally Advertised Super Discount Jeans Coupons will not be sold at this price by the company in any store. There is a limit of just Two (2) booklets per address at this price, but if your request is sent early enough (before June 10) you are allowed to request up to 5. Each booklet is strongly backed by the company's full one-year money-back guarantee.

To order your Guaranteed Famous Designer Jeans Super Discount Coupons mail this entire original publicity ad (no copies or photostats accepted) along with your name and address and \$10 for each Coupons booklet. Add only \$1 shipping per booklet ordered (North Carolina residents add sales tax.) Allow up to 3 to 5 weeks for shipment. Make check payable to Designer Jeans Clearinghouse.

Mail to Designer Jeans Coupons Booklets, Dept. 1112B, 110 West 5th Street, Dept. PC-2, Winston-Salem, North Carolina 27101

Don't forget — This Amazing, Low Price Offer Expires June 25, 1987 To Readers Of This Publication.

Just try finding such famous nationally advertised Designer Jeans in any store anywhere — at the astonishingly low price of only \$1 each! Just a mere \$10 for a booklet that's redeemable for 10 pairs of famous Designer Jeans ... a value of \$280 or more!



BROADCASTING STATION P W X

OF THE
CUBAN TELEPHONE COMPANY

HAVANA, CUBA.



Dear Dx:

We take pleasure in acknowledging receipt to your communication and we hereby verify reception of our concert of 12-16-1928

We are attaching our advance programs for the month of December 1928. At the same time we would appreciate that, if possible, our programs be published as sent to you. So many of our U. S. A. radio friends have been here and have favorites among the different orchestras that we broadcast, that you will readily realize that bare publishing of "Orchestra" would not in this case satisfy your readers.

Station PWX broadcasts on 357 meters (740 kilocycles) and is controlled by the Cuban Telephone Company, a subsidiary of the International Telephone and Telegraph Corporation of New York City.

Assuring you of our hearty appreciation of your cooperation.

We beg to remain,

Sincerely yours,

Ricardo Nadarse
Program Manager.

You probably haven't seen very many QSL's from Cuban broadcaster PWX, but this is what one looks like. It even has an EKKO stamp.

time with stations KFMX, WRHM and WLB. When most broadcasters were affected by forced frequency changes in 1941, WCAL ended up on 770 kHz. The non-commercial educational station remains, today, on 770 kHz with a 5-kW signal.

St. Olaf College was founded in 1874 and has an enrollment of about 3,000 students. We are fortunate enough to be able to share with our readers a rather rare QSL from this station under its 9YAJ guise in 1923. It confirms a two-way CW contact with an out-of-state Ham.

As related trivia connected with this station, when it split time on 1250 kHz, one of its time-share stations was right in WCAL's hometown of Northfield. That was KFMX, owned by Carleton College. WLB, also on frequency, was the station of the University of Minnesota at St. Paul. The other station on 1250 kHz that shared time with WCAL was WRHM.

WRHM had started its broadcasting career in 1925 with 50 watts on 1190 kHz. It

was located in Minneapolis, MN at the Andrews Hotel, being owned by the Rosedale Hospital Co., Nicollet and 44th Street. By 1929, WRHM had moved to 1250 kHz with 1 kW and was owned by the Minnesota Broadcasting Corporation, Wesley Temple Building, 115 East Grand St., Fridley. The station called itself, "The Voice of the Gopher State." In mid-1934 this station became known as WTCN, several years later moving to 1280 kHz. This station is presently known as WWTC, in Minneapolis, and operates 5 kW.

We can give you a peek at a QSL letter from WCAL's co-channel station, short-lived WRHM. This letter is from 1931. The letterhead is quite striking, don't you agree?

A Popular Cuban

One of the DX stations most popular with listeners of the 1920's was PWX, owned by the Cuban Telephone Company of Havana, Cuba. Operating on 750 kHz, and later on 740 kHz with 500 watts, PWX was the

showcase for many Latin American orchestras playing rhumbas, tangos, and congas.

According to the authoritative book *Radio Station Treasury*, by 1931, PWX had evolved into station CMC on 840 kHz. Reader Carroll Weyrich of Baltimore, MD (Registered Monitor KMD3CHW) provided us with one of the old PWX veries from 1928 containing the station's EKKO stamp.

The Short of It

A few issues back we ran a QSL from a shortwave relay broadcast station in California that operated during the 1930's. This was one of a number of stations that the FCC authorized to repeat on shortwaves the regular programming of broadcast band. Experimental licenses were granted and the stations existed for several years. Many readers wrote to say that they agreed with my sentiments that the FCC should bring back this concept; they also asked that we provide additional information on some of these novel shortwave broadcasters.



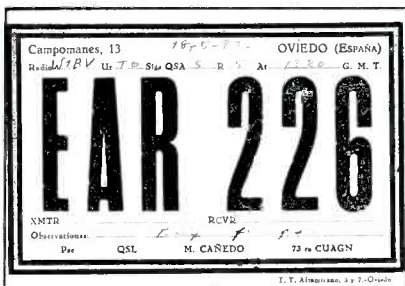
The upper section of Detroit's Penobscot Tower as it looked in 1936 when its roof was the site of the W8XWJ antenna.



The QSL card from shortwave broadcaster W8XWJ. This station relayed the programs of station WWJ during the mid-1930's.

Historic Ham QSL's

In the 1930's there were QSL's from Hams galore as technological developments opened the way for easy international communications. While most of those QSL cards bore callsigns cut from the standard Ham formats, several turned up bearing callsigns that were certainly far removed from the average.



Two that have particularly fascinated me came from Spain and carry the callsigns EAR226 and EAR227. Although the callsigns don't appear to be ones that Hams would use, these cards do confirm two-way contacts. Records of the era only confuse matters by listing some of Spain's shortwave broadcasters with similar callsigns, for example EAR25 in Barcelona on 6120 kHz, and two Madrid stations, EAR110 (6976 kHz) and EAR125 (7020 kHz). Still, other Spanish broadcasters used callsigns from the EAR## series, while Ham prefix records of the 1930's do not indicate that there was anything unusual about local Ham callsign formats. Obviously there was, at least from the viewpoint of 50 years after the fact. I have asked several old time Hams about these EAR## stations and nobody could come up with any certain answer.

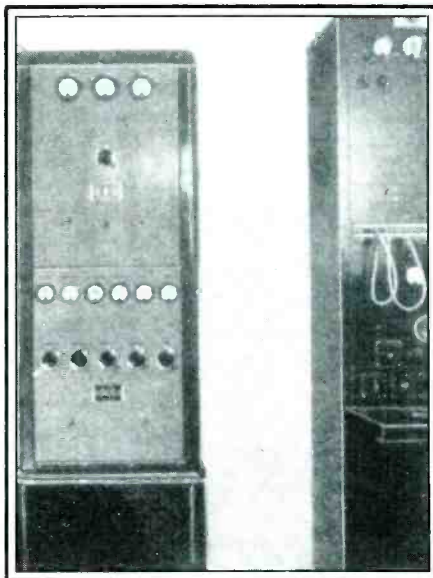
My own personal guess is that these calls were specially issued, perhaps to stations that were "amateur broadcasting" stations—stations that were low-powered and personally operated that could conduct Ham operations and also transmit entertainment broadcasts.

If anybody knows for sure, or has another guess, let's hear from you! By the way, the two examples we have to show you aren't in such great condition.

Let's then take a look at W8XWJ the shortwave relay broadcasting station operated in the mid-1930's by WWJ in Detroit, MI. W8XWJ first went on the air on 29 January 1936 running 100 watts on 31.60 MHz. The antenna was located 650 feet high on the roof of the Penobscot Tower (at that time it was the tallest skyscraper in town). Realizing that few listeners had receivers that could tune as high as 31 MHz (this was

considered a UHF band in those days), station owners furnished free plans for building equipment that would receive W8XWJ, and all who heard the station were sent a QSL card to confirm their reception.

We have some photos of WWJ's relay station, W8XWJ, and you can also see what their QSL card looked like—just in case you missed out on hearing this station and earning your QSL the old fashioned way.



The W8XWJ 100-watt, 31.60-MHz transmitter. It ran a Class "C" amplifier using four HF type 800 tubes connected in push-pull parallel. The audio system was a standard RCA high-fidelity speech amplifier driving a push-pull Class "B" modulator employing a pair of 203-A's. The amplifier and control panel appear at right of photo.

Time to QRX

Although I could rattle on here for many pages, I don't want to wear thin my welcome with either my readers or the editor of the magazine. I start typing and before I know it, it's later and the column's longer than I thought. Like the poor soul in our 1925 radio cartoon postcard—when it's later than you thought, you stand a good chance of becoming an April fool. 'Til next month, I'll quit while I think I'm still ahead!



Here's one of those Roaring 20's joke radio postcards. The poor soul either drank one too many glasses of bathtub gin or heard one too many bursts of static.



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THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Take note of this item found in *Editor & Publisher* magazine telling of the troubles news media reporters faced in Iceland while covering the summit meeting between President Ronald Reagan and Soviet leader Mikhail Gorbachev last October. Imagine what it would be like if those reporters had to use RTTY to send their stories back to the United States.

Iceland is a tiny country not accustomed to being inundated by the news media. It has only 2,000 long distance telephone lines—surely not enough to meet the demands of the journalistic stampede to the island.

To aid those reporters, a satellite telephone network was provided by the White House that enabled the press corps to make local calls in order to file their stories.

The system worked fine. Well, at least half of the time it was in use it did. So said Michael Putzel, chief White House correspondent for the Associated Press. A major problem occurred whenever strong winds battered the island. The winds "tended to shake up the satellite dish and break off our stories after two paragraphs," Putzel said.

During the peak of the summit conference, Putzel said, the dish antenna was finally knocked over in a gale wind and reporters had to seek other ways to relay their material back home. Putzel sent his news copy via phone lines to London, England. The copy then was fed to a satellite and transmitted to the United States.

Would you believe it was just two years ago that the AP closed down its RTTY operations in London, opting to use satellites for news transmissions? Wonder what the AP brass are thinking now about that move.

It's time to look at what we might be able to monitor if the April breezes don't blow our antennas off the rooftops.

Abbreviations Used in The RTTY Column

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

4355.5: HPP, Panama Intelmar R., Panama in FEC mode at 0100 w/notices to mariners, freqs, sked & tfc list (Ed.).

4533: Tokyo Meteo, Japan w/coded wx, logged at 1000, 850/66R (Hetherington, FL).

5061.5: RFFHCX, Marseilles Police Dept., France w/ARQ tfc. No other info.

5119: STK, Khartoum Aeradio, Sudan at 2144 w/RURY, 425/66R (Carol Kirk, CT).

5424: 6VY33, Dakar Meteo, Senegal w/wx to Nauakchatt Meteo, Mauritania, TDM mode at 0200 (Hetherington, FL).

6275.5: 52FHL, a Spanish naval unit calling 50KNE w/RURY & SGSG at 2017, 100 wpm at 2017 (Freud, FRG).

6340: GYA, Royal Navy, London, England w/foxes at 2251, 850/100R (Kirk, CT).

6359: 58JDQ, a Spanish naval unit calling 56UAZ at 0138, 850/100R (Kirk, CT). Sure wish the Commodore of the Spanish Navy would drop us a line to explain all of these tactical ID's!— Ed.

6795: Sofia Meteo, Bulgaria w/coded wx at 0144, 425/66R (Kirk, CT).

6826.5: VDD, Halifax, NS testing at 0040, 120/75R (Hetherington, FL). I can't locate VDD in any of my references. Whatzit?? VCS is the Halifax CG station. Station VAL of the Canadian CG at Cartier PQ is listed here as an RTTY station— Ed.

6972.3: Agerpress nx in EE from Bucharest, Romania at 1903, 66 wpm (Freud, FRG).

7229: The famous "Le brick" test tape from FDY, French Air Force, Orleans, France, noted at 2235, 350/66R (Kirk, CT).

7423: 5YD, Nairobi Aero, Kenya, w/coded aviation wx at 2142, 425/66N (Ed.).

7505: Un-ID meteo sta w/coded wx at 0158, 425/133R (Ed.).

7512: ZRO2, Pretoria Meteo, RSA w/wx in EE for Central Botswana at 0339, 425/100N (Ed.).

7520: XINHUA agency, Beijing, China w/RURY at 0140 & nx in EE at 0144, 425/66R (Ed.).

7592: Nx in FF from TANJUG, Belgrade, Yugoslavia at 2235, 500/66R (Ed.).

7658: Another EE nx xmsn from TANJUG at 2252, 425/66R (Ed.).

7920: From Fred Hetherington's DX diary after he logged coded wx in TDM mode at 1100 from Macquarie Island: "Owned by Australia. (Located) 600 miles SW of New Zealand (54.36S & 158.55E, near Antarctica. Measures 2 miles by 21 miles. Discovered in 1810. Created as a nature reserve in 1933. The only known breeding ground of the royal penguin. Has had a meteo station since 1948." A ribbon of TTY tape to you, Fred, for the great catch & for the info— Ed.

8439: PBC38, Dutch Navy, Goeree Island, Holland w/RURY at 1138, 850/100R (Walfgang Palmerberger, FRG).

9086: Y7A38, MFA Berlin w/RURY xmsn at 1252, 400/135R (Kneitel, NY).

9136: TJK, ASECNA, Douala, Cameroon, sending coded wx at 0037, 425/66N (Ed.).

9190.5: Coded wx from Moscow Meteo, USSR at 0649, 900/66R (Ed.).

9192: PAP Warsaw, Poland sends this at 1723: QRA DE SOJ219 9191 kcs & SOH284 7845 kcs

(-RURY); then at 1730: "End cast. QRX 2100 GMT SOH272 7725 kcs & SOG280 6805 kcs 5KSK." Was 426/66R (Ed.). PAP also sends this at 0048: "QRX 1100 GMT SON279 13793 kcs & SOL249 11494 kcs (Hetherington, FL).

9355: CTK Prague, Czechoslovakia w/nx in EE at 1651, 425/66 (Kirk, CT).

9966.5: Y2V54/9, ADN Berlin, GDR w/RURY at 1258 beamed to Southeast Asia, 425/66N (Kneitel, NY).

10730: MINREX Havana, Cuba, spotted at 2117 w/tfc in SS, 425/100R (Steven Jones, NY).

11063: Sofia Meteo, Bulgaria w/5F wx bc at 66 wpm, noted at 1550 (Freud, FRG).

11536: Nx in FF from AFP Paris, France, 350/66N at 1841 (Ed.).

11670.5: IDQ, Rome Navrad, Italy w/RURY at 2350 (Hetherington, FL). No RTTY setting given.

12065: EPD, Teheran Aero, Iran, w/flight instructions in EE at 0235, 425/66N (Dallas Williams, CO).

13076: VIP40, Perth, Australia in comms to un-ID ship at 0910, ARQ mode (Hetherington, FL).

13086: DCF, Norddeich R., FRG in ARQ at 1940 sending in EE re handling automatic Telex tfc (Hetherington, FL).

13400: LZG3, BTA Sofia, Bulgaria at 1904 w/nx in (presumed) Bulgarian, 525/66N (Kneitel, NY).

13440: TANJUG nx in EE from Belgrade, Yugoslavia at 1400, 425/66R (Ed.).

13482: DPA Hamburg, FRG w/nx in EE at 1342, 425/66N (Ed.).

13585: HBD20, MFA Berne, Switzerland in ARQ w/diplo texts in FF re fibre optics. Noted at 1327 then into 1 minute of FEC mode at 1329, then returned to ARQ at 1330 w/bulletins in FF (Kneitel, NY). Noted 1556-1610 w/5L groups in ARQ (Ed.).

13609.8: TAP Tunis, Tunisia w/nx in FF at 1551, 600/66R (Ed.).

13648: CTK Prague, Czechoslovakia w/nx in FF at 1547, 425/66N (Jones, NY).

13984.4: Mintex, Havana, Cuba w/RURY & circulars in SS at 1955, 550/66N (Ed.).

14490/14510: TASS Moscow, USSR w/nx in EE at 1330, 425/66R (Ed.).

14569: MFA Berlin, GDR w/nx in GG, 500/66N at 1335 (Ed.).

14574.5: MAP Rabat, Morocco, w/nx in EE at 1335, & in AA at 1517, 425/66R (Ed.).

14584.5: FDY, French AF, Orleans, France w/"Le Brick" & RURY at 1520, 425/66R (Ed.).

14603.5: MKD, RAF Akrotiri, Cyprus w/RURY & foxes at 1400, 170/66R (Ed.).

14605: MFA Berlin, GDR w/nx in GG at 1336, 425/66R (Editor).

14633: 9UA, Usumbura Aeradio, Burundi, w/RURY at 1825 & coded wx at 1900, 425/66N (Ed.).

14671.2: MKD, RAF Akrotiri, Cyprus filtering thru under CHU's time pips w/RURY & foxes, 170/66R at 1318 (Ed.).

14675.5: Can anybody figure out who sends this at 1653: RURY then "Okey QSA QSA -100000 -100000 RX RX RX 004 -004 -004 OKEY? OKEY OKEY REMETELE OKEY? ASASASAS" Ended at 1657 w/no further tfc. Was 900/66N (Ed.).

14690: RIC73, APN Moscow, USSR nx in AA at 1409, 425/100R (Ed.).

14760: Nx in FF from MAP, Rabat, Morocco at 1651, 425/66R (Ed.).

14764: Nx in AA from GNA Manama, Bahrain, 425/100R at 1218 & 1411 (Ed.).

14811: Un-ID sta w/nx in EE at 1430, 400/66N. Every time the nx agency's name would appear it would be garbled. Once it looked like KKKNA, leading to the suspicion it was KUNA. Safat, Kuwait. Help! (Ed.).

14812.7: HGX21, MFA Budapest, Hungary at 1700 w/RURY to HGX55, the Hungarian Embassy in Algeria, followed by tfc in Hungarian. Ended at 1707 (Ed.).

14841.5: Un-ID station w/5F gps in ARQ at 1445. Your guess is as good as mine! (Ed.).

RTTY Intercepts (All times are UTC.)

2446.2: "Lima Kilo Foxtrot Juliet," a US mil station at 0300 w/encryption, 120/60 to "272 Papa," ID's by USB tfc on 2446 kHz (Ed.).

2682: NMF, USCG Boston, MA in FEC mode w/Navtex & Hydrolant xmsn. Announced they had new equipment & were seeking reports & comments sent to P.O. Box 608, Marshfield, MA 02050. Time was 0220 (Tom Kneitel, NY).

2822: Greleng Meteo, FRG w/wx bc in EE & GG at 1610 at 66 wpm (US Army M/Sgt David Freed, stationed in FRG).

3292.3: GYA, Royal Navy, London, England w/foxes, 830/100R at 0145 (Fred Hetherington, FL).

3311.8: Comms in EE from a drilling rig, ARQ mode at 0930 (Hetherington, FL).

4215: Endless RURY xmsn w/o any ID, noted at 0257 in 525/66R (Kneitel, NY).

4334.4: FUE, Brest Navrad, France w/RURY/SGSG at 0755, 850/100R (Hetherington, FL).

4351.5: WLC, Rogers City, MI w/wx synopsis for Great Lakes region, FEC at 2140 (Ed.).

The tactical ID refers to Simon Bolivar, the famed Venezuelan general of the early 19th Century (Ed.).

14932.2: AP5 Algiers, Algeria w/nx in AA at 1615, 850/66N (Ed.).

14937.5: SUA, ASECNA, Naimey, Niger w/coded wx at 1600, 600/66N (Ed.).

15867: LOL, Buenos Aires Navrad, Argentina w/R/YRY & S/GSG at 1903, 170/100N (Jones, NY).

15950: CXR, Montevideo Navrad, Uruguay, w/R/YRY & faxes at 1848, 425/100N (Jones, NY).

16012: A report on Cuban-Nicaraguan relations sent from Minrex, Havana, Cuba runs encrypted at 1621, 500/100N (Ed.).

16041: MKK, British mil sta, location not known, w/R/YRY at 1449, 160/66R (Palmerberg, FRG). It's the RAF in London-- Ed.

16081.7: Tfc in SS from un-ID station in ARQ at 1510. RTTY stas listed here are the French Embassy in Algeria & some other type sta in Beirut, neither of which would use SS. Whatzit & wheretit? Ed.

16107.5: HBD20, MFA Berne, Switzerland sends only its callsign at 1230 in ARQ. On another day, a sta was idling 1435-1521 before s/off as HBD29, a Swiss embassy of unknown location. Anybody got a handle on the location of HBD29?? (Ed.).

16117: PANA Dakar, Senegal relays nx from Batswana Press Agency (BOPA) at 1551, 425/66R (Ed.).

16134: Nx in EE from MAP, Rabat, Morocco, 425/66R at 1323. Was running //15999.8. Nx in FF noted at 1555 (Ed.).

16224: CNA, Taipei, Taiwan w/R/YRY at 1323, 850/66R (Palmerberg, FRG).

17183: Tfc in 5F gps & GG sent by Y5M, Ruegen R., GDR to E. German merchant vessel w/callsign Y5AB, 1405-1408, 170/66R (Ed.).

17518.5: Un-ID sta in Bonn, FRG w/callsign DMK found in TDM mode at about 1420 w/encrypted tfc. ID sent in CW. Another "whatzit!" (Hetherington, FL).

18040.5: Nx in Turkish from Ankara, Turkey at 1238, 850/66R (Hetherington, FL).

19334.5: CLP7, Cuban Embassy at Brazzaville, Congo w/5F tfc to CLP1 in Havana, 425/66N at 1750 (Hetherington, FL).

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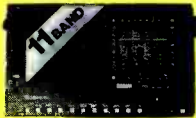
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EEB is ICOM's #1 R71A dealer and there is good reason. We offer more modification to enhance your listening pleasure and take better care of you. This is our 15th year. Buy with confidence.



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ICOM Options Free installation when purchased with your R71A from EEB

- CK-70: DC Kit for 13.8 VDC operation
- CR-64: High stability oscillator
- CK-70: DC kit for VDC operation
- CR-64: High stability oscillator
- EX309: Computer interface connector
- EX310: Voice synthesizer
- FL32A: CW narrow filter (500 Hz)
- FL44A: Crystal filter (2.4 KHz)
- FL63A: CW narrower filter (250Hz)
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R71 (HP) High Performance. EEB has the reputation of excellence when it comes to R71A modifications. Many of our modifications are proprietary and not offered by any other source. EEB now offers a package deal including our most popular option—known as the R71(HP) High Performance and includes the following:

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America's Most Off-The-Wall Broadcaster?

**He Was Successful, Influential, Rich, and Famous —
And He Thought That He Could Defy Gravity!**

BY TOM KNEITEL, K2AES, EDITOR

American broadcasters have certainly included some of the more interesting and unusual folks to be found. There was a quack doctor who performed goat gland transplants on people, there was the sworn enemy of chain stores, and even a broadcast licensee who insisted that the world was as flat as a pancake. Odd? Outrageous? Successful? Yes! But they had nothing on Roger Babson, the man who had conquered the business world and then sought to defy gravity itself!

Roger Babson was born in July of 1875. Graduating in 1898 with a degree in civil engineering from the Massachusetts Institute of Technology, he practiced his profession for three years until he contracted tuberculosis, which proved nearly fatal. When he recovered, he sought to find a new vocation that was less strenuous than engineering. Electing to apply his engineering principles, especially the laws of action and reaction, he decided to become involved in economics and investment. At that point he formed the Babson Statistical Organization and commenced to issue a publication called *Babson Reports* that offered tips on the stock market. This was an enormously successful enterprise that produced considerable revenue for Babson.

Eventually, Babson parlayed his business savvy into an empire consisting of companies that sold sand and gravel, distributed lobsters, manufactured fire alarms, produced sheep in Arizona and New Mexico, owned an office building, a chain of dime stores, a cattle ranch in Florida, and a diamond company. Hundreds of newspapers carried his weekly stock market column. He also wrote more than 50 books.

Babson founded no less than three respected business schools, Babson College (Wellesley, MA), Utopia College (Eureka, KS), and Webber College (a women's school in Florida).



Roger Babson, economist, financial advisor, statistician, entrepreneur, author, broadcaster, federal government official, Presidential hopeful, and serious searcher for a gravity insulating alloy.

Babson, was a rather flamboyant and colorful personality. One investment broker who had worked with him likened him to P.T. Barnum and described him as an autocrat who kept a tight, one-man control over his extensive business operations. At the height of his success, he was tall and distinguished, with silver hair, a moustache and goatee, and an always-present bow tie.

Babson was not only successful, he was the type of dynamic and charismatic personality that attracted acclaim and honors. During World War I, Babson was appointed Director of General Information and Education by the U.S. Government, a post he held for the duration of the war. Thomas Edison was a friend and confidant who freely discussed with Babson his unexplored theories and future projects.

