

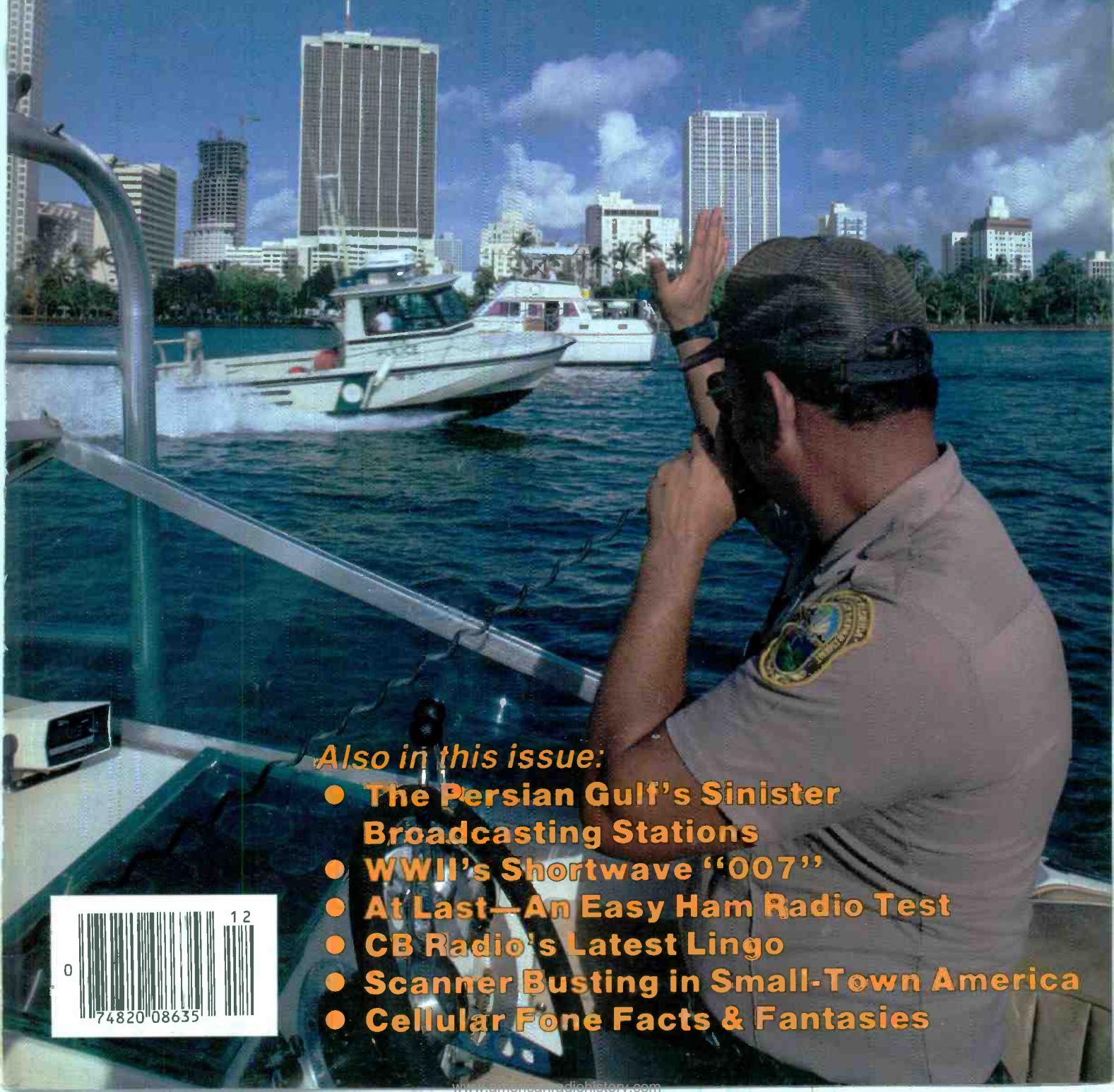
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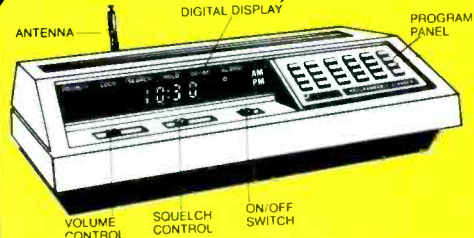
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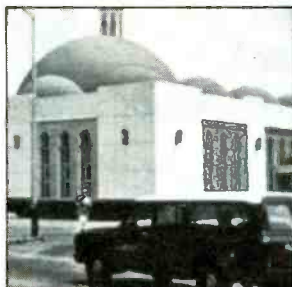
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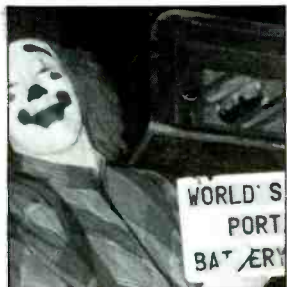
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DECEMBER 1987

VOL. 6, NO. 4



12



18



30

FEATURES

- Scanning Today** 10
News and information for SCAN members. *by Robert A. Hanson*
- Dangerous Waters** 12
Radio in the Persian Gulf. *by Gerry L. Dexter*
- America's Shortwave "007"** 16
She was our WWII answer to Tokyo Rose. *by Henry King*
- Radio's Golden Era** 18
Random glances at broadcasting and communications way back when. *by Alice Brannigan*
- Books You'll Like** 24
Ask Santa for these: *The Gas Pipe Networks; Radioteletype Monitoring: The Complete Guide; New ID In America.* *by R.L. Slattery*
- SCAN Public Service Award.** 28
Retired man rescues child.
- SCAN Photo Contest Winners** 28
Stan from Georgia and Mic from Colorado win this month's contest.
- POP'COMM Foto File** 30
Fed Facility fotos.

This month's cover: Mike Krutulis, Jr. of the Metro Dade County Florida Marine Patrol. Photo by Larry Mulvehill, WB2ZPI.

DEPARTMENTS

Beaming In	4	CB Scene	52
Mailbag	6	RTTY	54
Pirates Den	32	Listening Post	60
POP'COMM Products	34	Communications Confidential	64
Broadcast Topix	36	On The Line	69
Clandestine Communique	43	Satellite View	70
Scanner Scene	44	Radar Reflections	72
Better Signals	46	Ham Column	74
Emergency	48	Communications Shop	78

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The Ceiling Of America

The Electronic Communications Privacy Act (ECPA) has been on the books for several months now and (as many folks expected) it hasn't crimped anybody's monitoring activities because it is mostly unenforceable. It seems that there aren't any federal agencies particularly interested in doing so. As previously analyzed, it was primarily a bit of window dressing fluff high pressured into existence by the cellular (CMT) industry in order to mislead cellular customers into thinking that CMT calls are assured of privacy by a federal law. Still, what the law threatens for the future is unpleasant to think about.

The CMT industry, flushed with success at learning how easy it was to dazzle our Congressional representatives with their baloney, has been attempting to extend the ECPA to ban the sale and manufacture of equipment that is capable of receiving CMT frequencies. Regency Electronics has been attempting to defuse those efforts by suggesting that equipment should still be made available for receiving those frequencies, but would carry a label stating that the ECPA forbids monitoring certain frequencies.

Radio Shack, as widely noted, brought out their sensational PRO-2004 scanner minus the set's originally announced coverage of the 870 to 890 MHz CMT band. PRO-2004 owners have been able to easily restore those frequencies with a very simple modification (explained in our August issue). Reader Robin D. Colles of Battle Creek, MI was the first of several POP'COMM readers to write us saying that their newly-purchased PRO-2004's made it into factory sealed cartons with the CMT frequencies fully intact!

Ed Jones, WB2DVL, of Somerset, NJ is a POP'COMM reader who regularly writes to politicians and industry leaders concerning relevant matters. A recent letter Jones received from an executive within the CMT industry provides one of the most interesting and informative insights yet obtained on industry attitudes and plans concerning support for the ECPA, CMT privacy, etc.

For starters, I got raked for expressing outspoken anti-ECPA sentiments, stating "an editor with strong feelings on an issue has the advantage of a substantial private forum, and... complete control of printing opposing views." They added, "We find that it seldom pays to argue with someone who buys his ink by the barrel, even a nice guy and respected editor like Tom Kneitel." Curiously, they were complaining that I won't print opposing views, then they said

that it's not their policy to even bother offering opposing views. Figure that out!

Strange, too, was their perception that I had "strong feelings" about the ECPA, because the CMT man followed that observation with the thought that maybe, down deep, I actually supported the ECPA because it's "hard to believe anyone would lobby for folks to listen in on his private or business phone calls or conversations with his wife or girlfriend...no matter how interesting those calls might be."

The cynical inference that I expressed in sincere opinions to appease my readers was, until now, about the only venal sin of which I hadn't thus far been accused in my career. And anybody who wants to monitor *my* CMT calls is more than welcome to do so. The only conversations duller than my business calls are those to my wife and whatever girlfriends this fellow suspects I have. Furthermore, for the 25+ years I was writing prior to the development of CMT's, I always loudly advocated unrestricted monitoring access to all communications frequencies.

The CMT industry man then went on to tell Jones how "it's frightening that the government might close *down* the airwaves," a concept that this fellow didn't endorse. Actually, he went so far as to note that his company "will lobby long and loudly for open airways in virtually all other services." The word "virtually" here does leave open the door for future modifications of this policy. With scanners by the millions in the hands of the public for about twenty years now, it's difficult to think that any airwaves, at this point, could effectively be "closed down."

Insofar as CMT's go, the industry member said that he considers "cellular phone service a unique case.... The very technology which makes cellular radio so appealing, makes it function almost exactly like your home or office phone. That similarity creates an illusion and expectation of privacy found in no other radio service." This statement provides, in a nutshell, an interesting insight into the philosophies of the CMT industry.

In view of the availability of voice scramblers, it's hard to see how anybody can continue to insist that assuring the privacy of CMT calls becomes the responsibility of persons other than those using the CMT devices. Why should CMT users be so "unique" that they are entitled to more communications privacy than taxi drivers, tow truck operators, boaters, pizza delivery vans, Hams, CB'ers, or anybody else using two-way radio?

The CMT industry man then went on to make the comparison that, "If you can eavesdrop on private communications, why not allow anyone who wants to, to tap telephones as a hobby? Is U.S. Mail next...after all, it uses public highways and airways." This piece of logic says that monitoring an unscrambled radio transmission sent out over the public's airwaves is the same as making a hardware tap into a privately owned landline.

It really is difficult to consider that someone professionally involved in telecommunications is actually naive enough to seriously believe that *any* electronically reproduced conversation or other communication can be assured of privacy, especially ones sent by unscrambled radio transmission. Yet, the CMT industry appears to be intent on peddling this privacy concept (or, as put by the CMT executive, "an illusion and expectation of privacy") to an unsuspecting and gullible public. Let's face it, it's a public that thinks it's going to get cellular privacy and doesn't realize that its CMT calls are going out over UHF-TV Channels 80 through 83, and, theoretically, can be received on every TV set in North America!

And why shouldn't the public believe in this "illusion and expectation of privacy"? Indeed, why not? These are the same trusting souls that are quick to believe that eight-cylinder cars will deliver 45 mpg, and that eating a daily bowl of *Munchy Fiber* cereal will make middle-aged people feel like they were twenty again.

Mechanics know that eight-cylinder cars can't get 45 mpg. Nutritionists realize that the only people who'll feel like twenty from eating something are twenty-year-olds. Likewise, communications people aren't impressed with all of the bull about supposed CMT privacy. That the sleazy CMT industry has the brass bunions to try to peddle such fantasies to the public is bad enough, but when they think they can also palm it off on communications people, then it's time to say, "Hey, wait a minute!" It's a dirty job, but someone's got to do it.

Ed Jones was then told by the CMT industry apologist how the poor business and personal users of CMT's need their privacy. But, wait, isn't this the same public that made all of those ship-to-shore and mobile calls for more than forty years in the 2, 25, 152, 161, and 454 MHz bands without demanding or asking for special privacy con-

(continued on page 76)

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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.

RNI Update

As many readers know by now, the FCC dropped all charges originally brought against RNI. In conversations I've had with RNI's top personnel, they have vowed to put the station back on the air again from the same location—outside of American territorial waters off the south shore of Long Island. If their plans don't hit any snags, RNI might well be back on the air around the time you read about it in this issue. RNI's Al Weiner suggests that our readers periodically check out RNI's frequencies (1620 and 6240 kHz as well as 103.1 MHz FM) for their signals. RNI's ship, the *M/V Sarah* also monitors VHF marine Channel 16 (156.80 MHz) for calls, and (you read it here first) they have a CB aboard and (when staffers are available to chat) will be monitoring CB Channel 21 (27.215 MHz) for contacts. They've got a few other surprises on tap, but we promised not to let the cat out of the bag—they're certainly in keeping with RNI's attention getting ways!—Editor

Big Brother, The Literary Reviewer

Don't you think that *POP*COMM* is long overdue for a cover photo showing some of the facilities at the Voice of America? The station is, after all, our nation's way of speaking to the rest of the world.

Ted Gould, KDE3JS
Dover, DE

*While I could probably debate your definition of the VOA, I do agree that it would be good to see the VOA on a POP*COMM cover. Several years ago we were preparing a story on broadcast propaganda and I thought that it would be a fine occasion to give readers a peek at the VOA studios, transmitters, and whatever. When I approached the VOA they reacted with some distinct annoyance that I should have dared to think of the VOA as being connected in any way whatsoever with propaganda. At that point they informed me that it would be necessary for selected VOA honchos to "review" our manuscript in advance of publication and they'd then decide if they'd cooperate with us. They had their policies, I had mine—and their demand was unsuitable to me. I'm still open to the possibilities of a VOA cover, but not at the cost of permitting advance examination of our features by a government agency.—Editor*

The Pirates' Progress

The FCC actions against the floating pirate station RNI (November issue of *POP*COMM*) were very sad to hear about. When the government originated the broadcasting regulations (more than 60 years ago), the idea was to establish technical standards and guidelines for the new medium at a time when most of the transmitting equipment was either home-built or limited production prototypes. Over the years, various window-trimmings have been tacked on to these regulations that have far exceeded the establishment of technical standards such as interference, modulation, power output, and frequency stability. At this point, the broadcasting regulations seem to be more concerned with regulating programming, free speech and the First Amendment than they are with anything else. Since the broadcast media are the primary sources of news and entertainment in our nation, the FCC should be striving to get as many broadcasters as possible on the air rather than meddling in matters of free speech. Attempts to regulate the number of broadcasters the public can hear because of a "shortage of frequencies" is as illogical as if the government would attempt to limit the number of newspapers, books, or magazines because of diminished timberlands. When air pollution worsens, will they decide who can breathe?

Larry Cadota
Sarasota, FL

Interesting to learn that one of the government's claims against RNI was that the station was causing interference to licensed broadcasters. Unfortunately, the FCC never stated which specific broadcasters had complained. Maybe that's because the FCC doesn't have any broadcasters licensed on 1620 or 6240 kHz. Moreover, as for the RNI FM transmission on 103.1 MHz, few listeners reported hearing them. I live only five miles from RNI's former location, and I could barely copy the FM signals! Which FM stations experienced interference from RNI? Is someone putting us on?

Jon Doniker
Long Beach, NY

RNI said that it wanted to offer the listening public music and air personalities that were so unique that they couldn't be heard over any other station. I don't argue with RNI's complaint that much of broadcasting has become dreary and sterile; it's mostly as boring as a \$2.00 dentist drill. Furthermore, I deplore the manner in which the FCC treated RNI, and I hope that the station finds a way of getting back on the air. I would, however, like to dispel the feeling that without RNI radio audiences are again

doomed to an exclusive musical diet of Glen Campbell, Streisand, Sinatra, Mantovanni, and Manilow. As wisely pointed out in your own magazine (October '87 *Books You'll Like*), numerous non-commercial broadcasters (such as those operated by many colleges and universities) offer great offbeat music and air personalities not to be heard over commercial stations. Some of these stations are every bit as far out as RNI was. In my own listening area, stations WPKN (89.5 MHz) and WUSB (90.1 MHz) are typical examples. Let's hope that RNI can again join these stations in enriching the fabric of radio.

Holly Anderson
Westport, CT

The FCC regulations should have been obeyed and respected by RNI. Who were they to decide that the FCC regulations were unsuitable to their own needs and then establish a station in defiance of the agency? That sounds like anarchy to me. Why not let every hopeful Amateur Radio operator on the air without obtaining a license? Suppose everybody that always wanted to be a pilot began bypassing the FAA pilot licensing and aircraft registration regulations. I was shocked and angered when you suggested that RNI's staff had become folk heroes!

(Name withheld by request)
Stuttgart, AR

*POP*COMM* should have ignored RNI. Like the TV networks, *POP*COMM* was irresponsible in rewarding people with the very publicity spotlight they had sought with their exploits. If you don't write about them, maybe they'll go away.

I.S. Kosches
Milton, WI

What with drug smugglers boldly sailing into our ports in armadas, has the Coast Guard nothing better to do with its equipment and personnel than boarding foreign-flag ships in international waters in order to aid in silencing a broadcasting station that was neither vulgar nor the recipient of any complaints by the public? The FCC, for its part, would have better served the public if it directed its personnel to clean up the cellular telephone mess. I can't help but wonder about the FCC's presumed jurisdiction beyond our national boundaries. Why didn't the FCC seek a temporary restraining order against RNI rather than storming the ship with armed reinforcements and wirecutters? One would think that these agencies might get a better grip on their priorities and jurisdictions. Your coverage of the incident was excellent, please continue to keep your readers informed about RNI.

Fred Waite, KTX5PL
Olmito, TX

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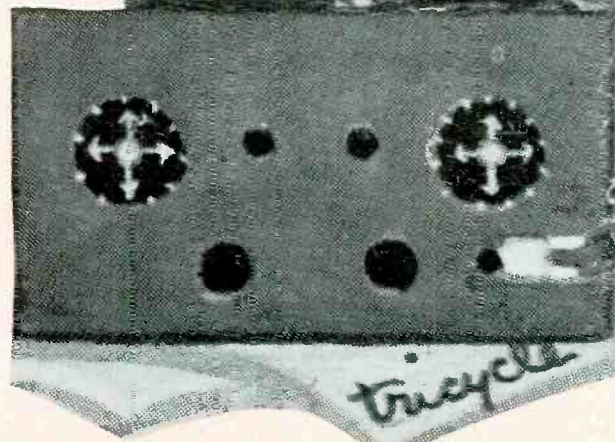
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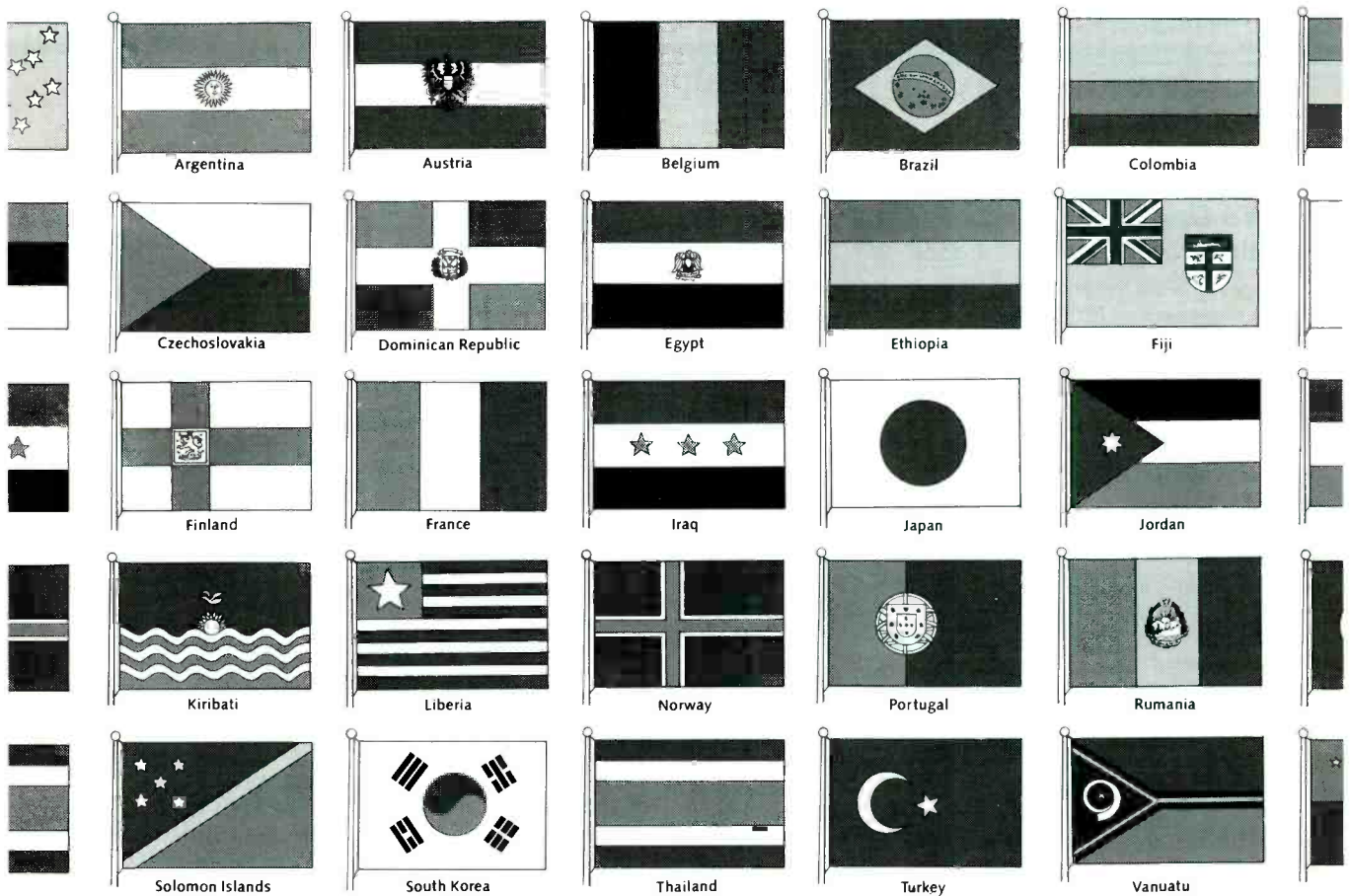
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CIRCLE 38 ON READER SERVICE CARD

Ready To Upgrade Your Scanning Capabilities? Better Act Fast!

If I were going to ask for a new 800 MHz scanner for Christmas, I would do my shopping RIGHT NOW. The chilling effect of the Electronic Communications Privacy Act (ECPA) is having its impact on the type of scanners being marketed. The continuous coverage scanner is starting to become extinct. At least some of the new generation scanners can be modified back to their original continuous coverage design, but the probability is that even this option will be gone in future designs. So the best advice we have is to act promptly. Check with your local scanner dealer to see if pre-ECPA models are still in stock. More likely, the dealer will have a new version of the same model which can be easily modified. Many dealers can do the work for you before delivery, or provide you with step-by-step instructions for returning the scanner to its original full-function design. Those who wait too long with their decision may be very disappointed.

Many members have written to us with very critical comments about the decision of scanner manufacturers to delete certain frequency coverage, even though ECPA does not prohibit manufacturing of full coverage scanners. While it is easy to criticize, I think that we should put ourselves in the manufacturer's place for a moment. With the Cellular Telephone Industry Association (CTIA) advocating additional laws to make manufacturing of products illegal, it is only logical for these companies to take the "safe" route and find a way to delete coverage. How would you like to be stuck with millions of dollars worth of scanners that can't be sold? So, while we may find the decision painful, it is understandable. In the meantime, better grab one of those full coverage capable scanners while you still can!

Joining Scan. . . It's Easy!

Many POP'COMM readers have written to ask whether or not it is possible to join SCAN. The answer is an unequivocal YES! If you are already a subscriber to POP'COMM, you can join us for just \$6.00 for your first year of membership. (If you are NOT a POP'COMM subscriber, write to us for a special combined SCAN membership/subscription offer.) Not only will you be helping SCAN help in the fight to protect your rights to listen to the airwaves, but you will receive many individual benefits as well. Your membership kit comes complete with an I.D. package, including vehicle decal, membership card, and laser-printed personalized membership certificate. Also included is a color wall banner of official FCC frequency allocations. There are many other SCAN benefits. For instance, there is a no-extra-cost \$1,000 insurance policy, the SCAN Co-Op offering member discounts on scanner accessories (some available exclusively through the SCAN Co-Op), discounts on frequency directories, scanner books, and even discounts from two major car rental companies.

In addition to personal benefits you'll receive, you'll be helping SCAN in a number of important ways. For instance, did you know that SCAN has, over the last nine years, given more than \$10,000 in cash to local police, fire, and EMT personnel who have demonstrated exceptional professionalism in the line of duty? All of the recipients of this SCAN Public Service Award have been nominated by SCAN members. It is just one aspect of SCAN's efforts to solidify the relationship between scanner users and the public safety community. SCAN is a not-for-profit association dedicated to advancing the rights and benefits of scanner radio monitoring. To join tens

of thousands of your fellow scanner enthusiasts who support SCAN, simply send a check or money order to SCAN, P.O. Box 414, Western Springs, IL 60558. Please print your name and address clearly so that it will be accurately entered on our records and your membership credentials.

Freedom Of Information Or Secrecy— How Did U.S. Media Vote?

One of the sordid spectacles in the ECPA battle was the position of the U.S. electronic news media. You know, the same guys who would defend to the death the Freedom of Information Act. Wouldn't you expect them to stand up and be counted as they became aware of the ECPA proposals to chip away at our traditional freedom to listen to the airwaves? Well, surprise! In one of the most provincial and self-serving positions we have ever witnessed, the electronic news media chose to support ECPA if they could have their news relay frequencies declared "private" along with cellular phone frequencies. That is an incredible sell out!

Having spoken to a number of reporters (we have quite a few who are SCAN members), I cannot believe that this policy originated with the editorial staffs of the news media. The best guess is that it came from the "front offices" of the TV and radio stations. Apparently, having a competitive edge is a higher priority than upholding the rights of American citizens to free access of information. Of course, the end result is just nonsense. They haven't made their press relay frequencies any more private than CTIA has made the cellular radiotelephone frequencies. True, if they could prove it, a competitive station might be sued if it picked up a story from another station. But we are on very thin ice as far as First Amendment rights here. It could be a position that will boomerang on the press as they try to maintain their right to access information in the future. From our perspective, it was an incredibly short-sighted position for them to take.

Police Dispatching—The Inside View

Two very informative books on police dispatching are now available through SCAN. Members of SCAN should have already received mailings about the books. We are using this column as a reminder and to alert other POP'COMM readers. Both books are written for professional public safety dispatchers in training. They are blunt, to the point, and reflect the real world that public safety dispatchers must contend with. If you are easily offended, it would be best not to order these books. But if you would like to know what the life of a police or other public safety dispatcher is like, these training manuals are invaluable. The first is the *Police Communications Guide For Dispatchers*, with a total of 211 pages of valuable information, including chapters on Law for Dispatchers, Radio Procedures, Telephone Procedures, Computer Aided Dispatch, and much more. The companion edition is the *Police Dispatcher's Dictionary*, with information on Police Language, Computer Terms, plus slang that dispatchers expect to encounter on the job. The dictionary is a 245-page book. These are books that are normally in restricted distribution and unavailable to the general public, but because we feel are exceptionally good reference material for scanner owners we have made special arrangements to make them available to SCAN members. The *Police Communications Guide* is \$23.95, including shipping and handling. The *Police Dispatcher's*

(continued on page 77)

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CIRCLE 23 ON READER SERVICE CARD

Dangerous Waters: Radio In The Persian Gulf

BY GERRY L. DEXTER

A recent story in *Newsweek* noted that archeologist Juris Zarins of Southwest Missouri State University believes he has located the site of the Biblical Garden of Eden. If Zarins' research is correct it was at what is now the mouth of the Persian Gulf, between Iran and Iraq.

The area could hardly be called a Garden of Eden today. Not with a full-scale war between Iran and Iraq raging into its eighth year. And the war is, as we know, not just any war, but a war between the two main Islamic sects—the fundamentalist Shiites of Iran and the more moderate Sunnis in power in Iraq. It is more than a religious war, more than the blinding hatred of one nation's leader for that of another. It is neighbors nervously keeping one eye over their collective shoulders at all times. It is oil, oil, oil. It is super-power gamesmanship. All of which makes for a highly volatile soup which needs only the crunching in of the wrong kind of cracker to ignite it into an even larger conflagration.

As ordinary citizens we can only wait and watch events unfold. As not-so-ordinary citizens who happen to own shortwave radios we can also tune in directly to the broadcasts from this tense region.

Iran and Iraq, of course, are busy pumping their version of things into the ether by the hour. But virtually every nation in the Persian Gulf area is also represented on shortwave: Saudi Arabia, Kuwait, Oman, Qatar and the United Arab Emirates. Only Bahrain has no shortwave broadcasting voice.

And none of these countries plays with small marbles when it comes down to transmitter powers. Some just have bigger marbles and more of them. The point is that none can be looked upon as really tough DX targets; they can all be tuned in with relative ease, even by SWL's who don't yet have a lot of practice or who may be using fairly simple portable receivers.

If there is a problem in listening to the countries of the Persian Gulf it is one of language, of understanding. Some of the broadcasters never stray from a strictly Arabic language service. English from some others is somewhat limited and really reliable "North American" services—despite the power being used—don't match that of the BBC or Radio Netherlands in signal quality. So it's often necessary to figure in a bit of a strain factor if you intend to get into understanding program content.

But the trick isn't so much in hearing these stations as it is in keeping up with the innumerable changes they make in times and frequencies so you'll know when and where to tune for them. We've dug up the latest available schedules for this radio tour of the Persian Gulf.

Iran

When it comes to knowing about the persuasive power of the human voice, the Ayatollah Khomeini is a past master. Cassette recordings made during his Paris exile, and circulated within Iran, helped build the support that led to his eventual assumption of political and religious power in the country. So it's no surprise that the government broadcaster, the Voice and Vision of the Islamic Republic of Iran, has been on a buying binge that has brought in several 500-kilowatt transmitters with still more to come. The main transmitting site at Kalamabad, near Tehran, has been reinforced by other sites at Ahwaz, Shahrivar, Mashhad, Tabriz and Zahedan, all of them with 500-kilowatt units on site or planned in the future. Exactly how many units isn't known, but a high number is expected.

Iran broadcasts in 16 languages, beaming Khomeini's view of things to listeners in the Middle East, South Asia, North Africa, North America, the USSR, Europe and Afghanistan/Pakistan. The foreign service on shortwave is broadcast in Arabic, Azeri, Baluchi, Bengali, Dari, English, Farsi, French, German, Kurdish, Pushtu, Russian, Spanish, Turkish, Turkmen and Urdu.

Some transmitters carry the home service program. VOIRI has long aired English at 1930 to 2030 on 9022 and, for a time, also had it on 15084 from 1115 to 1210.

Despite the extensive schedule which has broadcasts going out at all hours of the day and night, despite the many frequencies one can try, despite all the new and coming 500-kilowatt giants, for listeners in North America it still boils down to this: if you want to hear Iran and you don't care what language it's in, you need only dial up 15084. That is a historic Iranian frequency and it's in use virtually around the clock (as is 15310).

Having said all that, we'll still go ahead and present the most recently available schedule for the Voice of the Islamic Republic of Iran in Table 1.

The VOIRI readily QSL's reception reports. Send them to P.O. Box 3333, Tehran.

Table I
Voice of the Islamic Republic of Iran

Time (UTC)	Freq
0200-0300	11805, 11905
0200-0315	6165
0200-0330	11955
0200-0400	11930
0200-0430	11875
0200-0500	6175, 15445
0200-0530	11825
0200-0600	7115, 15365
0230-2030	5995
0330-1500	7215
0330-0700	9745
0330-1300	15315
0415-0600	11955
0430-0700	11780
0500-0600	11895
0515-0600	6165
0530-0730	9575
0645-1200	11805, 11905
0645-0800	11825
0700-1200	6115, 7235
0730-1515	17730
0900-1200	6165, 11955, 15365
0900-1300	7260
0915-1200	11825
1000-1230	11895
1030-1600	11790
1030-1200	11930
1100-1200	7110
1100-1500	9575
1100-1400	11715
1100-2030	11940
1230-1800	6165, 11955, 15365
1315-1515	11955
1500-1600	6115
1515-1800	15160
1515-1615	11930
1530-2130	11955
1600-2000	7190, 7215
1630-2130	11930
1630-1800	15445
1700-1800	11825
1830-2130	15365
1845-2145	6165
1845-2000	9635
1845-2200	11805
1845-2245	11955
2030-2200	11895
2100-2200	6030
2330-0230	9765

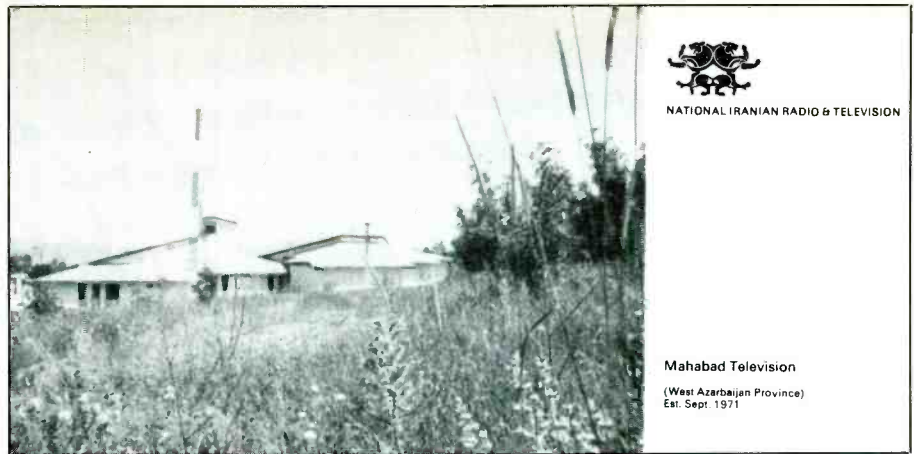
Iraq

Radio Baghdad, the voice of Iran's arch enemy, has also pulled some new 500-kilowatt transmitters into its stable and intends to add still a few more. Even so, the Broadcasting Service of the Republic of Iraq doesn't appear to be as large an operation as its opposite in Iran, nor is it expanding as rapidly, as far as external broadcasting is concerned.

Transmitters for shortwave are located at Abu Ghraib, Babylon, Salman Pack and Salah el Deen. The station beams its programming to the near and Middle East, as well as Europe, North America, Latin America and Asia. Syria and Egypt also get special attention. Languages are Arabic, English, French, German, Hebrew, Kurdish, Farsi, Russian, Spanish and Urdu. Much of the Arabic language program time is given over to broadcasts of the Voice of the Masses service from Baghdad.

Radio Baghdad's shortwave schedule seems to change even more often than is normal for an international broadcaster, perhaps because of the 500-kilowatt transmitters being put into use as they are ready for testing. The station has used a variety of 7 MHz frequencies of late. In addition, it has added several frequencies in the new 22 meter band, including 13630, 13680 and 13770 as well as "out of band" frequencies of 15555 and 17630 for the Voice of the Masses service. See Table 2 for the most recent schedule.

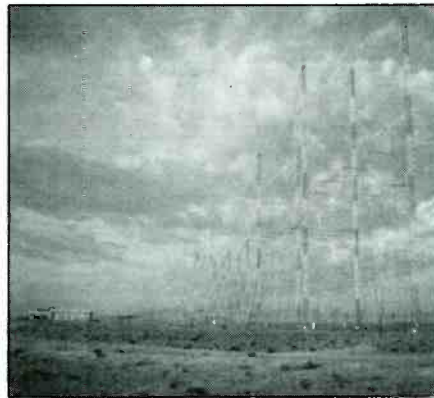
Reports sent to Radio Baghdad, Salihya, Bagdad, Republic of Iraq are verified.




NATIONAL IRANIAN RADIO & TELEVISION

Mahabad Television
(West Azarbaijan Province)
Est. Sept. 1971

An older QSL from Iranian Radio. Even after the station's name was changed it continued to use cards with "National Iranian Radio and Television" on them.



These towers in the desert belong to UAE Radio and Color TV in Dubai.

Table 2
Radio Baghdad, Iraq

Arabic	
Time (UTC)	Freq
1800-1850	11760, 15440
2100-2150	9770, 11670
0600-0800	12025, 13630, 15105, 15110, 15150, 15230, 17630
0800-1200	13630, 15230, 15555
1900-2300	9615, 11740, 11840, 11950, 12025, 13770
English	
2100-2200	9875
0100-0245	6195
French	
1900	9875
German	
2000	9875
Spanish	
2200-2255	9740

Saudi Arabia

For all of its close ties with the United States and for all its wealth one might guess—if one didn't know better—that a fair amount of English language programming beamed in a North American service would be heard from the Broadcasting Service of the Kingdom of Saudi Arabia. One would, unfortunately, be quite wrong.

Saudi Arabia is often rather more difficult to hear, even in Arabic, than Iraq or Iran. The BSKSA is a couple of steps down from VOIRI's pace. The government broadcast service can boast of only a 350-watt punch, fewer transmitters and thus a more restricted schedule. Broadcasts are in Arabic, French, Bambara, Bengali, Indonesian, Farsi, Somali, Swahili, Turkestani, Urdu and English. Besides the foreign service, there are also relays on shortwave of the home service program in Arabic as well as the Holy Koran program, also in Arabic.

The English broadcasts, not specifically directed to North America are on the air from 1600 to 2100.

Table 3 shows the most recent available schedule for the Broadcasting Service of the Kingdom of Saudi Arabia.

Reception reports for the external service go to P.O. Box 570, Riyadh 116, Saudi Arabia.

Table 3
Broadcasting Service of the Kingdom of Saudi Arabia

Arabic	
Time (UTC)	Freq
0500-1100	15435
1700-2000	7150
2000-2300	7210
1700-2130	9870
2130-2300	9885, 9705, 9720
0500-1100	15140
1100-1700	15060
1500-1700	9655
0300-0800	9720
0300-0830	7280
1000-1500	7225
1000-1700	5875
0300-1700	9570
1700-2100	5875

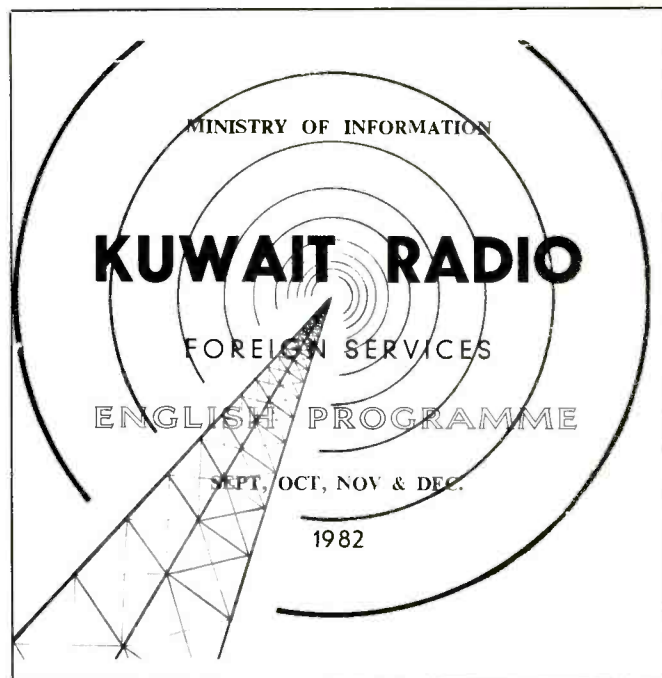
Holy Koran Program	
0500-0700	11730, 17740
0700-1000	17895, 21495
1000-1400	15170
1500-2100	7250
1900-2100	7275, 9610

English	
1400-1600	9705, 9720
1600-2100	9705, 9720

Other Languages	
French	1400-1600 9705, 9720
Turkish	0400-0600 11685, 15060
Farsi	0300-0500 7195, 15245
Indonesian	1000-1200 17895, 21495
Bengali	1200-1300 11825, 15345
Urdu	1300-1500 11825, 15345
Turkistani	1500-1600 7155, 9730
Swahili	1600-1700 11915, 15165
Somali	1700-1800 9520, 11910
Bambra	1800-1900 7275, 15060

Table 4
Radio Kuwait

	Time (UTC)	Freq
Holy Koran Service	0200-0800	15345
Arabic	0230-2230	6055
Arabic and Holy Koran	0230-2230	15495
Arabic	0230-1530	9840
Arabic	0400-0600	17850
English	0400-1100	11675
Arabic	0400-0730	17895
Arabic	0630-2230	9760
Arabic	0700-1800	15505
Arabic/Farsi	0800-1530	9750
Arabic	0900-1100	17895
Arabic	1530-2230	9760
Arabic	1600-2130	9880
Urdu	1600-1800	17895
English	1800-2100	11675
Arabic	1830-2130	7120



Kuwait's foreign service plays country and rock and such!

Kuwait

You might get the idea from listening to Radio Kuwait that the program director things he's really working in a major U.S. market and is fiddling around trying to find the right format that'll give the station a better showing in the ratings. It punches out rock and roll, country, movie themes, jazz—just about any kind of music you can think of, and each neatly fenced into its own time block. This is the case during the multi-hour daily English segment carried by Radio Kuwait which may amount to the most English hours per day of any of the Gulf stations.

In addition to English there is a "Special Arabic" program beamed to North America, Europe and North Africa for several hours each day. Presumably this means that the Arabic is spoken slowly and uses a limited vocabulary, much like the Special English used by the Voice of America.

In addition to regular Arabic, which, of course, consumes most of the program time, Radio Kuwait also has a service in Urdu and has a Holy Koran service as well.

The station's shortwave complex features four 250-kW and four 500-kW units. Reception from Radio Kuwait is fairly easy

and it's in English to boot, on 11675 from 1800 to 2100. A recent, complete schedule appears in Table 4.

Radio Kuwait is a first-rate verifier and reports should go to P.O. Box 193, 13002 Safat, Kuwait.

Qatar

Qatar's Ministry of Information operates the Qatar Broadcasting Service and, for whatever its reasons, sees no particular need to aim its shortwave service at anybody in particular nor in any other language but Arabic, even though English, French and Urdu are broadcast locally on medium-wave. The broadcast schedule appears in Table 5.

The station uses four 250-kilowatt transmitters and broadcasts run from 0800 to 2130 with a break until 0245 at which time a second segment begins and continues until 0700. Last year the station was in the process of adding two more highly efficient antenna systems to its Al-Khaisah transmitting plant to allow the station to be heard more reliably in parts of Europe, North America and the Mediterranean region.

Reception reports go the Qatar Broadcasting Service, P.O. Box 3939, Doha, Qatar.



The Grand Mosque in Doha, Qatar. Koran readings account for a lot of program time on the Gulf stations.

Table 5
Qatar Broadcasting Service

Time (UTC)	Freq
0245-0700	9585
0300-0645	11785
0800-1300	15195
0800-1045	17880
1300-2130	15265
1300-1700	17805

Oman

Here the scale of shortwave broadcasting gets still smaller. Even on the mediumwave band Oman has only two stations listed so perhaps it shouldn't be surprising that shortwave is not all that big an enterprise. Radio Oman is another station which broadcasts no language but Arabic and does not beam the broadcast to any special part of the world over another. The transmitters, of 100 kilowatts, are located at Seeb and Thumrait. Except for a silent period from 2200 to 0200, Radio Oman is active round the clock.

A recent schedule for Radio Oman, Table 6, shows these times and frequencies.

Reception reports go to Radio Oman, Ministry of Information, P.O. Box 397, Muscat, Sultanate of Oman.

Table 6
Radio Oman

Time (UTC)	Freq
0200-0400	6085
0200-0800	17735
0300-1600	11890
0400-1400	9735
0800-1400	15385
1400-1700	7270
1400-2000	9735
1700-2000	6085

United Arab Emirates

This is the only country in the group which has more than one shortwave broadcasting station.

The Voice of the United Arab Emirates broadcasts from Abu Dhabi with four 500-kilowatt transmitters and one of 120 kilowatts. It's uncertain whether all four of the high power units are in service yet, however. The broadcast schedule seems more changeable than most and there is even some question as to how regularly the station operates on shortwave. Tests, apparently of the new 500-kW transmitters, seem to have gone on for ages. All programs from the Voice of the UAE are strictly in Arabic, see Table 7.

Reception reports go to the Technical Advisor, Ministry of Information and Culture, P.O. Box 17, Abu Dhabi, United Arab Emirates.

The other UAE station is easier to hear. UAE Radio and Color TV, based at Dubai, even has some English broadcasts emanating from its pair of 500-kilowatt and trio of 300-kilowatt transmitters sitting out there in the desert heat. Programs are beamed to North America, Europe, North Africa, Australia and the Far East. English is the only language used beyond Arabic. The Arabic is a relay of the station's home service program. The English segment at 1600 is fairly well heard in the United States. Table 8 shows the current schedule for UAE Radio and Color Television's English programs.

The station is an excellent QSL'er and reports should be sent to P.O. Box 1695, Dubai, United Arab Emirates.

Monitoring the English broadcasts of those stations which carry them, coupled with careful attention to what's being said could provide you with new insights into the way things are these tense days in the Persian Gulf. **PC**

Table 7
Voice of the United Arab Emirates

Time (UTC)	Freq	Time (UTC)	Freq
Persian Gulf 0200-0500	6195	Middle East 0800-1600	15310
North America 0200-0700	6015, 11810	Far East 0800-1300	17810
India/Pakistan 0300-0630	9695	Africa 1230-1600	9595
Persian Gulf 0500-0800	9655	Persian Gulf 1400-2130	6065
Middle East 0530-0800	17645	Middle East 1600-2130	7215
Europe 0630-1015	9630, 17820	Africa 1600-2130	7195
Persian Gulf 0800-1400	7215	India/Pakistan 1600-2130	9695

Table 8
VAE Radio and Color TV

Time (UTC)	Freq
North America 0330-0400	9640, 11940, 15435, 17890
Far East 0530-0600	15435, 17775, 18830, 21700
Europe 1030-1100	15435, 17775, 17865, 21605
Europe 1330-1400	15435, 17775, 17865, 21605
Europe/North America 1600-1630	9640, 11730, 15320, 17775

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America's Shortwave "007"

She Was Our WWII Answer To Tokyo Rose

BY HENRY KING

When the Japanese shouted Tora! Tora! Tora! as their pilots bombed Pearl Harbor, they started a war of words as well as munitions.

They lost both.

Our military units outfought them on the battlefields.

I'm going to tell you the little-known story of how a starry-eyed, syrup-voiced Dixie gal out-talked them on the airwaves.

In Coastal Carolina lives the modest, soft-spoken woman who knows the details of dueling with a dialect the Nipponese couldn't match.

Susan Tate King listened politely when I told her I had been in her husband Philip's real estate office and had noted a photograph of a woman wearing a Red Cross uniform with a "Military Welfare Service" shoulder patch. "He said it is a picture of you."

"That was long ago and far away," she said, smiling wistfully.

"I understand you had a double role during World War II and were involved in psychological warfare. That you were the American counterpart of the enemy's efforts to wage a war of words," I said.

"Didn't most people think the Japanese added insult to injury by putting Tokyo Rose on the air as a propaganda broadcaster after they bombed Pearl Harbor?"

Susan Tate King's kind, grandmotherly eyes sparkled in a worldly-wise fashion and she said, "Perhaps." The brevity of the answer was a prelude to an eye-opening, earlier life of danger and intrigue she would unfold.

Although officially a member of the American Red Cross in the crucial years of World War II, Susan Tate's alternate job in the conflict was to counteract the propaganda broadcasts of Tokyo Rose.

Her experiences should have sparked a TV miniseries.

She was an OSS agent. On "loan" to the Office of War Information from The Red Cross, she made broadcasts calculated for the ears of both American service and the known monitoring by Japanese intelligence.

In effect, she was the "007" of short-wave radio.

"I would have guessed, at the time, that it was against the Geneva Convention" for a



Susan Tate King, today, restudies war documents.

registered non-combatant "to be involved in psychological warfare," she says in remembrance of her war duty.

"But I was 'Shanghai'd' into doing it. You don't say 'No' to the commanding general," she recalled of "orders" to go from hospital duty to broadcasting.

"I was reluctant to leave my Red Cross post where I had been helping to feed and care for wounded servicemen. I do think I could have filled a more benevolent role if I had been allowed to stay with my 171st Field Hospital unit," she insisted.

"That unit was the prototype of what later would become the M*A*S*H units."

Susan Tate went on "temporary" duty with the Office of Strategic Services for nearly two years.

She bolstered the morale of men on lonely outposts with her shortwave radio pro-

grams and interjected gibes at the enemy, too. Her work caused Tokyo Rose to start withering on the vine.