Babson claimed that his stock market predictions were governed by the dynamics of moving forces—action and reaction. If the

market rose, that would lead to a drop in prices. When prices dropped, market prices would surely rebound—a concept that is still considered valid by many investors. In 1926, Babson's calculations determined that (despite predictions by other advisors that a bull market lay ahead), Wall Street was heading for a sharp downturn in prices. He maintained his position until the 1929 Wall Street "crash" occurred.

In 1926, Babson also decided that radio broadcasting was worthy of exploration as a possible medium for promoting his financial advisory services. In December of that year, Babson obtained a broadcasting license for a station to be known as WBSO. The 100-watt station operated on 780 kHz and was located in Babson's offices on Prescott Street in Wellesley Hills, MA, a wealthy Boston suburb. At first, WBSO was primarily concerned with testing the technical potentials of broadcasting such as signal coverage. In short order, Babson was using the station for his Institute and also for carrying religious programs for area churches.

January of 1929 saw WBSO expand its scope of operations, having moved to 1240 kHz and increased power to 250 watts. A stock ticker was installed in the studio for a daily 15-minute financial advisory program. Two rack-mounted shortwave receivers were used for bringing in up-to-the-minute world market prices. WBSO used a center-fed transmitting antenna. Receiving antennas strung on telephone poles were in abundance.

A year later, WBSO had increased its power to 500 watts while awaiting the construction of a 1-kW transmitter and a new building in the Babson Park section of Wellesley Hills. The station had switched to a frequency of 920 kHz and was then running a daytime-only schedule. In early 1931, WBSO announced that its new structure was ready for use and that the station would henceforth be actively seeking new listeners

Radio Station WBSO

While it has not been generally known, the Babson Statistical Organization has owned and operated a radio station since receiving its first license from the Federal Radio Commission in 1926. This station until recently was housed in our office building in Wellesley Hills and being only of 100 watts power with a consequent limited range was used solely for our own use and in connection with certain broadcasts for the Massachusetts Federation of Churches.

A year ago, upon being granted permission by the Commission to construct a new 1000 watt station, work was at the same time begun upon a building at Babson Park, Massachusetts, to house the studio and new transmitter. Within the last two weeks construction of both studio and transmitter was completed and Radio Station WBSO is now on the air during *daylight* hours with a variety of programs.

WBSO is licensed as a one kilowatt station operating on 920 kilocycles and 326 meters. At present it is using only 500 watts power, yet, because the transmitter incorporates the latest and most efficient phases of radio construction, its range is over an unusually wide area. We, however, are especially interested in thoroly covering the New England States. This territory embraces more than 8,166,341 people and is in itself a large enough market for any bankers, merchants or manufacturers who wish to reach, via radio, the cream of New England prospects.

Altho first constructed as a practical working laboratory for the study of radio problems, the station is now available to clients desiring to try out any radio advertising or publicity work they may have in mind before entering into contract with the larger chains. Station WBSO is, therefore, now available to clients and will accept approved commercial business in the public's interests for which the Babson Statistical Organization has stood during the past twenty-seven years.

Clients confronted with a radio problem and desiring further information with respect to the facilities offered by Station WBSO for daytime broadcasting or a rate card outlining the charges for time, are invited to address Mr. Winslow L. Webber, Manager WBSO, Babson Park, Massachusetts. Incidentally, we have some decided opinions regarding the value of radio broadcasting with respect to certain enterprises and will frankly state whether or not we believe the radio would be of value for your particular business.

Babson's

In this press release of 1931, WBSO announced that it would compete in the commercial marketplace. After a five year quest to explore the financial rewards of broadcasting, Babson decided to sell WBSO and pursue other interests.

and new sponsors. Records, however, appear to indicate that WBSO moved at that time to Great Plain Avenue in the nearby town of Needham.

It may be that the station's daytime-only schedule and relatively low power, combined with the generally depressed financial conditions of the public, made WBSO something less than Babson had hoped for. After four years of dabbling with WBSO as a commercial contender for New England listeners, in December of 1935, Babson (without the necessary federal approval) sold the station to new owners, the Crockwell Broadcasting Company. Crockwell wasted no time in moving the studios to Boston's Myles Standish Hotel (610 Beacon Street) and changing the call sign to WORL.

In 1940, Roger Babson briefly turned his interest to politics. That's when he sought the U.S. Presidency on the Prohibition Party ticket. Unfortunately for Babson, Frank-

lin Roosevelt (with the backing of the Democratic Party) proved to be an unbeatable opponent. By then, Babson was 65 years of age and had begun to think about how his theories might be applied to things other than business and politics.

His interest in action and reaction had generally served him well. It was the time-tested theory of 'things that go up must come down'—Sir Isaac Newton had discovered that about 250 years earlier. Newton's Third Law of Motion (for every action there is an equal and opposite reaction) set him to thinking about something that Thomas Edison had told him many years earlier. Edison suggested to Babson that he might devote some effort to discovering something that "isolates from gravity." Edison thought that Babson ought to check out different types of alloys for this gravity screen.

Unless Einstein's conclusions and theories are totally incorrect, the discovery of

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such a substance would be impossible. This factor didn't impress Edison, and it didn't scare off Babson either. Babson theorized that gravity was a force that exerted an attraction influence upon all objects. Einstein's concept was that gravity is a warping of the space-time continuum and not a force that can be screened off or shut down.

Babson spent several years formulating his theories on gravity and how it might be filtered out when, in 1947, the accidental drowning of his teen-aged grandson summoned him to direct action. He felt that gravity was like a dragon that had seized the boy and dragged him to the bottom. In 1948 he established what must surely rank with the most inane quasi-scientific projects of modern times. It was called the Gravity Research Foundation and was located in New Boston, NH. The purpose was to be a forum for the exchange of information by those seeking to harness gravity.

Towards this end, the Foundation began placing ads in *Popular Science* and *Popular Mechanics* calling for essays on harnessing or isolating gravity. Six cash prizes totalling \$1500 were offered. In 1951, the Foundation held a Summer Conference for those who were serious researchers in the field of gravity isolation. Babson provided those in attendance with information on a medicine he had formulated (it was called *Priscolene*) that could supposedly improve blood circulation because of its alleged anti-gravity properties.

The Foundation issued or sponsored many quasi-scientific essays relating to how gravity affected weight loss, health, human locomotion and personality, prayer, Biblical events, birds, posture, sitting, sleeping, ventilation, crops, politics, business, etc. A treatise on power suggested a manner in which the hypothetical and elusive gravity insulator might be employed in connection with a rotating wheel to offer a source for generating unlimited power. This was a basic perpetual motion machine (although the Foundation stopped short of using that term because they claimed that there had been a plethora of crackpot and fraudulent devices using that title).

All of these essays brought a considerable amount of derisive laughter from the scientific community. As for Babson himself, he admitted that he wasn't a scientist but he knew what he was trying to find out and he was working towards his goal.

To the best of anybody's knowledge, Roger Babson still had not reached his goal by the time he passed away in March of 1967 at age 91. Despite his outrageous and absurd adventures in the world of physics, his long and distinguished career as an investment advisor was never compromised nor diminished and he has always been regarded as the pioneer Wall Street tipster. Babson College remains a top-notch academic institution.

And what of WBSO after it was sold and became WORL? In 1937 the station still operated on its long-standing daytime-only

BABSON'S STATISTICAL ORGANIZATION

INCORPORATED

REPORTS ON BUSINESS AND INVESTMENT CONDITIONS

WELLESLEY HILLS, MASS.
(SUBURB OF BOSTON)

December 9, 1930.

Dear Mr. Hueter:

We wish to thank you very much for reporting reception of our station's test program.

According to the selections heard we believe it was Station WBSO to which you were listening.

We shall be glad to hear from you in the future concerning our station inasmuch as we are just beginning to use the new transmitter. If you have any requests to make as to selections to be played, we shall be only too glad to receive them.

Cordially yours,
STATION WBSO
By

Hamilton Bates

Hamilton Bates

A QSL letter from WBSO, courtesy Joe Hueter, PA.

schedule, using the slogan, "News—Of the Hour, On the Hour, Every Hour."

In 1940, a new 380-foot steel tower was installed at Needham and the power was increased to 1 kW; a year later the frequency was changed to 950 kHz. In 1943, the studios were moved to the ninth floor of the Union Savings Bank Building, 216 Tremont St., Boston.

The station had changed owners several times during these years and when its license came up for renewal in 1945, the FCC was displeased about the manner in which transfers had been made without suitable FCC authorization. WORL operated with a temporary license while it valiantly fought to obtain a regular license. The fight, like Babson's search for a gravity insulator, was one of those impossible dreams. The renewal was denied in May of 1949.

On Tuesday, May 31, 1949, during the station's popular recorded music program, "The 950 Club," the station ceased broadcasting. The station's owners announced to listeners that WORL "was losing money." In

actuality, they had fought for four years to renew its license.

As Newton and Babson had both said, "What goes up must come down."

Credits

The author would like to thank the following for their invaluable aid in the preparation of this article: Broadcast Pro-File of Hollywood, CA; Neil F. Dunn (W1WV) of Danvers, MA; Joseph Hueter of Pennsylvania; Francis D. Donovan of Medway, MA; Elizabeth Tate, Special Collections Librarian of Babson College, Wellesley, MA.

Additional Reading

Actions and Reactions, (autobiography) by Roger W. Babson.

Fads and Fallacies In The Name of Science, by Martin Gardner, Dover Books, New York, 1952/57.

Christian Science Monitor, issue of 29 January 1929, "Babson Station New Air Feature—Market Surveys to go out from Wellesley Hills." PC

BROADCAST TOPIX

BY MARK MANUCY, W3GMG

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

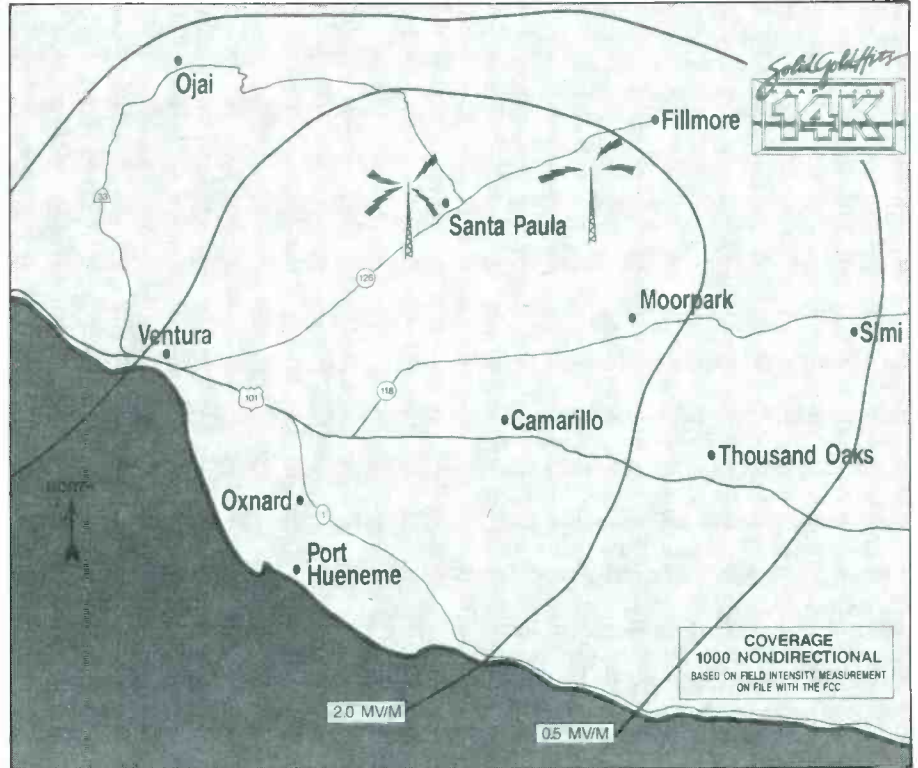
April will be the month for extended early morning DX'ing as Daylight Saving Time will begin three weeks earlier than it has in years before. Many stations will be operating at a lower power than normal and many will be at an extremely low power. Between the time this month's column is being written and the 1st of April the FCC may give these stations some form of relief. Just what will happen is up in the air. Anyway look for stations that you would not normally hear at this time of year. This gives us an extra hour of nighttime to play with.

Those readers of high school age or younger that might be interested in starting a closed circuit radio station in your school might want to write to Roland Davis or Pete Greene at Franklin High School in Franklin, PA 16323. WFHS is totally student operated and is on the cable (88.5 MHz) from 8 a.m. to 3:15 p.m. The station is supported in the community by WFRA/WVEN and the Cable Company and by a vending machine company. They boast several former announcers who have chosen radio as a career. They have at least eight newscasts each day. Another student run station is CJSR, also 88.5, at the University of Alberta in Edmonton. Ron Jack sent me a clipping from the Chinatown paper advertising the weekly program "Chinese Connection" on CJSR.

The NAB has had a setback in their effort to get an experimental broadcast station on the air in Loudon County, VA, outside Washington, D.C. The zoning board has turned down their request for a tower to experiment with skywave propagation of the broadcast band. This is not the final word, but they had hoped to be on the air already. This is one of the stations that will be operating between 1600 and 1700 kHz experimenting in an effort to reduce skywave propagation from a vertical broadcast antenna. The other station near Beltsville, MD is progressing favorably at this time.

A lot of questions about FM antennas come to me. The most recent was from David Bush and several others over the last few months. For FM DX'ing, as with AM DX'ing, a good antenna makes for better reception. The problem with the FM set is overload. Many of the portables around today cannot take the amount of signal present in the city. They just croak and you hear signals from many stations all over the dial. This is not always the fault of the radio but, more often than not, there is nothing the DX'er can do to make the situation better other than moving to the quiet country.

My situation is typical of the city dweller. I have several receivers that do not overload on the strong signals, however, the strong



signals still occupy several adjacent channels on either side of their assigned frequency because they are so strong. So, for every city station, I lose anywhere from 2 to 4 additional channels on either side of the main frequency. A more expensive receiver with a sharper and steeper IF pass band would reduce this "bleed over," but how many readers can afford this kind of money? A directional antenna will help and cost a lot less.

The Yagi is the most popular FM antenna and usually has from 4 to 10 elements. The more elements the antenna has the sharper the "nose" of it will be. The most popular

size right now seems to be the 6 to 8 element antennas. These antennas definitely require a rotator of some description. If you live in the city, I would not recommend using a preamp. Country-cousins can take advantage of getting the maximum signal to noise ratio.

If the preamp is mounted at the receiver, then the coax cable attenuates the signal before reaching the preamp thereby creating additional noise in "front" of the preamp. The preamp then amplifies this noise along with the other signals. A mast-mounted preamp will boost the signal *before* the coax attenuates the signal and therefore pass more

MAJIC 100

KMJI-FM

signal and less noise on to the receiver. Also, install the preamp in front of any splitter.

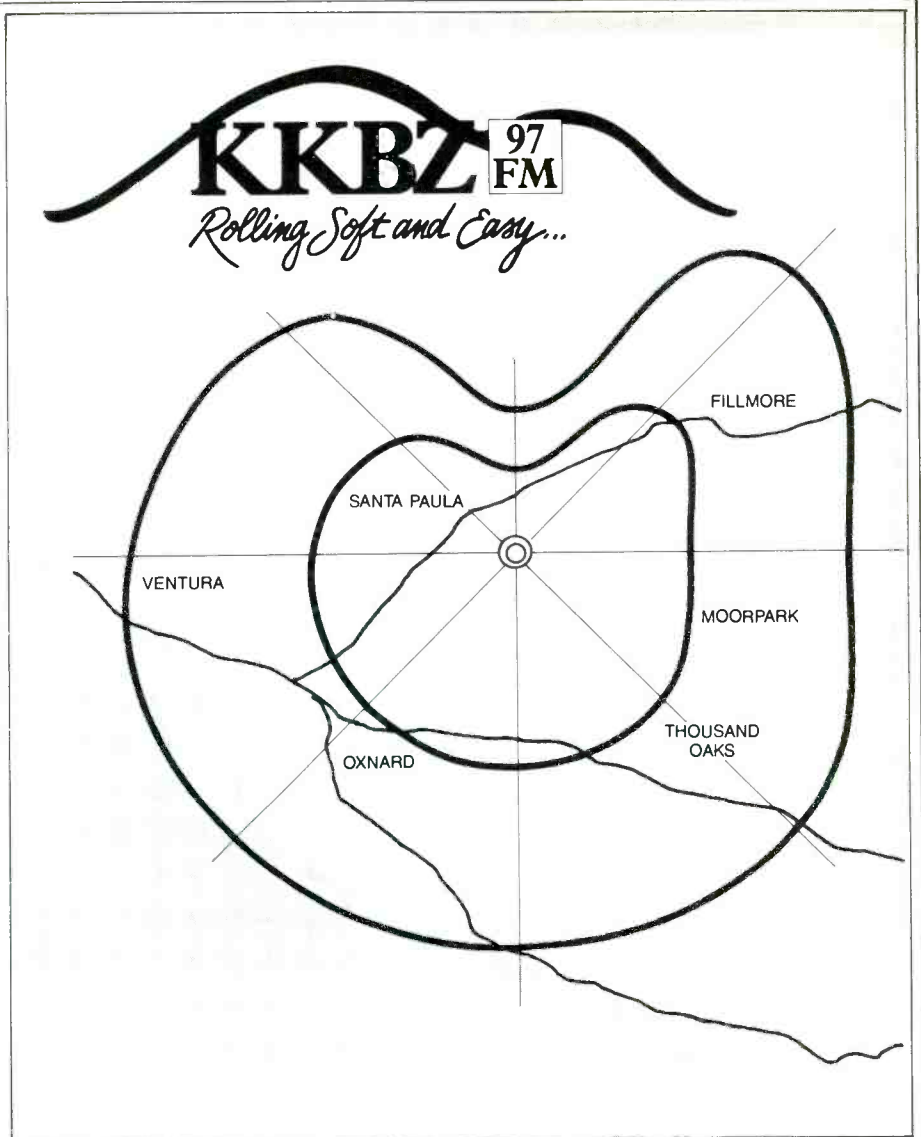
The Yagi antenna picks up best with the nose of the antenna pointed toward the desired station. Minimum pickup is off the sides of the antenna. The reception off the back of the antenna is much worse than the front reception, but not as poor as off the sides. If this is not the case with your FM Yagi then it may not be mounted in the clear or perhaps there is some other problem with it. I would recommend the use of RG-59 for the lead wire. If this is not available use the 300-ohm cable with a complete shield around the twin lead (shielded twin lead). This will allow the cable to last longer and prevents any outside signal from interfering with radio reception.

Regular 300-ohm flat cable and even the oval kind will deteriorate over a period of time and the FM reception will get worse and worse. This is also true of coax but the ribbon cable deteriorates at a much faster rate. The 300-ohm line is also more difficult to install as it has to be kept clear of metallic objects whereas the coax or shielded twin lead may be taped to almost anything.

Here are some tricks to try with the Yagi. Since the reception is least off the side of the antenna you might try nulling a strong station to the side of the antenna instead of the back. It is true that the maximum gain area, which is the front, will not be toward the desired station in every case but sometimes it is better to make the stronger station as weak as possible without regard for the desired station. This trick may also allow an adjacent channel station to be heard next to a local.

Null the strong local using the signal meter while tuned to the adjacent channel. Chances are the signal meter won't move regardless of the antenna position when tuned to the local station's frequency. It doesn't take much signal for these meters to go to full scale. It may be necessary to try the second adjacent channel to obtain a null. Remember there will be nulls on both sides of the Yagi. Some will be deeper than others. Use the one necessary to log the station you are after or the one that completely nulls the local station.

Once the null is found on each local channel it will be easier to find it the next time. However, the null will have to be adjusted



each time you are listening. The null could be too sharp for the rotor to remember the exact position unless: A) The rotor system is very expensive or, B) the Yagi has broad and deep nulls. Expect the nulls to be sharp and deep. If the null is poor then the antenna is located poorly or might be defective, or the lead-in is picking up too much signal which is why I suggest coaxial lead-in. The more elements, the more gain off the front and the deeper the side nulls. Stacking two

antennas of the same type gives 3 db more gain and makes the beam slightly sharper. The antennas must be stacked in accordance with the manufacturers instructions. You can't just put up two antennas any old way and think they are stacked!

Splitters divide the signal in half. If you use one, the signal at each set is 50% of what it would be directly. If two splitters are used then the signal is 50% of what was available at the input to the second splitter and so on down the line. Be sure, if using a splitter, that it is the same type as the lead wire, i.e., coax with coax and 300 ohm with 300 ohm. Again, I recommend the coaxial type.

Those of you experiencing Cuban interference on your favorite channels might be interested in a recent FCC release showing high-power Cuban operations on some frequencies including: 100 kW on 910 kHz and 1380 kHz; 130 kW on 630 kHz; 150 kW on 600 kHz and 300 kW on 1160 kHz.

Many operators of AM stations are so anxious to get a full-time facility that expense does not seem to matter. I recently heard of a daytimer that wants to move to a



Station Updates

Call	Location	Freq	Pwr	Ant
AM				
WDLP	Panama City, FL	590	1.7/2.5	DA-N
WJFF	Hope Valley, RI	1180	1.8/0	NDA
WJJY	Brainerd, MN	1270	5/5	DA-N
WJBD	Salem, IL	1350	.43/0	NDA
KTRO	Port Hueneme, CA	1520	10/1	DA-2
KJSM	Sequim, WA	1520	20/0	DA-D
FM				
WRAS	Atlanta, GA	88.5	100	436'
KAUR	Sioux Falls, SD	89.1	.680	184'
KRBM	Pendleton, OR	90.9	25	666'
KEBC	Oklahoma City, OK	94.7	100	1387'
KOOS-FM	North Bend, OR	94.9	15	590'
WMSP	Harrisburg, PA	94.9	50	699'
WTYD	New London, CT	100.9	3.0	328'
WBAZ	Southold, NY	101.7	2.7	341'
KLTB	Boise, ID	104.3	52	2574'
KXYQ	Salem, OR	105.1	100	1840'
KQQK	Galveston, TX	106.5	100	699'
WIZN	Vergennes, VT	106.7	50	374'
WOWW	Pensacola, FL	107.3	100	1421'

Key: D = Daytime, N = Nighttime, DA = Directional Antenna, DA1 = Same Pattern Day & Night, DA2 = Different Pattern/Power Day/Night, NDA = Omni Antenna Day and/or Night, * = Special Operation or Critical Hours, N/C = No Change.

clear and to do so will give up his 250-watt facility for another 250-watt channel on which he can operate at night. The catch is, to operate with a kilowatt at night, requires a different site miles from the daytime location and nine towers! No doubt someone will

pick up his present frequency creating another station in the market. The overhead for 2 sites with 10 towers to maintain is out of sight!

Just where is AM DX heard? One never knows. A letter from Tracy Sands in Califor-

nia, tells how he was tuning across the dial one night and heard a signal that normally was not present, just a carrier, but after listening, realized it was a kilowatt station half the country away. Goodland, Kansas was having a weather emergency and KLOE was exercising their EBS right. Their normal 24 watts at night didn't quite serve the need and as a result Tracy not only got a QSL but a T-shirt as well.

Ted Hodges asks whether or not a loop antenna would help him receive Detroit area stations such as WJR in his present home in Delaware. The way the band is being cluttered up with new stations it is definitely going to require a loop antenna to receive much of anything before long. Soon, with a wire antenna, most frequencies will sound the same—just a roar! I have printed a three-page, small print paper on loop antennas which tells of their benefits and differences. Any reader may have a copy by sending me a SASE requesting same. Don't just send the envelope without a note because I have several SASE offers including the C-64, C-128 programs so I won't know what you want if you don't tell me. Other offers include box loop plans for \$5.50 and ferrite plans for \$7.50. ICOM R-70/71A mods to improve AM sensitivity are \$2.50 and an eight-page, small print listing of U.S. AM stereo stations is \$2.50. All post-paid from me at Box 5624, Baltimore, MD, 21210.

Speaking of stereo, there is a group own-

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OLDIES



AM 1150

er in New Jersey who has petitioned the FCC to require receiver manufacturers to install a decoder capable of receiving both Kahn and C-Quam stereo systems in all stereo radios. This would be on par with the ruling some years back requiring TV sets to tune the UHF channels as well as the VHF channels. Probably makes more sense than anything else recently occurring in the "AM Stereo Wars"! The battlefield is quiet this month.

I still get inquiries about the Sony AM stereo radio, SRF-A100, which has been discontinued for quite some time now. Seems the best TV shows are the ones they cancel too, doesn't it! Anyway, if you act fast, it is my understanding that the NAB in Washington has purchased a group of these that were left over from somewhere. They may

be gone by the time you read this but you might give them a call to check. Always keep your ear to the ground as one never knows where a bargain might show up. I was buying some cassettes the other day when I spotted a used equipment list and bought a \$200 Sony cassette deck for \$10. The problem . . . a screw driver corrected a stuck head stack lever and a piece of plastic cut from a cassette box replaced the front door plastic which was missing. Otherwise the unit doesn't have a scratch on it and performs first class! Sony does have an AM stereo boom box, mentioned a few columns back, but, other than auto radios, the market is pretty dry for multimode AM stereo radios right now. Sanyo was supposed to have a chip out at the end of 1986 for multimode but as of this writing I have not seen it.