But apparently Gen. Douglas MacArthur was not overly grateful. MacArthur, whom many GI's characterized as a "cold" man, didn't want to acknowledge Susan Tate as a war correspondent.

He continually withheld her credentials, though she was entitled to them.

"The General did not like the idea of women war correspondents. . . ." she flatly states to this day.

Susan Tate King is now a Tarheel and has been living quietly, but active in civic affairs, at Southport in Brunswick County for more than 30 years.

"I was going to write a book about it all, someday, but Hurricane Hazel put an end to that project back in 1954," she said. "We



Australian photographer's picture of Susan Tate during war.



Famed American war artist Lt. Cmdr. McClelland Barclay did this sketch in 1945.

were living at Long Beach at that time and lost everything in the hurricane, including a trunkful of wartime notes."

The story would have been a pip.

Born at Newton, AL, where her youthful tongue learned its accent ability by curling around such words as Choctawhatchee River, her voice took on the dulcet tones of magnolia and honeysuckle.

It would come to pass in later life that the Japanese couldn't counterfeit a bona fide Dixie accent. Martha Susan Tate became America's not-so-secret weapon in the south Pacific.

She would admit later, after hearing how her voice recorded, that "played back, it came out sounding like molasses."

But long before those vocal charms swayed the palm trees of the south sea islands, Susan Tate became a teacher.

She tried a stint with a land bank in New Orleans, then spent five years as a legal secretary at a Washington, D.C. law firm while putting in two years attending law school at night.

In April, 1941, she started volunteer work with the Red Cross. In December Pearl Harbor was bombed. She volunteered for overseas duty.

Attached to the 171st Hospital unit, she was in the Pacific in a matter of months. "I had preferred Australia and that's where I landed," she said.

She spent her first wartime Christmas at

"17-mile hospital" near Hellfire Pass, at Moresby in Papua, an active battle sector. Japanese planes were frequent in bombing the area.

In the New Guinea sector she knelt in mud and fed broth to wounded men. Such arduous duty mandated rotation every six months for female personnel and she was flown back to Australia.

It was during this period that Tokyo Rose was saturating the airwaves with messages calculated to undermine the morale of Allied forces.

A counterattack in psychological warfare was needed to cancel out Tokyo Rose. American brass canvassed all units with female personnel and voice tested them without letting them know why.

Susan Tate's crepe myrtle, jasmine and honeydew voice made the tone indicator jump, and she was selected.

She became the U.S. Army's answer to Tokyo Rose and took to the air.

Her bubbly personality and the jivey music she played to entertain the troops with her "Reville Roundup" program became an instant hit. Thousands of men listened in. Many wrote. Some sent souvenirs they had made while living in foxholes.

"I got lots of kidding about my accent," she said, "But they loved it."

Island by island the troops took enemy territory and Susan Tate was always nearby with her "Jungle Network" to cheer them

up. she also took sideswipes at Tokyo Rose.

"We had some new ships come in today. We're getting stronger. Are you listening, Tokyo Rose?" would be a typical needling.

In August, 1945, the Japanese surrendered. In a way, General MacArthur did too. He finally commissioned Susan Tate a war correspondent.

By that time, famed American war artist Lt. Cmdr. McClelland Barclay had become impressed with the attractive brunette's heroic work and honored her with a published likeness.

When American troops entered Japan, Susan Tate followed.

"Tokyo Rose was imprisoned and charged with treason while I was in Tokyo," she said. "At one time, there was a movement afoot for me to meet her, but it never materialized."

Tokyo Rose was fined \$10,000 and sentenced to 10 years in jail.

"I would like to have met the woman," Mrs. King said. "Frankly, I think she was only doing what she was required to do. I was too, in a way."

In 1977, President Gerald Ford granted a pardon to Iva D'Aquino alias Tokyo Rose, who having long ago completed six years of her 10-year sentence, had been waging a campaign to clear her name.

Susan Take King read the newspapers with more than average interest that day
Small wonder.

Radio's Golden Era

Random Glances At Broadcasting And Communications Way Back When . . .

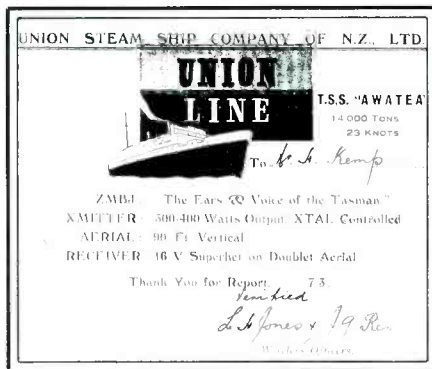
BY ALICE BRANNIGAN

All this talk about *Radio Newyork International*, the broadcasting ship that ran aground on the shoals of the FCC; it made me dig through files and records to uncover information on other radio ships, both famous and obscure.

News accounts of RNI mentioned the several recent pirates in the North Sea and off the British coast. Also of note was the 1970's offshore broadcasts of Rev. Carl McIntyre whose station went over with the FCC like the proverbial lead balloon. In last month's issue of *POP'COMM*, I even saw homage paid to 1933 shipboard pirate RXKR, aboard the *S.S. City of Panama*.

Broadcasting from ships, although looked upon today by the national media as something quite unusual and even bizarre, have a long and noble history that has been lost somewhere in the shuffle of facts, stations, and personalities. This goes back to the early days of broadcasting when the FRC licensed Grebe's station WRMU (100 watts on 1490 kHz) aboard the private yacht, *Mu-1*.

Throughout the 1920's and 1930's, larger ocean liners such as the *S.S. Normandie* and others had occasional broadcasts to mark maiden voyages or special occasions such as New Year's Eve celebrations. In the mid-1940's, right after WWII, history records that the *USAT Apache* was used for certain shortwave broadcasts, followed by (in the 1950's) the USCG Cutter *Courier* anchored at Rhodes Island (near Greece), operating as a VOA relay station.



Station ZMBJ, aboard the liner *Awatea*, was a high seas broadcaster that was active in the 1930's. Howard Kemp of NH received this QSL from the station.

All but totally lost in the shuffle are radio's two most interesting high seas broadcasters, stations that were very popular in their heyday and seemed to be legal, although wouldn't be by today's laws. I learned of them myself after reading about them several years ago right here in *POP'COMM*! Since then, I've done some additional research on the two stations.

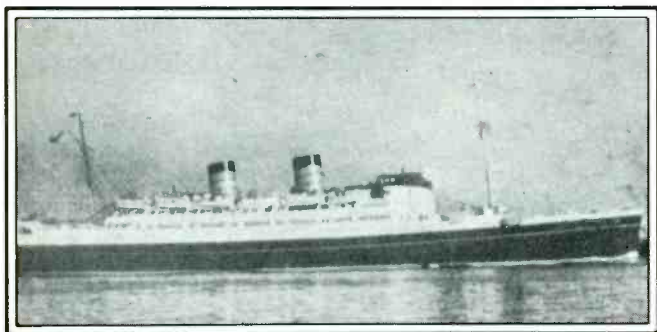
One on these stations was on the turbine steamer *Awatea*, of the Union SS Co., Wellington, New Zealand. This was a 545-foot ship that carried 566 passengers on the Sydney-Auckland-Vancouver run from September of 1936 to August of 1941. Aboard the *TSS Awatea* was shortwave

broadcasting station ZMBJ that ran as much as 400 watts on 8840, 13200, and 13600 kHz. Using the slogan, "The Ears and Voice of The Tasman," ZMBJ had a regular daily broadcast schedule, and sent out countless QSL cards to listeners in all areas.

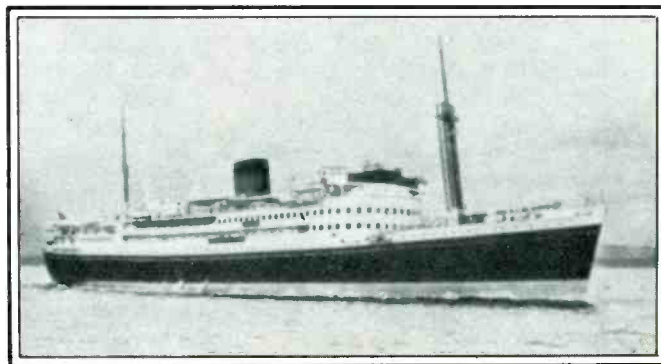
Station ZMBJ ended broadcasts in September of 1941 when the *Awatea* became a troop transport. In 1942, the ship collided (off Halifax) with an American destroyer (which broke in two and sank). In November of 1942, the *Awatea* was the target of German bombers while it was located between Gibraltar and Bougie. The vessel was abandoned and it sank near Cape Carbon.

The other major vessel with regular scheduled shortwave broadcasts was the *M/V Kanimbla*, of McIlwraith, McEacharn, Ltd., Melbourne, Australia. This was a 484-foot liner that carried 453 passengers and a crew of 160.

The maiden voyage was on 10 June 1936, which marked the first broadcast of its shortwave station, VK9MI while engaged in coastal passenger service (Melbourne-Cairns, but it also sailed on the Sydney-Fremantle route). VK9MI operated on 6053 and 11710 kHz, billing itself as "The World's First Ship Broadcaster" (an inaccurate boast). Still, shipping registries of the time partially supported the claim with a clarification that it was "the first passenger vessel in the British Empire to be licensed for broadcasting." That is to say, it went on the air three months ahead of ZMBJ on the *Awatea*!



The liner *TSS Awatea* was a two-stack beauty that was known far and wide for its shortwave broadcasts. It was sunk during WWII military action.

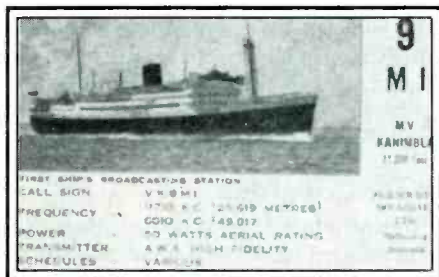


VK9MI was the callsign of the shortwave broadcaster located on the *M/V Kanimbla* which cruised the Pacific in the 30's. The vessel, under another name, owner, and flag (minus the shortwave station) was still in use until at least 1967, and may still be active.

The trademarks of VK9MI were its signal of a ship's bell followed by a blast of the *Kanimbla's* whistle. One of its more popular programs was handled by the station's female DJ. Even though VK9MI ran a mere 50 watts, it was widely reported and rewarded many listeners with QSL cards.

VK9MI went silent in 1939 when the *Kanimbla* became an armed merchant cruiser in the Royal Australian Navy (callsign VLFS), and (in 1943) a transport and accommodation ship. In 1950, the vessel was returned to civilian service and took up its former routes, carrying 371 passengers. In 1961 it was sold to the Pacific Transport Company, renamed the *Oriental Queen*, and placed under the flag of Panama for service between Japan and Indonesia. By 1964, *Oriental Queen* was chartered to Toyo Yusen KK (Tokyo) for Yokohama-Australia service and cruising. In 1967, Toyo Yusen KK purchased the ship.

VK9MI and ZMBJ were probably the best known legal shipborne broadcasters of radio's golden era. Let's not let their memory slide into oblivion.



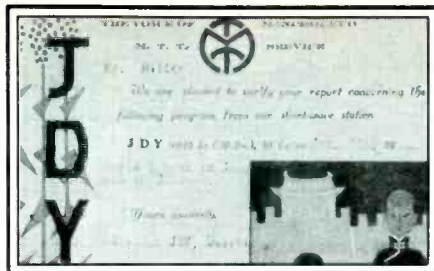
QSL from floating DX catch VK9MI from aboard the M/V *Kanimbla*.

Trivia Department

Here's another one of those brain busters sent in by a reader that got passed around the POP'COMM office staff without results and ended up on my desk. A reader who is a student at Tuskegee Institute in Alabama wrote to say that he understands that WNET (the PBS station in New York City on TV Channel 13) was started by a TV pioneer who happened to be black. He thinks that this has the makings of great thesis, but has drawn a total blank. The staff of Channel 13 tells him they know nothing of such a person, neither does anybody else he's asked. He believes that the story is true, but he's starting to think that he's going to have to come up with another thesis topic. POP'COMM is his last hope, he says.

Actually, this reader is on the right track but the wrong train. After more than forty years, the facts have become somewhat clouded.

In the mid-to-late-1940's, New York City had commercial operations by CBS, NBC, DuMont, and ABC on Channels 2, 4, 5, and 7, with independent stations on Channel 9 and 11. At that time, there was a small independent station (WATV) in West Orange, NJ. WATV wasn't on the air very of



The lovely four-color QSL from station JDY is so attractive that you'd hardly know it was sent out from a captive nation.

ten on Channel 13, and the FCC authorized the channel for use by several other local stations. One such station was in Brooklyn, Experimental licensee W2XDK owned by the Sherron Metallic Corp. and running 10 kW. Dumont Labs in Clifton was there with Experimental station W2XVT (25 kW video, 50 kW audio). Not the least active on Channel 13 in the New York City area was Experimental W2XJT (100 watts video, 400 watts audio), licensed to John Thomas of the Jamaica Radio and Television Co., Jamaica, NY. John Thomas is the early pioneer being sought by our reader.

Eventually, poor little WATV gave up the ghost (images) and quietly went out of business. In 1962 it was eventually replaced by the station that was originally known as WNTA but is now WNET on that channel, although WNET itself isn't a descendant of W2XJT or John Thomas. John Thomas' station, however was an early experimental TV operation on the same channel. Hope that provides enough information to kick off additional research on a complete study of this early TV experimenter's station and work. I don't want to be accused of doing the thesis!

December Doings

To those who have written to remind me that this December 7th marks the forty-sixth anniversary of the outbreak of hostilities with Japan, I do intend (as usual) to mention Japanese communications of that era. This time around, I have a very striking four-color QSL card to show from station JDY sent just prior to the outbreak of the war.

JDY was originally on 9925 kHz, but shifted to 9994 kHz. It was known as "The Voice of Manchoukuo," and was operated with 10 kW by the Manchoukuo Telephone and Telegraph Company (also known as the Darien Broadcasting Station) in Kwantung, Manchoukuo.

Manchoukuo was the Japanese name for the nation that existed from 1932 to 1945. It was set up by the Japanese Imperial Government and was comprised of the three provinces of old Manchuria with the capital at Hsinking. The Japanese occupied Manchuria in 1931, created Manchoukuo the following year, and proclaimed it an empire in 1934 with the puppet Manchu emperor K'ang Te as nominal ruler. At the end of

WWII, the nation was dissolved and then, in 1948, came under the complete control of the PRC.

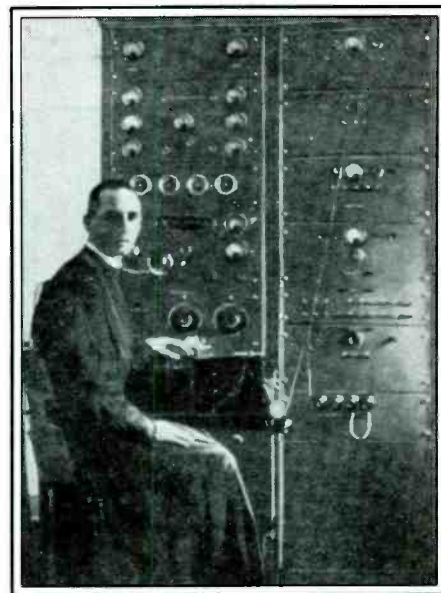
Station JDY first went on the air on 16 July 1937 relaying the broadcast band programs of JQAK every day for one hour. At other times the station was used for point-to-point radiotelephone purposes. JDY took about three months to QSL, and generally ignored reception reports for non-broadcast transmissions.

We are indebted to Harry Miller, Registered Monitor KWA7JG, of Washington State for providing us with a QSL card he received from JDY shortly before the war broke out and he found himself doing battle with the government that put this station on the air!

More December Doings

The December issue also seems to call out for mention of a station who messages have a special meaning to so many of the world's peoples this time of year. That would be HVJ, better known as "Vatican Radio."

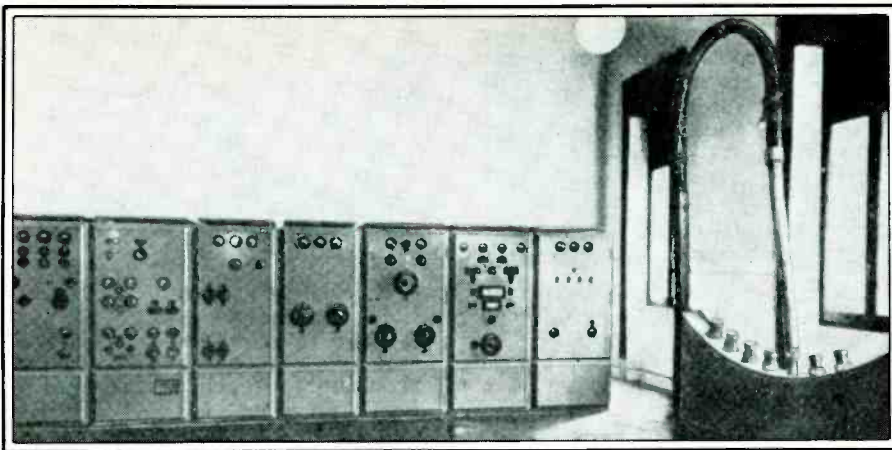
Let's look at HVJ as it was in 1938, when HVJ's director, Rev. Prof. Filippo Soccorsi, proudly announced the opening of the station's new 50-kW shortwave transmitter. This rig replaced the 12-kW one that was installed in 1931 and had become too much of an antique to keep up with HVJ's needs.



Father Soccorsi, S.J., at the control-board of the new shortwave transmitter installed at Vatican Radio in 1938.

HVJ's schedule had become home for programs in Latin as well as six modern languages, with those programs beamed to many areas on 6030, 11740, and 15127 kHz. The new crystal-controlled transmitter had provisions for ten frequencies so that additional channels might be added as the station continued to expand.

Of course, today this station has contemporary equipment to bring its religious mes-



Interior view of Vatican Radio's 50-kW transmitter built for the station in 1938 by the Telefunken Company of Germany.

sages to the world. Its special Christmas programming has long been a beautiful and welcome fixture of the shortwave bands, monitored by persons of many faiths.

Don Lee TV

Apropos our mention of early TV stations, it's a good time to mention old timer W6XAO, the Don Lee station in the Los Angeles area. This station first opened in 1931 as W6XS with 500 watts on 2100 and 2200 kHz. It used the cathode ray system,

but at only 80 lines—a very low definition picture.

The station kept improving the definition of its transmissions and within a few years it went to 330 lines, then (by 1940) had shifted to 441 lines per frame, 30 frames per second. On 1 July 1941, when the FCC set TV picture standards to the present 525 lines at 30 frames, the station again upgraded.

By 1935 the 150-watt station was operating on 42 to 50 as well as 60 to 86 MHz and was reporting a transmission range of 20 to 25 miles. In 1939, the station announced plans to construct a new transmitting plant atop 1700-foot high Mt. Lee on a twenty-one acre site on the Mack Sennett estate at

the eastern boundary of Griffith Park. This is just behind the famed *Hollywood* sign, that, at that time read "Hollywoodland" and previously was made famous by actress Peg Entwistle's suicide leap.

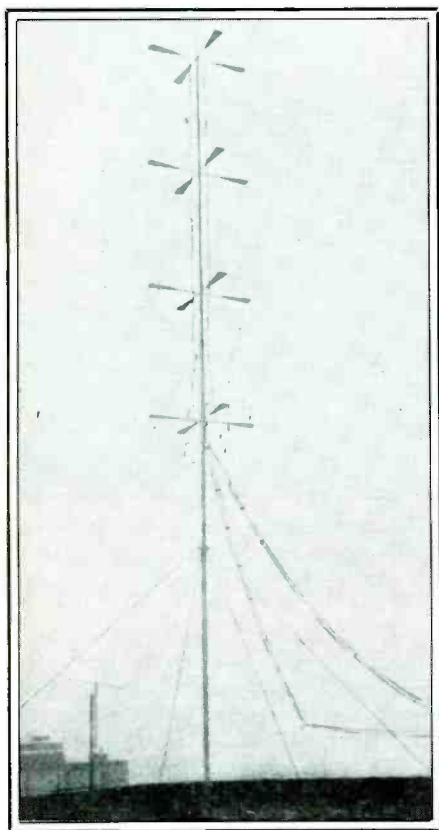
After WWII, when the TV industry began to rapidly expand, the station was ready and waiting for almost everybody else to catch up. By that time, the station had shifted over to TV Channel 2 (54 to 56 MHz) and became known as KTSL. Experimental license W6XAO was retained, and in addition to the Hollywood facilities, the Don Lee Co. had another Experimental license for a location in Los Angeles. That was W6XDL on TV Channel 2, with AM (instead of KTSL/W6XAO's standard FM) audio.

The Mt. Lee location is still in use, although the Don Lee Co. no longer operates the station, nor is it still known as KTSL or W6XAO. TV viewers these days know it as station KNXT.

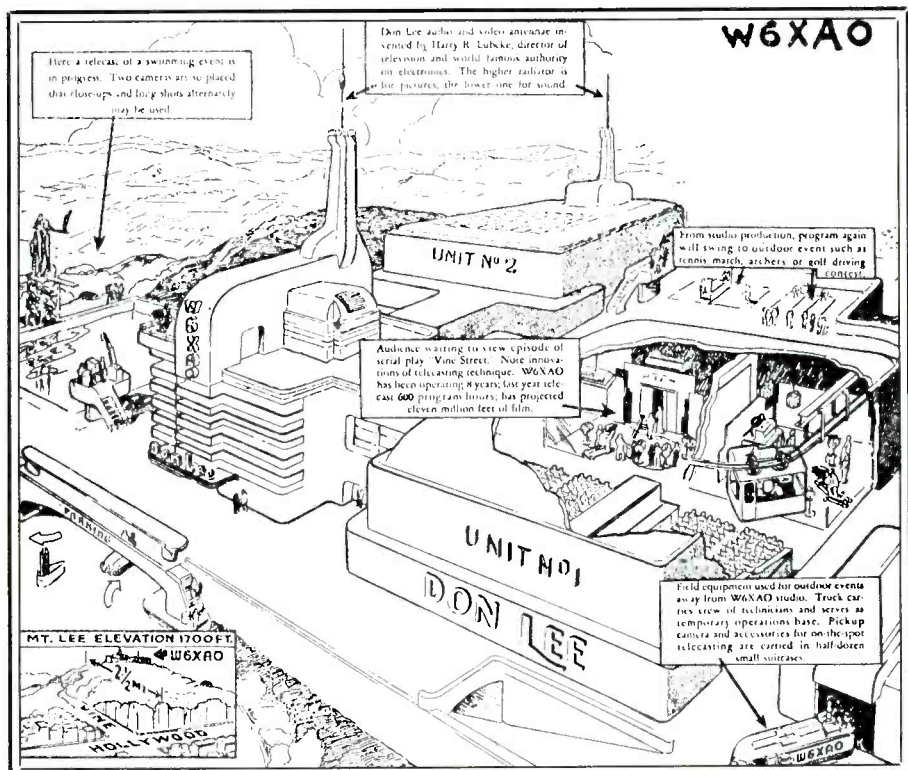
The station came a long way from the 1930's, when it had an antenna 200 feet above the streets of Los Angeles, and a full-time staff of nine people. Certainly, no mention of this station would be complete without acknowledging the enormous contributions to its early success by Harry Lubcke, its Chief Engineer throughout the 1930's. Credit him with building the first TV station west of Kansas City, and doing it with style!

Local Coverage

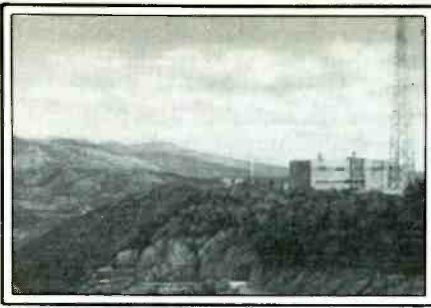
Nothing is more typical of the spirit of radio in modern society as is a station owned and staffed by local people serving their own



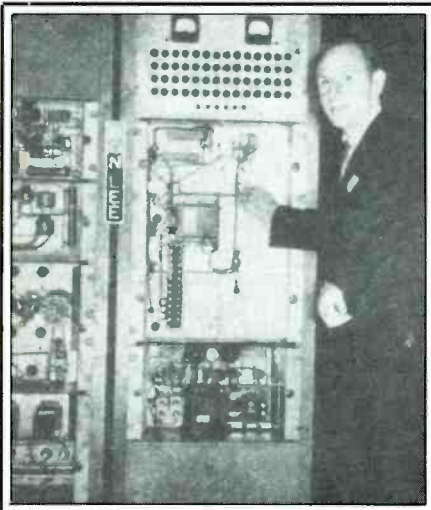
The 1940 TV transmitting antenna of W6XAO was designed and built by Harry R. Lubcke, the station's Chief Engineer.



By 1939, W6AXO released this artist's conception of the "dream station" they hoped to build for TV broadcasts in the Los Angeles area.



The W6XAO/KTSL facilities actually looked like this when the station was completed atop Mt. Lee in Hollywood. This picture postcard incorrectly gives the callsign as "W6XAD."



W6XAO's genius, Harry R. Lubcke. Here he's shown with the new TV transmitter installed in the late 1930's. The station started operating in 1931!

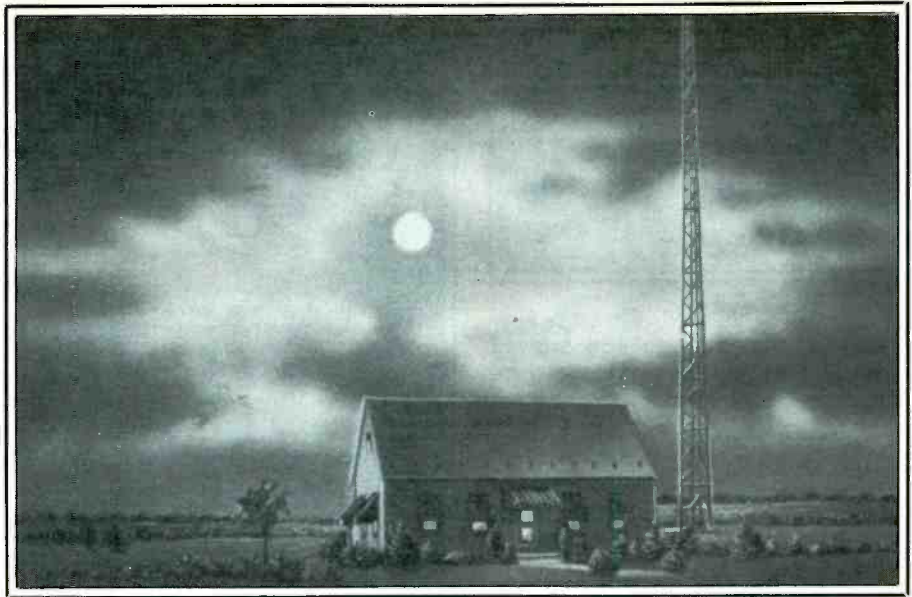
community. Such is station WJEJ of Hagerstown, MD.

This station went on the air 29 October 1932 running 100 watts on 1210 kHz. The major frequency shuffle that took place just before WWII caused WJEJ to shift to 1240 kHz, but allowed the station to increase its power to 250 watts. Still on its 1240 kHz frequency, WJEJ now runs 1 kW (250 watts at night), and has been happy to have been a participating member of the community for fifty-five years, and looks forward to the future.

Our view of the WJEJ transmitter building is a night scene showing the station as it appeared in 1940. This site is two miles north of Hagerstown on the main highway. Nothing fancy, just a residential type structure accompanied by a single tower that looks to be about seventy feet tall.

In The Navy

For those who ask for "ute" station coverage, here's an ancient one to ponder: U.S. Navy station NUG, a U.S. Navy radio-compass station located at Eagle Harbor, MI. Originally, NUG was located at Calumet,



The WJEJ transmitter site as it looked in 1940.

twenty miles southwest of Eagle Harbor (both communities are in Michigan's rugged northern peninsula). That was in the early 1900's, when it handled commercial traffic with ships. During the 1920's, however, NUG was moved to Eagle Harbor where its primary purpose was to help Great Lakes steamers on Lake Superior pinpoint their

own location (that was in the days before Loran made it all so easy).

NUG operated on 375 kHz, and could provide accurate directional bearings to ships as far away as fifty (to one hundred and fifty) miles. Ships would contact NUG and ask for a "QTE?" (What is my true bearing?) then transmit the CW letter "K" slowly

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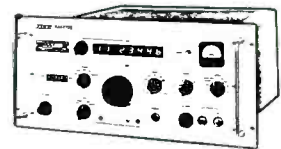
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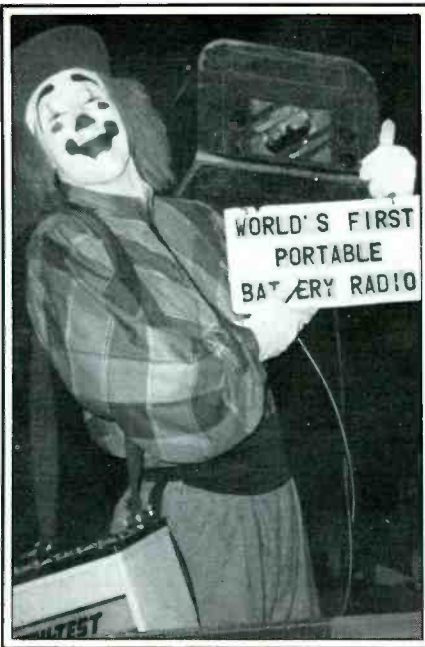
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The U.S. Navy station NUG at Eagle Harbor, MI in the 1920's. Sorry the photo is a bit faded with age. Take my word for it, there are two tall towers, plus a shorter one at the left. Trust me.

for almost a minute. NUG would then take bearings on the signals. When such bearings were simultaneously taken by two or three shore stations, the ship would have its true location.

Our photo of NUG is one that's become a little faded with age; apparently it was taken in the 1920's. It shows three towers and three structures on the shores of Lake Superior. The back of this photo was made into a postcard, so it looks as though NUG was a major tourist attraction in its day. By the way, of the three towers, the shorter one at the far left looks to be primarily a support for a flag.



Raggs, one of the great clowns at the Clyde Beatty Cole Brothers Circus sent in his own olde tyme radio discovery — the world's first portable battery radio. Note the power source slung from his right shoulder! Thanks, Raggs, see ya' under the big top! (Photo by Kathy Harris.)

I see the clock and the ribbon on the mill have both run out, so it's time for me to put away the dusty files for this issue and tiptoe over by the Christmas tree to see if Santa has stopped by yet. And may the gift you find for your own holiday be peace. Your cards, letters, QSL's, station photos, newspaper clippings, books, ideas, and criticisms have been helpful and welcomed. But, more than that, your kind words and support for this portion of POP'COMM have been just great!

PC

Historic Ham QSL's

Here's another QSL from one of those nations that gave up its identity at about the same time it lost its freedom. This time it's Estonia, located on the shores of the Baltic Sea in Europe, a small nation of 17,000 square miles. It had been a Baltic province of Russia since the 18th Century, but became an independent republic in early 1918. Estonia joined a nonaggression pact with Nazi Germany in 1939, but was occupied by the Soviet army in June of 1940. Two months later Estonia was annexed to the USSR under the name of the Estonian Soviet Socialist Republic.

Hitler's army moved into this area in 1941, but the Soviets were able to recapture the territory in 1944. None of this has been particularly agreeable to the Estonians, many of whom seem to indicate that they'd like to have their nation returned to them. The U.S. has never recognized Estonia's incorporation into the USSR, although hasn't taken any recent steps to secure its independence. Estonian patriots living in the U.S., however, still hold demonstrations at the U.N. Building in the hopes of obtaining an independent Estonia. They are usually joined by those seeking independence for Latvia and Lithuania, two other small former Baltic nations that also ended up in the same stew.

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During the 1930's, Estonian Amateurs were plentiful with their distinctive "ES" prefixes, later replaced by the Soviet prefixes UR2, UK2R and UK2T.

Our card from Estonian station ES5D shows red letters on a light buff QSL card. It verifies a 1938 contact while the station, located in the village of Tapa, was running 50 watts. There probably are many who would like to find Estonia back on the air as an independent nation!

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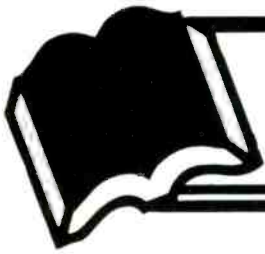
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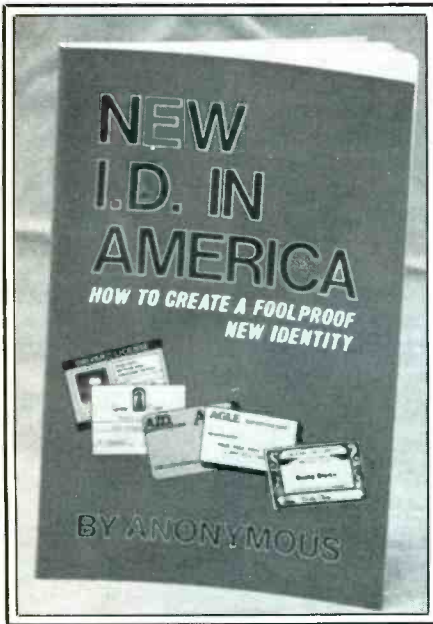


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BOOKS YOU'LL LIKE!

BY R. L. SLATTERY



Is That Really You?

The term *paper tripping* has come to mean intentionally losing one's self behind dense layers of alternative identities, addresses, and official records, licenses, etc., etc. There are numerous reasons why *paper tripping* has become so popular—why people have sought to establish changed or secondary identities that they can fall back upon. This includes security purposes, credit or employment reasons, to avoid former spouses, or just for getting some privacy in a world filled with nosy computers that seem very anxious to compile and distribute personal information on individuals. That's what professionals call *paper tripping*. If it's done correctly, it's a trip into total anonymity that leaves a trail so tenuous that it defies detection by even the most ardent trackers.

The classic information on identity change is a book called *New I.D. In America*. It's information on the most efficient current shallow, medium, and deep cover methods, revealed by a professional *paper tripper*. The author, a high-priced private investigator who (probably wisely) wishes to remain anonymous, specializes in helping his clients "get lost"—quickly and most permanently. However, his unique knowledge and experience in this area has also made him a specialist in locating persons who thought they'd never be found. A few minor

but common slip-ups on their part brought this investigator directly to their doorsteps. This 110-page book contains *all* of his most successful techniques for both aspects of his highly successful specialty.

He provides step-by-step details for creating (on paper) a totally new person with a *bona fide* birth certificate, passport, driver's license, credit records and cards, employment and education information, bank records, *everything* needed to assure a totally different identity that is probably more genuine looking than the true identities some people can prove.

New I.D. In America reveals how persons can project any image they want and even prove they are who and what they say they are, with nary a link to any former true or other alternate identities. Equally revealing is the information on how careless or inadequately informed would-be *paper trippers* get located by those who know the tricks of the trade—persons such as the author of this fully-illustrated security manual.

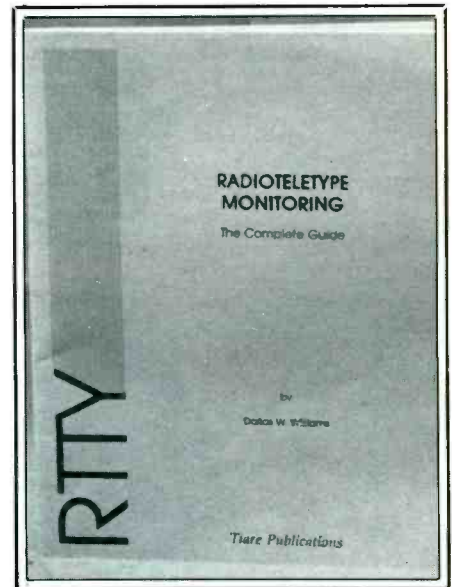
New I.D. In America is available from CRB Research, P.O. Box 56, Commack, NY 11725. The price is \$14.95, plus \$1 postage and handling to addresses in USA/Canada/APO/FPO.

RTTY Monitoring Primer

There's no doubt that one of the most interesting monitoring specialties is tuning in radioteletype stations. Newly developed equipment available at modest prices to DX'ers is easy to use and a cinch for even the most "all-thumbs" hobbyist. Long gone are the days of massive mechanical monster printers that not only sounded like an UZI set to full automatic, but also required a Ph.D. in electro-mechanical engineering to connect and operate with ease.

But there is a problem with RTTY monitoring; to those who aren't hip on the topic, it still conjures up images of being very esoteric, complex, and obscure. In view of currently available equipment, it's a bad rap that RTTY monitoring has to haunt it from its past. To make matters worse, most of the books that have thus far come out on the subject of RTTY are more or less aimed at those who seek to receive and also transmit RTTY, ending up with text that comes off as being somewhat more technical and intimidating than many of us big dummines feel comfortable with.

Dallas W. Williams, whose name regular-

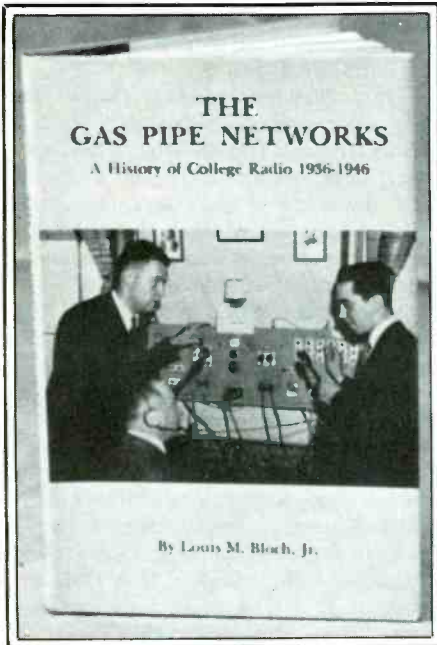


ly appears as a monitoring contributor to the RTTY column in *POP'COMM*, has taken steps to make things easier. Williams' new book, *Radioteletype Monitoring: The Complete Guide*, is a book that is written by and for the monitoring enthusiast who would like to get into monitoring RTTY with as little pain as possible. It's also aimed at those who are presently active in RTTY monitoring but would like to expand their knowledge of the topic in order to make the most of the monitoring specialty.

The 54-page book covers topics such as the hardware involved, tuning in RTTY signals correctly, information sources, traffic slugs and coded transmissions, test tape transmissions, press agencies, best times and places to monitor for RTTY DX, etc. The book is topped off with a directory of more than 300 best-bet worldwide RTTY stations and frequencies.

Williams knows his topic well, and explains everything in an easy-to-understand style. It's a fine book and should go a long way towards beaming light into the dark corners of RTTY to show that there really aren't any ogres lurking in the shadows. The book might have been enhanced with a few relevant illustrations and photos, however there aren't any.

Radioteletype Monitoring is published at \$9.95, plus \$1 shipping (\$2 outside the USA, send U.S. funds only) from Tiare Publications, P.O. Box 493, Lake Geneva, WI 53147.



College Broadcasting

College broadcasting stations are affectionately referred to as being affiliated with the *Gas Pipe Network*; presently there are more than 1000 college campus radio station. Many are virtually unknown by persons other than the students or staffs at those institutions. More formally, the stations are members of a non-profit organization called *The Intercollegiate Broadcasting System*. It encompasses stations operating in the AM and FM bands, and also those operating with current transmitters.

All of this harks back to the first such station, opened in 1936 at Brown University. Since that time, well over 1.5 million persons have participated in college radio, and many turned into today's high power radio/TV broadcasting executives.

When researching the history of this interesting and unusual aspect of broadcasting, the names of several of its pioneers constantly turn up. One such name is Louis M. Bloch, Jr., who (as a freshman) was one of those who placed that first campus station in operation.

In his 126-page hardcover book, Bloch traces the history of college radio from its very first rumblings (1936) and through its first ten hectic years. The book is loaded with many photos of the various IBS stations and personalities from the early days.

The text tells of the trials and tribulations involved in putting the early stations into operation, including extreme measures sometimes required in order to keep it all going and in tune with FCC requirements as well as the college administrations. It's humorous, informative, and a story studded with the names of well known people from government and business.

The book also includes individual histories of the pioneer campus broadcasters, a roster of the colleges that had campus sta-

tions prior to 1946 (showing dates of affiliation in the IBS) and an index. Today some of these early miniature broadcasters have evolved into 50-kW AM stations. The route that they took from the early days that brought them to that point is very worthwhile reading for everybody interested in broadcasting.

Bloch's book, *The Gas Pipe Networks*, is priced at \$12.95 from Bloch and Company, P.O. Box 18058, Cleveland, OH 44118. We recommend it highly!

PC

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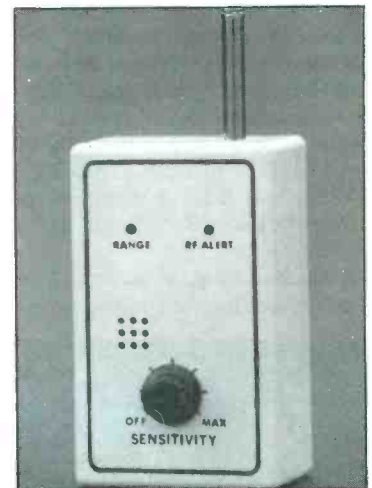
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Retired Man Rescues Child

Russell S. Lauer is an unlikely hero. The 79-year-old retired railroad supervisor has had three heart attacks and has spent almost a year on an oxygen tank. And he doesn't like stairs or hot weather.

But despite his age and medical difficulties, the Juniata, Pennsylvania, man was still able to take part in a rescue of two young children who were found unconscious and floating in a nearby backyard swimming pool.

Lauer pulled five-year-old Jessica Eaton from the pool after seeing her unconscious body floating in the pool.

SCAN PUBLIC SERVICE AWARD

"I could see a body laying there, but there just seemed to be a little bit of water moving," Lauer told the *Altoona Mirror*. "I grabbed her arm and yanked her out."

"Then somebody asked, 'Where's the boy?' I went back up there and looked. You couldn't see another child in there."

Jessica's four-year-old brother Jared was also in the pool, but his body was hidden under rafts on the pool's surface, and was not discovered until a few minutes later.

Lauer told the *Mirror* the he then called



Gary Baranec/Altoona Mirror

for help and Bill Drugg, 28, ran over, thinking that his neighbor was having heart trouble.

After he learned that the boy was still in the pool, Drugg pushed the rafts aside and pulled Jared out.

Drugg then spent some five minutes pumping water from the four-year-old's body, and then administered CPR until paramedics arrived at the scene.

According to an account of the incident in the *Mirror*, the children had climbed over a five-foot-high locked chain link fence that

surrounded the pool. The two children were reportedly in the pool for 15 minutes.

Lauer says that he did what anyone else would have done.

"You don't worry about yourself at a time like that," he said. "You just do what you have to do. I didn't have time for a heart attack. My first instinct was, 'My God, there's a child laying there.' The kid had to come first."

Lauer's daughter, Judy Hamilton, told the *Mirror* that he put himself in a potentially dangerous situation.

"No matter what Daddy says, he put himself in a very precarious situation," she said. "I was terrified. The thought of him gone racing across the yard and having a heart attack. I was scared and tears came right to my eyes," she said when she first learned of her father's exploits. "I know my father and I'm not surprised at what he did at all."

Jessica was released from Altoona Hospital following the incident. Jared was flown by Life Flight helicopter to Pittsburgh Children's Hospital, where he was reported "conscious, alert and breathing on his own" a few hours after the accident.

For their quick action, Russell S. Lauer and Bill Drugg will receive the SCAN Public Service Award. The award consists of a special commendation plaque and a cash prize. For making the nomination, C.A. Dotzler of Altoona will also receive a commendation plaque. Congratulations to all of you.

Best Equipped

Mic Ryan writes that he has a 564-channel capability with this well-equipped shack. Without adding up the channel capability of each scanner, we note that this Thornton, CO scanner enthusiast uses a Bearcat 200 and Bearcat 100, along with five Realistic scanners: Pro-2004, Pro-2021, Pro-16, Pro-40 and Pro-23. The two Bearcats and the 2004 and 2021 are programmable, the other three sets are crystal units.

There are four Citizens Band rigs: a Cobra 142-GTL, Realistic TRC-206 and TRC-216, and E.F. Johnson Messenger 223. Mic also uses a Realistic DX-160 shortwave receiver.

Mic has two Realistic scanner antennas and a longwire for the shortwave receiver.



SCAN PHOTO CONTEST WINNERS

For the CB base, Mic uses a Signal Engineering "Superhawk" two-element quad beam and a Realistic arch rotor.

One final piece of equipment is a Magnavox observation system, with a 12-inch black-and-white monitor with four-position switcher. The cameras in this security system have sound as well as video capability.

Best Appearing

Stan Sheram of Athens, GA has been interested in radio communications since the early 1960's. He purchased his first scanner almost 20 years ago.

Today, his attractive radio shack includes a Regency MX4200 scanner, Bearcat 800XLT and Realistic Pro-32 200-channel handheld. Stan's VHF/UHF accessories include a Grove scanner beam, Butternut SC3000, Capri electronics antenna amplifier and Capri descrambler.

On the lower frequencies, Stan uses a



Yaesu FT101E transceiver, Yaesu 7700 receiver with matching tuner and active antenna, Realistic DX-400 and MFJ antenna tuner. Stan also has a Commodore 64 computer, an eavesdropper antenna for receiving and a multiband dipole for transmitting.

With this set-up, Stan says that he can "receive anything from a bass drum to a laser beam and transmit on much in between."

We couldn't have put that any better.

Winners in the Photo Contest this month receive the BMI "NiteLogger" tape recorder activator. Plugged into a cassette recorder and a scanner, it gives a complete record of all communications with no "dead time" on the tape. If you would like to enter the contest, just send a sharp black/white print to SCAN Photo Contest, P.O. Box 414, Western Springs, IL 60558.

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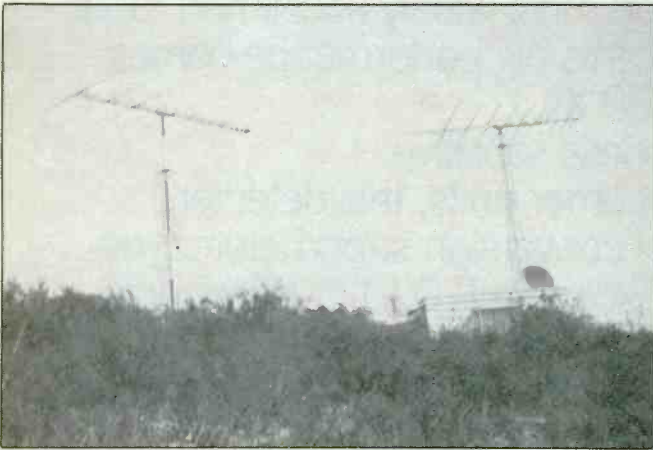
For more information about Uniden Radar Detectors, or any other Uniden products, write Uniden Corp. of America, Consumer Products Division, 6345 Castleway Court, Indianapolis, IN 46250.

POP'COMM Foto File

Fed Facility Fotos

POP'COMM is fortunate in being on the receiving end of a continuous stream of photos sent to us by our readers and our authors. Sooner or later, most seem to end up in our columns and features. This month we thought we'd sort through the incoming mail and filter out some of those that show federal communications facilities at various locations.

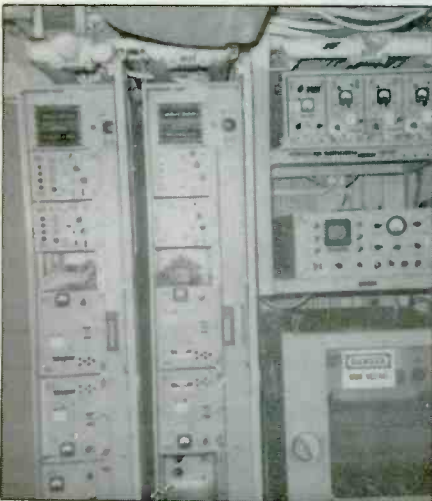
We're always on the lookout for photos showing communications or broadcast facilities located anywhere. This includes stations operating on any frequencies between ELF and microwave, located on land or sea, in air or outer space! We'd even like to see a photo with you included in the shot. Photos can be color prints or transparencies, Polaroids, or b/w prints. Make sure they are well lit, in focus, and have good contrast. Please include descriptions of the subjects in the photos.