This would be a big help for do-it-yourselfers.

Another new product on the market is the PORTAQUAD 901. The who? It is an FM antenna designed to receive on the FM educational band, 88-92 MHz. This antenna weighs four pounds and folded up is 29 inches by 3 1/2 inches. According to Middlesex Farms Antenna Division it has high gain and is portable. It also has a high price tag—\$175. The claims are big and, even though it has a 15-day money back guarantee, I think it would be wise to write for more information before spending bucks for a limited-use antenna. The address is Box 609, Hudson, MA 01749. I have not seen it or tested it. I haven't even seen any specifications other than what you have read here.

That's the show for this month! Catch my address a few paragraphs back.

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Call Letter Changes

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Placerville, CA
Pompano Beach, FL
Salina, KS
Topeka, KS
Brewer, ME
Gaithersburg, MD
Ennis, MT
Albuquerque, NM
New Bern, NC
Greensburg, PA
Santee, SC
Tulahoma, TN

WRFS
New
WBSS
KNNN
KSKX
WMLI
WMTG
New
KOB
WRNB
WXVX
WMNY
WCWY

WSTH
KTLL
WWHR
KICT
KEWI
WGUY
WMET
KKMT
KKOB
WLOJ
WNVU
WGZS
WKQD

FM Stations

Alexander City, AL
Ketchikan, AK
Chaular, CA
Hanford, CA
Lompoc, CA
Crested Butte, CO
Wichita, KA
Harbor Beach, MI
Gladstone, MI
Albuquerque, NM
Healdton, OK
Newport, OR
Tulahoma, TN
Hamlin, TX
Austin, TX
Strasburg, VA
Ravenswood, WV
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KICT
WWTM
WWIA
KOB-FM
KZEA
KNPT-FM
WKQD
KRRS
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New
New

WSTH-FM
KGTW
KHDC
KCLQ
KBOX
KBUT
KICT-FM
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WWTM
KKOB-FM
KTYX
KYQT
WKQD-FM
KWZD
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PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Microprocessor-Controlled Trunking Mobile

Standard Communications has expanded its trunked radio system mobile line with the introduction of a microprocessor-controlled model.

According to Roy Place, Director of Sales, Land Mobile Division, The GX3000TJ is based on Standard's highly successful GX3000 Series mobiles. It is compatible with the LTR trunking system. "The GX3000TJ is truly operator friendly," Place said. "It offers microprocessor control of up to 80 trunking channels, with pushbutton access to four systems, each with four subgroups. Each subgroup has one transmit ID code and four receive ID codes for a total of 16 transmit and 64 receive codes."

Programmable features include Call Verify, Interconnect, System Scan and Horn Alert (for use in communities where regulations permit). With Call Verify, during an unattended call, the receiving unit responds with a tone to demonstrate that it is still active. An LED illuminates on the unit to show that the call has been received.

Interconnect allows the GX3000TJ to interconnect with telephone lines. System Scanning searches the first subgroup in each programmed system for busy channels, allowing monitoring of total system activity.

Other specifications include 25-watt power output, dimmable LED display, and pushbutton, high-speed channel and function operation. Both compact and lightweight, the GX3000TJ measures 2 1/4" x 7" x 10" and weighs 5 1/2 lbs. It may be mounted conventionally in most vehicles.

More information is available from Standard Communications Authorized Sales and Service Centers, or by contacting:

Standard Communications, P.O. Box 92151, Los Angeles, CA 90009, or mark number 102 on our reader service card.



America Series Cellular Telephone

Motorola's Cellular Systems Group introduces the America Series 630 Cellular Mobile Telephone.

The unit, available through a limited number of retail dealers in selected cities, features Motorola's trim, comfortable deluxe handset design with dial-in handset convenience. Key features and capabilities include storage and recall of up to 101 telephone numbers (including lengthy international listings), a 14-digit fluorescent display for total readability day or night, user programmable key pad and memory restrictions, super-speed calling from all memory locations.

Other features include Touch-Tone® signaling, including Touch-Tone® from memory, for alternate long distance carrier access such as MCI™ or GTE Sprint®; pager triggering; electronic banking and other telecommunications service. Call transfer and three-way calls are possible with the switch-hook operation.

The America Series 630 mobile telephone includes primary status messages, pushbutton control of the earpiece, speaker and ringer volumes, and an internal call processing speaker.

Key options available with the America Series 630 Cellular Mobile Telephone include Motorola's patented and field proven "V.S.P." or "V.S.P. II" Vehicular Speaker Phone for true "hands free" conversation in the car.

Additional information about the America Series 630 Cellular Mobile Telephone, its many features and benefits, is available from Motorola, Inc., Communications Sector, Public Relations Dept., 1301 E. Algonquin Road, Schaumburg, IL 60196, or mark number 101 on the reader service card.



TV Genie

Wireless TV! Now you can conveniently watch satellite-carried or other programming from any video equipment source on all TVs throughout the home without using a hard-line MATV coaxial cable system to deliver the signal. That's the word from Orion Industries of Las Vegas, NV promoting its new TV Genie wireless home video transmission system.

In operation, the TV Genie accepts all raw audio/video signal inputs from your VCR, video game, satellite receiver, video camera or microcomputer and converts them to the UHF band for wireless relay to the other televisions in your home. No extra cables are required. As well, the former need for conventional video source "A-B" switches is eliminated. Preset station frequencies for the TV Genie transmitter include UHF channels 14, 19, 23, 25 & 27.

Priced at under \$100, the TV Genie promises excellent and economic use for video enthusiasts. For more information you may contact Orion Industries directly at 3675 S. Highland Dr., Las Vegas, NV 89103 or circle reader service card number 106.

Replacement Battery For Uniden Bearcat Scanner

Used in the Uniden Bearcat Scanner, the JB50XL is a rechargeable replacement battery introduced by JaBro Batteries, Inc., a manufacturer of nickel cadmium rechargeable communication batteries since 1976.

The JB50XL, rated at 7.50 volts and 500 mAh, has about twice the capacity of the original equipment manufacturer's battery. This allows longer usage of the scanner before the battery requires recharging. The JB50XL will accept a rapid or standard charge.

JaBro nickel cadmium batteries are shipped factory fresh and have a full one year warranty.

For more information or the name of your nearest distributor, contact JaBro Batteries, Inc., 5003 Chase Avenue, Downers Grove, IL 60515 or circle number 105 on the reader service card. **PC**

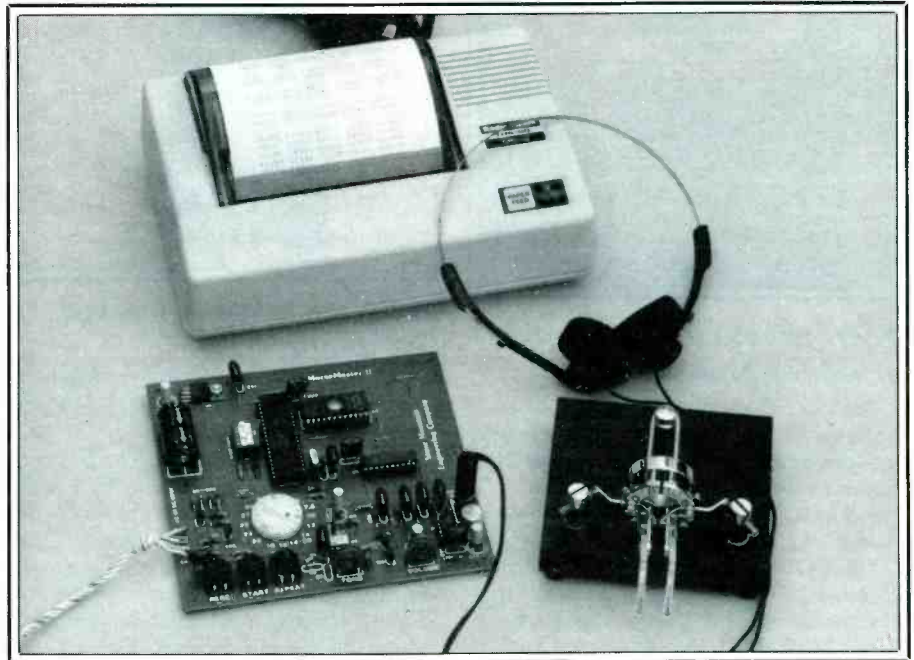
MorseMaster II Morse Trainer

BY PHIL INGRAHAM, W2OSY

My introduction to SWR was back in the early 1930's. During the depression years, a youngster built what he could and became an expert at the art of scrounging. After I got my set together, I then had to not only learn the code but find a way to get tested. Fortunately for me, my family offered to transport me to an exam point once I had learned the code and theory for the examination—the exam for the Amateur license. The transportation obstacle now overcome, schools studies as well as chores about the house were obstacles to be tackled, too.

My Morse studies, along with practice at the art of scrounging, had begun with the discovery of one straight key and an old 3:1 audio coupling transformer, a weak 201A tube and a discarded B battery, all but deceased. I learned the characters by sending them with my left hand while writing them with my right hand. In the next two months I was able to build a two-tube regenerative receiver (parts scrounged) and copied the code from this receiver. In four months time I gained my Amateur license.

Just 52 years later, it became my pleasure to test and work with a state-of-the-art unit called the MorseMaster II Morse Trainer. The board may be purchased as a kit or ready to operate. It has everything that the student of CW, as well as a group instructor, could possibly want.



Looking back 50 years, the audio note of this unit is one which no one back then would ever have dreamed. Unlike many audio devices, the unit will drive a speaker as well as ear phones and, with a slight capaci-

tor change in the output, even increases the output for the speaker.

In designing the MorseMaster, spacing and timing of the characters was engineered around IMC timing which can be found in

Morsemaster II Specifications

Automatic Morse Transmission Performance

Number of Training Lesson Types	15
Training Method	Modified U.S. Army Code Groups
Number of Code Speeds	16
Speed Range	4 wpm to 33 wpm
Accuracy of Code Speeds	Better Than 1%
Weighting	Same as FCC/VE Amateur Tests
Characters per Group	5
Groups per Transmission	1, 5, 10 or 25; User Selectable

Keyer Trainer Specifications

Keyer Training Modes	Full Iambic, Bug, or Straight Key
Number of Iambic Keyer Element Speeds	16
Iambic Keyer Element Speed Range	13 wpm to 50 wpm
Accuracy of Iambic Keyer Speeds	Better Than 1%

Audio Performance

Frequency Range	Approx. 400 to 1200 Hz.
Low Pass Filter	3-Pole, 3 db Point Approx. 1000 Hz.
High Pass Filter	2-Pole, 3 db Point Approx. 150 Hz.
Speaker or Headphone Impedance	4 Ohm Minimum, No Maximum
Maximum Power Output	Approx. 0.5 Watts into 4 Ohms

Printer Interface Specifications

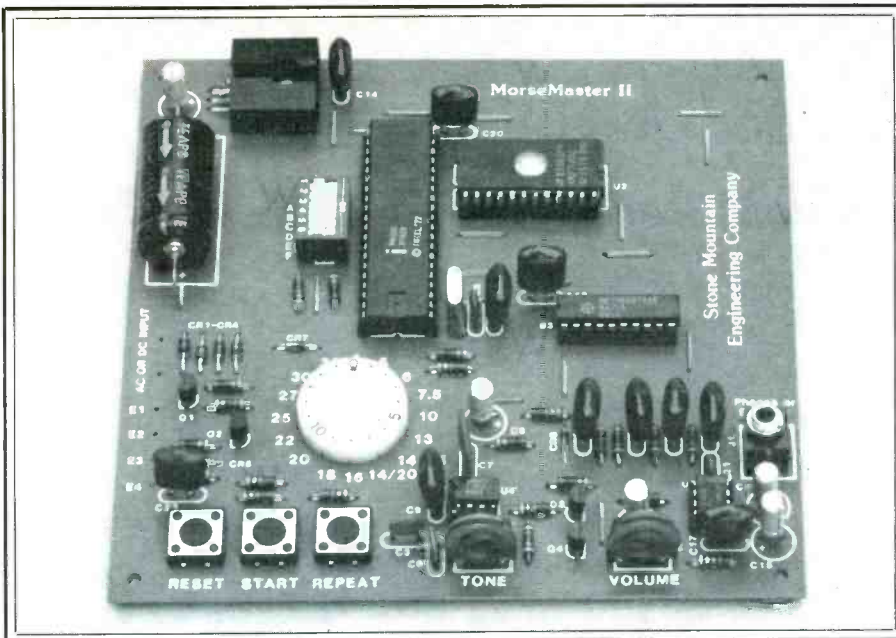
Minimum Printer Width	30 Columns
Transmission Mode	Serial
Data Representation	7-Bit ASCII
Format	8 Data Bits, No Parity, 2 Stop Bits
Baud Rate	300 or 600, User Selectable
Mark Level	0.2 V (max)
Space Level	8.0 V (min)
Control Line (Optional)	Data Terminal Ready (DTR)

Integrated Circuit Complement

Microprocessor	Any member of 8035/8048 Family
Program Memory	2716-Type 2048 x 8 Erasable Read-Only Memory
Audio Oscillator	LM555 Timer
Audio Amplifier	LM380N-8
Latch	74SC373, 74HCT373, or 74LS373
Voltage Regulator	LM7805T

Power Requirements

Input Voltage	7-13 VAC or 10-18 VDC
Current Required	150 mA, typical
Plug-in Transformer	120 VAC, 60 Hz, 5W (max)



such as the ability to use a telegraph key for sending practice (though not included in the kit) and how to connect the MorseMaster II to a serial printer so that audible code letters and words may be printed out in hard copy; a description of dits and dahs and proper achievement of spacing for characters and words; how to "fire up" the unit and get it ready for use; a section on controls and how they operate; positioning of the various switches to call up the different stored lessons; a description of training principles and how to prepare for the Novice, General, and Extra Class code tests. Finally, there is a page of hints on listening and copying, for example, suggested pencil strokes for making the letters and numbers in the easiest and fastest manner.

You will find the MorseMaster II one of the most complete systems available for learning Morse code, yet one of the easiest due to the extremely thorough presentations of practice and theory. If you desire to learn the code and learn it right, the MorseMaster is ready to serve you. For the beginner—why scrounge? Mow a few of the neighbor's lawns. For you oldtimers, improving your CW is like shining your shoes—it gives you a lift.

MorseMaster II is the product of Mike Huddleston, KJ4LN, founder and president of Stone Mountain Engineering Company, Box 1573, Stone Mountain, GA 30086. The approximate cost of the MorseMaster II, in kit form, is \$44.95, while the assembled and tested product is about \$69.95.

the ARRL Handbook and the Army TM2-459.

The MorseMaster is quite versatile. One may use a straight key, bug or Iambic paddle with the MorseMaster to practice sending. Also, there is an output with which a printer may be operated. There are sixteen lessons available and the characters most confused by the listener are given a special lesson and review. Also included is a full description

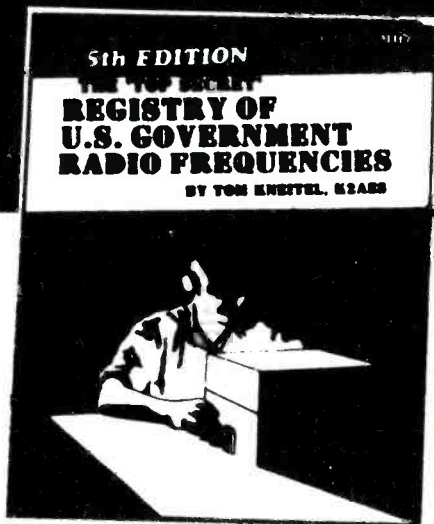
and explanation of the MorseMaster available in code. If you have had no experience in the building of solid-state devices in kit form, this unit gets you off to a good start.

Whether you buy the assembled unit for only slightly more money, or the do-it-yourself kit, you also receive an Operation Manual that is a model of completeness. There are paragraphs describing the audio quality and how it is achieved; available options

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JGAR - HILLBILLY



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Vertical- 4.75 DB
Multiplication Factors:
Horizontal - 17 Times
Vertical- 15 Times
Horz. to Vert. Separation:
20.25 DB
Power Rating: 2000 CW,
4000 PEP
Height: 11 Feet
Weight: 10 Lbs.
Materials: Anodized
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Indoor/Outdoor Antenna And Reference

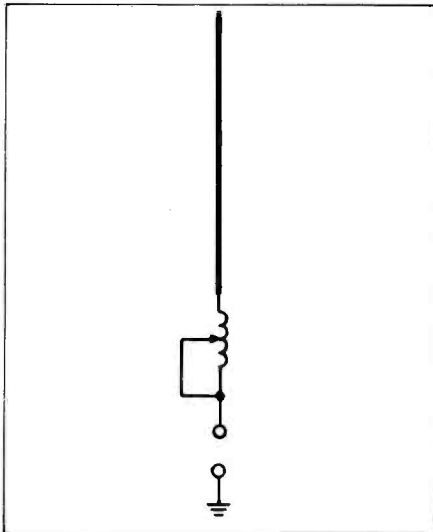


Figure 1: Basic plan of a base-loaded vertical.

Often the length of an indoor antenna wire must be restricted severely. Such a short wire, by itself, responds poorly to the great range of frequencies allocated to shortwave broadcasting. Even on the higher frequency bands, such as 19 meters, where its length can be cut to one-quarter wavelength, the wire may not intercept much signal because of poor placement and shielding. The same short antenna outdoors would do well on high frequencies. These and other problems plus a number of improvement suggestions were detailed in the October '86 column. The coil information in this issue may also be applied to the antenna covered in March.

There is one more technique to be considered as a means of adapting a short antenna for good all-band reception. A loading coil can be attached to the base of such a short wire, Figure 1. Such an arrangement tunes the antenna to resonance and helps to transfer as much signal as possible to a short length of line that connects to the receiver input. Additionally, a series of taps is used to find an optimum coil length for each individual shortwave broadcast band.

To be efficient, the coil must have a low loss and a high ratio of inductance to capacitance over a wide range of frequencies. Such conditions are obtained conveniently by using a large diameter coil wound on a low-loss form. A tapped coil wound with #16 vinyl piping is an economical and effective answer.

A practical assembly is mounted on a 7'6" length of 2" ID piping, Figure 2. This

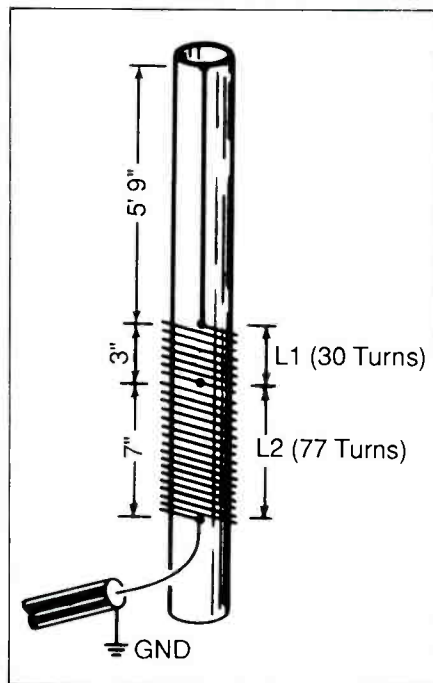


Figure 2: Loading coil assembly. Coils are tapped as per instructions.

length was chosen because it can be used indoors, outdoors in a tight spot, and is transportable. There are two separate windings, L1 and L2, close wound with #16 vinyl covered wire, Figure 3. Coil L1 was wound from a 20' length of wire with taps spaced 1' apart; coil L2 a 50' length of wire with taps separated by 10'.

An appropriate short piece of wire with clips is attached to the bottom of each coil with a length just sufficient to reach the furthest tap and also to jump the individual coil completely. Total numbers of coil turns are 30 and 77, respectively. A vertical wire runs from the top of the top coil to a terminal at the top of the mast. Its length is about 5'9" as in Figure 2. The terminals of the antenna system are attached beneath coil L2, Figures 2 and 3. The bottom terminal connects to whatever ground system you use indoors. Our own ground seeks out a cold water pipe, Figure 5. For outdoor use, several resonant radials do a fine job.

The arrangement of Figure 5 is our indoor reference antenna. Notice that the antenna assembly is positioned at the operating table and tap positions can be changed with ease as indoor antennas are tested band-by-band. However, it is an excellent antenna by itself if you do not mind making the tap changes. Its all-band performance pretty

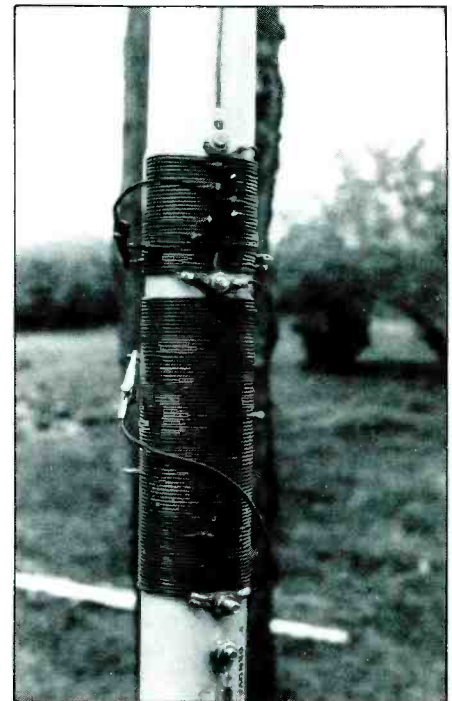


Figure 3: Multiband loading coils.

much duplicates, up and down a shade, the stretched-out 48' wire antenna described in October.

An extra length of wire was stretched out from the top of the mast over to a fastener screwed into the top of the window sill. Actually, the total length of the basic antenna from the end of this wire to antenna terminal, with both coils jumped, is only 15'3". This corresponds to a quarter wavelength on 19 meters. Sections of coil are then tapped in for the remaining SWB bands including the lowest frequency band of 120 meters.

In our installation, an antenna meter was connected across the antenna terminal and the proper taps were located to obtain resonance on each band. These were recorded, making it possible to change bands quickly. You may also locate the proper tap for each band by observing the S-meter readings on your receiver as you tune in a station on each band. This takes a little additional time because you must take into consideration the fast propagation changes that occurs. However, you can double check your work very easily. When you find what you consider to be the best tap position for a given band, quickly change to one tap higher and one tap lower to notice if there is a slight drop-off in the signal. If this happens,

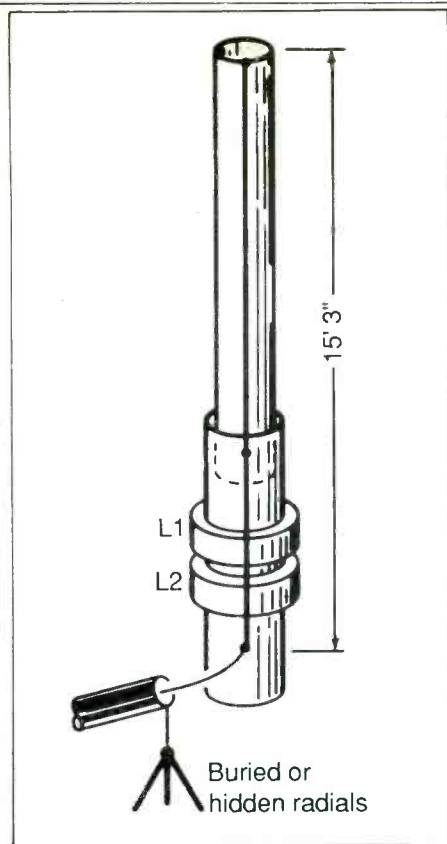


Figure 4: Outdoor version of base-loaded vertical.

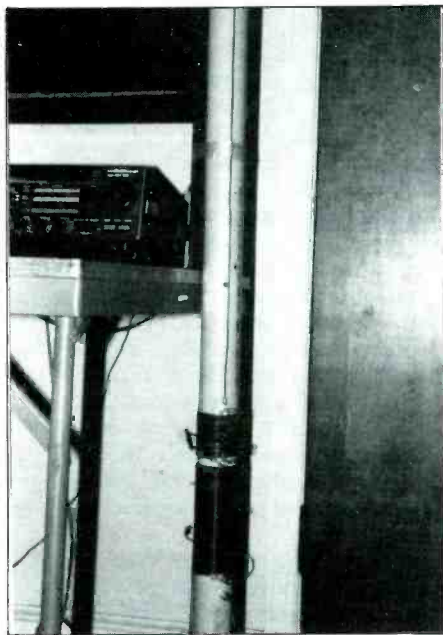


Figure 5: Indoor antenna and loading coils near receiver—a top-performance reference antenna.

then you know you have located the correct tap. Our tap positions are listed in Table 1. They may not be exactly the same for you.