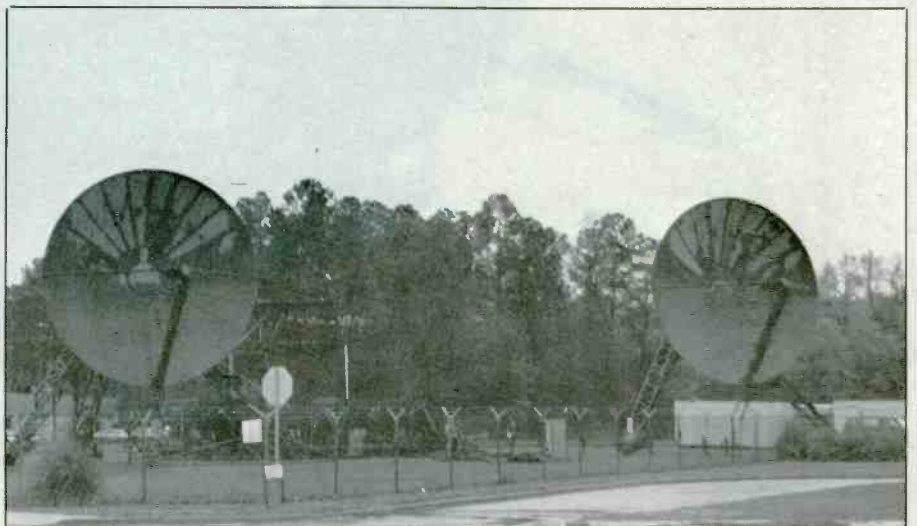
On a remote hill outside of San Diego, CA, stands this large federal communications facility, complete with microwave dishes and beam antennas. No hint as to which agency owns and operates this site. Maybe our readers know. (Photo courtesy Dave Carlson.)



At Ft. Bragg, NC, Capt. Bob Hoover, the 82nd Airborne Division's Fighter Liaison officer, directs an A-10 Thunderbolt during a bombing run exercise. (U.S. Army photo by Douglas Ide.)



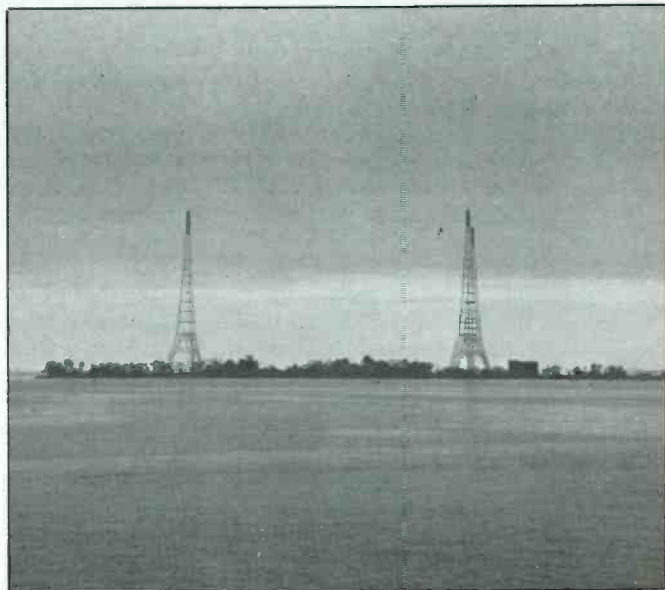
Two SRC-23 communications units installed in a USN guided missile destroyer (DDG). The HF units operate from 2 to 30 MHz. (Photo submitted by an anonymous reader.)



A National Guard armory in Savannah, GA displayed these two huge terrestrial microwave dish antennas. Plenty of other antennas here, too; but all safely behind a chain link fence topped with barbed wire. (Photo courtesy Kathy Harris.)



STARS means Small Tethered Aerostat Relocatable System. Radar antennas located in the pod beneath the aerostat (an unmanned blimp kept on a leash tied to a ship) can get a good look at distant ships and aircraft once the aerostat is sent aloft. Operators located on the vessel radio the vectors to pursuit aircraft and ships. It's being considered for use in hunting drug smugglers. This one, on the vessel American Sentry, was spotted while moored in the Washington, DC area. Note the battleship in the background. (Photo courtesy Alice Brannigan.)



At the entrance to the Severn River, on the way to the U.S. Naval Ship Research and Development Center at Annapolis, MD, you get a dazzling eyefull of the antenna system at this facility. (Photo courtesy Alice Brannigan.)

PC

10 Meter Enhancement Is Here

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PIRATES DEN

FOCUS ON FREE RADIO BROADCASTING

It shouldn't be hard to guess what the main news in the pirate world is about this month. What else but **Radio Newyork International?**

As you know, Radio Newyork International had four transmitters on the air simultaneously: on 190 kHz longwave, 1620 kHz just above the top of the broadcast band, at 103.1 in the FM broadcast band and on 6240 MHz shortwave.

I have been swamped with news clippings about the station as well as loggings of RNI's broadcasts. Receptions of RNI were made by Steven B. Johnston in Norfolk, VA; Tom Kneitel of **POP'COMM**; Bob Dayle in Shelton, CT; John Fontaine of Brooklyn, NY; Garry T. Laing in Chambersburg, PA; B. McCarty in Brookfield, CT; Steve Coletti in New York City; Daryll Symington in Holland, OH; Robert Ross and Mike Yohnicki both of London, Ontario and Arnie Schnecht in Jamestown, NY. I know that receptions were made by many others, spread all over the continent.

POP'COMM featured a story on RNI last month so I'll not go into greater detail here except to provide the station's address for those of you who requested it: 496 La Guardia Place, Suite 451, New York, NY 10012. QSL's were promised and are going out slowly but surely.

What used to be **WHMC-FM 93** in Cumberland, MD has become **Radio Unicorn**, according to the operator, who calls himself "Big D." The station operates with a staff of four, broadcasting evenings from 7 to 10 p.m. The ERP is 20 watts, though that is cut down to just 100 mV and the antenna is disconnected if the FCC is known to be prowling the area. Big D says he's been in "boot-

leg" radio since the 1940's and that Unicorn Radio even has a small list of advertisers.

Tim Tromp in Muskegon, MI caught **Zepelin Radio Worldwide**. They were on 7416 from 0100 to 0130 with mostly rock music but also aired an operatic number and a march. The address for reports is the Hawaii mail drop, Box 5074, Hilo, 96720. Tim says the station asks for three 22-cent stamps to be included. That's pretty much a standard these days.

The Public Relations Director of **Atomic Communications, Inc.**, who calls herself Ann Tennae (cute!) tells us that Atomic Radio was to have gone on the air in the West Texas area late in the summer. The station will be made available to outsiders—any group or organization that has a topic that "needs to be made public." The station will broadcast in stereo on 95.3 and will also include music, comedy and seasonal material. "Ann" promises more information and an address later. In the meantime, "keep your eyes and ears open for Atomic 95, where you'll experience major meltdown."

"Rocco Gibraltar" of pirate **KNRH** says they've been experiencing equipment problems as well as a shortage of programming and that has cut back on the station's activity. The station is completely tape automated so they do a lot of trading with other stations, including Europeans such as **Falcon Radio, Radio Pamela** and **Laser 558**. Last January the station moved to 15125 and then had another breakdown. In the meantime, it's been rebroadcasting local outlets KLAC, KSHO and the local TIS station. That would put it in the Los Angeles area. If you hear KNRH, reports go to the Hilo address.

A station calling itself the **Hunter Society** and featuring "Captain Bottlecap" and "Pull Tab Hunter" was noted by Steven Sachs in New York on 7370 at 0610 to 0637. Steve called the number the station gave (which later proved to be a phone booth in Nashville) and learned they use 100 watts into a dipole and had only been active for a couple of weeks.

Tangerine Radio was heard by Nick Gollabitt in St. Louis at 0145 to 0206 sign-off on 7415. The station identification included the words "... from the dark, deserted streets of a city destroyed by fire comes Tangerine Radio." The announcer called himself "Raunchy Rick." The most recent info I have, Nick, is that reports go to the Hilo address.

A reporter who doesn't include his name or address reports logging **WBRI** at 0015 on 7415. The station gave a post office box in Washington, D.C. but static got the number before our reporter could. Anyone have it?

Radio Newyork International wasn't the only station using 1620 recently. **WDOG** was heard there every other weekend through June, usually on Sunday nights, by Arnie Schnecht in Jamestown, NY. Arnie says the announcer, T. E. Magnatron, plays a lot of new wave rock. The station also announces 7420. Arnie sent a copy of the QSL he received but doesn't mention the station's address.

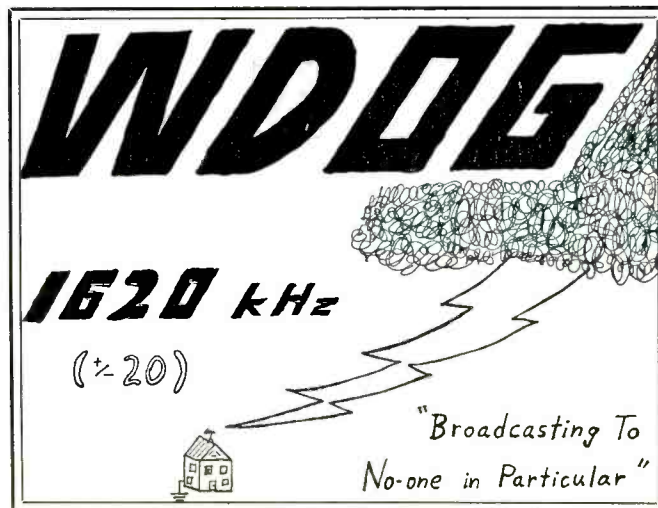
It's great to see you pirate operators checking in with news about your coming plans or current operations. Keep it coming—and your loggings, QSL copies, pirate station photos, news clippings and such, too.

I'll have more pirate pickings for you next month!

PC



The studios of Unicorn Radio.



The QSL from WDOG on 1620 kHz which, from the looks of the verification, seems a rather approximate frequency!

NEW! CB Radios & Scanners

Communications Electronics,TM the world's largest distributor of radio scanners, introduces new models of CB & marine radios and scanners.

NEW! Regency® TS2-RA

Allow 30-90 days for delivery after receipt of order due to the high demand for this product.

List price \$499.95/CE price \$339.95
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Frequency range: 29-54, 118-174, 406-512, 806-950 MHz.
The Regency TS2 scanner lets you monitor Military, Space Satellites, Government, Railroad, Justice Department, State Department, Fish & Game, Immigration, Marine, Police and Fire Departments, Aeronautical AM band, Paramedics, Amateur Radio, plus thousands of other radio frequencies most scanners can't pick up. The Regency TS2 features new 40 channel per second Turbo Scan™ so you won't miss any of the action. Model TS1-RA is a 35 channel version of this radio without the 800 MHz. band and costs only \$239.95.

Regency® Z60-RA

List price \$299.95/CE price \$148.95/SPECIAL
8-Band, 60 Channel • No-crystal scanner
Bands: 30-50, 88-108, 118-136, 144-174, 440-512 MHz.
The Regency Z60 covers all the public service bands plus aircraft and FM music for a total of eight bands. The Z60 also features an alarm clock and priority control as well as AC/DC operation. Order today.

Regency® Z45-RA

List price \$259.95/CE price \$139.95/SPECIAL
7-Band, 45 Channel • No-crystal scanner
Bands: 30-50, 118-136, 144-174, 440-512 MHz.
The Regency Z45 is very similar to the Z60 model listed above however it does not have the commercial FM broadcast band. The Z45, now at a special price from Communications Electronics.

Regency® RH256B-RA

List price \$799.95/CE price \$329.95/SPECIAL
16 Channel • 25 Watt Transceiver • Priority
The Regency RH256B is a sixteen-channel VHF land mobile transceiver designed to cover any frequency between 150 to 162 MHz. Since this radio is synthesized, no expensive crystals are needed to store up to 16 frequencies without battery backup. All radios come with CTCSS tone and scanning capabilities. A monitor and night/day switch is also standard. This transceiver even has a priority function. The RH256 makes an ideal radio for any police or fire department volunteer because of its low cost and high performance. A 60 Watt VHF 150-162 MHz. version called the RH606B-RA is available for \$459.95. A UHF 15 watt, 10 channel version of this radio called the RU150B-RA is also available and covers 450-482 MHz. but the cost is \$439.95.

Bearcat® 50XL-RA

List price \$199.95/CE price \$114.95/SPECIAL
10-Band, 10 Channel • Handheld scanner
Bands: 29.7-54, 136-174, 406-512 MHz.
The Uniden Bearcat 50XL is an economical, handheld scanner with 10 channels covering ten frequency bands. It features a keyboard lock switch to prevent accidental entry and more. Also order the new double-life rechargeable battery pack part # BP55 for \$29.95, a plug-in wall charger, part # AD100 for \$14.95, a carrying case part # VCO01 for \$14.95 and also order optional cigarette lighter cable part # PS001 for \$14.95.



PC 22

NEW! Scanner Frequency Listings

The new Fox scanner frequency directories will help you find all the action your scanner can listen to. These new listings include police, fire, ambulances & rescue squads, local government, private police agencies, hospitals, emergency medical channels, news media, forestry radio service, railroads, weather stations, radio common carriers, AT&T mobile telephone, utility companies, general mobile radio service, marine radio service, taxi cab companies, tow truck companies, trucking companies, business repeaters, business radio (simplex) federal government, funeral directors, veterinarians, buses, aircraft, space satellites, amateur radio, broadcasters and more. Fox frequency listings feature call letter cross reference as well as alphabetical listing by licensee name, police codes and signals. All Fox directories are \$14.95 each plus \$3.00 shipping. State of Alaska-RL019-1; Baltimore, MD/Washington, DC-RL024-1; Chicago, IL-RL014-1; Cleveland, OH-RL017-1; Columbus, OH-RL003-2; Dallas/Ft. Worth, TX-RL013-1; Denver/Colorado Springs, CO-RL027-1; Detroit, MI/ Windsor, ON-RL008-2; Fort Wayne, IN/Lima, OH-RL001-1; Houston, TX-RL023-1; Indianapolis, IN-RL022-1; Kansas City, MO/KS-RL011-2; Los Angeles, CA-RL016-1; Louisville/Lexington, KY-RL007-1; Milwaukee, WI/Waukegan, IL-RL021-1; Minneapolis/St. Paul, MN-RL010-2; Nevada/E. Central CA-RL028-1; Oklahoma City/Lawton, OK-RL005-2; Pittsburgh, PA/Wheeling, WV-RL029-1; Rochester/Syracuse, NY-RL020-1; Tampa/St. Petersburg, FL-RL004-2; Toledo, OH-RL002-3. A regional directory which covers police, fire ambulance & rescue squads, local government, forestry, marine radio, mobile phone, aircraft and NOAA weather is available for \$19.95 each. R0001-1 covers AL, AR, FL, GA, LA, MS, NC, PR, SC, TN & VI. For an area not shown above call Fox at 800-543-7892 or in Ohio 800-621-2513.

Regency® Informant® Scanners

Frequency coverage: 35-54, 136-174 406-512 MHz.
The new Regency Informant scanners cover virtually all the standard police, fire, emergency and weather frequencies. These special scanners are preprogrammed by state in the units memory. Just pick a state and a category. The Informant does the rest. All Informant radios have a feature called Turbo Scan™ to scan up to 40 channels per second. The INF1-RA is ideal for truckers and is only \$249.95. The new INF2-RA is a deluxe model and has ham radio, a weather alert and other exciting features built in for only \$324.95. For base station use, the INF5-RA is only \$199.95 and for those who can afford the best, the INF3-RA at \$249.95, is a state-of-the-art, receiver that spells out what service you're listening to such as Military, Airphone, Paging, State Police, Coast Guard or Press.

Regency® HX1500-RA

List price \$369.95/CE price \$218.95
11-Band, 55 Channel • Handheld/Portable
Search • Lockout • Priority • Bank Select
Sidelit liquid crystal display • EAROM Memory
Direct Channel Access Feature • Scan delay
Bands: 29-54, 118-136, 144-174, 406-420, 440-512 MHz.
The new handheld Regency HX1500 scanner is fully keyboard programmable for the ultimate in versatility. You can scan up to 55 channels at the same time including the AM aircraft band. The LCD display is even sidelit for night use. Includes belt clip, flexible antenna and earphone. Operates on 8 1.2 Volt rechargeable Ni-cad batteries (not included). Be sure to order batteries and battery charger from the accessory list in this ad.

Bearcat® 100XL-RA

List price \$349.95/CE price \$178.95/SPECIAL
9-Band, 16 Channel • Priority • Scan Delay
Search • Limit • Hold • Lockout • AC/DC
Frequency range: 30-50, 118-174, 406-512 MHz.
Included in our low CE price is a sturdy carrying case, earphone, battery charger/AC adapter, six AA ni-cad batteries and flexible antenna. Order your scanner now.

★★★ Uniden CB Radios ★★★

The Uniden line of Citizens Band Radio transceivers is styled to compliment other mobile audio equipment. Uniden CB radios are so reliable that they have a two year limited warranty. From the feature packed PRO 540e to the 310e handheld, there is no better Citizens Band radio of the market today.

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NINJA-RA PRO310E with rechargeable battery pack \$99.95
B-10-RA 1.2V AA Ni-cad batt. for Ninja (set of 10)... \$20.95
PRO520E-RA Uniden 40 channel CB Mobile... \$59.95
PRO540E-RA Uniden 40 channel CB Mobile... \$119.95
PRO710E-RA Uniden 40 channel CB Base... \$119.95
PC22-RA Uniden remote mount CB Mobile... \$99.95
PC55-RA Uniden mobile mount CB transceiver... \$59.95

★★★ Uniden Marine Radios ★★★

Now the finest marine electronics are available through CEI. The Unimetrics SH66-RA has 50 transmit and 60 receive frequencies with 25 or 1 watt power output. Only \$169.95. The Unimetrics SH88-RA is a deluxe full function marine radiotelephone featuring 55 transmit and 90 receive channels and scanning capability for only \$259.95. The Unimetrics SH3000-RA is an excellent digital depth sounder, good for 300 feet. It has an LCD continuously backlit with red light display and a 5 ft. or 10 ft. alarm. Only \$189.95. Order today.

CIRCLE NO. 151 ON FREE INFORMATION CARD

Bearcat® 800XL-RA

List price \$499.95/CE price \$289.95/SPECIAL
12-Band, 40 Channel • No-crystal scanner
Priority control • Search/Scan • AC/DC
Bands: 29-54, 118-174, 406-512, 806-912 MHz.
The Uniden 800XL T receives 40 channels in two banks. Scans 15 channels per second. Size 9 1/4" x 4 1/2" x 12 1/2".

OTHER RADIOS AND ACCESSORIES

Panasonic RF-2600-RA Shortwave receiver... \$179.95
RD55-RA Uniden Visor mount Radar Detector... \$98.95
RD9-RA Uniden "Passport" size Radar Detector... \$169.95
NEW! BC 70XL-RA Bearcat 20 channel scanner... \$168.95
BC 140-RA Bearcat 10 channel scanner... \$92.95
BC 145XL-RA Bearcat 16 channel scanner... \$98.95
BC 175XL-RA Bearcat 16 channel scanner... \$156.95
BC 210XL-RA Bearcat 40 channel scanner... \$196.95
BC-WA-RA Bearcat Weather Alert... \$35.95
R1080-RA Regency 30 channel scanner... \$118.95
R1090-RA Regency 45 channel scanner... \$148.95
UC102-RA Regency VHF 2 ch. 1 Watt transceiver... \$117.95
P1412-RA Regency 12 amp reg. power supply... \$189.95
MA549-RA Drop-in charger for HX1200 & HX1500... \$84.95
MA518-RA Wall charger for HX1500 scanner... \$14.95
MA553-RA Carrying case for HX1500 scanner... \$19.95
MA257-RA Cigarette lighter cord for HX12/1500... \$19.95
MA917-RA Ni-Cad battery pack for HX1000/1200... \$34.95
SMMX7000-RA Svc. man. for MX7000 & MX5000... \$19.95
B-4-RA 1.2 V AA Ni-Cad batteries (set of four)... \$9.95
B-8-RA 1.2 V AA Ni-Cad batteries (set of eight)... \$17.95
FB-E-RA Frequency Directory for Eastern U.S.A... \$14.95
FB-W-RA Frequency Directory for Western U.S.A... \$14.95
ASD-RA Air Scan Directory... \$14.95
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RRF-RA Railroad frequency directory... \$14.95
EEC-RA Embassy & Espionage Communications... \$14.95
CIE-RA Covert Intelligent, Elect. Eavesdropping... \$14.95
MFF-RA Midwest Federal Frequency directory... \$14.95
A60-RA Magnet mount mobile scanner antenna... \$35.95
A70-RA Base station scanner antenna... \$35.95
MA548-RA Mirror mount Informant antenna... \$39.95
USAMM-RA Mag mount VHF ant. w/ 12' cable... \$39.95
USAK-RA 3/4" hole mount VHF ant. w/ 17' cable... \$35.95
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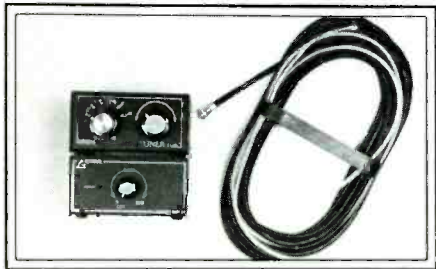
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PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Hidden Antenna System Solves Apartment Dwellers' Dilemma

The age-old question, "What's an apartment dweller to do for a shortwave or scanner antenna?" has been solved by Grove Enterprises.

The Grove Hidden Antenna System combines a flexible antenna with a powerful, 30 db gain preamplifier for continuous 100 kHz-1000 MHz receiver applications, making it ideal for indoor shortwave, long-wave and VHF/UHF scanner listening, even TV and FM reception.

Two output connections allow the simultaneous use of two receivers on the same compact antenna system. A separate pre-selector is also available to eliminate short-wave intermodulation and image interference in particularly troublesome installations.

The Grove Hidden Antenna System costs between \$48 and \$100 depending upon options. For complete information write Grove Enterprises, P.O. Box 98, Brasstown, NC 28902, 1-704-837-9200, or circle number 107 on the reader service card.



A New Scanner With Exclusive Features

From Scanner World USA comes a new state-of-the-art scanner. The BC-600XLT sets a new standard for base and mobile scanners in features, performance and dependability. This full featured unit has 100 user-programmable channels with five scanning banks and eleven bands of coverage (29-54, 118-174, and 406-512 MHz) including automatic pre-programming search of police, fire, emergency, aircraft, weather, and marine services.

It also includes priority, squelch, lockout, and delay controls. It has automatic and manual band search to find active frequencies in other areas of the radio spectrum. The unit's small size of 6 $\frac{5}{16}$ "W x 1 $\frac{5}{8}$ "H x 7 $\frac{3}{8}$ "D fits easily anywhere you need a scanning receiver. Also included is a flip-down stand for desktop use, telescopic antenna, AC and DC cords for base or mobile use, mobile mounting bracket, illuminated controls and lighted display for night use, six-month memory backup, direct channel access, track tuning, external speaker or headphone jack, antenna jack, and tape recorder jack.

Plus, the BC 600XLT has 2 optional accessories available for separate purchase which no other scanner has ever offered before. First is an RF receive amplifier board which will act as a receive booster in fringe and weak signal areas to increase receive signals without the use of an outside antenna. The second option is a CTCSS tone decoder plug-in board which allows the 38 standard single tone CTCSS frequencies between 67.0 Hz and 250.3 Hz to be programmed on the keyboard of the BC-600XLT along with the carrier frequencies in each channel.

Price will be less than \$230 for the BC-600XLT; CTCSS tone board \$60; RF receive amplifier board \$25 with exclusive distribution thru Scanner World, USA, 10 New Scotland Ave., Albany, NY 12208, (518) 436-9606. You may also use the reader service card by circling number 106.

Pocket-Sized 100-Channel Scanner

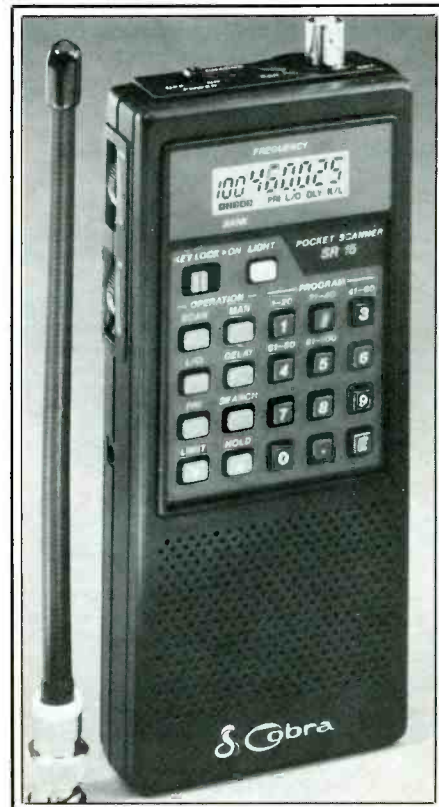
Cobra has introduced its new miniaturized, 100-channel scanner unit with electronic digital tuning and five memory banks.

The new pocket-sized, handheld scanner, Cobra Model SR-15, is the fifth model in Cobra's new family of sophisticated scanning receivers. This premium unit (\$299.95 suggested retail) features 11-band coverage for reception of police, fire, paramedic, government, military, aircraft, business and Amateur radio broadcasts.

The unit's memory feature—each of the five banks can store up to 20 frequencies—enables added monitoring convenience. Channels can be grouped within the banks in any order for faster and easier access; the memory banks can be monitored separately as well as together in any combination.

A complete array of automatic operating functions are featured, including normal scan, automatic search, channel lockout, channel priority, selective scan delay, channel hold and manual scan.

The SR-15's backlit, six-digit LCD display



shows the channel position and frequency readout during automatic and manual scan. The display also indicates the status of three operational modes (priority, lockout and delay) and the five-position memory bank.

The ultra compact Cobra SR-15 scanner is only 6" in height and 2 $\frac{3}{4}$ " wide. It has a durable, weather-resistant anodized aluminum and high-impact ABS plastic case in black with gold accents. Accessories packed with the unit include a flexible rubber antenna, rechargeable nickel cadmium battery pack, AC adapter/charger, earphone and carrying case.

For more information contact Cobra/Dynascan Corp., 6500 West Cortland St., Chicago, IL 60635, or circle number 105 on the reader service card.

Phone-E Fun

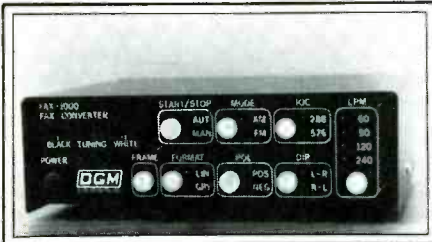
Just for fun, National Communications Group, Inc. is now offering the "Phone-E," an exact replica of a glass-mount cellular phone antenna, America's newest status symbol. The antenna owners are sure to enjoy the prestigious image of having a car phone without the annoyance and expense.

The "Phone-E," manufactured by Enerwest, Inc., Torrance, CA, is of all metal construction using the finest alloys, hard finish paint, and the same adhesive backing as a real cellular antenna. It comes gift packaged



with its own humorous 12-page owners manual to insure its "proper" use.

You can order the "Phone-E" by sending check or money order for \$12.95, to National Communications Group, Inc., Dept. PC, P.O. Box 35610, Canton, OH 44735.



FAX-1000 Facsimile Converter

DGM Electronics, Inc. has just introduced the FAX-1000 Facsimile Converter to its line of quality communications products. The FAX-1000 simply connects between your communications receiver and Epson graphics compatible printer.

The FAX-1000 allows you to print weather charts, satellite pictures and press photos. It will copy AM facsimile signals sent by the satellites or FM facsimile signals which are normally sent on the HF frequencies. The FAX-1000 will copy all standard speeds and index of cooperations. Pictures can be inverted or printed in either direction. A 10 segment bar graph allows you to accurately tune in the station being copied.

The FAX-1000 can be operated in the automatic or manual mode. In the automatic mode it will wait for the appropriate signals from the sending station to start, frame and stop printing. In the manual mode the operator can start the printing and manually frame the picture with a front panel button. Front panel LED indicators and pushbuttons make the FAX-1000 easy to operate.

The FAX-1000 is housed in a compact, attractive RFI proof aluminum enclosure and measures only 7" wide x 2" high x 6" deep. The unit is powered by a 110 VAC wall transformer which is included. The

FAX-1000 costs only \$299. For more information contact DGM Electronics, Inc., 901 Elmwood Ave., Beloit, WI 53511, (608) 362-0410, or circle reader service card number 108.



Deluxe 40-Channel CB Handheld

Fanon Courier announced another addition to its expanding CB Radio Line. A new

deluxe 40-channel, 5-watt, CB handheld transceiver, Courier Model CWT-40, was unveiled by Murray Trotiner, Director of Sales & Marketing. Its superb adjacent channel rejection of better than 70 db down, automatic noise limiter circuit reduces background noises and adjustable squelch control assures clear, noise-free reception. Its selectable RF power level/battery saver switch allows 4 or .4 watts power output.

Convenience features include a bright LED channel number display with battery saver "on-off" switch, LED meter to indicate signal strength, transmit, receive power and percentage modulation.

In addition CWT-40 features an automatic Channel 9 switch, transmit/battery "low" indicators, separate condenser microphone and speaker, jacks for earphone, external antenna and external 12 volt supply.

Courier CWT-40 operates on 12 volts D.C.—ten "AA" rechargeable nickel cadmium batteries or eight "AA" standard alkaline batteries (not included). A deluxe carry case and auto lighter adaptor are included.

Courier CWT-40 cabinet colors are black with white appointments and units are packaged in attractive multi-colored "Out Of This World" gift boxes. Suggested list price is \$109.95.

For more information contact Murray Trotiner, Director of Sales & Marketing, Fanon Courier, 14281 Chambers Rd., Tustin, CA 92680, (714) 669-9890, or circle reader service number 11.

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Satellite Networks

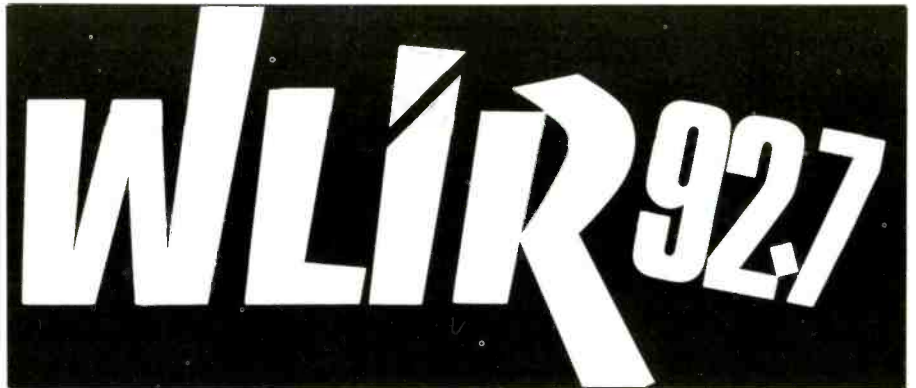
Technology is moving so fast today that by the time it's written and printed things may have changed! Efforts are always being made to do something better for less money and, of course, the broadcast industry is no exception.

There are only a few things that have troubled the satellite networks since the big switch from landlines a few years ago. The cost of receiving equipment has been an obstacle that hampers small networks in their attempts to get started with as many affiliate stations as possible. Terrestrial interference (T.I.) has also been a major problem with both the analog and digital networks.

The majority of the satellite operations for broadcast audio is on the C band, or about the 4-GHz range. Many systems use the "Ku" band but this band has another set of problems that prevent it from attaining the popularity of the C band, not the least of which is cost. Each satellite may have several different formats among the two dozen transponders on board. Most of the audio networks have been using SCPC technology (Single Carrier Per Channel). In other words, a stereo network would use two SCPC channels. The other popular audio transmission system has been a subcarrier on a video channel. I mentioned this type of system about a year ago in this column.

The SCPC has worked well except for the T.I. problem. This is caused by earth-based microwave systems whose signals pass over or near a dish pointed at a satellite. The satellite system and earth-based microwave use the same frequency range. Not only is the SCPC system subject to T.I. but there may also be interference from other satellites as well as adjacent transponders. One reason for this interference is the much lower downlink power used by the single carriers, hence the signal being received is less and therefore subject to more interference. Uplinking with SCPC is no problem and can be done from most anywhere in the country. Even so, well over 95% of the T.I. problems with SCPC have been resolved by using filters or larger dishes.

Another problem with SCPC, in addition to the T.I., is the high cost of the receiving equipment. As a single carrier, the receiver has to be very stable and very sensitive at 4 GHz. This translates to higher costs. One of the bigger users of satellite audio channels is Satellite Music Network. They quickly outgrew the TV subcarrier audio channel as the number of stations and music formats increased. Although SMN uses many SCPC channels for flexibility, they realized a much



higher cost in the downlink, that is, the receiver in the hands of the affiliate.


Just about a year ago, United Video of Tulsa, Oklahoma, found a better way in the subcarrier system (SCS). This system uses a group of subcarriers by themselves on a transponder without video. They are planned in such a way that the T.I. does not fall into the range of frequencies used by SCS. With this problem eliminated and the subcarrier providing more downlink power, the cost of the receiver comes down, way down. A much smaller antenna is needed too. The small network could then be in business for a lot less cost.

As a matter of fact, many networks can provide the affiliate station with the necessary equipment without any initial cost by the station, unless there is a peculiar installation such as the dish being put on the roof of

a building. Downlink costs can be cut from \$2,000 to \$4,000 per installation.

With a data channel used by many news services, the antenna dish is only a fraction of the size seen outside most stations today. In fact, many dishes have been mounted on the facer boards at the edge of the roof on the station. The news machine of today is a fraction of the size of one even a few years ago and the installation uses much less power, yet is much more complex than its counterpart of 1980.

So, a station which may already be using a satellite-delivered music system could add a second network for less than \$200. If the station has no satellite antenna at all, then the entire system might be \$1,100. This time last year the cost would have been almost \$4,000. Audio services from telephone lines for a network service today are




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Fisher Bldg., Detroit, Mich.

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MIKE



73

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We have studios in both Daytona Beach and Orlando, feeding program material to the transmitter site via microwave systems operating at 2GHz and 7GHz.

Thanks for your interest!
73!

Nile Hunt
CHIEF ENGINEER



over \$200 per month for local interconnects for each channel. One station in a metro area is paying for four network channels. More next month in the continuing story of building a satellite delivered network.

U.S. DX

To Steve Trott, the U.S. is DX! He's a

North Carolina boy in the Air Force, currently stationed in Panama and although he has a good rig, the Uniden CR-2021, he hasn't heard any U.S. stations yet. He has tried all sorts of AC filters to no avail. A big problem with a barracks, Steve, is that the noise comes from many directions at the same time. Small noisy appliances and TV's

in your surroundings all cannot be nulled out at the same time. With most fancy portables, using the batteries eliminates most of the noise.

Probably the biggest problem with the filters is the lack of a good ground for them to work against. A radiator or copper baseboard hot water system might give you a decent ground. Before trying something like this, be sure there is not a hot ground situation. Take a small neon tester, available from any hardware or dime store electrical department, and touch one probe to the ground and the other to the point to be grounded. If it doesn't light up everything should be okay. Before connecting the ground, reverse the AC plug on the radio and see if the tester lights. Again, if it does, abandon the project and seek qualified outside help. Electricity is nothing to play around with if one knows not what one is doing! Ask questions first.

When using these small line filters you could try reversing the plug of the radio and the filter to see which produces the least amount of interference. Of course everyone wants to DX when and where he or she wants, but as we quickly find out that is not always possible. If you are in a dorm or barrack situation such as Steve is, maybe your best bet is to save your DX time and batteries for specific places and situations away from buildings and power lines.

Last summer our family was on a Boy

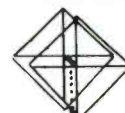
Station Update

Call	Location	Freq	Pwr	Ant
AM				
WARO	Canonsburg, PA	540	1/5	DA-2
WASG	Atmore, AL	550	3.9/0	NDA
WSEN	Baldwinsville, NY	780	7.5/0	NDA
New	Falcon, CO	820	2.5/0	DA-D
WMIN	Maplewood, MN	1030	50/1	DA-2
WISM	Eau Claire, WI	1050	.9/0	NDA
New	Fielddale, VA	1160	5/5	DA-2
New	Lynchburg, VA	1170	3.5/0	NDA
New	Danville, VA	1180	4.5/0	NDA
WADE	Wadesboro, NC	1340	.5/1	NDA
KELC	England, AR	1530	.5/0	NDA
FM				
New	El Dorado, AR	90.9	3.0	488'
WJIR	Key West, FL	90.9	.39	49'
New	Hiawatha, KS	91.9	.398	134'
WOBM-FM	Toms River, NJ	92.7	1.4	485'
KWKS	Winfield, KS	94.3	2.0	396'
KAAN-FM	Bethany, MO	95.9	26.4	357'
New	Mt. Jackson, VA	96.9	3.0	29'
WMRX-FM	Beaverton, MI	97.7	2.0	400'
WTWR-FM	Monroe, WI	98.3	1.4	466'
KKCY	San Francisco, CA	98.9	4.3	1355'
New	Pawhuska, OK	104.9	100	328'
New	Cross City, FL	106.3	3.0	328'
WPCX	Auburn, NY	106.9	13.8	940'
KXXZ	Ruston, LA	107.5	100	1066'

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

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Call Letter Changes

Location	Old	New	Location	Old	New
AM Stations			FM Stations		
Hobson City, AL	New	WHOX	Chico, CA	New	KZFR
Phoenix, AZ	KMYL	KAMJ	King City, CA	New	KRKC-FM
Mojave, CA	KDOL	KVOY	Pueblo, CO	KKMG	KPKE
Folsom, CA	KHWY	KIOQ	Denver, CO	KPKE	KSSY
Thorton, CO	KMBD	KJIM	Apalachicola, FL	New	WAPY
Ashburn, GA	WMES	WNNQ	Jacksonville, FL	WLCS	WEJZ
Atlanta, GA	WGTW	WCNN	Lakeland, FL	WHAN	WWOL
Savannah, GA	WWJD	WEAS	Honolulu, HI	KULA	KXPW
Boise, ID	KKIC	KJHY	Chicago, IL	WRXR	WTKS
Boise, ID	KWOW	KIZN	Red Oak, IA	KOAK-FM	KLRZ
Hailey, ID	KNRC	KSKI	Lexington, KY	New	WRFL
Paoli, IN	WWWJ	WSEZ	Marksville, LA	KWLB-FM	KAPB-FM
Brewer, ME	WGUY	WKIT	Brewer, ME	WGUY-FM	WKIT-FM
Westfield, MA	New	WNNZ	Mio, MI	WDCP	WFMA
Dillon, MT	KDBI	KDLN	Dillon, MT	KDLN	KDLN-FM
Raleigh, NC	WSES	WCLY	Columbia, NC	WWOK	WRSF
Xenia, OH	KNRC	WBZT	Eden, NC	WKLM-FM	WWMY
Eugene, OR	KQAK	KWOW	Cadiz, OH	WHOH	WEIR-FM
Palenstine, TX	KNET	KYYK	Harrisburg, PA	WSFM	WHIT-FM
Chesapeake, VA	WCPK	WJQI	Folly Beach, SC	New	WCCG
Yakima, WA	KAJR	KZTA	Palestine, TX	KYYK	KNET
FM Stations			Crockett, TX	KCKR	KBHT
Bay Minette, AL	WWSM	WLPR	Gainesville, TX	KDNT-FM	KZRK
Mobile, AL	WLPR	WAVH	Georgetown, TX	KQFX	KGTN-FM
Bethel, AK	KJBA	KYKD	Lufkin, TX	KDEY	KUEZ
Apache Junction, AZ	KSTM	KVVA-FM	Roosvelt, UT	New	KBWL
Phoenix, AZ	KAMJ	KAMJ-FM	Yakima, WA	KAJR-FM	KIHS

Scout family camp-out on the southern tip of Maryland's western shore, Point Lookout. This was the first trip I've had away from the high RF environment of Baltimore/Washington so I expected to hear some interesting stuff on my Sony ICF-2010.

In the city I found that using an external loop along side the 2010, though boosting the signal, did not bring in stations I could not hear without the loop. Not so in the country setting. My "Select-A-Tenna" would bring in stations that the 2010 could not hear at all. I really feel that the external loops do truly help even a top-performer like the 2010.

The 2010 has excellent sensitivity, as I've pointed out previously, but adding a small loop like the Select-A-Tenna beside the 2010 brings in stations one would never hear without it. A station that could not be heard will light three LEDs using the external loop. You'd be able to log many new and different stations just by adding an inexpensive loop external to the radio's built-in antenna. No connections necessary. No previous experience required. These antennas are available from U.S. General Hardware as well as the manufacturer, Intensi-tronics Corp., Box 562, Hales Corner, WI 53130, for about \$40. Other companies also sell loop antennas, so check POP² COMM's ads. If you're a handyman, you might be interested in the plans I have available. A four-foot box loop plan is \$5.50 and

a ferrite loop antenna plan with a preamp is \$7.50.

I don't know how many of the plans purchased have ended up as loops but I have had requests for more than I can count over the past couple of years and some, like Walt, have written back to say how well they have worked. I do get back-logged from time to time but you *will* get your order. My work schedule changes considerably from week to week, so my time devoted to "outside activities" varies as well!

New AM Band

As many readers are aware the FCC will be opening the 1600-1700 kHz segment of the AM band in a few years. I recently received a letter from Peter McElvein who wants you to get involved in shaping the destiny of this new band. He says, and I have to agree, that if the FCC turns these frequencies to commercial use we'll just have more of the same. More "low-budget" programming as he put it! In other words, the poor state of affairs on AM will be worse.

Peter suggests that readers think about having themselves better served by AM radio by having these frequencies reserved for high-power, non-commercial stations. High power stations could blanket the country with creative, thought-provoking programming. I'm sure there are many large institutions and other organizations that could afford to operate a station of this type. Per-

haps a power company could subsidize some of the power costs. The last thought was mine, but what do you think?

The FM band educational reserve of 88.1 to 91.9 is overloaded in most areas of the country and there is a need for additional space for these operations. Maybe the band could be split up into local eds plus high power eds just as the bands are now. I like it! If you like this idea, or have any other ideas, write to your Congress persons and suggest it. Thanks for the thought, Peter!

David Shearman gets the last word this month. He is isolated in northern New Brunswick. The main reason David's letter is so important is because he says the illusive Sony SRF-A100 AM stereo radio is still available in Canada! I am not aware of the exchange rates but the cost is about \$150 Canadian. He has seen them in several stores. Next month I'll run down some of the tips he gives for DX'ing the CBC. There are also a few Radio Shack AM stereo tuners still out there for about \$30 even though they were closed out some time ago. I got one in June for \$30. More about that next month. By the way, for David and others, the abbreviation ETR stands for Electronic Tuned Radio which is the digital display type of radio and is a popular term used by auto makers.

That's all for now . . . sign-off time. Send all correspondence and pictures (please!) to P.O. Box 5624, Baltimore, MD 21210. **PC**

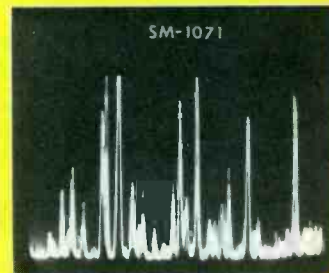


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* SONY PRO 80 & ICF 7700 *PG. 13, 15*
 * PORTAL DISPLAY UNITS *PG. 28*
 * FILTERS *PG. 30*

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OPTIONS:

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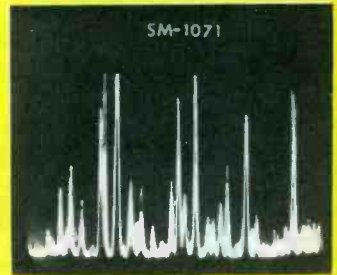


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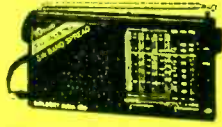
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CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

BY GERRY L. DEXTER

Activity by the world's shadow broadcasters continues to be on the upswing—we have another new clandestine station to report on this month!

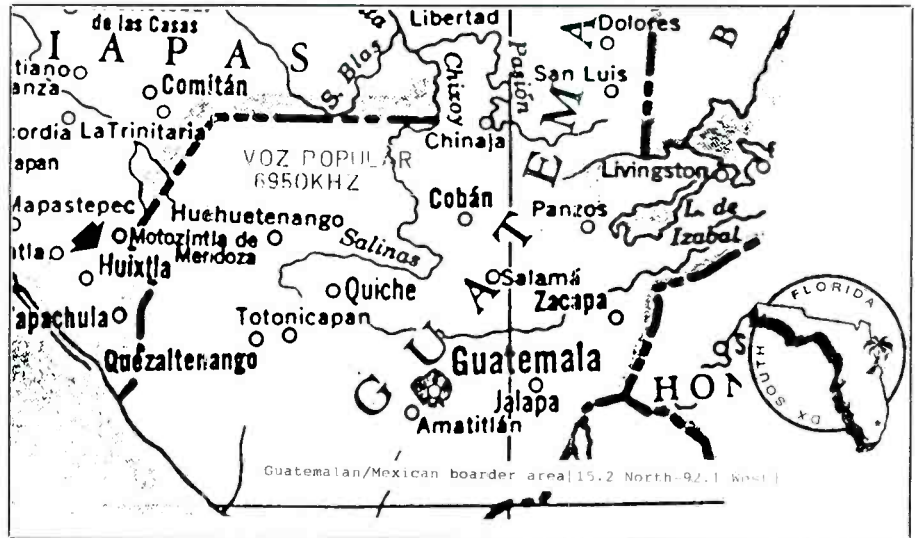
This one attacks the Marxist government of Ethiopia and calls itself the Radio Voice of Ethiopian Unity (RVEU). Our information is that it is on the air daily from 1900 to 2000 on both 7200 and 9660, though these frequencies may vary up to 5 kHz. There may be another transmission in addition to the one at 1900 but this has not yet been traced. The station began broadcasts in early July and is operated by the Ethiopian People's Democratic Alliance, which reportedly has an office in London. Programs are only in Ahmaric. Although the station has been monitored in Europe it has not yet been heard in North America, at least to our knowledge. Our chance may come during the winter months when reception conditions will be more conducive.

The anti-Guatemalan government station, La Voz Popular, continues its operations 0015 to 0045 UTC Saturdays only (Friday nights local time in both the U.S. and Guatemala). The station did shift frequency to 6975 once, but most weeks it stays on or near 6950. Signal strengths continue to be only fair at best and most of the time reception is very poor. One press release says, "The team entrenched behind the microphones of La Voz Popular invites everyone who follows attentively the internal conflict which is transforming Guatemala, to listen to the voice of the vanguard of the people of Guatemala, the voice of the URNG, La Voz Popular, voice of Guatemala in struggle."

In addition to the two possible contact addresses we gave you last month, you might also try Guatemala Publications, P.O. Box 34, New York, NY 10009.

The frequency of the Nicaraguan Resistance's La Voz de la UNO, 5890, now seems to be airing only identifications for Radio Liberation, which is the name of the resistance's 1520 kHz mediumwave outlet. 1520 is not audible in our part of the country so we don't know if this is a parallel outlet now on shortwave too, or whether it is a name change for La Voz de la UNO. Whatever, the station is heard quite regularly to sign off around 0307 UTC.

The station which broadcasts to the Cuban troops serving in Angola, though it isn't friendly to those troops or that situation, is being heard again on 6045 at 0500 to 0600, in Spanish. It may also have a transmission at 1700 to 1800 on the same frequency. "Cubanos en Africa" remains something of a mystery since it has never announced any



The DX South Florida group supplied this map showing the approximate location from which the anti-Guatemalan La Voz Popular is believed to transmit.

backing organization. That fact, along with its Angola target area, tempts us to put it into the same pigeonhole as A Voz de Verdade (Voice of Truth) which also does not announce any sponsoring organization. Since Verdade is almost certainly transmitted from the Republic of South Africa it is tempting to think that "Cubanos en Africa" is a part of that overall structure. About three years ago a spokesman for the anti-Castro Abdalla organization claimed that group was running Cubanos en Africa but, as Abdalla has not been able to keep going a clandestine broadcast effort aimed directly at the island, the logistics of running the African station appear perhaps larger than that group could handle.

One of our monitors recently visited Seoul, S. Korea, and was able to provide some notes on the various Korean clandestine broadcasters:

The Voice of National Salvation (North Korea broadcasting to the South) is on 4557 at 0300 to 0500 and 2000 to 2130, also on that frequency plus 4120 at 0900 to 1300 (during which time it is most often heard in the U.S.) and also at 1400 to 1500.

Echo of the Masses, also broadcasting to the South from the North, airs on 5885.5 (but announces as just 5.8) at 1000 to 1300.

Echo of Hope (based in the South, beaming North) is on 3985 at 0855 to 1155 and 1350 to 1505. All three of these stations can be heard in the United States.

A fourth station, not mentioned in our correspondent's report, so perhaps not currently active, is the relatively new Voice of the People, also beaming to the North from the South. It is, or was, aired at 2200 to

2300, 0400 to 0500 and 1300 to 1400 on 4027 but as far as we know has not yet been logged in North America.