The tapped loading coil antenna is rather elaborate but it does result in good indoor antenna operation. For a shielded location, position the assembly and especially the antenna wire near a window. Perhaps you can

Band	L1 Tap	L2 Tap
19 M	shorted	shorted
21	2	"
25	3	"
31	5	"
41	8	"
49	11	"
60	16	"
75	16	Tap 1

Table 1: Tap positions for various bands using tapped loading coil indoors. The best tap positions vary with installation.

let a good portion of the wire be positioned on the outside of the window. When aluminum siding is the problem you may be able to find a way to attach some of the antenna wire exterior to the siding.

Sometimes an antenna cannot be used outside because of space limitation or even restrictions such as are often found in association with mobile home parks. Perhaps you can come up with some decorative scheme

that would permit the assembly to be mounted right outside of a window or in association with a small porch. This would take your entire short antenna system outdoors.

In other situations, such as when only a small amount of space is available outside and height itself is not a special problem (within reason), the entire 15'3" length required for a quarter wavelength on 19 meters can be obtained by telescoping another section of tubing (1 1/2" diameter) into the top as shown in Figure 4. This too can be mounted near the window that permits a short transmission line link into the interior. The complete antenna mast can be attached to the dwelling or supported by a metal fence post or fence pole.

When making changes in the antenna, or when locating at a new position, it is necessary to go over the tap sequence once again. The ideal tap positions are influenced by the overall length of the antenna and its associated ground system as well as nearby metallic surfaces. In summary, the antenna system is a little more trouble but it can be a help where it is needed.

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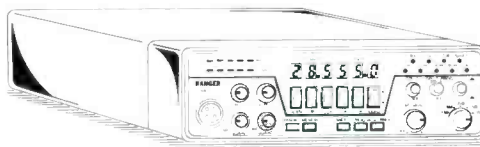
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The AR-3300 is an HF all-mode transceiver incorporating the latest microprocessor technology. The transceiver operates continuously from 28.0000-29.9999 MHz. The transceiver operates on 13.6VDC either mobile or base operation with proper power supply.

Frequency selection is entered through either the momentary

switches located below the frequency display or by automatic scanning. The scanner will stop whenever a signal appears that is strong enough to open the squelch. Frequency resolution is selectable in 100Hz, 1000Hz, 10,000Hz, or 100,000Hz steps.

Up to five preset frequencies may be stored in the computer's memory.

The AR-3300 can be programmed to split transceive. Transmit on one frequency and receive on another. This is accomplished by programming the shift controls. Any two frequencies within its operating frequency range may be used. The frequency display will automatically show both frequencies.



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LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

No one who has listened to shortwave radio for very long or who has observed shortwave events will need much convincing of shortwave's capacity to surprise us, if not through propagation conditions and unusual receptions, then through the rather remarkable array of characters, politics and whatnot that are a part of the medium. Witness the curious affair of the French/Chinese swap of transmitter time last year.

The latest is that we just might be at the edge of a new era in shortwave, an era that could be relatively free of jamming. News reports last fall began to note some progress in the long effort by the U.S. and other countries to combat Soviet jamming. Making use of a little known rule of the International Telecommunications Union (ITU), the U.S. has already caused the ITU to issue at least one study actually naming the Soviet Union as the source of interfering signals.

Apparently, there has been some discussion within the Kremlin about the worth of jamming. Soviet commentator Vladimir Posner has even called jamming "counter-productive." There have also been reports to the effect that the Russians would drop the jamming if they could have access to a U.S. audience over an AM radio outlet or outlets. Imagine Posner sandwiched between last night's basketball scores and the morning rush hour traffic 'copter report!

Actually, the Soviets have already taken one positive step. In a move aimed at improving relations between Moscow and Beijing, the Soviets have discontinued jamming the Radio Beijing Russian broadcasts (while the Chinese stopped jamming Radio Moscow in Chinese four years ago). So, there seems to be a glimmer of hope though it's too early to start holding your breath.

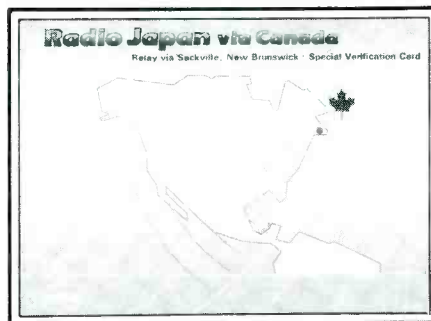
Some of the heaviest rains and wettest conditions in 20 years were slowing down the construction schedule of the new Adventist World Radio station in Guam. It was originally scheduled to go on in October but the weather forced a delay until last December. But, as of the middle of that month, there was no further news on the status of the station, nor were there any reports of its having been heard.

Nicaragua has announced that it will build two new shortwave broadcast stations in order to combat what it calls "counter-revolutionary" broadcasting aimed at Nicaragua by foreign stations.

If you live in Colorado, you are welcome to join the Rocky Mountain Radio Listeners. This regional club doesn't charge any dues, nor does it publish a bulletin. The club does hold regular monthly get togethers and these are all planned through the end of 1987. If you'd like more information and a



This attractive pennant collection hangs in the shack of Joseph Hueter of Philadelphia.



Radio Japan's special QSL for its broadcasts via Sackville, Canada. Courtesy Forrest Johnson, Oklahoma.

copy of the meeting schedule just drop your request in the mail, along with an SASE, to Rocky Mountain Radio Listeners, 4131 S. Andes Way, Aurora, CO 80013-3831.

If you'd like your local or regional club mentioned here, or if you'd like to contact people about starting a regional club, just pass the info along and we'll be glad to include it here. With the large numbers of shortwave radios being sold and in use throughout the land there's no reason why there shouldn't be a large and active club in every state. 'Tain't the way it is, though. Probably only one-fifth of the states have such groups, at least that we're aware of.

If you are working your way up the ladder

towards 100 countries logged, there's a booklet available which can give you a push. It's called *How To Log 100 Countries on Shortwave Broadcast*. It includes tips on tuning in 100 specific countries, a handy form for logging the 100 and information about a 100 countries' certificates you can apply for. The booklet is \$5 plus 50 cents postage from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147. Those interested in the certificate alone (which is good for SWBC, utilities, Hams, BCB) can send an SASE to the above address for details.

Onto the mail: Robert Brossell in Pewaukee, WI says people wave and beep their horns when they see his license plate. One person asked him what a "southwest dixer" was!

Douglas Waller in Bay Village, Ohio says he sent a report in earlier but hasn't seen it yet. He sent a report in this month, too, giving us another chance. You're not the first to wonder what happened to a report, Doug. It takes awhile so please be patient—and keep reporting!

Joseph L. Hueter in Philadelphia, PA is proud of his collection of station pennants, and so he should be. (See his shack photo which also features an HQ-180 receiver, rapidly becoming a "classic.") Joseph was a DX'er back between 1930 and 1940 and he promises another picture featuring part of his large QSL collection.

M.I. Felsenfeld is a teacher at Inwood In-



Paul Johnson in his Arizona shack.

intermediate School 52, 650 Academy Street, NY, NY 10034 and is looking for materials about DX'ing for use with his school's Ham radio club. If you have advice or materials you can spare, your help would be appreciated. The shortwave specialty stores advertising in *POP'COMM* can give you tips on receivers.

Forrest L. Johnson of Norman, OK just got started in DX'ing a few months ago and is already focusing on the Spanish-speaking stations of Latin America, which he says should keep him busy for awhile.

Charles Williams of Quincy, MA is involved in a small scanner/shortwave listening club and is looking for ways to improve it. Well, we can pass along your address, Charles, and maybe you'll pick up a few members out of the legions of listeners there in Massachusetts. It's 711 Southern Artery, Suite 51, Quincy, MA 02169.

Paul Johnson in Phoenix would like to join an Arizona-based listeners club. Unfortunately, we don't know of one, Paul. If anyone in Arizona does—or wants to organize such a group, let us know.

Robert Charles Pickering, KB5AXZ, in Mosello, MS sends along a number of questions, mostly related to U.S. shortwave broadcasters. KYOI, as you probably know by now, Robert, was not a commercial success, but WRNO seems to be doing okay. As for the religious stations on shortwave, you'll notice that few, if any, ever go off the air for lack of funds. The several stations planned but not yet on the air appear to be in a state of limbo.

We are on the lookout for your letter! Your questions, comments, news, shack photos, schedules, copies or spare originals of QSL's are welcome. So are your loggings. They should be by country, with your last name and state abbreviation after each and some space between each item. Please don't send duplicate loggings of the same

station on the same frequency a few hours or days apart. The steadily increasing number of reports we are receiving means we have more and more editing and the first to be cut are those reports which are harder to work with. Thanks for your cooperation!

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/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel frequencies

**SWBC Readers' Loggings
(All Times Are UTC)**

ALASKA- KNLS at 1710 in EE w/Glenn Miller mx, "Magazine" pgm, on 7355 (Linville, ALB).
 ALGERIA- R. Algiers, 15160 at 1940 in EE (Hartley, OH).
 ANTIGUA- Deutsche Welle relay sta on 6045 at 0301 in EE (Lyster, BC); at 0315 (Haley, WV); 6120 at 0518 in EE (Moser, PA); 9660 in EE at 0350 (Hartley, OH).
 BBC Relay on 9510 at 0600 w/nx (McDonough, PA); 11775 at 1100 in EE (Hartley, OH).
 ARGENTINA- RAE on 9690 at 0122 w/mx (Moser, PA); or 0400: w/EE, including DX pgm on one occasion (Moser, PA; Janusz, NJ; Dementiuk, NY; Gilbert, CA); 11710 at 0134 (Gilson, MD); both freqs at 0409 (Johnson, AZ).
 ARMENIAN SSR- R. Yerevan, EE to the Pacific 0330-0400 on 11790, then into Moscow's NA svc. Assume via USSR xmtrs (Dementiuk, NY). Yes--Ed.
 ASCENSION IS.- BBC Relay on 15400 at 1700-1745 w/sports scores (Johnson, OK).
 AUSTRALIA- R. Australia, 1057 w/IS & EE

nx on 7125 (Lyster, BC); 9580 at 1350. Gud level (Janusz, NJ); //11720 at 0800, 11945 at 0448 (Linville, ALB); 15315 at 0602 (Johnson, AZ); 15395//17795 at 0230 w/IS & nx (Haley, NV); 17750 at 0345 (Brooks, KY).

ABC Brisbane, 9660 at 0735 w/racing results (Waller, OH).
 ABC Perth, 9610 at 1249 w/opera (Gilson, MD).

AUSTRIA- R. Austria Int'l., 2145 in EE but weak on 6000 (Dementiuk, NY).

BANGLADESH- R. Bangladesh at 1230 w/nx in EE on 15125 (Waller, OH).

BELGIUM- BRT w/Brussels Calling at 0025 on 5910 (Hartley, OH); 1325 in unknown language, IS on 15590 (Northrup, MI).

BELIZE- R. Belize on 3285 at various times in evening his, EE, as late as 0600 (Waller, OH); 0330 w/mx (Brossell, WI); 0412 w/sports (Russell, AL).

BENIN- ORTB loud/clear at 2200 on 4870 w/live highlife & reggae (Brossell, WI); 0610 in FF (Hartley, OH).

BOTSWANA- R. Botswana on 4820 w/barnyard IS 0356, anthem, freqs, rx mx, some EE (Moser, PA); 0355 w/IS & s/on (Russell, AL); from at least 0350 (Waller, OH).

BRAZIL- R. Nacional Amazonia, 9760 at 2216 w/mx & commercials(?) in PP (Gilson, MD); 15200 at 1943 (Russell, AL).

Radiobras, 11745 at 0158 w/IS, s/on, ID, freqs, mailing address, in EE (Moser, PA); at 0245 (Janusz, NJ).

R. Nacional Manaus, 4845 w/pop mx in PP at 0128, s/off at 0157 (Eichenholtz, PA).

R. Globo, 11805 at 2354 w/pop mx, dramas (Coyle, NY); 2345 fast talk w/echos (Johnson, AZ).

R. Cuaiba, 2349 on 11785, many mentions of Brazil (Johnson, AZ).

BULGARIA- R. Sofia on 6070 w/nx at 0015 w/Top 10, nx in EE (Northrup, MI); 7115 at 0400 w/nx in EE (Moser, PA; Johnson, AZ); 2300 w/EE nx on 9700 (Dementiuk, NY); 7230 at 0523 (Hartley, OH).

BURKINA FASO- R. Burkina Faso, 4815 from 2200 w/reggae & talk in FF (Brossell, WI); 2316 w/mx, FF ID (Moser, PA); 0540 (Dementiuk, NY).

CAMEROON- R. Gaioua, 5010 in FF at 2245 (Dementiuk, NY); EE nx to 0544 (Waller, OH).
 R. Bertoua, 4750 in vernaculars at 0458, into EE w/nx 0500, into FF 0503 (Dementiuk, NY).

R. Douala, 4795 at 2150 in FF. "Ici Douala" at 2200 (Brossell, WI).

CANADA- RCI, 5960 at 0200 w/nx & RCI Journal (Haley, NV); 9760 at 0648 w/CBC nx in EE (Lyster, BC); 11940 in SS at 2306 (Linville, ALB).

CFRX Toronto, 6070 at 1957 relays CFRB (Gradakowski, ONT).

CFXC Montreal, 6005 at 1953 w/ID for SW freq (Gradakowski, ONT).

CKZU Vancouver, 6160 at 0655 weak w/classical mx, WYFR QRM after 0700 (Johnson, AZ).

CBC N. Quebec Svc. 9625//11720 at 1442; also at 0100 on 6195//9615 (Gilson, MD).
 BBC via Sackville, 15260 at 1501 w/nx (Moser, PA).

CENTRAL AFRICAN REP.- R. Centrafricaine, 5034 at 0504 in unknown language (Hartley, OH).

CHAD- Radiodiffusion National Tchadienne, 7120 in FF at 0705 (Dementiuk, NY).

CHILE- R. (Sistema) Nacional, 15140 at 2125 w/love songs (Dementiuk, NY).

CHINA- R. Beijing, 15280 at 0210 in SS (Dementiuk, NY); 15445 or 0030 CC/EE lesson (Hobbs, ONT); at 0000 (Hartley, OH).

COLOMBIA- Caracol Neiva, 4945 at 0508 (Hartley, OH); 0155 in SS (Russell, AL).
 R. Super, Bagota, 6065 in SS at 0917 (Dementiuk, NY).

COOK ISLANDS- R. Cook Isl., 0610-0714 at 11760, weak w/fading. Rock & Islands mx, numerous ID's after 0700 (Dementiuk, NY).

COSTA RICA- R. Relaj, 4832, 0450 in SS (Hartley, OH).

TIFC, 5055 at 0344 in EE w/rx pgm & ID, heard local Sunday eve (Dementiuk, NY).

CUBA- R. Havana Cuba, 6035 in SS at 0337 (Lyster, BC); 6090 at 0034 (Gilson, MD); 9525 at 0653 in EE (Lyster, BC); 11760 at 1300 in SS (Gilson, MD); 11795 in EE at 1832 (Johnson, AZ).

R. Rebelde, 5025 in SS at 1143 (Hartley, OH).

CZECHOSLOVAKIA- R. Prague, 5930 at 0110 w/nx (Gilson, MD); 0310 in EE (Brooks, KY); 7345 at 0300 (Johnson, AZ); 0133 (Hartley, OH).

CYPRUS- BBC Relay, Limassol, 1430 on 15420 w/World Svc to Europe/Mideast (Brossell, WI).

DENMARK- R. Denmark, 15165 at 1159 w/ID in EE & into Danish (Waller, OH).

DOMINICAN REP.- R. Discovery, 15045 tentative ID of 2133 in SS to 2146 fade (Dementiuk, NY); 2230 in EE w/ID (Waller, OH); 2115 w/rock, IDD, address (Brossell, WI); 2030 w/Latin mx,

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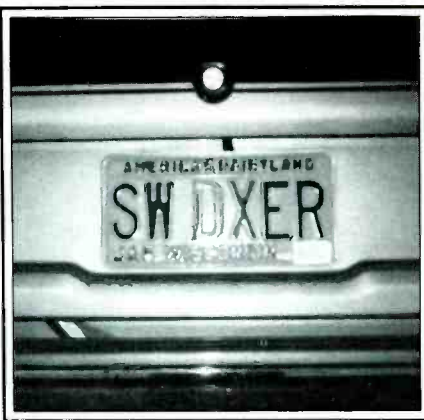
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EE/SS announcer, asking for reports (Pickering, MS). Now has a 1 kW xmtr-- Ed.
R. Clarin, 11700 at 2011 in SS (Russell, AL); 11750 exact (? Ed.) at 0315 w/Caribbean mx (Janusz, NJ).
EAST GERMANY- R. Berlin Int'l., 6080 at 0124 w/EE (Moser, PA); 17755 at 1730 w/EE nx (Grodowski, ONT).
ECUADOR- La V. de los Caras, Bahia de Caraquez, at 0203 in SS on 4795 (Eichenholtz, PA).
R. Zaracoy, Sta. Domingo de los Colorados, mx & SS announcements at 0330 on 3395 (Brossell, WI).
R. Quito, 4920 at 0453 in SS w/many ID's, mentions of Quito & Ecuador (Russell, AL).
HCJB on 6230 at 0519 in EE w/rx pgm (Moser, PA); at 0610 (Johnson, AZ).
EGYPT- R. Cairo, 2343 on 9475 (Hartley, OH); 2006 in EE, mx/nx (Lyster, BC); 9675 at 0204, weak (Linville, ALB).
ENGLAND- BBC World Svc, 5975 at 0332 (Moser, PA); 6005 w/rock countdown at 2355 (Johnson, AZ); 6195 at 1100 in EE; 9640 at 0645 (Lyster, BC). Same or all via relays-- Ed.
EQUATORIAL GUINEA- 5004 (R. Nacional, Bata-- Ed.) to 2200 s/off in SS (Weller, OH).
FALKLAND ISL- FIBS on 3958 at 0850 w/rock, v. weak (Dementiuk, NY).
FINLAND- R. Finland Int'l., 15400 at 1525 w/IS & s/off in EE, (Gilbert, CA).
FRANCE- R. France Int'l., 7120 at 0445 w/EE nx (Brooks, KY); 7160 in FF at 2130 (Brossell, WI).
FRENCH GUIANA- RFI relay, 7135 in FF at 2130 w/EE nx (Januz, NJ); 9800 at 0315, FF, to EE (Haley, NV).
GABON- Afraca #1 on 4830 in FF at 2100 at 0503 (Hartley, OH); 11940 at 0650 in FF (Dementiuk, NY); 15200 at 1335 in FF, EE mx & ID (Northrup, MI); 15475 w/EE nx for 2-5 min at 1858 into FF (Johnson, AZ).
GHANA- GBC at 0600 w/EE nx on 4915 (Moser, PA; Dementiuk, NY).
GREECE- V. of Greece, 7430 w/EE nx at 0350 (Januz, NJ); EE nx at 0130 (Kimpton, ONT); 9420 at 0200 w/flute IS, into SS (Lyster, BC); 17565 w/nx in EE at 1540 (Dementiuk, NY).
GUAM- KTWR, 9870 at 1212 in Mandarin, 1300 in EE (Hartley, OH).
GUATEMALA- TGNA, R. Cultural, 3300 at 0200 w/light mx, SS announcer, ID as "Radio Cultural" (Johnson, OK).
HONDURAS- HRR1, Sani R., Puerto Lempira, 4755 at 0025 w/mailbag pgm in EE (Grodowski, ONT); reggae at 0030 & address as "Thomas Keough, Sani Radio, Puerto Lempira, Honduras." Into SS at 0100 (Dementiuk, NY).
La V. Evangelica, HRVC, 4820 at 0430 w/rx pgm in SS (Dementiuk, NY).
HUNGARY- R. Budapest, nx in EE at 0303 on 9835 (Moser, PA).
INDIA- AIR on 9910 w/regional nx in EE at 2202 (Moser, PA); 9910 in EE at 2055; 11620 at 2100 (Wallace, OH).
INDONESIA- V. of Indonesia, 11790 (poor) w/EE nx at 1500 (Waller, OH; Johnson, AZ).
IRAN- VOIRI, 15084 w/presumed rx pgm, no ID heard (Northrup, MI); fair at 1707 in language (Johnson, AZ).
ISRAEL- Kol Israel, 7465 in EE at 2240 (Linville, ALB); EE s/off 0225 (Lyster, BC); 9435 nx in EE at 2006 (Moser, PA); 9440 at 2345 in EE (Dementiuk, NY).
ITALY- RAI, 9575 at 0120, bells into FF, 0135 bird IS, 0140 bells & into II to Latin America (Gilbert, CA); 0100 w/nx in EE (Hobbs, ONT).

IVORY COAST- RTV Ivorianne, 4940 in FF at 0635, tentative ID (Dementiuk, NY); 11920 in FF, tentative ID (Russell, AL). Right on both accounts-- Ed.
JAPAN- Nihon SW Broadcasting, NSB, 6115 at 0713. Better on 9595 but different pgm (Johnson, AZ).
R. Japan, 6120 (via Canada-- Ed.) at 1100 in EE (McDonough, PA; Eichenholtz, PA); 9505 at 1903 in EE, also at 1542 on 5990 (Lyster, BC); 9645 (via Gabon-- Ed.) at 2331 (Johnson, AZ); 15325 at 0100 in EE (Pickering, MS).
KAMPUCHEA- V. of People of Kampuchea, 11937 to 1317 s/off in Asian languages (Waller, OH).
KUWAIT- R. Kuwait, 11675 at 1900, regional nx in EE (Moser, PA; Eichenholtz, PA); 15505 at 1235 (Hartley, OH); 1320 sports event in AA (Northrup, MI).
LEBANON- V. of Lebanon, 6550 at 0058 in AA, into EE at 0100 w/Lebanese mx, faded 0117 (Dementiuk, NY).
LESOTHO- R. Lesotho, 4800 at 0330 (Hartley, OH).
LIBERIA- VOA Relay, 15600 at 1805 w/EE nx (McDonough, PA); 17870 at 1935 (Russell, AL).
ELWA, 4760 at 0600 w/nx every 15 min in EE, local mx (Dementiuk, NY).
LIBYA- R. Jamahiriya, 6155 at 2100 in AA (Hobbs, ONT); 7245 at 0256 (Hartley, OH).
V. of the Arab Homeland, 15415 at 1528 in AA (presumed) (Russell, AL).
LITHUANIAN SSR- R. Vilnius, 7165 at 2315 in EE (Eichenholtz, PA; Gilson, MD); 11790 at 2300 w/mailbag (Linville, ALB).
LUXEMBOURG- R. Luxembourg, 15350 at 1730 in FF, pop mx (McDonough, PA).
MADAGASCAR- R. Nederland relay, 9715 at 2100 w/"Mailcall" pgm (Waller, OH).
MALI- RTV Mali, FF/AA at 0618 on 4783/4838 (Dementiuk, NY).
MALTA- Deutsche Welle relay, 9545 at 0259 w/IS/ID, world nx in EE (Moser, PA).
R. Mediterranean, 6110, EE to 2330 s/off (Waller, OH).
MAURITANIA- ORTM on 4845, songs in AA at 2317 to 0001 s/off (Dementiuk, NY).
MEXICO- R. Mexico Int'l., 9705 at 0300 in SS (Hartley, OH); 0023 w/soft mx (Eichenholtz, PA).
MONACO- TWR, 7105 at 0830-0900 in EE (Waller, OH); 7160 at 0623, IS then EE s/on for rx pgm (Gilbert, CA).
MONTERRAT- Deutsche Welle relay, 6040 at 0126 in EE (Moser, PA).
MOROCCO- RTV Marocaine, 11920 at 1959 in AA, barely audible 'neath Ivory Coast (Russell, AL); 15330 at 1745 in AA (Johnson, OK); 15335//15360//17815 in AA at 1210 (Waller, OH).
NAMIBIA- SWABC, 3295 at 0410 in EE (Hartley, OH).
NETHERLANDS- R. Netherlands, 6020 at 0127 w/IS, ID in SS (Moser, PA); 9715 at 2115 in EE (Johnson, AZ).
NETHERLANDS ANTILLES- R. Netherlands, Bonaire relay, 6165 at 0230 in EE (Haley, NV); 9590 at 0253 in EE (Moser, PA); 0320 in SS (Brooks, KY).
TWR, Bonaire, 11815 at 1332 w/nx (Gilson, MD).
NEW ZEALAND- R. New Zealand, 11780 at 0507 (Dementiuk, NY); 0605 w/sports (Moser, PA).
NEW CALEDONIA- R. Noumea, 7170 at 0900-1000 w/EE pop mx, OM announcer in FF (Autry, CA); 0621 (Johnson, AZ); jazz at 0805 (Dementiuk, NY).
NICARAGUA- V. of Nicaragua, 6015 w/EE at 0100 & 0400 (Brooks, KY; Hobbs, ONT; Moser, PA).
NIGER- ORTN, 5020 in FF at 0531 (Hartley, OH). How about more details?-- Ed.
NIGERIA- V. of Nigeria, 7255 at 0550 in EE (Dementiuk, NY); 0600 in FF (Gilbert, CA); 15120 at 2110 w/N. African & overseas svc (Johnson, AZ).
R. Nigeria, Lagos 4990 in EE at 0607 (Hartley, OH).
R. Nigeria, Kaduna 4770 at 0506 w/"Morning Beat" pgm, US pops (Johnson, AZ).
NORTH KOREA- R. Pyongyang in EE on 11735 to 2349 s/off (Waller, OH); 13650 at 2320 in EE (Johnson, AZ); 2300 in EE (Johnson, AZ).
NORTHERN MARIANAS- KYOI, 11900 w/rock & ID's at 1330 (Waller, OH); at 1450 (Hartley, OH); 1130 (McDonough, PA). Probably Christian Science Monitor station by now-- Ed.
NORWAY- R. Norway Int'l., 9590 at 2233 in NN (Johnson, AZ); 11850 at 1715 w/"Listeners' Corner" (Pickering, MS); 15310 at 1300 in EE (Hartley, OH); 15370 at 1425 in EE (Moser, PA).
PAKISTAN- R. Pakistan, 17680 in presumed Dari at 1610, many references to Islamabad & Pakistan but no ID heard (Dementiuk, NY); 17660 w/AA? at 1328 (Hartley, OH).
PAPUA NEW GUINEA- NBC Pt. Moresby, 4890 at 1139 in EE (Hartley, OH).
PERU- R. America, Lima, 6010 in SS at 0854 (Dementiuk, PA).

R. Atlantida, Iquitos, 4790 at 0456 s/off (Waller, OH).
PHILIPPINES- FEBC, 11850 from 1300 s/on in EE (Waller, OH).
PORTUGAL- RDP, 15285 at 1750-1800 w/announcements in PP, s/off at 1800 (Johnson, OK).
ROMANIA- R. Bucharest, 5990 at 0215, talk, QRM from VOFC via WYFR (Eichenholtz, PA); 0415 w/same QRM (Brooks, KY).
RWANDA- Deutsche Welle relay, 7225 at 0430, nx/mx (Johnson, AZ); 9565 at 0430 w/clear ID, mx, in EE //7225 (Moser, PA).
SENEGAL- ORTS, Dakar, 4890 at 2320 in FF (Moser, PA).
SEYCHELLES- FEBA in Farsi(?) to 0330 IS & s/off on 11865 (Waller, OH).
SINGAPORE- BBC Relay at 1600 w/nx in EE on 11750 (Waller, OH).
SOUTH AFRICA, REP. OF- Radio RSA, 4990 in EE at 0326 (Hartley, OH); 5980 at 0256 w/bird call IS, into EE (Moser, PA); 5980/6010 at 0204 in EE (Lyster, BC); 7270 at 0330 in EE (Dementiuk, NY); 9585 at 2145 in EE (Brossell, WI); 9615 at 0200 in EE (Johnson, AZ); 0642 in EE on 11900 (Johnson, AZ).
SABC Radio 5, 4880 in EE w/pops at 0407 (Johnson, AZ); 0415 w/rock (Dementiuk, NY).
SOUTH KOREA- R. Korea, 9750 ending EE nx at 1413, into nx commentary (Gilbert, CA); 15575 w/nx & commentary (Haley, NV); 2035 in EE (Eichenholtz, PA).
SPAIN- Spanish Foreign R., 9630 at 0000 w/"Panorama" (Janusz, NJ); here & 6125 (Eichenholtz, PA); 0030 in EE on 9680 (Hobbs, ONT); 17845 at 1251 in EE (Hartley, OH).
SRI LANKA- SLBC at 1415 w/mx pgm on 9720//15425 (Waller, OH).
SWAZILAND- TWR, 7295 at 0430 w/EE rx pgm (Johnson, AZ).
SWEDEN- R. Sweden Int'l., 0200 w/Swedish to Europe on 9695 (Haley, NV); 15345 at 1400 s/Scandinavian nx in EE (Moser, PA).
SWITZERLAND- Swiss R. Int'l., 9725 in EE at 0404, also //6135 (Moser, PA); 9885 at 0414 in EE (Johnson, AZ); 0203 in EE (Eichenholtz, PA).
SYRIA- R. Damascus, 9950 in EE at 2124 (Hartley, OH); 2049 in EE on 12085 (Moser, PA).
TAHITI- 6135, weak at 0455; 11825, good (Johnson, AZ).
TOGO- RTT, Lome, 5047 in FF at 0540 on 5047 (Dementiuk, NY).
TURKEY- V. of Turkey, 9560 in EE at 2300 (Johnson, AZ); in Turkish at 1507 on 15220 (Johnson, AZ).

UNITED ARAB EMIRATES- UAE Radio, Dubai on 11940 ending EE at 1037 (Waller, OH); 15300 in EE at 1620 (Linville, ALB).
 V. of the UAE, Abu Dhabi, 9900 in AA at 0032 (Eichenholtz, PA).
UKRAINIAN SSR- (via USSR xmtrs) R. Kiev on 6035 at 0039, off 0058 (Gilson, MD); 7165 at 0315 in EE (Gilbert, MD); 11790 w/EE at 0032 (Hartley, OH).
UNIDENTIFIED- 4920 at 0457 w/electronic drums or chimes, martial mx at 0458 w/singing; ID in FF at 0501 sounded like "Ici Radio Rwandaise" (Dementiuk, NY).
 4845 at 0731, FF w/"Asian type" mx (Johnson, AZ).
UNITED STATES- KVOH, Simi, CA on 17775 in EE/SS (Linville, ALB); 1830 w/modern rx mx on 1st day of regular programming (Pickering, CA); 1800 w/address as Box 93937, Los Angeles, CA (Stuart, OK); at 1918 (Russell, AL).
WHRI on 11790 at 1330 w/rx pgm, ID in EE, SS/PP (Gilson, MD).
WYFR on 11490 at 1637, rx programming (McDonough, PA); VOFC via WYFR, 5985 at 0100 in EE (Hobbs, ONT).
WRNO, 9715 at 1143 w/Japanese(?) rx talk, off 1200; also 2230 s/on on 9852.2; 11705 at 2226 to 2230 s/off (Gilson, MD).
VOA African Service on 7280 at 0310 w/"Daybreak Africa" (Lyster, BC).
AFRTS on 6030 at 0145, nx at 0200 (Grodkowski, ONT); 15330 at 2104 w/sports (Gilson, MD).
R. Maurit, 9590 at 1311 in SS, at 2237 on 11930 (Gilson, MD).
 V. of the OAS, 9565 at 2345 s/on in SS, ID in EE (Johnson, AZ).
 Tentative WMLK on 9455 at 1800 w/rx pgm (Kampton, ONT).
USSR- R. Moscow, 5920 at 0106; also 5940, 7150, 7215, 7310, at 2310; 9755 at 1315; 11710 at 1230-- all but last one in EE (Gilson, MD); 7260 in SS at 0150 (Dementiuk, NY); 7270//7290 in SS at 0659, EE at 0700 (Lyster, BC); 11840 (via Havana-- Ed.); at 1414 in EE (Moser, PA); 15475 at 1400 in EE (Johnson, AZ).
UZBEK SSR- R. Tashkent, 11785 to 1358 in EE, lost to R. Sweden (Waller, OH).
VATICAN- Vatican R., 6185 at 2332 in EE/II (Gilson, MD); 9615 at 2145 in JJ (Brossell, WI); 2205 w/EE to Australia (Johnson, AZ).
VENEZUELA- R. Occidente, Tovar, 3225 at 0316 (McDonough, PA); 0205-0220, ID "esta es Radio Occidente" (Johnson, OK).
 R. Tachira, 4830, from San Cristobal, 0125

in SS, ID at 0130 (Gilson, MD); at 0305 (Hartley, OH).
 R. Rumbos, Caracas, 9660 in SS at 1150 (Hartley, OH).
 R. Capitol, Caracas, 4850 in SS at 0454 (Hartley, OH).
 Ecos del Torbes, San Cristobal, 0148 on 4980 in SS w/ID's (Russell, AL); 0220 w/mx (Eichenholtz, PA).
VIETNAM- V. of Vietnam in EE at 2050, on 10040 (Waller, OH).
WEST GERMANY- V. of Germany, 6100 at 0259 IS & s/on in GG (Lyster, BC); 6145 at 0147 in EE w/freqs & s/off (Moser, PA).
 RFE, 21665 at 1300-1600 in Polish svc. (off the back of their beam) at excellent level //15145//17735//17805 (Grodkowski, ONT).
ZAMBIA- ZBS, 4910 w/Fish Eagle bird call IS from 0346, African mx at 0353 (Dementiuk, NY); IS for 20 mins before s/on at 0355 (Waller, OH); 0255 s/on, on 3346 (Waller, OH).

Many thanks to: Richard Russell, Hart-selle, AL; Robert Charles Pickering, Mosel-lo, MS; Forest L. Johnson, Norman, OK; James E. Brooks, Jr., Bardstown, KY; Paul Johnson, Phoenix, AZ; Tom Harlety, Chillicothe, OH; Dave Kimpton, Thunder Bay, ONT; Robert Brossell, Pewaukee, WI; Steve J. Autry, Jamestown, CA; Jim Coyle, Johnson City, NY; Bruce Gilson, Silver Spring, MD; Douglas S. Waller, Bay Village, OH; Jerry M. Stuart, Lawton, OK; Roman Dementiuk, Brooklyn, NY; Bob Eichenholtz, Corapolis, PA; Paul Grod-kowski, Etobicoke, ONT; Mark Northrup, Ann Arbor, MI; Allen Linville, Edmonton, ALB; Pat McDonough, Pittsburgh, PA; Ed Janusz, Bricktown, NJ; K. J. Hobbs, Hamil- ton, ONT; S. Lyster, Keremeos, BC; War- ren Gilbert, Sherman Oaks, CA; William Moser, Pittsburgh, PA; Tony Haley, Sparks, NV.
 'Till next month, good listening!

WHAT'S NEW IN SWL?

BY J. FERRELL

(Advertisement)

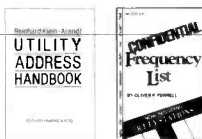


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Gilfer has a fascinating new book for utility buffs. Entitled **Utility Address Handbook**, authored by Reinhard Klein-Arendt, this compilation of UTE station addresses has the majority of world addresses and they're 99% up-to-date! Countries are listed in alpha order with stations listed by type. Address divisions are Post, telephone & telegraph, maritime, aeradio, airlines, meteorological, military, relief groups (Red Cross etc.) diplomatic, police, press, scientific, U.S. MARS, etc. This is the easiest way to get UTE addresses and the least costly, 140 pp just \$12.95 (+ \$2).

For DXers interested in the subrosa broadcasts of the world, Gilfer publishes **Confidential Frequency List**, a 304 pp compendium of fixed, FAX, military, aeronautical, embassy, INTERPOL, VOLMET, press, coastal and hundreds of RTTY stations plus mystery stations etc. Covers 4 - 26 MHz by frequency and gives broadcast modes and hours. Chapters include an Introduction by Tommy Kneitel, a Primer on RTTY, About Cyrillic, etc. Now in its 6th edition. \$15.95 (+ \$2).

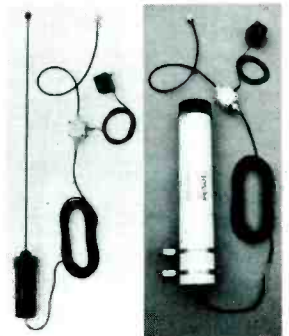
Save with this Combo Offer. Order both the Utility Address Handbook and the Confidential Frequency List and save \$6.95. Both for just \$24.95 postpaid!



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Marine Channels In Ham Sets

Ham operators who own boats usually modify their Kenwood, ICOM and Yaesu worldwide Ham radio equipment to operate, in an emergency, on marine frequencies. For *emergency* purposes, marine frequencies are an ideal way to call out for help because many channels are monitored 24 hours a day by the Coast Guard and high seas marine operators that will instantly swing into action if you come on the air with a Mayday. In an emergency, you need not be on water, either. However, if you call out for help out in the mountains or far out on the prairie, you'd better make sure it's a real life-and-death situation before you're going to get the marine telephone operator or the Coast Guard to be sympathetic to your situation. Simply running out of gas won't cut it with the Coast Guard or the FCC.

All marine frequencies use upper sideband (USB). Also, 20 db carrier insertion is no longer necessary. Full carrier suppression is fine.

United States Coast Guard

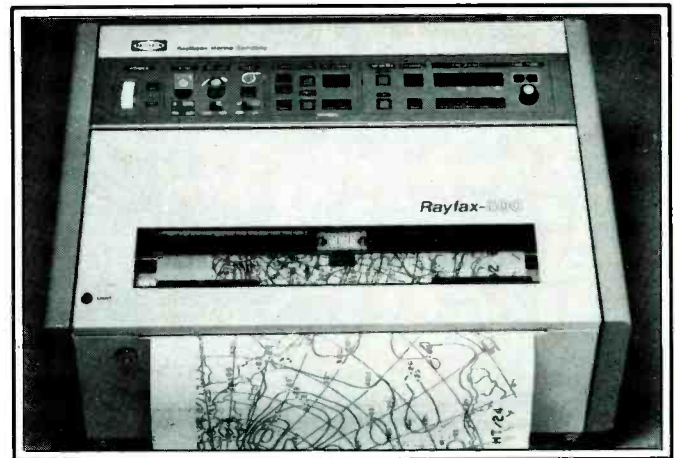
The following frequencies may be used to call up the United States Coast Guard in an emergency:

Your Transmit	Your Receive	I.T.U. Channel #	Remarks
2182 kHz	2182 kHz	None	International distress and calling frequency to all Coast Guard and rescue agencies worldwide
2670 kHz	2670 kHz	None	U.S. Coast Guard working channel
4134.3 kHz	4428.7 kHz	424	500-mile Coast Guard working channel
6200.0 kHz	6506.4 kHz	601	Gulf Coast Coast Guard working channel
8241.5 kHz	8765.4 kHz	816	Medium-range Coast Guard working channel
12342.4 kHz	13113.2 kHz	1205	Long-range 24-hour Coast Guard working channel
16534.4 kHz	17307.3 kHz	1625	Day/evening long-range Coast Guard working channel

Since most of these channels are duplex, you must enter the transmit in one VFO, and the receive in your other VFO, and then operate "split." On the Kenwood 430, one duplex channel may be stored in memory Channel 8. In the Kenwood 440, memory Channels 90 through 99 may store 10 different duplex frequencies. ICOM and Yaesu H.F. Ham rigs do not offer duplex memory channel operation, but dual VFO split operation works fine!

High Seas Marine Telephone Service

In the United States, AT&T operates a fantastic worldwide telephone service with base stations and rhombic antennas in San Francisco, Miami, and New York. You must be a marine ship station to take advantage of their service, and you should register ahead of time to receive a marine identification number (MIN). You must also doublecheck that your marine station license is endorsed for high frequency operation. To receive full details about the high seas radiotelephone service and some great wall maps (if you request them) of their rhombic beam headings, write AT&T, High Seas Services, Room N460, 412 Mt. Kemble Road, Kemble Plaza II, Morristown, NJ 07960. There is no charge for all the information they will send you.



Raytheon's RAYFAX-500 Weather Facsimile Receiver/Recorder.

All frequencies are duplex, so again you must use either two VFO's or store them in a Kenwood set with duplex memory. The high seas marine telephone service also broadcasts traffic lists and marine weather conditions. The line up appears in Table 1.

In an emergency, the high seas marine telephone service will handle any traffic, free of charge, directly through the Coast Guard facilities. Their rhombic antennas can sniff out a signal almost anywhere, so consider this duplex phone service an excellent way to raise help.

Time Signals

The following stations broadcast the time signals 24 hours a day, plus weather conditions throughout selected geographic areas, and also solar conditions (18 minutes past the hour):

Frequency	Service
2.5 MHz	WWV Ft. Collins/WWVH Hawaii
5.0 MHz	WWV Ft. Collins/WWVH Hawaii
10 MHz	WWV Ft. Collins/WWVH Hawaii
15 MHz	WWV Ft. Collins/WWVH Hawaii
20 MHz	WWV Ft. Collins
5.0 MHz	JJY Tokyo
8.0 MHz	JJY Tokyo
10 MHz	JJY Tokyo
15 MHz	JJY Tokyo
3.33 MHz	CHU Ottawa, Canada
7.335 MHz	CHU Ottawa, Canada
14.670 MHz	CHU Ottawa, Canada
5.425 MHz	Australia
7.515 MHz	Australia
12.005 MHz	Australia
12.744 MHz	Calcutta
12.763 MHz	Germany

Radio Facsimile

You don't need to be a mariner to pick up some valuable weather information on high frequency radio FAX. Recent developments in facsimile interface units now allow you to add a module to the back of your present Ham rig or shortwave set and pull in exciting facsimile pictures with just about any kind of long wire antenna.

Table 1

Coast Station KMI – California

Address: AT&T
Station KMI
P.O. Box 8
Inverness, California 94937

For technical information call: (415) 669-1055 (collect)

Coast Station	Channel Designation	Coast Station Transmit (Carrier)	Ship Station Transmit (Carrier)
KMI Point Reyes, California		2450.0*	2003.0*
		2506.0*	2406.0*
		2182.0*	2182.0*
	417	4407.0	4112.6
	416	4403.9	4109.5
	401	4357.4	4063.0
	872	8784.0	8260.1
	809	8743.7	8219.8
	804	8728.2	8204.3
	1229	13,187.6	12,416.8
	1203	13,107.0	12,336.2
	1202	13,103.9	12,333.1
	1201	13,100.8	12,330.0
	1624	17,304.2	16,531.3
	1603	17,239.1	16,466.2
	1602	17,236.0	16,463.1
	2236	22,704.5	22,108.5
	2228	22,679.7	22,083.7
	2223	22,664.2	22,068.2
	2214	22,636.3	22,040.3

Channels: 401, 804, 822, 1201, 1229 and 1602

GMT	TRFC	WEATHER
0000	X	◊
0300	X	◊
0600	X	◊
0900	X	◊
1200	X	◊
1500	X	◊
1800	X	◊
2100	X	◊

Channels: 416, 809, 1202, 1203, 1603 and 2214

GMT	TRFC	WEATHER
0100	X	◊
0400	X	◊
0700	X	◊
1000	X	◊
1300	X	◊
1600	X	◊
1900	X	◊
2200	X	◊

Coast Station contact telephone number: (415) 669-1055 (Call Collect)

* Pending

◊ Broadcasts of National Weather Service Information. All stations will omit Traffic Lists (TRFC) and Weather broadcasts on busy channels.

Coast Station WOM – Florida

Address: AT&T
Station WOM
1350 N.W. 40th Avenue
Fort Lauderdale, Florida 33313

For technical information call: (305) 587-0910 (collect)

Coast Station	Channel Designation	Coast Station Transmit (Carrier)	Ship Station Transmit (Carrier)
WOM Ft. Lauderdale, Florida		2182.0	2182.0
		2490.0	2031.5
		2442.0	2406.0
		2514.0	2118.0
		2566.0	2390.0
	423	4425.6	4131.2
	417	4407.0	4112.6
	412	4391.5	4097.1
	403	4363.6	4069.2
	825	8793.3	8269.4
	810	8746.8	8222.9
	805	8731.3	8207.4
	802	8722.0	8198.1
	814	8759.2	8235.3
	831	8811.9	8288.0
	1215	13,144.2	12,373.4
	1209	13,125.6	12,354.8
	1208	13,122.5	12,351.7
	1206	13,116.3	12,345.5
	1223	13,169.0	12,398.2
	1230	13,190.7	12,419.9
	1616	17,279.4	16,506.5
1611	17,263.9	16,491.0	
1610	17,260.8	16,487.9	
1609	17,257.7	16,484.8	
1601	17,232.9	16,460.0	
2222	22,661.1	22,065.1	
2216	22,642.5	22,046.5	
2215	22,639.4	22,043.4	

Channels: 403, 802, 1206, 1601 and 2215

GMT	TRFC	WEATHER
0030	X	◊
0430	X	◊
0830	X	◊
1230	X	◊
1630	X	◊
2030	X	◊

Channels: 417, 810, 1209, 1610 and 2222

GMT	TRFC	WEATHER
0230	X	◊
0630	X	◊
1030	X	◊
1430	X	◊
1830	X	◊
2230	X	◊

Coast Station contact telephone number: (305) 587-0910 (Call Collect)

Coast Station WOO – New Jersey

Address: AT&T
Station WOO
P.O. Box 558, Beach Avenue
Manahawkin, New Jersey 08050

For technical information call: (609) 597-2201 (collect)

Coast Station	Channel Designation	Coast Station Transmit (Carrier)	Ship Station Transmit (Carrier)
WOO Manahawkin, New Jersey		2450.0	2366.0
		2558.0	2166.0
		2182.0	2182.0
	422	4422.5	4128.1
	416	4403.9	4109.5
	411	4388.4	4094.0
	410	4385.3	4090.9
	826	8796.4	8272.5
	815	8762.3	8238.4
	811	8749.9	8226.0
	808	8740.6	8216.7
	1228	13,184.5	12,413.7
	1211	13,131.8	12,361.0
	1210	13,128.7	12,357.9
	1203	13,107.0	12,336.2
	1631	17,325.9	16,553.0
	1626	17,310.4	16,537.5
	1620	17,291.8	16,518.9
	1605	17,245.3	16,472.4
	2210	22,623.9	22,027.9
	2205	22,608.4	22,012.4
	2201	22,596.0	22,000.0
2236	22,704.5	22,108.5	

Channels: 410, 826, 1210, 1631 and 2205

GMT	TRFC	WEATHER
0000	X	◊
0400	X	◊
0800	X	◊
1200	X	◊
1600	X	◊
2000	X	◊

Channels: 416, 808, 1228, 1620 and 2201

GMT	TRFC	WEATHER
0200	X	◊
0600	X	◊
1000	X	◊
1400	X	◊
1800	X	◊
2200	X	◊

Coast Station contact telephone number: (609) 597-2201 (Call Collect)

These facsimile pictures are broadcast, not directly from the sky, but from Coast Guard, military, and U.S. government facilities with overlaid outlines of the United States and hundreds of bits of information on weather fronts, high pressure systems, and the like. I recently tried a weather facsimile module that plugs into the back of any shortwave receiver and prints out three pictures on any television set or computer monitor. Just two connections—audio out of your receiver, and television input. For more information, write TV FAX Interface, 9842 Hibert Street, Suite 145, San Diego, CA 92131. Phone (619) 549-2150. It works great.

Here are the hot FAX frequencies that are regularly on the air. Listen for the twice-per-second sweeping sound:

Receive Frequency

- 4271 kHz
- 9890 kHz
- 13510 kHz
- 8502 kHz
- 12750 kHz
- 9389.5 kHz
- 11035 kHz
- 4793.5 kHz
- 10185 kHz
- 12201 kHz
- 14671.5 kHz
- 9157.5 kHz
- 17447.5 kHz
- 8080 kHz
- 10865 kHz
- 16410 kHz

East Coast

Service

- Halifax, Canada
- Halifax, Canada
- Halifax, Canada
- Boston, Massachusetts
- Boston, Massachusetts
- Brentwood, New York
- Brentwood, New York
- Washington, D.C.
- Washington, D.C.
- Washington, D.C.
- Mobile, Alabama
- Mobile, Alabama
- Norfolk, Virginia
- Norfolk, Virginia
- Norfolk, Virginia

West Coast

- 4802.5 kHz
- 9440 kHz
- 13862.5 kHz
- 7770 kHz
- 11090 kHz
- 13627.5 kHz
- 8459 kHz
- 4346 kHz
- 8682 kHz
- 12730 kHz
- 17151.2 kHz
- 8646 kHz
- 17410.5 kHz

- Hawaii
- Hawaii
- Hawaii
- Hawaii
- Hawaii
- Hawaii
- Alaska
- San Francisco
- San Francisco
- San Francisco
- San Francisco
- San Diego
- San Diego

This is just a partial list, and you should try and tune them in with



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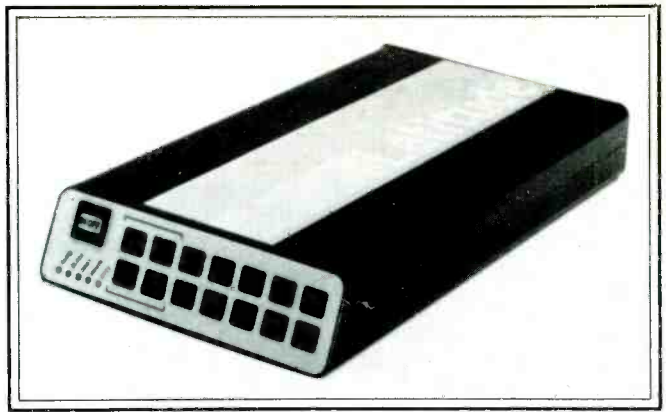
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Please allow approximately 4 weeks for delivery.