Broadcasts of all the stations are almost entirely in Korean (except at 1400 on 4557/4120 for Voice of National Salvation) and all claim to be broadcasting from inside the territory of the other nation. None have ever been verified and, indeed, there aren't even any possible addresses known.

Two of our contacts point out that the communist-backed Voice of Malayan Democracy is, indeed, active. It airs broadcasts at 0400 to 0515, and 1215 to 1330 on the frequencies 6699 and 8998. This station can occasionally be heard in North America.

A very fine list of clandestine stations, organized by broadcast time as well as in frequency order, has been published by the Danish Shortwave Clubs International. The list also includes some background information on many of the stations as well as addresses where known. It was edited by internationally known Danish DX'er Finn Krone. The listing is available for five international reply coupons and sent airmail. Order from the DSWCI Treasurer, Bent Nielsen, Betty Nansens Alle 49, DK-2000 Frederiksberg, Denmark.

We are about out of room for this month. Remember, any informational input you can provide about clandestine broadcasting—receptions, verifications, background data, address information or clues to who is operating stations and from where—is always very, very welcome. We can protect your identity if you so desire.

Thanks. And, until next month, Good Hunting!

PC

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

Imagine what could happen in a small Midwestern city where police didn't want the citizens to know what was going on.

Imagine further that the police in such a city decided that their radio system was no longer secure enough and that too many residents were monitoring their transmissions.

Worse yet, imagine this in the Hawkeye state of Iowa. The police department in LeMars, Iowa, a rural city of about 8,000 residents just northeast of Sioux City, doesn't want citizens listening to their radio calls on a regular basis. According to an article that appeared in the *Sioux City Journal*, Police Chief Joseph Melnichak said that several bars in LeMars had scanners that allowed patrons to keep track of patrol cars in the city. (They must have three or four cars at least!) Hey, that's my kind of town—belly up for a beer and sit down and listen to the scanner! But Chief Melnichak doesn't like that. I guess the drunks were able to figure out when the neighborhood patrol was on a car stop or chasing go-carts in the cornfield, and knew they had enough time to scoot home before they were spotted weaving over the double yellow line.

In any event, Chief Melnichak must have contacted the nation's largest supplier of radio equipment to police departments to find out how he could keep his troop's movements under wraps. They like to sell radio equipment; it's their business. And their diodes must have heated up when Chief Melnichak got on the horn and screamed for help in tuning out the public. You see, they sell a product that is state of the art. It's a highly sophisticated scrambling system that makes it impossible to monitor on any radio not equipped with their digital scrambling system.

Some police departments have used inverted audio scramblers in their patrol cars to pass sensitive information and deli orders. The inverted audio scramblers, however, could be unscrambled with a simple descrambler available from scanner accessory suppliers. By tuning a knob on the front of the descrambler, the scanner listener could unscramble the cop's scrambled eggs orders being given over the radio. (Note, that with that new crazy federal law, the Electronics Communications Privacy Act of 1986, it is illegal to use these descrambler units anymore. Better pack yours away in a box and ship it to Siberia, okay? You wouldn't want the "radio police" to catch you with a descrambler, would you?)

A digital scrambling system takes scrambling several steps further. In essence, it converts the human voice from an analog signal to a binary signal. After the voice signal is converted, the order of the digital

bits (all the 1's and 0's) that represent the analog signal (which has a number of scalar values) is transformed so that a routine digital-to-analog converter is unable to restore the signal. Because there are so many possible combinations in which the signal could be coded, each radio in a fleet must be set up with the same code.

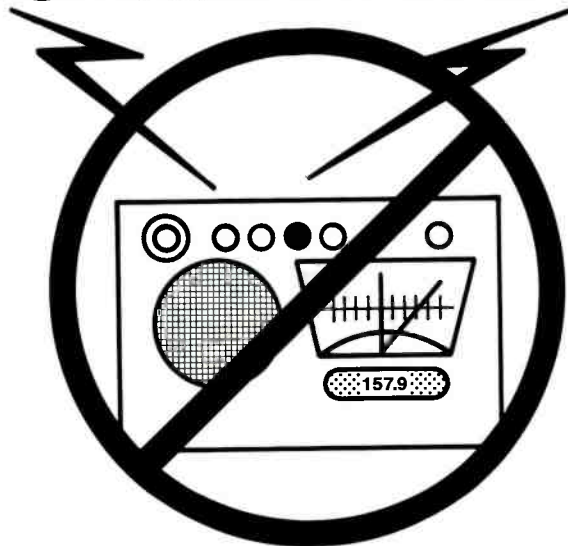
To ensure security in digital systems, usually only the radio technician knows the code, which is programmed into each radio with an external device. Once programmed, it is impossible to find out which of the thousands of possible codes is being used in the system. The system also is flexible so that the code could be changed routinely, if necessary. However, I doubt many users reprogram radios on a regular basis. Only if a radio gets lost or stolen would a system be reprogrammed.

Once the signal is converted and coded, it modulates an audio frequency shift keying (AFSK) device that modulates the FM carrier. However, because the signal being transmitted is an FSK-modulated digital

version of the actual human voice, it doesn't sound anything like a voice. Thus, every time a digital transmitter is keyed, all the scanner listener will hear is static, or white noise. At the end of each transmission, you also will hear a short, quick tone.

In any event, the LeMars, Iowa police department was sold on this high-tech digital scrambling equipment for their patrol cars and headquarters. Chief Melnichak has also taken it upon himself to become the rumor control official in the small city. Apparently, the Chief was concerned about scanner owners hearing other residents' names on their scanners and assuming they were in some type of trouble, though they may be cleared minutes later. The Chief wanted to eliminate the misinformation and gossip garnered from the city police radio system. The Chief also claimed that "roving bands of burglars equipped with police scanners" were burglarizing homes and businesses while keeping track of patrol cars that might be closing in. "They (scanners) have become a tool of the trade, along with pry

SCANBUSTERS!



SECURENET DIGITAL VOICE PROTECTION SYSTEMS

from  **MOTOROLA**

bars," the chief told the *Sioux City Journal*.

So what it comes down to is this: someone sold a small-town police department the same voice privacy system it is selling to the entire FBI force nationwide. The LeMars Police Department has a radio system that is as secure as those of the FBI and the Secret Service. Maybe the residents there should have known about this high-tech radio system their police department installed beforehand. They really should run the town fathers out of office for approving such a monstrous expenditure. But, LeMars police have a high-tech scrambling communications system and the residents and scanner owners will have to live with it. Sorry, scanner fans, there's no way of descrambling this mess.

The Chief should get some credit, however. The department will be scrambling calls only when necessary and occasionally at random, too, so monitors can't associate the digital noise with something of interest that might be going on. The department could be using scrambling on a full-time basis, driving everyone and their scanners into the middle of a soybean field. The police department in Pennsauken, New Jersey, uses scrambling on a full-time basis and drives everyone nuts in that suburban Philadelphia township. The scanner listeners in LeMars, Iowa, while unlucky that scramblers will keep rumors, burglars and drunks under control, are fortunate that they don't have to heave-ho their radios because the unit won't be used all the time. Warning: That white noise is still going to drive you nuts! Lots of luck in northwest Iowa.

Where Did They Go?

Tim Barbosa of Nutley, New Jersey, has been searching for the frequency used by New Jersey State Police on the Garden State Parkway for car-to-car communications. He states that the frequency is referred to as "Channel 3," but he can't find it anywhere near their current channels on VHF high-band or the new 800-MHz radio system. He's afraid the troopers are using this mysterious Channel 3 "to talk about things they obviously don't want us folks out here in 'scannerland' to hear."

Actually Tim, it's not too much a secret. The parkway's Channel 3 is none other than 154.950. Unless you are within a few miles range of the patrol cars, you won't hear them since only car-to-car communications will be heard on this channel. Punch it in to your scanner and give it a shot. Sooner or later, you'll hear the troopers on their elusive Channel 3.

For others interested in monitoring the Garden State Parkway, check out these frequencies:

154.905R	State police dispatch, Channel 1
155.505R	State police alternate dispatch, Channel 2
154.950M	State police car-to-car, Channel 3

154.680

State police SPEN-1, off-parkway coordination, Channel 4

154.920

State police point-to-point, Channel 5

155.460

State police radar operations, Channel 6

155.475

State police SPEN-2, off-parkway, Channel 7

156.120R

Maintenance units

851.3375R

State Police, maintenance, new system (primary use)

Other 800-MHz channels that might be used include: 851.1625R, 852.1625R, 852.7375R, 852.7875R, 852.8125R and 853.8625R. The old system is kept in operation because of dead spots and foliage problems inherent with the 800 MHz system.

Your Turn

We'd like to hear from you here at POP'COMM. We also welcome your comments, frequency lists, questions and listening tips to be shared with others. You can write to: Chuck Gysi, N2DUP, P.O. Box 544, New Hope, PA 18938-0544. **PC**

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Strictly Ham Radio Listening Part Two

Ham radio listening with a scanner, like Ham radio listening with a modern short-wave broadcast receiver, has become very popular. There are a number of reasons for this. Perhaps the most notable is the increase in the number of local repeaters with high mounting sites and higher powers. The wide area they cover extends the transmit range of mobile and handheld (HT) Ham transceivers.

There are many mobiles accessing the various repeaters thereby increasing activities on the VHF/UHF Ham bands. These are adjacent to the land-mobile, public service and other radio services that you have been listening to with your scanners. For commuters, there is no better way of keeping up with local traffic conditions than by accessing the various repeaters.

There are interesting nighttime activities on the repeaters too. There are club get-togethers of all sorts, such as strictly Ham radio clubs, the Quarter Century Wireless Association, emergency drills, and code practice sessions. Such groups are admired for providing emergency assistance and for monitoring other local services and special events. Most are very public-service minded. Because there are so many of them who know each other personally and are accustomed to well-planned radio operating procedures and practices, their efficiency and skill is well respected.

Before considering antennas for VHF/UHF Ham band application let's take a look at the frequency location of the three most active Ham bands. These are the 2M, 1.25M and 70CM bands as shown in Table I. Note how they fit in among the active scanner bands above 136 MHz.

Table I
Active Scanner and Ham Bands

Bands	Freq (MHz)
Landmobile	136-144
2M Ham Band	144-148
VHF Band	148-174
1.25M Ham Band	220-225
Gov't Landmobile	406-420
70CM Ham Band	420-450
UHF Band	450-470
T Band	470-512

There are active repeaters on all three bands. Today 2M is the most active band followed by 70CM and the 1.25M. Technicians and higher grade Ham licensees may operate on these three bands. In addition, a new FCC action permits Novice Hams to operate on the 1.25M band. This is likely to

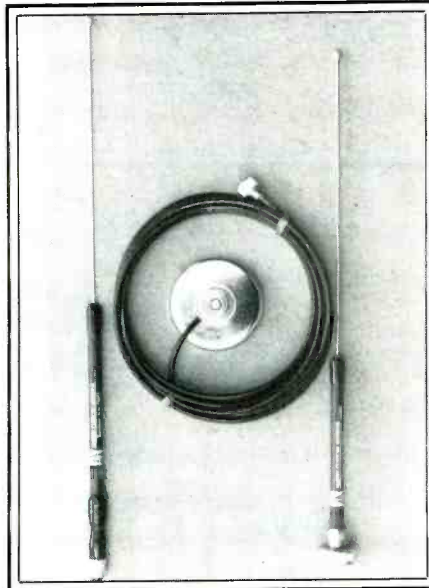


Figure 1: Two VHF/UHF antennas and magnet mount. Either does well for Ham or commercial band reception. For transmit you must choose the right one.

produce a sharp jump in 1.25M activities. In fact, the growth is likely to match or surpass the activities on 70CM in a short period of time with regard to FM repeater operations. However, the frequency separation of the 1.25M band between the VHF and UHF scanner bands is significant and there is an antenna concern that we'll go into later.

Where can the repeaters be found? What you are looking for are the repeater transmit frequencies because they can be picked up well on your scanner receiver. By setting your scanner on a repeater transmit frequency you can hear both ends of a mobile-to-mobile, mobile-to-fixed, or fixed-to-fixed conversation that is going through a repeater. Your reception is aided, of course, by the fact that the repeater operates at a high power level and usually is located at a point of relatively high altitude. Repeater transmit frequencies for the three bands fall between the following limits:

- 145.10-145.50
- 146.61-147.39
- 223.92-224.98
- 442.00-445.00
- 447.00-450.00

Set up your scanner limits on either one of the 2M segments and you are likely to latch on to a repeater very quickly. On the other bands the same thing applies for most metropolitan areas. Further out there are less activities on the latter two bands. There



Figure 2: Austin Custom Antenna 2M/1.25M/70CM fixed tri-bander atop 8-foot PVC pipe 1" ID. Also receives well on adjacent commercial bands.

are other activities on the VHF/UHF Ham bands as well. Repeater, though, represent an ideal initiation for your VHF/UHF Ham radio listening.

Antennas Tips

Antennas are no real problem in the reception of 2M/1.25M/70CM Ham band repeater signals. The frequency nearness of the commercial and Ham bands is such that a good scanner antenna for that segment of the spectrum does well in both applications. One reason for this has been mentioned many times in our discussions about antennas for various parts of the radio spectrum.

Note that the UHF band frequencies are third harmonics of the VHF band frequencies, an ideal situation for good low-impedance matching. For example, the third harmonic of 146 MHz at the center of the 2M band is 438 MHz in the 70CM band. Similarly, 160 MHz on the VHF commercial band has a third harmonic on 480 MHz in the UHF commercial band. Two such duoband antennas would give fine receive results on both the Ham and commercial segments. It must be pointed out, however, that for transmit application, the properly cut antennas would have to be used to assure the most efficient transfer of RF energy from the transmitter to the antenna.

There is a major and minor problem with the 1.25M band. The major problem is that


many scanners do not include this portion of radio spectrum. This is likely to change as Novice operators populate the band along with other Ham licensees. Also, commercial occupancy is rising on the adjacent frequencies.

A minor problem with using the antenna styles of Figure 1 occurs because the length of the antenna corresponds to about one-half wavelength on 220 MHz, not too ideal for the best matching. This is not too worrisome for FM reception on 1.25M unless the repeaters you wish to receive deliver weak signals to the antenna.

The Austin Custom antenna of Figure 2 matches Ham transmitters on all three of the Ham bands and also performs well as a receiving antenna over the spectrum tabulated in Table I. In addition, the Diamond D130 discone and Austin Ferret all-band antennas, described in this column some months back, do a fine job of Ham and commercial reception over the entire 30-1300 MHz spectrum.

Ham radio backyard and worldwide strictly listening is on the rise. New shortwave broadcast receivers have sideband capability and can tune into the various HF Ham frequencies. In terms of VHF/UHF listening, you might contact a local Ham or radio Amateur club to find out the exact radio transmit frequencies of the local repeaters in your area so that you can place them in permanent memory. Join in these newly active phases of radio listening. **PC**


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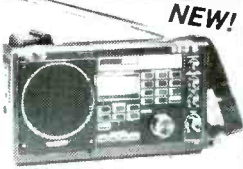
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At Last, An Easy Ham Test

The Amateur Radio Service has traditionally been made up of operators who (in at least one respect) are lousy communicators. They do fine on the rig or on the key—but when it comes time to putting on the PR hat to bring more radio enthusiasts into the hobby, they plain just didn't make it. Consequently, CB radio operators, shortwave listeners, and scanner enthusiasts think that Hams are occasionally unfriendly, and many times unwilling to let anyone else into their hallowed airwaves.

As of March 21st of this year, it's all changed. The Ham radio service is making an all-out effort to encourage everyone with an interest in radio to join them on the airwaves. "Novice Enhancement" now makes it as easy as 21 days to study and pass the entry-level Novice test that authorizes voice privileges on HF and above. Additional good news—the entry-level test for voice privileges may be given by any two Hams,

General class license or higher, 18 years of age or older, and they can test even in your own home. Still more good news—all test questions are published, all exams are multiple choice, and you see ahead of time the precise questions that may appear on your simple 30-question exam. The test may be written or verbal.

Yes, my friends, the Morse Code test at a simple 5 wpm is still required, but the FCC allows your two Ham buddies to give you the code test any way they want to certify your code proficiency.

The first license to shoot for is Novice Class. This is a powerful license, now that the Novice operator may use voice (single sideband) on a worldwide band of frequencies plus FM voice repeater operation on two other VHF and UHF bands. Now add digital computer privileges with these voice privileges, and the new enhanced Novice license gets real exciting. Now add world-

wide code privileges, and let's take a look and see what awaits the new Novice operator after the entry-level test is passed:

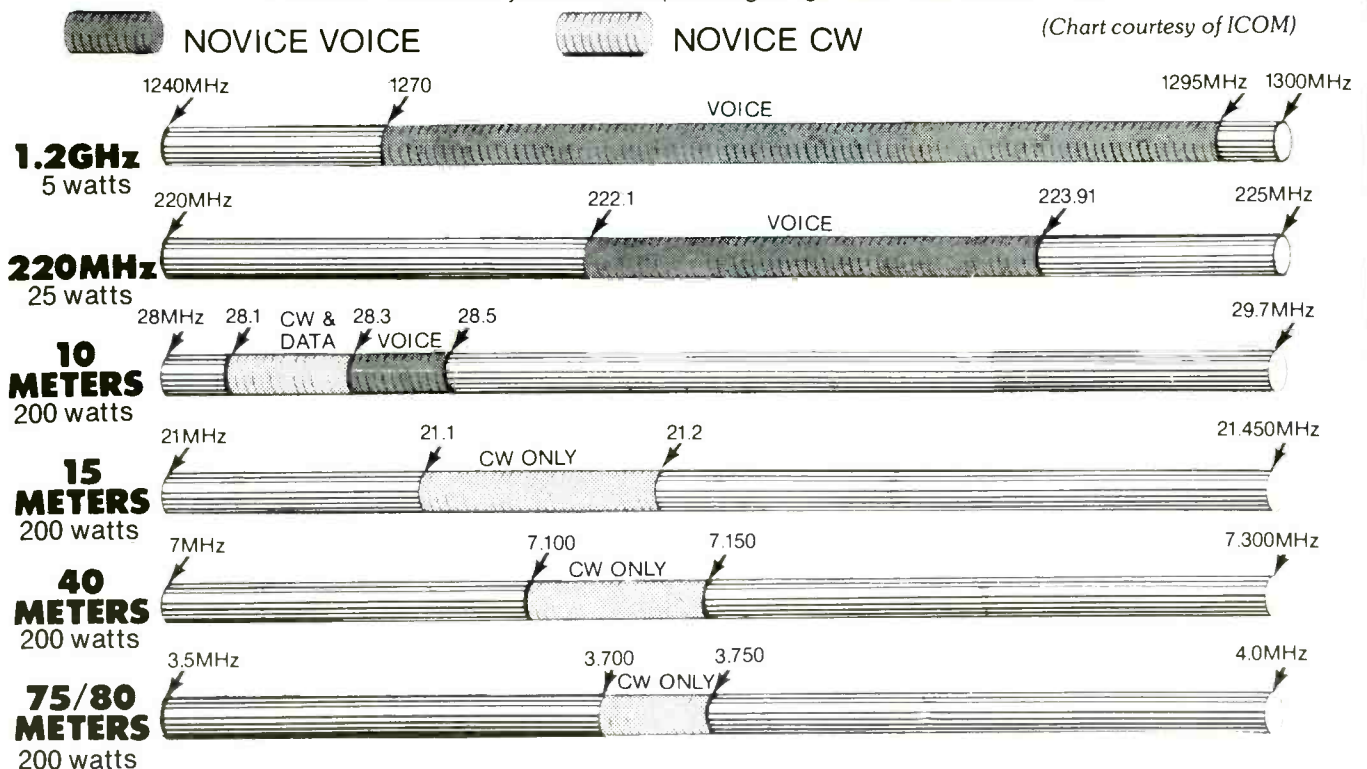
The 75-meter, 40-meter, and 15-meter code privileges allow for worldwide Morse code operation, day or night, using up to 200 watts of power. Although only Morse code is allowed by the Novice operator on these three bands, the opportunities to work the world with a key are endless! 75 and 40 meters are great bands for nighttime use, and 15 meters is a great band for daytime use.

With the Novice class license, you get exciting privileges on the 10-meter band. Ten meters regularly, during daylight hours, skips throughout the world and certainly offers almost daily skywave communications to other points in the United States. Located just above the 27 MHz Citizens Band, you can use converted CB base and mobile antennas quite nicely on 10 meters.

New Bands and Frequencies

This chart illustrates your added operating ranges and their power limits.

(Chart courtesy of ICOM)



Amateur Radio License Classes and Exam Requirements

License Class:	Test Element:	Type of Examination:
Novice Class	Element 2 Element 1A	30 Question Written Examination 5 Words-Per-Minute Code Test
Technician Class	Element 3A	25 Question Written Examination (No additional Morse Code requirement)
General Class	Element 3B Element 1B	25 Question Written Examination 13 Words-Per-Minute Code Test
Advanced Class	Element 4A	50 Question Written Examination (No additional Morse Code requirement)
Extra Class	Element 4B Element 1C	40 Question Written Examination 20 Words-Per-Minute Code Test

Note: Written examinations must be taken in strict ascending order of difficulty. You can't be administered Element 3A until you have passed Element 2, etc. The code tests may be taken in any order. You can take the 20 wpm code test first if you can pass it.

Computer communications for the Novice take place from 28.1 to 28.3. RTTY (ratio teleprinter), Amtor, packet, and ASCII are some of the fun ways to stay in touch with other Hams throughout the country and throughout the world when band conditions are just right. You have 200 kHz of elbow room, so there are plenty of spots to start out your Novice computer communications.

28.3 MHz to 28.5 MHz is now full of exciting Novice single sideband communica-

tions. Up to 200 watts of power is allowed—most Novices will be running regularly high frequency Ham equipment “barefoot” with about 100 watts of output power. During the daylight hours, E and F2 skip propagation is prevalent. This winter, F2 skip should favor Europe, South America, and the Orient, so there's no limit as to where you might communicate. Look for short skip band openings around sunrise and sunset.

The Novice operator now gains repeater and simplex frequencies on the popular 220

MHz band. There are over 54 repeater channels on this band, and many repeaters are “linked” for multi-state communications. Handheld FM transceivers are quite popular on 220 MHz, and Novice operators are also allowed telephone patch capabilities, too. Maximum permitted power output, 25 watts.

The 1.2 GHz band (1270-1295 MHz) is just above the cellular telephone band, and is ideal for big city use. There are over 259 allocated repeater channels on this microwave band, and handheld operation is exciting. 1.2 GHz has the ability to filter in to large buildings, and you might be surprised as to how well you can work a distant repeater while sitting at your desk two stories below the ground floor! 5 watts maximum power output.

This new “Novice Enhancement” also grandfathers existing licensed Novice class operators. Do you hold an old Novice ticket that is still current? If so, get on the air!

If you had a Novice license but let it expire, simply retake the tests and go on the air with your new callsign. It takes about six weeks for the FCC to issue call letters, which are sent directly to your home.


All Amateur licenses are now good for 10 years, and they are all renewable without a test. There is also no license fee—the novice license is also administered without any test fee. (All other upgrade tests will cost a maximum of \$4.50 each exam session.)

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Technician Element 3A	General-level theory and regulations with VHF/UHF emphasis
General Element 3B	General theory and regulations with emphasis on General class operating privileges and on HF operation
Advanced Element 4A	Intermediate theory and rules and regulations
Extra Element 4B	Specialized theory and VEC regulations

The American Radio Relay League reports that the up-take for the new Novice license has been dramatic—licensing figures are up as much as three times over last year. The ARRL has been instrumental in seeing this Novice enhancement program take shape from the beginning to where we are now, and they have done an excellent job in working with the FCC and selected equipment manufacturers in putting this program through.

The hard parts? Passing the code test and passing the written exam will be easy. You need 74 percent on the written, and your two examiners will judge as to whether or not you have passed the code. The hard part with the code and the written is just getting started in preparing for the exams. There is plenty of study material available. A course with some code tapes and a study book is all that you need.