Weather FAX converter.



A good marine set for the future!

your shortwave receiver right now to hear what radio FAX sounds like. Just imagine what you could "see" if you had a complete FAX station (Alden Electronics, Westborough, MA can help) or some of those new slick FAX converters for your TV or printer.

Tuning is critical on FAX frequencies; but once you have the readout unit installed, tune in the picture so it looks the best.

U.S. News

Voice of America sends out the very latest news on shortwave frequencies. If you're out of the range of local commercial broadcasting, tune in these frequencies to stay up to date:

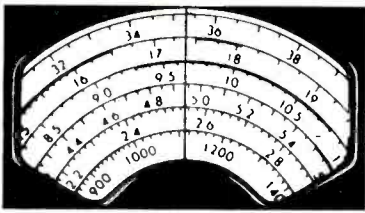
15205 kHz	9770 kHz	7325 kHz
15195 kHz	9760 kHz	7205 kHz
11925 kHz	9740 kHz	7200 kHz
11760 kHz	9700 kHz	6040 kHz

This is just a partial list. For a complete frequency schedule, write Voice of America, Frequency Division, Washington, D.C. 20457.

Warning

Ham radio equipment may not legally transmit on marine frequencies *except in an emergency*. Even though you may own a boat, and possess a valid marine radiotelephone license, *that* license requires that all marine equipment be Part 80 type accepted. Ham sets are not. Part 80 type acceptance requires the marine sideband to be "idiot proof" and incapable of accidentally going on the wrong frequency. Ham sets, when modified, can transmit virtually anywhere, and have not been submitted for type acceptance. There's also an archaic marine radio rule that prohibits an operator from using any type of transceiver for dual purposes—marine and Ham, all in one nice neat cabinet.

Can they detect that you are using a Ham set on authorized marine frequencies? Probably not. Most Ham sets have the same frequency base and tolerances as marine radios, and if you are careful to enable that last 10 Hertz digit on the readout, you should be able to hold a frequency closer than most older-style marine SSB sets. *Only use your Ham set for marine transmit in emergency situations.*



COMMUNICATIONS CONFIDENTIAL

BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

The volume of mail this month was terrific and we have been joined by many newcomers. To all who wrote, thanks for the loggings. The kind words were very much appreciated.

Messrs. Pakula and Cote of Canada recently participated in military exercises in Norway and while they were there they put in some time monitoring during their off-duty hours. Some of their contributions appear in the loggings for this month.

Another fine batch of loggings was forwarded by Patrick O'Connor, NH and in his note he passed along the following comments:


"The rig in use here is an ICOMIC-R71A, attached to a 180-foot long multi-directional random wire antenna; additional equipment in use includes an MFJ-1020 active antenna/antenna tuner, a Maartens Loop for BCB use, and a Kantronics Field Day II CW/RTTY Reader. For those who like to see how many states they might hear on SW, try the Civil Air Patrol frequencies, especially 4585 and 4602.5 kHz; many training nets are active on these frequencies at various times. Although they may be hard to track down, most will verify a correct report. One idea might be to write to the CAP Liaison Office at a USAF Base in the state logged."

In response to my remarks in the November column regarding the August editorial ("Wanted: New Faces!"), I received a very informative letter from Ralph Shepherd, Promotion Coordinator of the Ontario DX Association and I would like to share the information with you readers. The length of the material precludes printing it in its entirety so I have condensed it.

Re-establishing the SWL'ing hobby as a major recreational activity has been my enthusiasm for the past three years since I joined the ODXA and I have some, I hope, useful ideas to share with you. ODXA was started in 1975 and grew at a very slow rate until 1983 when a number of factors seemed to begin working to start it on a growth pattern The first lesson we can pass on—get a first class executive and editorial team working to produce a really fine club bulletin.


Next, copies of our publication, the *DX Ontario*, were placed in Ham radio supply stores. As they began to sell, a modest but steady flow of new members resulted, including licensed amateur operators. (This surprised us but it seems to result from the new style general coverage receivers now in vogue for Ham equipment.)

Representation at Ham flea markets and



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PATRICK O'CONNOR

DEAR SIR/MADAM,

THANK YOU FOR YOUR RECEPTION REPORT OF OUR TRANSMISSION(S)
ON 4575.7 kHz, 1674, WITH EMISSION B3E
HEARD AT 03:35 U.T.C. ON JUNE 13, 1986
WE HAVE PLEASURE IN VERIFYING YOUR REPORT WHICH IS
MUCH APPRECIATED.
DATE AUGUST 23, 1986 _____

MANAGER

ΟΡΓΑΝΙΣΜΟΣ ΘΑΛΗΓΙΚΟΝΩΝΙΩΝ ΤΗΣ ΕΛΛΑΔΟΣ

OTE

HELLENIC TELECOMMUNICATIONS ORGANISATION S. A.
NETWORK DEPARTMENT
RADIO DIVISION

TO MR PATRICK O'CONNOR

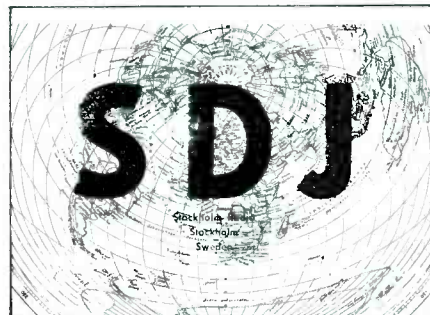
THIS IS TO CERTIFY YOUR RECEPTION OF OUR 5VA ATHINA RADIO COASTAL STATION
ATHENS INTERNATIONAL RADIOTELEPHONE LINE

FREQUENCY : 8687 KHZ
CALL SIGN : 5VA
PERIOD : 24 HOURS SERVICE
DATE : MAY 27, 1985
TRANSMITTER : BRZ-506
POWER : 10 KW
AERIAL : DOUBLE CONE

VERIFIED BY

HEAD OF RADIO DIVISION

ATHENS NOVEMBER 20, 1985



QSL cards received by Patrick O'Connor, NH.

Hobby Shows plus hosting the 1984 ANARC convention all helped to produce additional new members.

In 1986 we carried on programs of issuing press releases to the hobby publications, flea market promotions, plus adding two new programs. We made arrangements with a local community college to staff a night course in "Introductory SWL'ing" and we changed our Second Annual convention from a high cost seminar and discussion approach to actual DX'ing in a rural location with some hands-on demonstrations on how to cope with problems in the field. We have nine students in the first course and hope to increase this in the years to come. The DXpedition was a resounding success. We had about 50 members, wives and children and some 25 actual DX'ers who logged 117 countries including 41 in Africa which enabled some of our members to log stations that they had never been able to hear before.

So, there you have it. I want to thank

Ralph Shepherd for taking the time to prepare such an informative response to the points I had raised. The methods described in his letter, which proved successful for ODXA, will perhaps give other clubs some new approaches to increasing club membership. ODXA's address is P.O. Box 161, Station A, Willowdale, Ont., Canada M2N 5P0.

I must also mention the sample copy of *DX Ontario* that Ralph sent me. This is a very fine publication prepared by ODXA and is an indication of why the club has been successful attracting many new members.

Chris Anderson, CO made an interesting point in the note which accompanied his logging of a numbers transmission. He said "I've noted in several publications that English, Spanish, German and Chinese are in use for numbers transmissions these days. Nowhere have I ever seen mention of Russian. No doubt about it either (regarding his intercept), as I suffered through six years of the language in school."

Chris heard 5F groups by a YL in Russian on 3220 kHz in AM at 0430.

A hearty thank you to all those readers who forwarded comments pertaining to the Radio Reloj Network in Cuba. Here is a complete rundown on this network as prepared by Perry Crabill, Jr., VA:

The ticking signals reported by Clarke Durham, KY on 790 kHz were from CMAD, a 30-kW standard broadcast station in Pinar del Rio, Cuba. This station is part of the "Radio Reloj" network, hence the Morse code ID "RR." The phrase is Spanish for "Clock Radio."

CMED, 570 kHz and 60 kW in Santa Clara, Cuba is another station in this network, and is the station reported by Gary Vendetti of NJ in the same article. Here's what the *World Radio and TV Handbook* says about these signals:

"Continuous N. and commentary with background of clock-like pulses marking the seconds. Chime, timecheck and "RR" in code on the minute. Official station of the ICRT's 'Noticiero Nacional de Cuba' and the country's official time standard."

(ICRT is the abbreviation for "Instituto Cubano de Radio Y Television.")

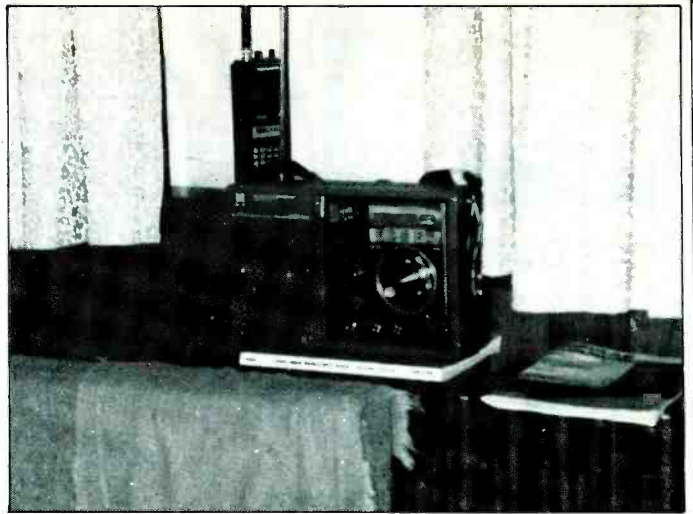
Table 1 lists all of the stations in the Radio Reloj network, including the above, as shown in the *WRTV Handbook*.

Perry also sent in some comments about the WOO listings carried in the November column. He offered the following:

The listings given for transmitting frequencies authorized for WOO, the AT&T station at

Table 1**Radio Reloj Network**

Call	kHz	kw	Location
CMED	570	60	Santa Clara
CMGI	610	1	Trinidad
CMBD	760	5	Guanabacoa
CMAD	790	30	Pinar del Rio
CMDI	910	0.25	Colon
CMDD	920	0.25	Matanzas
CMDJ	930	0.25	Cardenas
CMID	930	1	Ciego de Avila
CMGD	950	1	Sancti-Spiritus
CMFD	960	1	Cienfuegos
CMIE	960	0.25	Ciego de Avila
CMMD	960	0.25	Guantanamo
CMND	980	0.25	Bayamo
CMOD	1180	1	Neuva Gerona
CMJD	1221	1	Santiago de Cuba
CMHD	1270	10?	Camaguey
CMED	1280	1	Santa Clara



William Minardi, RI shows us his Panasonic RF-B300 and Realistic PRO-31 scanner. He also has a Panasonic RF-4800, Hallicrafters Civil Patrol VHF receiver and uses an 85-foot long wire running east to west.

Ocean Gate, NJ appear to be exactly 1.4 kHz higher than the listings shown in the *Confidential Frequency List, 6th Edition*, by Oliver P. Ferrell. I believe that this occurs because the federal government insists on showing the center frequency of the bandwidth used by the station, which operates on USB, instead of the carrier frequency. I prefer to use the latter because this is the frequency we set our receivers to. Table 2 lists these channels by carrier frequency, along with the channel numbers as used by the operators. Since these are duplex channels, the associated ship transmitting frequency is also shown.

Mark Fosella, NY sent in a tape of an unusual signal. Here is what he said:

Dear Mr. Schimmel, enclosed please find a tape of a signal heard between 0320 and 0345 UTC, 5 October 1986. The primary frequency was \pm 4200 kHz although I did tune to an image or harmonic on 4450 kHz for a clearer channel and then back again to 4200 kHz as heard on the tape.

The signal had four distinct volume level cycles indicated on the VU meter. The S-meter on this rig is made out of lead and did not show anything. The volume level seemed to indicate no signal for a brief moment than a 15% -25% -75% and 100% change. Of course, this is relative to the meter set for a maximum before overload on the loudest part of the signal. They are also approximate.

As you can hear there is also a "squiggly" tone attached at certain intervals. It seems to be a part of this signal. At one point in the recording as you will hear, I switched out the bfo for a sample of that mode.

What is interesting to me is the fact that I have always heard this signal way in the background. I could have heard it for about 4 years or so but it just sounded like noise. I have heard it on many frequencies as well, between 1.6 to 4 megs. To me, it just seemed like interference and not intentional, but when for the first time I heard it so loud I just had to record it.

I listened to the tape but am unable to offer any positive identification of the signal.

Table 2**WOO Ocean Gate, NJ USB Duplex**

Channel #	Frequency kHz	
	WOO	Ship
411	4388.4	4094.0
416	4403.9	4109.5
422	4422.5	4128.1
808	8740.6	8216.7
811	8749.9	8226.0
815	8762.3	8238.4
826	8796.4	8272.5
1203	13107.0	12336.2
1210	13128.7	12357.9
1211	13131.8	12361.0
1228	13184.5	12413.7
1230	13190.7	12419.9
1605	17245.3	16472.4
1620	17291.8	16518.9
1626	17310.4	16537.5
1631	17325.9	16553.0
2201	22596.0	22000.0
2205	22608.4	22012.4
2210	22623.9	22027.9
2236	22704.5	22108.5

WOO broadcasts WX reports and traffic lists at 1300 UTC on 4422.5 and 8749.9 kHz.

An interesting observation was received from Gary Bledsoe, AK. "I've been noticing a very odd signal at various places in the 13 meter band. It sounds like a freight train, building in intensity and then slowly fading out. It lasts a total of 15 seconds or so. Could this be our American version of the Woodpecker? Some are being built around here in Alaska. It is extremely disruptive, but fortunately doesn't last long."

Rick Matthew, Canada has provided some corrections for October loggings.

TFW is the correct call for Iceland, VFC is Cambridge Bay and VFF is Frobisher.

Any anonymous contributor sent in the breakdown of the special characters used in Soviet communications as shown here in Table 3. This arrived at an opportune time because several requests had been received asking for a listing of such characters.

Here are two QSL addresses in answer to a number of requests: Genova Radio ICB, Ufficio Principale Radio P.T., Il Direttore, Via Romana della Castagna 23, I-16100 Genova-Quarto, Italy. Vancouver Coast Guard Marine Airradio Station VAI, 101 4611 Cowley Crescent, Richmond, BC V7B 1B9, Canada.

Al Trautman says he works on an oil platform about 150 miles off shore, southwest of Texas. He heard KKKU880 on 33.36 MHz and wondered what this station was. According to FCC authorizations, KKKU880 is assigned to CITGO Petroleum Corporation, Lake Charles, LA. The actual location of the transmitter is probably also off shore and could be another oil platform.

The information in the November column about the Table Mountain antennas brought this response from David Triska of Colorado.

"Pat (Patrick Griffin, CO) indicated the antennas were operated by several Government Agencies. They are in a sense, however, the Department of Commerce in Boulder maintains this facility, which can be used by other government or private agencies. The area is designated as a quiet zone, and by that I mean the area is relatively free of man-made noise in order to run whatever kind of testing they do out there. According to an engineer that works for the Department in Boulder, there are no transmitting capabilities at the site, and the log periodics are or were used for back scatter radar."

Here is an expanded explanation on the Soviet MIR which was reported in the De-

Table 3

Soviet Special Characters

Sent as	Copied as	Or copied as	Sounds like
••••	"	Ä	AA
••••	:	O	OE
••••	&	H	OT
••••	*	U	IM
		È	UI

Mr. *Neely*

This verifies your reception of *MGD*

Location *McMURDO STATION* Date *8 OCT 86*

Time UT *2147/0904* Time Req *8:27K* Mc *SSB*

Remarks *"ICE 3" was met & fully an Air Force C-141 returning to Christ Church, NZ from Antarctica.*

Lower frequency.
Signature *RM3 TFL/duke*

A McMurdo Station (Antarctica) QSL sent in by Ralph Neely, OK.

ember column. Mike Neary, PA forwarded this clarification:

"The monitor was referring to the MIR Laboratory, a space station launched earlier this year. MIR means 'peace' in Russian. Was it MIR? Possibly, but it also could have been Salyut 7, an older station still in occasional use. Or, it could have been a robot Progress supply ship. It might even have been a manned Soyuz."

Coverage of Antarctica communications was the subject of a letter from Ralph Neely, OK and he included a copy of the QSL he received from McMurdo Station. Ralph copies the stations via both MARS and U.S. Navy frequencies on 13974 and 8997 kHz, respectively. Stations heard included the following:

Location	Call sign	MARS Call
South Pole Stn.	NPX	NNOØNWB
McMurdo Station	NGD	NNNØICE
Palmer Station	NHG	NNNØKMR
Siple Station	NQU	NNNØICF

Also heard on 8997 was traffic between McMurdo Station and the U.S. Navy Support Force in Weedons, Christchurch, New Zealand.

Tom Kneitel reports snagging the globe-circling experimental aircraft *Voyager* in USB on 8822 kHz at 2300 the evening before the flight ended. The craft was in contact with its command center at Edwards AFB in CA discussing weight distribution of the fuel remaining aboard.

Now for the loggings sent in by readers:

**Intercepts
(All times are UTC)**

- 206: Beacon GLS, Galveston, TX at 0249 (Lauterbach, MI).
- 230: Beacon SH, Crakk (Shreveport Reg. Apt.), LA at 0212 (Lauterbach, MI).
- 233: Beacon LG, Baugherty Field, Long Beach, CA at 1355 (Szalony, CA).
- 236: Beacon GNI, Grand Isle, LA at 0205 (Lauterbach, MI).
- 263: Beacon GR, Grand Rapids, MI at 1959 (Lauterbach, MI).
- 291.9: Beacon KN, Skrova Lt., Saltvaersholsen, Norway at 0223 (Cote, Norway).
- 300: Beacon C, Mobile Pt., AL at 0125 (Lauterbach, MI).
- 303: Beacon HK, Port Kholmsk Lt. Sta., Siberia, USSR at 0306 (Cote, Norway).
- 304: Beacon BN, Nashville, TN at 0254 (Lauterbach, MI).
- 356: Beacon AR, Green State-Armin Apt., Providence, RI at 0200 (Sam, MA).
- 362: Beacon SB, Sudbury, Ont. at 0139 (Lauterbach, MI).
- 365: Beacon FT, Ft. Worth, TX at 0258 (Lauterbach, MI).
- 368: Beacon IMR, Marshfield, MA at 0205 (Sam, MA).

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/led/ication
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	with
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

- 371: Beacon DU, Bardufess, Norway (Cote, Norway). No time given-- Ed.
- 378: Beacon RJ, Roberval, PQ at 0216 (Sam, MA).
- 382: Beacon UPA, Punta Alegre, Camaguey, Cuba at 0907 (Sam, MA).
- 385: Beacon EMR, Augusta, GA at 0345 (Pat O'Connor, NH).
- 388: Beacon MFV, Melfa, VA at 0338 (O'Connor).
- 391: Beacon DDP, Dorado, San Juan, PR at 0540 (Sam, MA).
- 397: Beacon SB, Norton AFB, San Bernardino, CA at 1640 (Szalony, CA).
- 406: Beacon FLR, Fall River Munic. Apt., MA at 0554. My refs show this one on 201 kHz, not 406 kHz-- Ed.
- 407: Beacon IL, Wilmington, OH at 0415 (O'Connor, NH).
- 412: Beacon UKG, Kleinburg, Ont. at 1952 (Lauterbach, MI).
- 414: Beacon PCW, Pt. Clinton, OH at 0301 (O'Connor, NH).
- 516: Beacon YWA, Petawawa, Ont., 25 watts, at 0236 (Tom Kneitel, NY).
- 1619: KA85084 call market in CW at 0250, unknown location (Kneitel, NY).
- 2010: CHM7211, CHM7221, CHM7231 & CHM7281 in USB at 0745 w/mil exercise tfc. Possibly Canadian Military Reserve net (Doerschler, CT).
- 2182: USCG station, Charleston, SC in USB at 0700, YL op sending navigational bulletins (Fernandez, MA).
- 2206: CCGF, Canadian ship SIR WILLIAM ALEXANDER in USB at 2214 working VCS (O'Connor).
- 2514: Canadian Coast Guard, Sault Ste. Marie in USB w/Great Lakes forecasts at 0525 (Fernandez).
- WLC, Rogers City, MI w/fc list & wx at 0147 (Ross, Ont.).
- 2670: USCG ComSta, Boston, MA w/ex & notices to mariners at 0445; also NMR at San Juan, PR; NMN37. Ft. Macon, NC; & NMB, Charleston, SC (Pearce, NY).
- 2863: KVM70, Honolulu, HI in USB at 1335 w/wx //6679 & 8828 (Szalony, CA).
- 3130: Fox Tango as apparent NCS being called by P4X checking his "Romeo side," 9FN w/request for new data freqs for "Alligator Playground." Possible USN net in USB at 0506 (Dunn, MS).
- 3217: YL/GG in AM-mode w/5F gps at 0443 (Fernandez, MA).
- 3415: YL/EE (accented EE) w/5L phonetics in AM-mode at 0400. Phonetic letters pronounced slowly and deliberately (Dunn, MA). Kneitel's Guide to Embassy & Espionage Communications shows this as a Mossad (Israeli Intelligence) transmission-- Ed.
- 3445: YL/SS in AM-mode w/5F gps at 0435 (Fernandez, MA).
- 4030: Army MARS net Tennessee stations w/check-ins, LSB at 0135 (Goubeaud, TN).

- 4066.1: NHLT, USS CONYNGHAM (DDG-17) in USB at 2132 to Norfolk ICSB (on 4360 kHz) w/patch to COMDESRON 2 (Symington, OH).
- 4221: GYU, Royal Navy, Gibraltar in CW at 0600 w/marker tape (Sam, MA).
- 4231: A7D, Doha, Qatar in CW at 0300 w/call marker tape (Kneitel, NY).
- 4400.8: Lima 5 X-Ray to X-Ray 1 Kilo in USB at 0820 w/fc re vessel compartment photos for evidence & report that compartments were flooding. Told to get "3 bales" for evidence. Also heard Victor 2 Zulu in contact w/L5X about vessel boardings. Possible anti-smuggling ops (Fernandez, MA).
- 4410: Vessel NORDIC PRINCE in contact w/WOO for 'patches at 1917 (Pearce, NY).
- 4452: "U" beacon in CW at 2220 (Cote, Norway).
- 4467.6: Mississippi CAP net in USB at 2400 w/Mockingbird 482 in charge of things (Goubeaud, TN).
- 4637.5: WRB669, Zapata Offshore Co., Channel View, TX in USB at 2318, YL op working oil rigs (Ross, Ont.).
- 4640: Ohio State Civil Defense net, NCS at Columbus in USB at 2220 (Cote, Norway, OH). Day of the week not given-- Ed.
- 4670: YL/SS in AM-mode w/call-up signal of 580 580 580 followed by a 1 to 0 count, then repeated (Magrann, CA).
- 4996: RWM, Moscow, USSR time station w/VVV & CQ in CW at 1916. Also noted on 9996 kHz (Cote, Norway).
- 5015: YL repeating PAPA NOVEMBER w/flute-like sounds in background, AM-mode at 0003 (Vendetti, NJ).
- 5168: NRK, US mil, Keflavik, Iceland in CW at 0345 calling CQ (Kneitel, NY).
- 5230: JXU, Bø NavRad, Norway in CW at 2230 (Cote, Norway).
- 5320: NODE, USCGC WHITE PINE in USB at 1605 to USCGC Mobile (AL) Group (Symington).
- 5550: Boyeros (Rancho Boyeros Airport, Havana, Cuba) advising Aeroflot 335 of severe thunderstorm over Havana w/4 km visibility, USB at 0624. Aeroflot then advised Havana ETA was 0725 and asked for wx at Camaguey (Halstead, WV).
- 5696: CG helo 2107 in USB at 1455 working New Orleans ops w/fc re position of observed vessel saying "we are still covert" but stating need to refuel (Goubeaud, TN).
- 5711: SS language mil net in USB at 2014. Some stations in net included WTA, TAA & BZC (Stinnett, WV).
- 5985: YL/SS in AM at 0713 w/5F groups (Fernandez, MA).
- 6227: YL/SS in AM-mode at 0804. Switched from 2/3L gps to 5L gps in mid-xmsn (Anderson, CO). The changeover you describe is most unusual-- Ed.
- 6410.1: KLB, Seattle, WA in CW at 0225 w/call tape (Szalony, CA).
- 6506.4: NMX, USCG Baltimore, MD at 2300 to USCGC NORTHWIND setting up RTTY comms (O'Connor, NH).
- 6509.5: KVVH, the NOAA Atlantic Marine Cente, USB at 1500 to various NOAA vessels. Also heard KHW in Pascagoula, MS here (Symington, OH).
- 6535: Ascot 3435 working Dakar, Senegal in USB at 0415 w/position report. Aircraft had to go off planned course by 20-miles to skirt bad weather (Halstead, WV).
- 6683: Air Force 1 in LSB at 2400 w/info for press services (Covington, WV).
- 6693: CZW, Halifax, NS in USB at 0440 to Canadian Rescue 102 (Ross, Ont.).
- 6738: Fox 23 calling Anderson AFB, GU w/o success. Thule AB in Greenland responded giving a Lima Charlie (loud/clear) sig report. Also heard P9P in USB at 2221 asking for patch to NKW, Diego Garcia Island, Indian Ocean (Homer, PA).
- 6745: YL w/accnt (Chinese?) in EE repeating 2C102 w/phonetics, USB at 2248; then switched

to CIO2 & s/off (Vendetti, NJ). Typical Israeli Mossad xmsn-- Ed.

6753: Lahr Military (MAC), FRG w/wx in USB at 1900 (Pakula, Norway).

6840: YL w/accnt (Chinese?), AM-mode at 2122 w/5L phonetic gps (Vendetti, NJ). This is the brother of the Mossad xmsn reported on 6745 kHz according to Kneitel's Embassy/Espionage book-- Ed.

6883: Andrews 972 to Andrews AFB, LSB at 0000 w/reading of news item (Hardy, VA).

6995: AIR, Andrews AFB, MD in CW at 0058 w/tape of VVV DE AIR TEST (Dunn, MS).

7230: YL/EE in AM-mode at 1800 w/xmsn of 780 780 780 & 1 to 0 count (Anonymous, IN).

7422: YL/SS repeating 358 & 1 to 0 count at 0407; at 0410 3 beeps & into # gps (Krepps, TX).

7527: 5L gps in CW at 1243 (Kneitel, NY).

7545: Bearcat in USB at 0626 to Appetite, Stout Hearted & Rhombus (Bob Margolis, IL).

7574: Auto-sent CW at 1531 w/4F/L gps (cut #'s) using A B D E N T U V 4 6 (Hall, WA).

7601: CW sta w/5F gps at 2220 (Cote, Norway).

7886.9: YL/SS in AM at 0745 w/5F gps (Fernandez, MA).

7905: K beacon in CW at 2220 (Cote, Norway).

8025: Single letter beacon (SLB) station sending "A" in series of varying length w/silent periods during 1319 to 1401 followed by encrypted tfc (Sam, MA).

8079: U beacon in CW at 2035 (Pakula, Norway).

8110: CW sta w/5L gps at 0638 w/only the following letters used: A D E G I M N P R T U W. At 0644 s/off w/"AR SK" (Hall, WA).

8150: OVG, Fredericksheven NavRad, Denmark in CW at 2247 (Cote, Norway).

8213.6: WCM, Pittsburgh, PA in USB at 1807 calling the tug ED RENSHAW. Minutes later I heard the tug on VHF and simultaneously spotted

it transiting 'neath the Hannibal, MO bridge over which I was traveling, says A. Nonymous of MO.

8242: YL/SS in AM-mode at 0330 ending a series of #'s (King, MN).

8291.1: WPE, Tug Communications Inc., Jacksonville, FL in USB at 1812 to tugs MARINER & VIGILANCE (Symington, OH).

8441.5: HPP, Intelmar R., Balboa, Panama in CW at 1921 calling un-ID station TF6; sends freq list for CW & 'phone ops (Stinnett, WV).

8460: OFJ, Helsinki, Finland in CW w/call tape at 2330 (Cote, Norway).

8460.8: YVG, La Guaira, Venezuela in CW at 0001 w/VVV tape (Venedetti, NJ).

8565.3: XSJ3, Zhanjiang, Peoples Rep. China, in CW at 0359 calling CQ marker (A.Nonymous, MO).

8622: PCH414, Schevenigen, Netherlands in CW at 1933 (Cote, Norway).

8644.5: XSG, Shanghai, PRC in CW at 1640 calling CQ (Sazalony, CA).

8646: S beacon in CW at 2054 w/rapid xmsn. Also letter "A" at 2038 (Pakula, Norway).

8670: U beacon in CW at 0105 (Pakula, Norway).

8740.6: WOO, Ocean Gate, NJ on maritime channel 808 monitored between 2000-2100; also operates on 13128.7, 13131.8, 13184.5 & 22608.4 kHz (Patterson, FL).

8742: WPD, Tampa, FL in CW at 1536 w/marker (Lauterbach, MI).

8761: Un-ID sta in USB at 0500 started out w/various musical notes then OM/SS began talking; sequence repeated over & over (King, MN).

8765.4: USCG ComSta Honolulu, HI in USB at 0550 w/wx for Pacific including High Surf Advisory for 100 miles around HI (Dunn, MS).

8848: American Flight 1 on USB .ct 0345, aircraft enroute Miami (King, MN).

8867: Auckland R., New Zealand in USB at 0608 contacting United 812 & Qantas 54 w/wx

& other data. Received relay from Sydney R. (Dunn, MS).

8891: Speedbird 6 (British Airways) on the polar route working Cambridge Bay in USB at 2324 reporting over "Sierra 115 West." Cambridge Bay is located on Victoria Island in the Canadian Arctic (Halstead, WV).

10215: U beacon at 0007 (Cote, Norway).

10507: CW sta at 1258 w/5L gps sent in groupings of 10 separated by a "-" (Margolis, IL).

10561: FTK56, Paris (St. Assise), France (AFP news service) in CW at 1905 w/FF nx to ships (Margolis, IL).

11182: Buckeye 30 in USB in 1915 w/patch to SAM Command via Scott AFB (A. Nonymous, MO).

11234: An RAF station in England w/wx in USB at 2115 (Goubeaud, TN).

12110: YL/SS in AM-mode at 1605 w/5F gps (A.Nonymous, IN).

12342.4: OWIS, vessel FETISH working USCG station NMN (on 13113.2 kHz) in USB at 1822 (Kneitel, NY).

12432.3: KBCF, tanker OVERSEAS CHICAGO to KHR (Rockwell Int'l., Newport Bch., CA); WTEP, the NOAA ship OCEANOGRAPHER to KAC of Woods Hole Institution, MA; WRV at Prt. Richmond, NY to tug JOE MORAN. All USB between 1452-2119 (Margolis, IL).

12573: ATUJ, Indian vessel TULSIDAS to A9M in Bahrain in CW at 1556 (Halstead, WV).

12600: BRTS, vessel HONG QI 120 in CW at 1454 w/Telex sent to XFM (Margolis, IL).

12662: 7TAB, Algiers, Algeria in CW at CQ marker (Ross, Ontario).

12690: VRD, Hang Kong, in CW at 0043 w/call tape (Cote, Norway).

12880: SAG, Goteborg, Sweden in CW at 0052 w/CW marker (Cote, Norway).

12906: DZJ, Bulacan R., Manila, PI in CW at 1842 calling CQ (Hall, WA).

12948: JJF, Japanese Naval R., Tokyo, Japan at 2228 w/CW marker followed by duplex ttc & ttc list (Hall, WA).

12994: VIP, Perth, Australia in CW at 1358 sending call marker (Vendetti, NJ).

13086//13095: OXZ, Lyngby R., Denmark in CW at 2117. Sends call followed by 4 data bursts, possibly ARQ/TOR (Pakula, Norway).

13201: Camp Pendleton USMC, CA in USB calling Clark AB, Philippines at 2047 (Homer, PA).

13240: CUA69, Alfragide, Lisbon, Portugal in CW w/possible wx xmsn in PP at 1842 (Hall, WA).

13875: YL/SS in AM at 1812 w/5F gps. At end of ttc sent 849 849 133 133 00000 (A. Nonymous, IN).

13940: FFY in CW at 1340 sending VVV tape. Unknown station (Kneitel, NY).

13965: Managua R., Nicaragua conducting SS ttc net in USB at 1515 & calling Bensua (Vendetti, NJ).

14990: 2 un-ID stas in CW at 2312 w/info about nulls, gains & freq. changes, using numerical readings after each. Possible RDF'ing net? (Vendetti, NJ)

15015: AFD14, USAF Ascension Island, So. Atlantic in USB at 1916 working Avid 67 w/patch to Format (21st AF, McGuire AFB, NJ) (Hall, WA).

15035: Trenton Military (MACS) w/wx at 1835 (Pakula, Norway).

15705: U beacon in CW at 1329 (Kneitel, NY).

16587.1: KHT, Rockwell Int'l., Cedar Rapids, IA to various ships, EXXON BATON ROUGE, EXXON WILMINGTON at 1500, & KFCC, the OMI YUKON w/patch at 1715 (Symington, OH).

16765: GBWY, British bulk carrier LORD CURZON in CW at 2329 w/Telex to HLJ (Margolis, IL).

16902.6: PCH60, Schevenigen, Netherlands in CW at 1954 w/call tape (Weber, Bermuda).

16920: AM-mode carrier w/sharp metallic clicking sounds every 1 1/2-sec. (Fernandez, MA).

16999: JDC, Choshi, Japan in CW at 0508 w/call tape (Anderson, CO).

17052: JNA, Tokyo Naval R., Japan in CW at 2331 w/wx then marker tape (Hall, WA).

17074.4: LQX, Rogaland R., Norway in CW at 1935 w/call tape (Weber, Bermuda).

17205: HEC, Berne, Switzerland in CW at 1935 w/call marker (Lauterbach, MI).

17852: At 2315 a long, strong carrier, a few brief buzzes. At 2317, a high-pitched tone, carrier abruptly ends. At 2318 everything repeats but w/lower pitch tone...then rises tone by jumps to out of audible range. Tonal scaling repeats but w/varying patterns, changing tone every 2-3 secs. Some form of "piccolo"? (Hall, WA).

22336.2: XSW, Kaohsiung, Taiwan in CW at 0312 calling CQ (Bledsoe, AK).

22430.2: PKX, Jakarts, Indonesia in CW at 0136 calling CQ; also JFF, Yaizu Gyogyo, Japan w/CW ttc at same tmc as PKX (Bledsoe, AK).

22459.5: XSX, Keelung, Taiwan in CW at 0206 w/CQ tape (Bledsoe, AK).

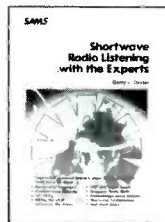
26786: Complex scrambling xmsn in USB at 1908 (Vendetti, NJ).

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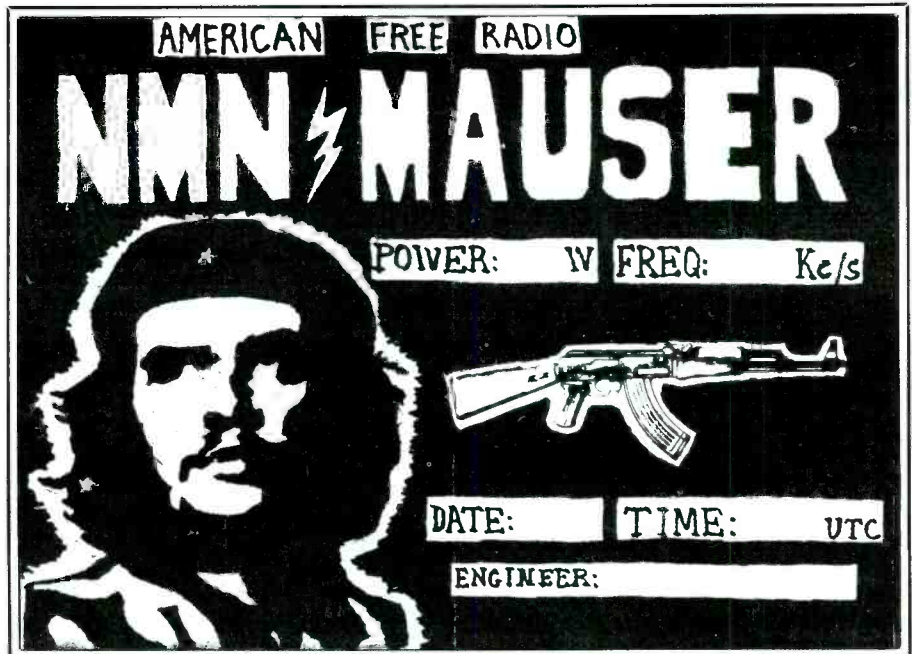
FOCUS ON FREE RADIO BROADCASTING

I mentioned **KLES** Radio in the December column and the operator of this station has been back in touch to advise us of some additional details on his station. **KLES** has changed frequency from 1600 kHz to 7325—where it should be heard much more widely. Seems the size of the antenna at 1600 kHz was too large for the operator to handle! **KLES** has been on the air since last September but “Les,” the operator, says only about a half dozen letters have been received so far and the station is anxious to get more. I don’t know if Les wants the address published since it appears to be his home address, and I don’t know if he has a mail drop he announced on the air or what the score is so I’m going to hold off printing an address until I know what’s what. I guess I can tell you that it’s in California.

KLES is scheduled to be on the air each Saturday around 0300 and plans a different program line-up each time, based upon which Saturday of the month it happens to be. Big Bands are the fare on the first Saturday of the month, old time radio shows on the second, polkas on the third, jazz on the 4th and something “very special” on the 5th Saturday—when there is one.

Radio Mauser checks in to state that it usually operates around 7490 or 7520 and that the frequency reported in the column in November (7425) was not correct. The reference to “**NMN**” in the QSL card pictured this month means “New Mother Nature.” Note that the card still refers to frequency as “kc/s” but is up to speed with UTC as the time type.

A month or two ago this column had a report of a **Gold Coast Radio** up around 28 MHz. Now other reports of this station are coming in, not only on the high end of the shortwave band but just above the top of the broadcasting band, too. William Winchester in Gonzales, CA heard a station at 0713 on 25 October on 1705 kHz. The station was announcing as “**KDTA, The Delta**” with the announcer calling himself the “**Gold Coast Ghost**.” Bill says all this struck a bell with him so he checked his old logs and found he’d heard this station in October 1979 on 28.045, lower sideband! They were using 28.005 lower sideband at the same time they were on 1705. Bill also heard them on 28 October on 28.005, 30 October and the 31st on 27.915, as early as 0420 to as late as 0929. During all that listening there were mentions of “broadcasting on desert rangelands near the Pacific shores” and announcing use of 91.5 MHz FM and “shortwave 28.” Brent Allen in Nevada reports the same station on 30 October at 0630 on 1705, 31 October at 0230 on 27915 and 7



November on 1705. So it would seem an old pirate has been reborn, although on frequencies which aren’t likely to provide very wide coverage. Maybe they’ll show up in the 7 MHz pirate band one of these days.

Another odd station is reported by Ross Beckstrom in Montana. Ross heard a station on 10 November on 4935 identifying as **Radio Orange** and using upper sideband between 0505 and 0550. At tune-in the station was reading off lists of questions such as “mother’s name, name of insurance company . . .” At other times there were comments which included “Good evening, men of the Blue Navy,” and “Here’s a tune for you lonely and confused Blue soldiers.” Ross says a lot of names were mentioned but he was unable to copy them and about half the broadcast seemed to consist of a coin-operated “**Pac Man**” game! There were also strange, whistling sounds and an apparent newscast which Ross couldn’t copy. At sign-off the announcer said “Goodbye, but not forever, I hope.” A most interesting logging, Ross! Not the **Radio Orange** service of South Africa, surely—even on a wrong frequency. Some parts of the broadcast Ross describes have an almost clandestine flavor, others a pirate flavor. Anyone out there have any additional info on this?

Brent Allen provides a few additional pirate loggings:

Radio North (or perhaps **Radio Northwest**) heard on 1633 kHz at 0500 on 29 Oc-

tober with overmodulated music and mention of station name.

Garden Radio (tentative ID) on 27705 at 0215 on 1 November with bell-like music and an announcer with an oriental accent.

Other recent pirate activity includes **Radio Clandestine** on 7373, **Secret Mountain Laboratory** on 7411, the **Voice of Lester** on 7420, **WKUE** on 7435 and **Zepelin Radio Worldwide** on 7420.

The Communicator, the ship which once housed the British medium wave pirate **Las-er 558**, was sold to a British firm (East Angelian Productions) which produces corporate videos and radio/TV commercials. The company paid £35,000 for the ship (valued at about eight times that amount) which still contains the broadcasting equipment and a satellite link-up. The ship may be used as a summer-only English language tourist station based in the Mediterranean or it may be moved to a location where it could operate as a legitimate commercial radio station. Some “free radio organizations” are also reported to be interested in the ship and its radio facility.

That’s about it for this month. Remember to send in your pirate loggings—it’s important to help others hear what’s on. Background data on pirates, news from pirate operators about current or planned stations, copies of pirate QSL’s or other material is always welcome. I’ll look forward to hearing from you and I’ll be back with more pirate news next month.

PC

SCANNER SCENE

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

The mailbag has been pretty full lately, so we'll get right to your letters:

Bernard Wimmers Jr. of Vienna, VA writes to say that the Fairfax County (VA) Police Department has switched to a new 800-MHz radio system that also will be used by the Fire Department and Rescue Squad. The frequency plan is as follows:

F-1 854.1375	F-5 853.9625
F-2 854.2875	F-6 853.1875
F-3 853.3375	F-7 853.7875
F-4 853.4875	F-8 853.6375

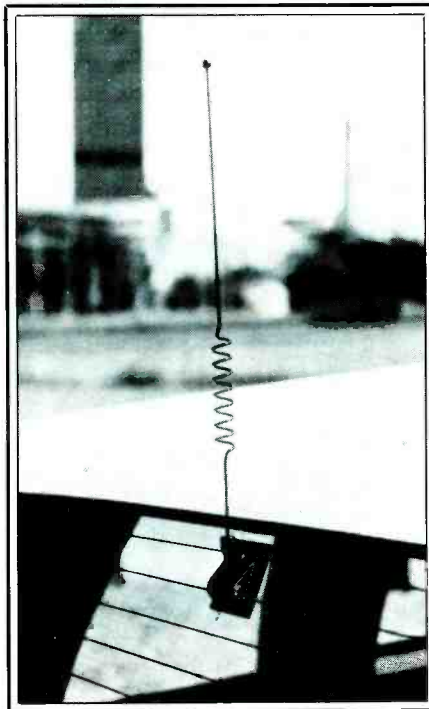
F-1 is assigned to Station 1, etc. The 460-MHz system used by the county will continue to be used, however, only computer digital transmissions will be heard.

A reader from Honolulu, Hawaii writes in to report that while stuck in a drive-thru line waiting for a Big Mac, he noticed that the McDonald's employees working the window were using FM-type headsets. Setting his scanner into search, he found them on 35.02 MHz and could hear orders being taken and even conversations between headset-equipped employees. He reported that the signal could be heard for several blocks.

Well, our listener (who prefers to remain anonymous) has stumbled across something that many have learned. If you check 154.600 MHz as well, you'll probably hear the same thing. It seems McDonald's uses these frequencies across the country. The one frequency is usually used for communications from the drive-thru lane to the window, while the other frequency is used for the order taker to talk to the customer. If you live near a McDonald's, check it out!

Another anonymous reader sent in a clipping that tells how Toledo, Ohio is also switching over to 800 MHz for public safety communications and is expected to be fully on-line by 1987. The 20-channel trunked system will be used not only by police and fire units, but by all city departments and divisions as well. The new system is also expected to make use of mobile computer terminals for police and fire units. The All Ohio Scanner Club reports that the following frequencies will make up the Toledo system under the callsign WNCE682: 851.0625, 851.4375, 851.4625, 851.4875, 852.0625, 852.4375, 852.4625, 852.4875, 853.0625, 853.4375, 853.4625, 853.4875, 854.0625, 854.4375, 854.4625, 854.5875, 855.0625, 855.4375, 855.4625, 855.4875.

Ron Porter of Watertown, MA says that the most interesting news media channel in



It looks like a cellular phone antenna, but beware! It's Antenna Specialists new "On-Glass" model M-906 mobile antenna for CB. One automotive parts dealer even offers fake cellular antennas for those who like the "status" look.

the Boston area is the one used by WCVB-TV Channel 5 on 450.6125. The repeater carries information from the newsroom, helicopters and remotes as well as technical information. Ron also reports that his favorite frequency is 450.1125, which is a repeater used by Metro Traffic Patrols for the Boston area. Traffic reports from reporters in helicopters, airplanes, mobile and portables are called in and are then rebroadcast on AM, FM and TV stations throughout the Boston metro area.

George H. Strack of Pottstown, PA says he hears babies crying every night on frequencies between 49.8 and 50 MHz. Yes, it's the baby band! Perhaps you've seen them advertised in catalogs—those portable systems in which an open transmitter is left in baby's room, while Mom or Dad carry around a walkie-talkie-looking unit to hear whatever goes on in the baby's room. When I lived in town, it used to drive me nuts, too, hearing all that crying going on every night. But if you're into goo-goo, it's for you. George also reports hearing telephone con-

versations in the 46.5-47 MHz band. This is where frequencies for newer cordless phones are located. The channel plan for cordless phones manufactured after 1984 is as follows:

Channel	base	handset
1	46.61	49.67
2	46.63	49.845
3	46.67	49.86
4	46.71	49.77
5	46.73	49.875
6	46.77	49.83
7	46.83	49.89
8	46.87	49.93
9	46.93	49.99
10	46.97	49.97

Bob King of Absecon, NJ took notice of the November column that mentioned ways of finding out desired frequencies and submits his own succinct method. He writes: "Appear not too well-informed (the smart cat is the one who lets people think he isn't) and ask something about the unit (usually a walkie-talkie) that seems stupid, such as, 'Is that a Motorola or a GE radio?' Fifty percent of the time, the user will unholster the unit to take a look. At this time, try to get a glance at the plate on the back of the radio. Some units have these plates and others don't. If you're lucky and keen of eye, you'll be able to see the frequencies used in the unit. (The other 50 percent of users will give you a strange look—and a cold shoulder—and tell you to get lost!)"

Richard C. Effner of Riley, IN wants to know where to find portable frequency counters, as mentioned in the November issue. The best bet is to check electronics and Ham magazines for advertisements offering frequency counters (make sure the counter

Listening To South Texas And The World

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includes the bands you want to check). Our sister publications, *CQ Amateur Radio* and *Modern Electronics* both carry ads for equipment such as this. Richard also wants to know where he can check FCC files for the Terre Haute, IN area. FCC files are open to the public; however, they're not convenient unless you live near an FCC field office. The closest to you, Richard, is in Chicago, IL. Every FCC field office has microfiche files of all radio licensees that can be viewed on readers in the office.

A reader who is with CBS News in New York City, sheds some additional light on frequencies used during last year's Statue of Liberty celebration. CBS News had a camera on the Goodyear blimp and used 450.350 MHz to coordinate the blimp aerial platform. In addition, the Coast Guard cutter *Eagle*, the lead tall ship, was equipped with a radio on 450.5125. For technical coordination during the event, 450.800, the frequency used by WCBS in New York, was used. While you may think we are printing these frequencies too late to be of any good, keep in mind that they may be used again some time at other events. You can bet on it!

Robert Blackburn of Highland, MI writes in with two corrections for the new Michigan State Police network frequencies that were listed in the November issue of *POP'COMM*. The Intelligence Squad and Detectives "Red" channel is 154.665 (not 165.665 as listed) and the Michigan Emergency Public Safety Radio System (MEPSS) frequency is 155.865 (not 155.685 as listed).

New York City's gypsy taxi cabs have been operating on a frequency around 29.36 MHz with converted CB radios. The Hams have been unhappy about this invasion of their 10-meter band and have tried to drive the cabs off the air. Apparently, the cabbies were talking in Spanish, Greek and Korean in this band. Chances have it, the hacks are hacking it in some other band by now.

With the improvement of cellular service, pay phones are now available on major commuter rail lines. Amtrak began offering cellular pay phone service on Metroliner trains that run from Washington, D.C. to Boston, MA. While the old train phones operated in the 416 MHz band under a special license issued by the federal government, the new pay phones utilize cellular sites along the rail's line. There are only a few "dead" spots along the line, but the roaming cellular pay phones seem to be doing the job. Meanwhile, commuter trains operated by Chicago Metropolitan Rail have had cellular phones installed on them as a test. Callers pay 95 cents a minute for calls made at phones in the 312 or 815 area codes and all other calls are billed to credit cards at a rate of \$1.45 a minute.

We're interested in hearing from every one of you here at *POP'COMM*. Send your questions, photographs, frequency lists or comments to: Chuck Gysi, N2DUP, Scanner Scene, *Popular Communications*, 76 North Broadway, Hicksville, NY 11801.

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Useful Numbers To Know

There are many, many help and information telephone numbers available in the United States—not including the now notorious 976-XXXX numbers. The 976 numbers are not all astrology, sex, and talks with Santa. Some of these numbers provide useful financial information and forecasts of various types.

Sometimes an individual will put an announce tape machine on a line and provide a dial-a-joke service. Many churches provide dial-a-prayer services and politicians often provide a dial-my-pitch service for the local electorate. Many of the numbers listed here are run by individuals who take the time and trouble to set up an answering machine with a long answer-only tape. Some of the individuals running some of the services appear to be the same types that run pirate radio stations. For the comment lines, they usually use one machine to receive the comments and another machine to transmit them.

The conference lines listed here are run by private individuals; besides the charge to place the phone call, there are no other charges and most allow a caller unlimited time. There are similar services run by some phone companies, but there is a charge. The conference lines are simply set up with isolation transformers.

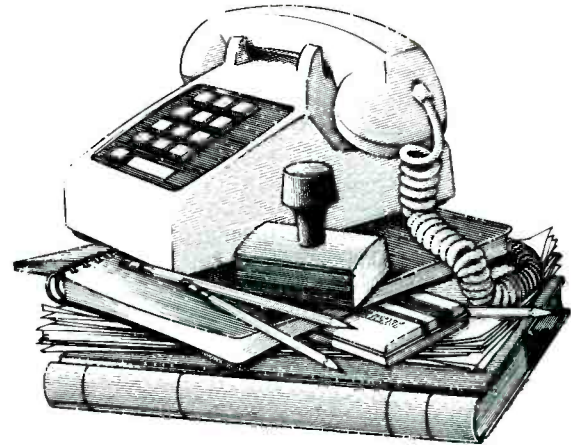
There are two viewpoints to all these numbers. To an individual, they may be fun or informative to call. To the boss, they can be an added expense and mean that employees are not working. Many telecom managers use lists of numbers similar to the one presented here to program the PBX to exclude these numbers.

By the way, if you look after the company phones or own a couple of teenagers and have some mystery long distance calls that keep popping up on your monthly bill, you can ask the phone company to provide you with the name and address of the owner of a called number. Sometimes spurious items may appear on a phone bill; you can advise the phone company about them and, if you convince the phone company that the calls were never placed from you line, they will be deleted.

By the way, not all the numbers listed here may still be in use. New ones are popping up every day.

Message And Info Telephone Numbers

(201) 623-0150 Stock Quotes
 (202) 224-3081 Joint Economic Committee
 (202) 224-8541 Senate Floor Activity (Democratic)
 (202) 224-8601 Senate Floor Activity (Republican)
 (202) 225-1600 Legislative Program (Democratic)
 (202) 225-2020 Legislative Program (Republican)
 (202) 225-7400 House Floor Activity (Democratic)
 (202) 225-7430 House Floor Activity (Republican)
 (202) 287-4091 Treasury Department Securities
 (202) 287-4100 Treasury Department Auction Dates
 (202) 343-3020 Newsline Department of the Interior
 (202) 357-2000 Dial-A-Phenomonon
 (202) 393-4100 Economic News
 (202) 447-8233 National Grain Summary
 (202) 456-2343 Ronald Reagan's Daily Schedule
 (202) 456-2343 Nancy Reagan's Daily Schedule
 (202) 523-3540 Newsline Federal Trade Commission
 (202) 523-5022 Newsline Government Policy
 (202) 632-0002 Newsline FCC
 (202) 755-7395 Newsline HUD
 (202) 899-3244 Ten Eastern Cities' Weather Forecasts



(206) 258-2791 The Sleep Line
 (212) 255-2748 The Apology Line
 (212) 899-3249 Ten Western Cities' Weather Forecasts
 (212) 986-1660 Stock Quotes
 (212) 989-2233 The Party Line (Bruce Springsteen Info)
 (213) 205-7980 The Party Line (Bruce Springsteen Info)
 (213) 205-7985 The Party Line (Bruce Springsteen Info)
 (213) 372-6244 Dial-A-Joke
 (213) 384-9630 Dial-A-Modem Geek
 (213) 664-7664 Dial-A-Song
 (213) 687-3129 Audio Adventure
 (213) 688-6694 Newsline Los Angeles Government Policy
 (213) 765-2000 Dial-A-Joke
 (213) 855-0999 Phun Fone
 (213) 888-7636 Dial-A-Poem
 (214) 742-3999 Dial-A-Joke
 (215) 229-2575 The Entertainment Line
 (215) 334-1899 Telephone Friends Inc.
 (215) 872-0624 For Telephones Only
 (312) 654-8900 Stop Smoking Line
 (312) 663-0884 Newsline Chicago Government Policy
 (312) 792-1051 Dial-A-Trance
 (405) 843-7396 Synthesizer Music
 (415) 388-4025 Dial-A-Spaz Input (Comment Line)
 (415) 388-7755 Dial-A-Spaz Output (Comment Line)
 (415) 428-9371 City Conference
 (415) 642-2160 Dial-A-Quake
 (415) 644-2424 Zygot
 (415) 843-7439 Dial-An-Excuse
 (516) 794-1707 Stock Quotes
 (714) 666-0066 Dial-A-Bozo Like Yourself Line
 (714) 680-0814 The Orange County Connection Input (Comment Line)
 (714) 680-0894 The Orange County Connection Output (Comment Line)
 (714) 891-1267 Dial-A-Geek
 (714) 895-6304 Zontor
 (714) 964-2396 The BS Line Input (Comment Line)
 (714) 964-2395 The BS Line Output (Comment Line)
 (714) 964-0774 The Bubba Brady Line

(718) 338-4900 The Kook Line
 (817) 267-2222 American Airlines Flight Info
 (818) 349-5385 Jaffel
 (818) 407-1111 REC407 Output (Comment Line)
 (818) 407-1112 REC407 Input (Comment Line)
 (818) 407-1113 REC Conference
 (818) 702-0429 The Observatory (Comment Output)
 (818) 716-9242 The Observatory (Comment Input)
 (818) 761-1330 Dual Phase
 (818) 765-7000 California Recordings
 (818) 765-2000 Zygote Joke Line
 (818) 765-6000 Feedback
 (818) 765-7000 California Recordings
 (818) 715-0000 Phun Fone
 (818) 780-7000 Phun Fone
 (818) 785-8080 The Bark Line (Conference)
 (818) 846-5000 Teleguide
 (818) 882-9523 Telephun
 (818) 883-3000 Nobody Home (Dial-A-Joke)
 (818) 888-8880 Feedback Cross Connection (Conference)
 (818) 893-8899 Decreepo Broadcast System
 (818) 982-7000 Funfone
 (818) 989-7500 The Movie Line (Paul Mack Presents)
 (818) 994-7557 Televance (Conference)
 (904) 384-8844 Tel Med
 (907) 279-0653 IRS Touch-Tone Tele-tax
 (914) 997-1277 Stock Quotes

Various 800 Numbers

This is a selection of useful numbers, though it is far from complete. Most of the numbers listed here are announcements and help lines. For help with locating any 800 number call (800) 555-1212.

(800) 221-0226 NBA Hotline
 (800) 221-4945 Woman USA News
 (800) 228-8777 Zip Code Information
 (800) 242-4022 Los Angeles Smog Report
 (800) 242-2121 AT&T Repair (Large Business)
 (800) 248-0151 White House Press
 (800) 252-0112 USC Newline
 (800) 325-0887 Arts Program Guide
 (800) 336-3366 The Source Customer Service
 (800) 367-4710 San Bernadino Smog Report
 (800) 368-5500 Coin Update
 (800) 368-5634 MCI Update
 (800) 368-5640 Senate Update
 (800) 368-5693 Republican Talk Line
 (800) 368-5744 AFL-CIO News
 (800) 368-5814 National Association of Realtors
 (800) 368-5833 American Heritage Foundation
 (800) 368-5844 COMSAT
 (800) 424-8807 Transportation Newline
 (800) 424-9090 White House Press Office
 (800) 424-9128 Department of Energy Newline
 (800) 424-9820 Citizens Choice News
 (800) 424-9864 Energy Line
 (800) 525-3056 Cattleman News
 (800) 525-3085 Cattleman News
 (800) 525-7623 American Express Currency Exchange Rates
 (800) 526-2000 AT&T Repair (Small Business)
 (800) 532-1556 Federal Information Center
 (800) 538-8154 Rolm
 (800) 621-7640 Sports Line
 (800) 621-8094 American Medical Association
 (800) 622-0858 California Medical Association
 (800) 645-5656 Sports Line
 (800) 648-3579 Mitel Inc
 (800) 882-1061 AT&T Stock Prices
 (800) 992-7433 Aviation Weather

PC



Where Oh Where Do I Send . . .

There still is understandable confusion about what to send to SCAN and what to send to *Popular Communications*. Even we were confused at first, so don't feel alone! Here's a brief rundown you may want to save for reference.

Change of Address: If you're a SCAN member, your old mailing label and new address should be sent directly to: SCAN Address Change, P.O. Box 414, Western Springs, IL 60558. Sending it to **Comments and Suggestions:** Always welcome at either *Popular Communications* or SCAN (or both!)

SCANNING TODAY

(from page 7)

ment agency authorizing you to descramble their communications, please send a copy to us. We plan to document this legitimate use of descramblers by the general public.

In the case of the frequency converter, we can't imagine that our member has anything to fear. (But, as we cautioned in a previous column, we are not giving out legal advice here.) The fact that the converter moves a "block" of frequencies received down to another "block" that can be received on a scanner makes it impossible to determine what frequencies are intended to be received with that converter. Under the unlikely event that somebody should decide these devices are illegal, all sorts of other block converters, including those for cable TV, would have to be declared illegal, too. Not much chance of that, we'd say.

But these two questions may have been the easy ones. What about police radioteletype communications using standard transmission, such as ASCII or Baudot codes? Or even packet communications in standard formats used by Amateur radio operators, too? It appears that decoding these transmissions on your scanner will continue to be legal, as long as the department doesn't resort to some special "unpublished" coding designed to prevent interception.

Perhaps a fundamental thing to remember is that most law enforcement agencies are in favor of local citizens listening in on their radio communications, in which case you have nothing to worry about. If your local officials don't have that attitude, then perhaps it is time to provide them with a Neighborhood Watch manual or other literature which describes to them how scanner owners can help. At that point you should be prepared to pitch in and make the concept work by helping them organize citizen awareness programs. A partnership will soon develop that will be invaluable . . . and it will be another blow to those misguided souls who want to bring further regulation, and perhaps even licensing and permits for radio receivers, to the U.S.

By the way, if you need Neighborhood Watch materials, SCAN can provide them. A pamphlet called *Organize Yourself and Your Community to Fight Crime*, published by the Neighborhood Crime Prevention Coordinating Committee is available from SCAN at no charge, provided that you supply us with a business-size self-addressed stamped envelope. The complete *National Neighborhood Watch Program* kit, published by the National Sheriffs' Association is also available from SCAN at just \$1.00 (half-off the regular NSA price). Both publications include information on how to use scanners in police-sponsored Neighborhood Watch programs. To speed your request, please be sure to address your order to Neighborhood Watch Book, c/o SCAN, P.O. Box 414, Western Springs, IL 60558. SCAN provides this information, in cooperation with NCPCC and NSA, as a public service.

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

BY GERRY L. DEXTER

Arms deals and other secret U.S.-Iran contacts revealed last November also exposed a long suspected CIA involvement in anti-Khomeini clandestine broadcasting efforts by Iranian exile groups. Funds amounting to \$20,000 to \$30,000 per year have gone to the Paris-based Front for the Liberation of Iran, headed by former Prime Minister Ali Amini. The FLI used this money for the operation of its clandestine station Radio Nejet-e-Iran (also known as Radio Liberation or the Voice of the Liberation of Iran.) The station calls for the ouster of Khomeini and the reestablishment of the Iranian monarchy. Radio Nejet-e-Iran can often be heard here in the U.S. Its current schedule is from 0330 to 0530 on 9027 and 15555, and 1630 to 1825 on 7080 and 9027. The station is one of the more reliable clandestines when it comes to confirming reception reports. The address is P.O. Box 102, Greve Strand, DK-2670, Denmark.

Other Iranian clandestines, (of the many which are operating), which can sometimes be heard in North America include the Voice of Unity which is scheduled from 0130 to 0225 and 1530 to 1625 on 9027, 9215, 9795, 9905, 11490 and 15685—although not all of those frequencies seem to be in use at the same time. QSL attempts can be tried at P.O. Box 2065, D-2000, Hamburg 60, Federal Republic of Germany. Also active and occasionally heard here is Radio Iran using 7075 and 9400 from 1830 to 1925.

Radio Frie Sranan (Radio Free Surinam) is aired over the facilities of La Voz del CID on 9940 at 2340 to about 2357, mostly in local Surinamese languages, plus Dutch. The Council for the Liberation of Suriname, which is responsible for the broadcasts, claims there is now a guerrilla army active within Surinam, lead by Ronnie Brunswijk. Radio Frie Sranan can be reached by writing to the CLS at Box 5517, 3008 Amsterdam, the Netherlands.

Radio Miskito, the voice of the Miskito and other indigenous Indian groups of Nicaragua, has been back on the air for some months now. You can tune for it between 0130-0230, 1130-1230 and 2100-2200 on 5565.

Followers of the anti-Zimbabwe station Radio Truth are probably aware of the mystery surrounding the U.S. address for the station. Some letters sent to the address (Mr. Stanley Hatfield, 815 Thayer Ave., Silver Spring, MD) were returned to senders. So, Jonathan Marks of Radio Netherland's Media Network program commissioned Robert Horvitz of Washington, DC to check things out. In a late November report on the



Ronnie Brunswijk is the reported leader of the active guerilla resistance inside Suriname.

Media Network program, Horvitz said that the 815 Thayer Avenue address was a large apartment complex and no "Stanley Hatfield" lived there. Mail for Mr. Hatfield was picked up by someone living in another large apartment complex nearby, according to what Horvitz was told by someone at the reception desk at 815. Horvitz finally got to the proper apartment in that nearby building, only to discover that Mr. Hatfield was, in reality, Rev. Ndabaningi Sithole, founder of the Zimbabwe African National Union (ZANU)—one of the political parties active before and during the changeover from Rhodesia to Zimbabwe and briefly part of the transitional government! Sithole told Horvitz he merely forwarded mail for Radio Truth to another address, but declined to say where. A nice piece of detective work! Incidentally, Radio Truth is one of the few clandestines broadcasting in English. If reception conditions are good it can be heard from 0530 sign-on using 5015.

As this is being written, we still have no specific news of the planned new medium-wave station to be operated by the contras.

Nor we do know where it will be located. However, the U.S. is said to be establishing some new island bases for supplies and operational centers. One will be on El Tigre Island, about 12 miles from Nicaragua. El Tigre, among other uses, is being used as a listening post, tuning in on Nicaraguan communications. Other bases are purportedly being established on—would you believe—Swan Island, once the home of the CIA's Radio Swan (and later Radio Americas) anti-Castro broadcaster during the 1960's!

Please let us have your input regarding clandestine stations and associated information. We're especially interested in schedules, details about stations and their backers, addresses and so on. Such items occasionally appear in the lay press and more often in the less widely circulated magazines and newsletters to which you may subscribe. Loggings are also welcome, as are copies of QSL's from clandestines or literature which these stations may send out with QSL's. We'll appreciate anything you can forward to this column in care of POP-COMM headquarters.

PC

RADAR REFLECTIONS

RADAR DETECTORS AND THEIR USE

BY JANICE LEE

Janice Lee is the Editor of Monday, A.M., the newsletter of Electrolert, Inc.

Stiff Penalty Levied On Radar Scrambler

A Joplin, MO company has been assessed \$68,000 in penalties and ordered to make full restitution to persons who bought a purported radar scrambling device it manufactured.

William L. Webster, Missouri Attorney General, brought suit against Skytower Electronics Inc. and its owner, Harold Dean Daniels, alleging they violated the state's Merchandising Practices Act by selling a device intended to block or scramble signals from a radar gun. In the action Webster contended that the device didn't work and constituted a traffic safety hazard.

At a hearing on September 4th, Newton County Judge George Henry of Neosho, MO ruled that the company had indeed violated the Merchandising Practices Act, assessed the fine and ordered restitution to customers misled by the company's claims.

The Attorney General said he would ask media help in locating defrauded customers. Customers who own one of the devices are being asked to call a toll-free hotline number to participate in the judgement. The number is (800) 392-8222.

The judge heard testimony from an expert witness, Joseph Winkler of MPH Industries in Chanute, KS, in support of Webster's concern about safety. Winkler said use of devices to block radar would lead to imprudent driving.

Webster said he hoped amount of the penalty imposed would deter sales of products that don't work.

Not only was sale of the device fraudulent, it was "dangerous to lead consumers to believe they could drive at any speed safe from detection," Webster said.

FCC Finds Loophole To Allow Radar Back In Kentucky

Federal Communications Commission officials have apparently found a loophole that will allow unmanned radar units to be switched back on along Death Hill in Kentucky, Senator Mitch McConnell's office recently announced.

If the maker of the radar units can find a way to rig the devices so they perform a function in addition to the transmission of radar waves, they will be allowed under FCC rules, said Jan Walker, a legislative aide to the Louisville Republican.

Ms. Walker said the radar units might be used to monitor the speed of traffic. "It's using a little bit of a loophole," Ms. Walker said.

"They (the FCC) said Kentucky's going to have to use some imagination. It would be up to the manufacturer to modify the equipment, and the FCC folks said it was a relatively easy thing to do."

Kentucky State Police and the Transportation Cabinet put up several of the unmanned units after a fiery, nine-vehicle accident in June. The accident left a teenager dead, and renewed the debate over traffic on Death Hill, the winding section of I-75 between Ft. Wright and the Brent Spence Bridge in Covington, Kentucky.

Police say the units, which are on poles along the highway from Florence to Covington, give the impression of police patrols without the manpower cost.

In August, the FCC said the units violate several federal regulations. In essence, the FCC said the units must be manned so that someone is available to take care of any malfunction, including the possible interference with other transmissions.

Subsequently, northern Kentucky officials enlisted the aid of McConnell, Sen. Wendell Ford, and Rep. Gene Snyder, to overturn the FCC's ruling. Snyder announced that he would propose an amendment to a House bill to allow a test use of the units for a two-year period. Ford's office followed that he would introduce the same amendment to an "appropriate" Senate bill.

Both the regulatory route and the legislative route should be equally successful, said a Ford spokesman. Neither Ford nor Snyder expect any opposition to their amendment.

DA's Office To Stop Prosecuting 'Moving Radar' Arrests

Chautauqua County (NY) District Attorney John T. Ward Jr. confirmed recently that his office will no longer prosecute arrests for speeding based on "moving radar" evidence alone.

Mr. Ward said he has written all county police agencies and magistrates telling them that until the status of moving radar is established by the courts, there is no point in prosecuting the arrests.

"Moving radar" is the type mounted in a police car that can supposedly determine the speed of an oncoming vehicle while the police car itself is in motion. A car moving away from a police car cannot have its speed verified by such a device, however.

Mr. Ward pointed out that County Court Judge Lee Towne Adams has been overturning moving radar convictions on appeal from lower courts as a matter of routine.

Judge Adams said that the Court of Appeals (the state's highest court) has not ruled on the validity of moving radar and there have been lower court decisions against it. "I must follow the law until such time as the Court of Appeals makes a determination of the validity of such a device."

In his letter to the police and local magistrates, Mr. Ward said, "It has long been the policy of this office to prosecute traffic infractions where the defendant has entered a plea of not guilty and retained counsel to contest the charge.

"Up until now, this policy has included prosecution of speeding cases involving moving radar. However, the prevailing law in this county, as expressed in several appellate decisions from the County Court, is that moving radar has not yet been accepted by the courts of this state, and most certainly not by the County Court of Chautauqua County. We had hoped to receive some definitive opinion from the Court of Appeals in a recent case, however, that court sidestepped the issue of the reliability of moving radar devices," Mr. Ward said.

"We have attempted in the past to plea bargain moving radar arrests with varying degrees of success. At this point, virtually every defense attorney in the county is aware of Judge Adam's position with regard to moving radar, and most are not willing to plead their clients to anything other than a non-moving violation, if that.

"This office, the Sheriff's Department and the State Police," he continued, "have formed an unofficial task force in search of a good test case to take up on appeal involving moving radar. We are looking for a case without extraneous issues, one that will have to be decided on the basis of the reliability of the moving radar device. We are prepared to try such a case, with whatever expert testimony it takes, and follow through to exhaust all appeals."

The letter continues, "In the meantime, it would appear to be a waste of effort to continue to attempt to prosecute these cases, given the prevailing law in this county. Therefore, unless the alleged speed is in excess of 20 mph over the posted limit, this office will not accept for prosecution any moving radar arrests. When and if the Court of Appeals overrules this or any other county court decision invalidating moving radar, this policy will immediately change."

It was noted by County Court sources that the Court of Appeals moving radar case, ironically, was dismissed on another point of law which had nothing to do with the electronic devices and therefore their validity was not seriously considered. **PC**

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SATELLITE VIEW

INSIDE THE WORLD OF TVRO EARTH STATIONS

BY FRED H. ALLEN, KA0YAE

Terrestrial Interference

With the explosion in TVRO sales, consumers now enjoy a variety of programming formerly available only to those in areas that were served by cable TV companies.

Of course, TVRO was a welcome "sight" to people in the rural areas of the U.S. Yet, quite a few homes in urban areas also enjoy the benefits of TVRO and the numbers are increasing steadily, though cable TV access is readily available to urbanites.

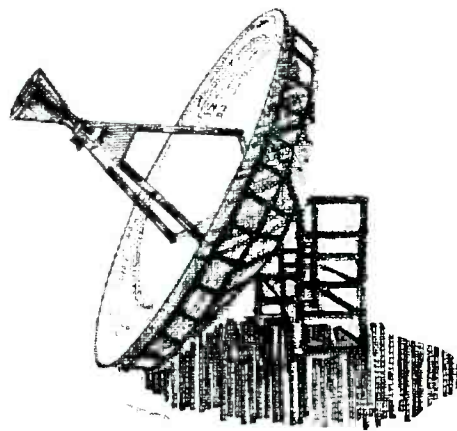
This modern, push-button convenience that allows one to receive channels from all across the continent is not without its attending problems, however. One particular problem, to be explored here, can cause a snowy picture or, at times, wipe the picture out completely. This type of problem is called Terrestrial Interference (TI).

One type of in-band Terrestrial Interference may be caused by a local microwave transmitter. For example, the company I work for utilizes a type of microwave transmitter carrier whereby, from one point known as HUB site, we microwave cable TV signals to seven different systems. The problem of TI occurs when these microwave carriers are assigned frequencies that are close to, or even the same as, the frequencies being used by the satellite station. Unfortunately, when this local microwave facility transmits a signal, it may be picked up by your TVRO.

The other kind of in-band TI that I'd like to bring to your attention may only happen during certain times of the day. This TI is caused by communication-type microwave transmitters and occurs when the users transmit enormous amounts of information/data at a certain time, and, in doing so, may cause their bandwidths to increase, thus making it more likely that your TVRO will be affected. Some examples of these users include telephone and radar microwave.

Now that we've gone through some of the causes of TI, I must emphasize one important fact: Make sure your TVRO system is in good operating order before you start looking for TI. Problems that appear to be TI at first may, later on, turn out to be troubles within your own TVRO system!

An appropriate illustration of this under-



standable misinterpretation involves a call for help I received wherein a TVRO user had a case of the "sparklies." This person claimed he was getting TI from a local TV station. Upon arriving, I noticed his dish was rather small for this part of the country (North Dakota). When I took a look at his picture, I noticed some impulse noise "sparklies" on a few of the transponders. I then went out to inspect the dish and noticed that he was using a 120 degree L.N.A. — much too high a temperature for that size dish. I advised him to go out and get a 65 degree L.N.A., which he did, and his problems were solved.

Always consider that you may have a problem within your own TVRO system first. If you've done a thorough check of your system and continue to have problems, it is best to contact the person who installed your system. The installer will probably be able to determine exactly what type of filters you'll need to correct your interference problem. If you're a do-it-yourselfer, there are many companies that you can contact to get the right parts for the job.

If you have any trouble contacting a company that can help you, you may want to drop me a line, along with an SASE. Write to F.H. Allen, Box 1771, Grand Forks, ND 58206-1771 and I will pass on any information I have.

Good viewing!

PC

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National Tower Co.	37
Pacific Cable Co.	51
Palomar Engineers	37
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Radio West	17
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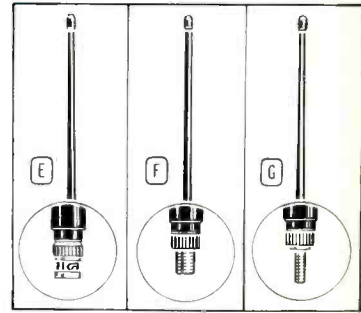
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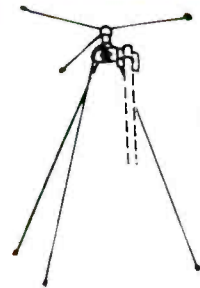
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