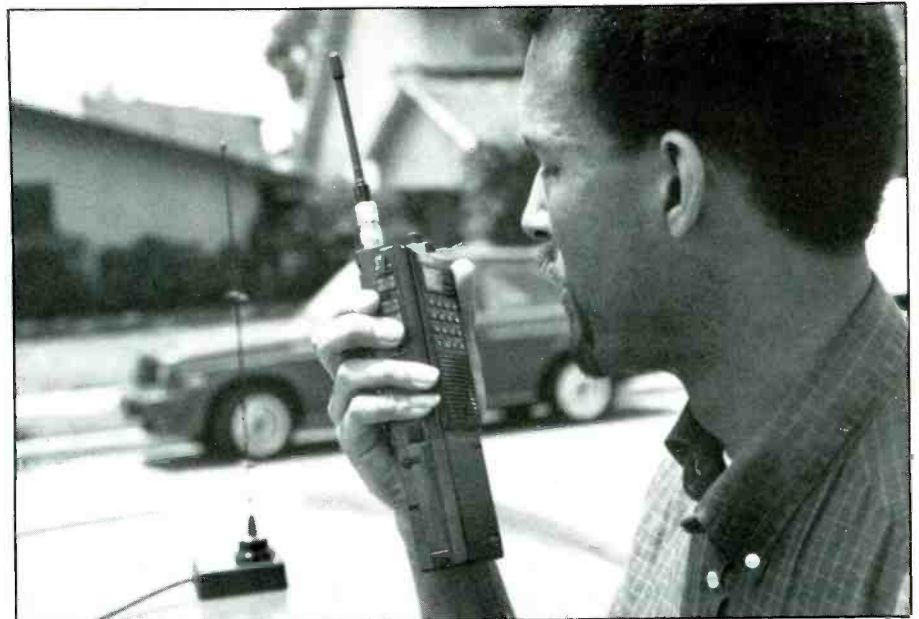
Another hard part might be finding two Hams that know how to give the code and written exam. Sometimes your study materials will have special sections written specifically to the two licensed Hams on how to give the Novice test. You can also purchase sealed Novice examinations that you give to your two Ham buddies who then give you the test! Once they send in your FCC Form 610, it's a quick six-week wait for call letters.

Where do Novices first go? Usually on 10 meters. Many go voice, and then add their computers. Some go directly to the 220 MHz band and operate through repeaters. Novices with the technical background may wish to explore the new frontier at 1.2 GHz with FM handheld transceivers.

Believe it or not, many Novices are fascinated with the code and will flock to the 15 meter, 40 meter, and 80 meter Novice sub-bands. Regardless of license class, everyone is limited to 200 watts on these frequencies, so the Novice operator has the same capabilities as an Extra class operator. For some, code is fascinating. If it's not your bag, then go on 10 meters voice, 220 voice, 1.2 GHz voice, or let your fingers do the talking on the 10 meter computer band.

Never in the history of Amateur Radio has it been easier to get a voice class license. If you've been thinking about getting your ticket, but were turned off by the aloof attitude of old-time Ham radio operators, then give the Amateur Radio service a second chance. It's changed dramatically, and the red carpet is rolled out just for you to join the ranks as a licensed Amateur Radio operator.

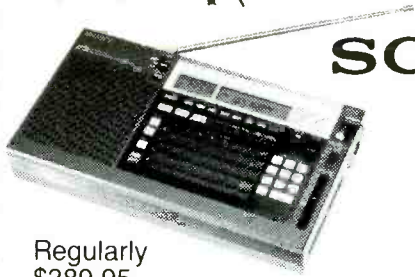
Remember, the hardest part of passing your Ham test is *not* the code. It's *not* the theory. The hard part is just getting off your duff to begin your preparation! Now get busy!



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The *Info CB-2* is a deluxe top-of-the-line type of unit containing all of the other unit's features plus a combo signal strength and RF output meter instead of the LED signal strength display. There's also a switch for instant access to CB Channel 9, rear-panel jacks for adding a PA system, a noise blanker circuit, dual-level digital display, plus a microphone gain control.

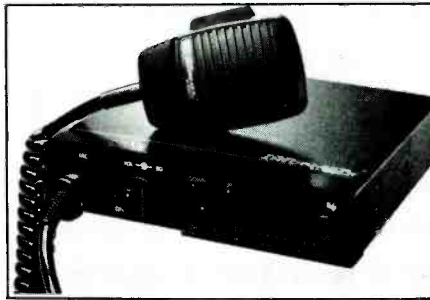
The *Info CB-1* is offered for \$69.95, with the *Info CB-2* selling at \$159.95. Check with Regency dealers, or directly with Regency Electronics, Inc., 7707 Records Street, Indianapolis, IN 46226.

Lotsa Lingo

Ever since I made a nasty comment in these pages about some of the dumb so-called "trucker talk" on the CB channels, and how happy I was to see it in diminished use, I've gotten letters expressing various opinions. Some correspondents defended every single word of the rich and colorful CB talk that came into popularity about ten years ago, hoping that it can be restored and preserved as if it were a national treasure. Other readers generally agreed with my sentiments. Mostly, the incoming mail asked for clarifications and explanations as to what I meant, with information on translating the specialized words and expressions that one normally encounters on the channels.

The type of chatter I'm pleased to find on the wane is all of that phony corn pone talk, with "mercy, mercy" uttered after every few words, wishing all within earshot "a good day today and a better day tomorrow," and that junk. I am especially happy to find that operators have mostly stopped referring to one another as "goodbuddy."

"Goodbuddy" had become a popular CB reference to all who used CB radios. After a while, in the eyes of the public, it depicted the type of person who was responsible for turning 27 MHz into a shambles. It wasn't until the CB operators themselves came to feel that there was something unflattering about the label that it started to lose its im-



The Regency Informer CB-1 has a nifty appearance.

mense popularity. What had happened was that word began to circulate that the term had come to mean a guy who had, shall we say, some unusual proclivities. Many operators feared using the term for fear of having its addressee seek them out on the Interstate and bean them with a monkey wrench. The only people who seem to use the term today are those who don't realize that the term has become a pariah by anybody but the most rank greenhorn.

This isn't to say that CB doesn't retain many of its own picturesque, unique, and very useful words and expressions; I don't at all object to these. Mostly, these are words you'll encounter while listening on Channel 19, which is the unofficial channel to monitor when you traverse the highways in the U.S. and Canada. For those who asked about them, here (in no particular order) are the basics of current CB jargon (you may already know a few):

A *Smokey* is a general term for any police officer, but usually a State Trooper or a

Deputy Sheriff (a *County Mountie*, however is specifically a Deputy Sheriff or other county law enforcement officer). A *Local Yokel*, of course, is a city or town police officer. A *Plain Wrapper* is an unmarked police car, sometimes described with its color, as in a *White Wrapper* or a *Plain White Wrapper*. A marked police car is a *Tijuana Taxi*. A *Smokey Report* is information on the location of a police car or a *Picturetaker* (police radar unit).

Greenstamps are speeding tickets. It also means any type of folding money, such as what you'll pay at a *Piggy Bank* (toll booth).

All small vehicles (especially *V N* "Bugs") are *Roller Skates*, and any motorcycle is an *Evel Knievel*. While all semi type trucks might be generally classified as *18 Wheelers*, gravel trucks are *Sandboxes*. A *Dragon Wagon* or *Hook* is a tow truck, and an ambulance is (ugh!) a *Meat Wagon*.

The extreme right-hand lane is the *Granny Lane*, the middle one is the *Sandwich Lane*. The far-left lane is the *Hammer Lane*. The currently popular way of addressing other vehicle operators is *Driver*. Those who operate *18 Wheelers* are known as *Truckers* (never "truck drivers").

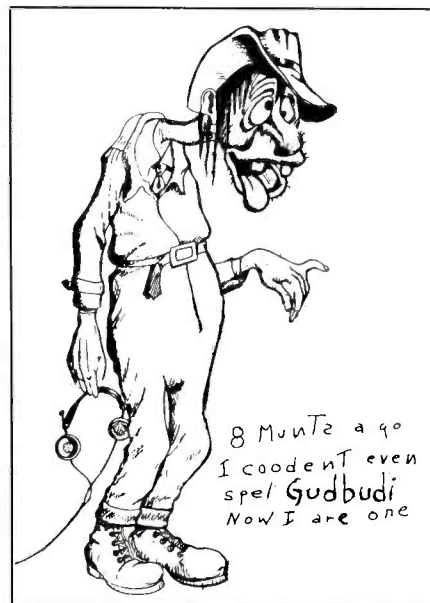
A *High Roller* is a car greatly exceeding the posted speed limit, but a *Wallbanger* is a speeding vehicle that is making sudden lane changes. The opposite of all this is a dangerously slow vehicle, quaintly known as a *Rolling Road Block*.

As for landmarks, a *Gas Can* is a service station, a *Hole In The Wall* is a tunnel, while a *Needle In The Sky* is a tall broadcasting station tower. A *Picture Window* is any location on the highway where you can grab a quick *Eyeball* (glimpse) of the traffic flow along another road that you'll soon be entering.

Those who tie up the channel with unending talk are known as *Ratchet Jaws* but those who *Read The Mail* (monitor the channel) and don't say much on the air are said to be *Sandbagging*.

If you're told that *Someone Walked All Over You*, or that you've been *Stepped On*, that means your last transmission couldn't be understood because of interference from other stations. If asked *How's It Look Over Your Donkey?*, or for an *Over The Shoulder*, that means someone driving in the opposite direction wants you to advise of the traffic conditions (and any *Picturetakers*) in the direction they're heading.

As for the infamous "10 Codes," you already know that 10-4 means "OK." You'll hear 10-20, meaning location; 10-36, which is a request for the correct time (obviously from a person who either can't tell time or who spent so much on their CB gear that they couldn't afford a wrist watch). A



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REMARKS:

Only radio operators with certain qualifications at CE or station can belong to this Group. The ALFA TANGO is the Group organizing the security contest and awards on 11 m. band.

PSE TRX QSL

Oleg, who hangs his hat in Mongolia, uses this QSL. We knew POP'COMM had a worldwide readership—but, Mongolia?

10-42 is a highway accident. Sometimes the "10" is dropped and all you'll hear about is a "20," "36," or a "42." The other numbers are seldom encountered anymore.

That's the basic jargon, if you can master these then you'll do just fine. Forget about calling other operators Cotton Pickers, wishing them Good Numbers, and saying irrelevant or dumb things such as Negatory, Radidio, We Down and Gone, Rockin' Chair, Put The Pedal To The Metal, Feeding The Bears, A Big 4-10 and other similar passé things that were hyped into CB by the Nashville and Hollywood creative moguls. And if you call anybody a Goodbuddy, may you get a wart on your nose.

Mailbag

J.Y. Avila, SSB-955-B, wants to know how to contact "the California based publication that's published by Dr. Rigormortis." That could only be the *Eleven Meter Times and Journal*, which is now located at P.O. Box 1019, Lemon Grove, CA 92045. The

IRANIAN CB LICENSE

Back in 356 BC the American spy Alexander The Great whupped our tails and made us look like pantywaists; it's been downhill ever since! Since that time we've tried everything to change our image—making carpets, pumping oil; nothing has helped. People still say that the letters IRAN stand for "Idiotic-Raunchy-Assinine-Nauseating." The latest Yankee plot against us is CB Radio, so this Official Iranian CB License allows you to hold all radio frequencies hostage until the FCC says it's sorry and pays us lots of rotten Yankee dollars.

As an Iranian CB operator you must never forget that you represent a 3rd rate nation and gang of cutthroats, cowards and creeps. And may the fleas of a thousand Ayatollahs infest your armpits.

104

Allah Be Crazed!

نکارا اول السلطنة

Ayatollah One Too Many

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You'll get lots of comments from this outrageous certificate. It's a freebie, too. Check it out in our column this month.

publication which recently went to a small-size magazine format, comes out ten times per year (\$15, by subscription only).

Bill Cheek, a/k/a Dr. Rigormortis, is well remembered by POP'COMM readers for being the author of the instructions for restoring the 800 MHz capabilities in the Realistic PRO-2004 scanner (August, '87 issue of POP'COMM). His EMTJ publication is a fiercely independent, feisty, semi-technical journal that has somewhat of a cult following and has even caused the FCC's San Diego Field Office to write them threatening letters.

Dr. Rigormortis is a gutsy and grided Vietnam vet who used to live back up in the High Country (Colorado Rockies). His nonsense approach to communications is a little blunt for those with delicate sensitivities. In the most recent issue we saw, he was still sorting through the fallout of a once-over-lightly he had given REACT in an earlier edition.

Bill's a long-time supporter of POP'COMM and his efforts contributed heavily towards convincing the "powers-that-be" at POP'COMM to include CB Scene in the magazine.

When It Came To CB, I Ran!

We're always on the lookout for the outrageous, and the so-called "Iranian CB License" is about as gross and whacko as they come. The colorful and fancy-bordered gag "license" (among other things) permits you, "as an Iranian CB operator" to "hold all radio frequencies hostage until the FCC says it's sorry and pays . . . us lots of rotten Yankee dollars." It's got a serial number, "official" seals and stamps, and is even signed by the "Ayatollah One Too Many." Best of all, you can get one for decorating the wall of the shack (your visitors will crack up) absolutely free! All you have to do is furnish a self-addressed, stamped (U.S. 22-cent stamp) for it to be sent back to you. I suggest you send a No. 10 (9½ by 4 inch) size envelope instead of one of those dinky little ones so it doesn't have to be folded up. Request your copy from: SSB Network, P.O. Box 908, Smithtown, NY 11787. You might also ask them to send along a membership application for the SSB Network when they send you the "Iranian CB License." **PC**



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from Carbondale, Illinois on 147.39 MHz, Hajek says. Please drop us a line if you know of this type of operation occurring elsewhere in the country.

Fun and games at Voice of America? Several months ago I reported seeing "LRS" sending foxes at 2311 UTC on 7478. A short time later the station's true identity was found to be the VOA station at Monrovia, Liberia, as it began its daily news transmission. Now I've found "ZKX" sending foxes and RY's at 0740 on 7477.3 (see Fig. 1). Is this the VOA again? If so, what's the purpose of these oddball callsigns?

Last summer, GKA, Portishead Radio, England, reported in a FEC RTTY broadcast that stations with the callsigns of GKZ and GNI were to be operational in July, and GNF would cease service. The frequencies of service came in garbled over my video monitor but it appears they would not be receivable in the United States.

GKZ is Humber Radio, England; GNI is Niton Radio; and GNF is North Foreland Radio. If anyone has further details about the times and frequencies of Humber's and Niton's RTTY transmissions, please share them with the rest of us. GNF had been operating RTTY on 3605.6 kHz.

VCS, Halifax Coast Guard Radio, Canada, now issues notices to navigators on 4410.1 kHz at 1230 and 2100, according to late information. Mauritius Radio, Mauritius now has RTTY broadcasts at 0030, 0330, 0630, 0930, 1230, 1530 and 1830, the ITU says. The stations are 3BT2 on 3188 kHz, 3BT3 on 7693 kHz, and 3BT4 on 15955 kHz.

A slight change in how TDM transmissions are noted in the loggings section. The channels of reception are indicated after the shift and speed thusly: TDM 425/86A, TDM 850/96B, etc. The letters A, B, C, and D are the channel designators.

Santa Claus has made his list and checked it twice. He's found alot of RTTY loggings he thought were nice. Now he wants to give them to you. Merry Christmas!

**RTTY Intercepts
(All Times UTC; Settings Are
Shift/Baud/Polarity)**

4242.5: Y5M, Rugen Radio, GDR at 0153 w/GG telexes, 170/50R (Tom Kneitel, NY).
4271: CFH, Canadian Forces, Halifax, NS w/wx at 0141, 850/75N (Michael Walker, TX).
4489: GFL26, Bracknell Meteo, England w/coded wx at 0205, 425/50R (Editor).
4570.5: HZN46, Jeddah Meteo, Saudi Arabia w/coded wx at 0158, 850/100N (Ed.).
4607: 960QZ, of the Spanish Navy, w/RYYR & SGG, 850/75R at 2258 (Ed.).
5117.5: TYE, ASECNA Cotonou, Benin w/RYYR at 0435, 425/50N (Richard Brumm, IL).
5322.8: MKK, RAF London, England w/RYI's & foxes, 850/50R at 0022 (Gleit, PA).
5396.6: RFQP, French Navrad, Djibouti w/"controle de voie" at 0514 in TDM. I was so excited that I forgot to log the shift/baud (Gleit, PA). Now that you've had a chance to recover from it all, I can tell you that the shift was 650, the baud was 96-- Ed.).
5504: Un-ID sta ID's as Minrex, w/tfc in SS marked "Habana..Relacion Es Para Nicaragua." Was 850/75R at 0440 (Jerry Brumm, IL). This is CLP1, MFA in Havana, Cuba. Minrex is their shorthand way of stating Minister of the Exterior. The garbled tfc you mentioned was probably crypto-- you can spot it in the future by the series of ZZZZ's seen at the beginning/end of their crypto msgs-- Ed.).

Abbreviations Used In The RTTY Column

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

6358: Y5M, Rugen Radio, GDR in 170/50R at 0150 w/GG tfc to ships (Fred Hetherington, FL).
6736: ETD3, Addis Ababa Aero, Ethiopia at 0322 in 425/50N asking "Do you read over?" (Brumm, IL).
6825.8 6827.7: No less than 8 channels here all running foxes, 1-0 & test w/o any ID. These were at 170/75N or 170/75R at 2315 (Ed.).
6986: Apparent MFA comms at 0315, 50 bauds. Some sort of nx summary in GG mentions Tass, NY Times, NATO, SDI, etc. Went into hand-keyed CW at 0331 then back to RTTY at 0333 (David Alpert, NY). My guess is Y7A31, MFA, Berlin, GDR-- Ed.).
7402.6: ATP57, Delhi Meteo, India w/coded wx at 0825, 850/50R. An S-4 signal-- considering the distance, quite strong! (Ed.).
7423: SYD, Nairobi Aero, Kenya w/RYYR at 0136, 425/50N (Ed.).
7428.6: TELAM nx in SS from Buenos Aires, Argentina at 0016, 850/50R (Ed.).
7432.9: CCF calling HDN w/RYYR & SGG, 850/75N at 0702. HDN is Quito Navrad, Ecuador, but can't seem to pin down CCF. Apparently it's a Navrad, but where? Then followed several SS msgs re war games called "Transoceanic II." Ended at 0725 w/73's & AR (Ed.).
7472.3: RUES, w/foxes at 0038, 850/75N. Who/what/where? (Gleit, PA). For more info, see the logging on 11642.5 kHz-- Ed.).
7477.3: ZKX-- this month's mystery station. Had its foxes jumping over the lazy "doig," 850/75R at 0740. See Fig. 1. (Ed.).
7523.5: TYE, ASECNA Cotonou, Benin w/aero wx at 0523, TDM 425/96A (Ed.).
7585: 6VY41, Dakar Meteo, Senegal w/aero wx at 0623, 425/50R (Ed.).
7613.5: 5UA, ASECNA Niamey, Niger w/coded aero wx at 0515, 425/50N (Ed.).
7624: HZN47, Jeddah Aero, Saudi Arabia w/aviation wx & terminal area forecasts at 0057, 850/100N (Brumm, IL).
7629.5: TTL, ASECNA Ndjamena, Chad, w/RYYR at 0457, 425/50N (Ed.).
7658: YZD, TANJUG Belgrade, Yugoslavia w/RYYR at 0001 + nx in EE at 0005, 425/50R. Was //5240 (Ed.).
7808: 4UZ, UN Geneva, Switzerland w/RYYR & QRA at 0330, 425/75R (J.M., KY).
7922: 5UA, ASECNA Niamey, Niger w/aero msgs & plaintext wx in FF at 0025, TDM 425/96B (Ed.).
7954.5: LRN85, DyN Buenos Aires, Argentina w/SS nx at 1110, 850/75R (Ed.); at 0255 w/same (Kneitel, NY).
7980.1: Y3I, Potsdam Meteo, GDR w/coded wx at 0035, 850/100R (Ed.).
7998: FDY, French Air Force, Orleans, France w/RYYR & le brick at 0725, 425/50R (Ed.).
8000: RFL1, French Navrad, Fort de France, Martinique w/idling or saying "controle de voie," was TDM 850/96B at 0727 (Ed.).
8027.4: Un-ID sta at 0443, 850/75R with a "very" quick brown fox (Ed.).
8063: FDY, French AF, Orleans, France w/RYYR & le brick at 2315, 350/50R (Ed.).
8145: EJAAYH (a/k/a EIP), Shannon Aero, Ireland w/RYYR at 0438, 850/50N. Coded wx followed shortly thereafter (Ed.).
8165: SYD, Nairobi Aero, Kenya at 2242, 425/50N (Ed.).
8299.5: URUZ, Soviet fish factory ship Kulikovo Polye sending encrypted tfc to UJY, 170/50N at 0208. Why all of the secrecy about fish? (Ed.).
8328.5: Polish ships here w/ARQ tfc at 0044 (Ed.).
8347.5: UMDL, Soviet supertanker Kuzbass w/telex to Havana, ARQ at 0143 (Ed.).
8530: PWZ33, Rio de Janeiro Navrad, Brazil w/CQ's & tfc in PP at 0515, 850/50R (Ed.).
8715: WCC, Chatham Radio, MA w/AP nx items in ARQ at 0045 (Walker, TX).

8908: Un-ID sta idling in ARQ from 2330 to 0000. Wherezit?? (Hetherington, FL).
8945: CLP1, MFA Havana, Cuba w/Prensaminrex nx in SS at 0519 & 2241, 500/50N (Ed.).
9044: Possibly a Yugoslavian embassy w/crypto at 0540, 425/75N. Numbered headers to msgs similar ones noted previously from the Yugoslavs (Ed.).
9070: 6VU, ASECNA Dakar, Senegal w/RYYR & QJH1 at 0526, 425/50N (Leonard Thomas, CA). Welcome to the column, Len-- Ed.).
9175.3-9177.3: Foxes w/o ID on 7 different freqs here, all 170/75N at 1310. Similar logged on 9273.6-9275.8 kHz (Ed.).
9187.5: DIPLO Paris, France w/nx in FF at 0835, 425/50N (Ed.).
9192: SOJ219, PAP Warsaw, Poland w/RYYR & QRA at 0013, 425/50R (Ed.).
9223: TJK, ASECNA Douala, Cameroon w/RYYR at 0600, 425/50R (Ed.).
9225: NRV, USCG Barrigada, GU w/Tentative Passenger List in ARQ was sent at 0858. Sta on this freq they contacted barely audible. NRV also had a severe wx warning possibly intended for US mil installations in Japan, then coded wx at 1136, was 170/75R (Ed.).
9273.6-9275.8: Foxes w/o any ID on 10 freqs here, 170/75N&R at 1950. Foxes on 9275 alone at 1145, with the S-meter pushing S-8! (Ed.).
9375: RFHIER, possibly a French mil unit in the South Pacific, w/crypto at 0942, TDM 850/96. Then RFHJ says "controle de voie" & RFHI took up the same cry a short time later. Went off at 1418 (Ed.).
9391: SOJ239, PAP Warsaw, Poland w/RYYR then nx in EE at 1954, 850/50N (Brumm, IL).
9435: KRH51, US Embassy, London, England w/foxes at 0537, 850/75R (J.M., KY); Logged by me at 0935 (Ed.).
9886.5: GFL23, Bracknell Meteo, England w/coded wx at 0948, 50R. Was sending RY's at 1153 (Ed.).
10105: FDY, French AF, Prieans, France w/RYYR & le brick at 0524, 425/50R (J.M., KY).
10157: CLP1, MFA Havana, Cuba w/msgs for Cuban embassies at 0417, 425/50N (J.M., KY).
10235: STK, Khartoum Aero, Sudan w/RYYR, 50 bauds at 0345 (Alpert, NY).
10278.5: YZA9, TANJUG Belgrade, Yugoslavia w/nx in F at 1808, 425/50R (Ed.).
10298: HSW62, Bangkok Meteo, Thailand w/airport wx for Vietnam & India at 1030, 290/50N (Hetherington, FL).
10307.5: OLG4, PTT Prague, Czechoslovakia w/telegrams in EE to PTT, Beijing, PRC at 1559, 425/50R (Editor).
10325: 5L grps from un-ID sta at 1618, 425/75N (Ed.).
10470: WKB30, TRT Telecommunications Corp., New Orleans, LA w/telegrams from Miami to Cuba, at 1349 & 1950, TDM 425/96A & B (Ed.).
10497.5: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes at 1810, 170/50N (Ed.).
10518: 5AQ56, JANA Tripoli, Libya w/nx in AA at 1807, 425/50R (Ed.).
10523: HMF45, KCNA Pyongyang, N. Korea w/nx in FF at 1215, 425/50N (Ed.).
10543: Y2V54, ADN Berlin, GDR w/RYYR beamed to Northern Asia at 1858, 425/50N. Followed at 1902 w/nx highlights in EE from around the world. Was //8067.5 (Ed.).
10559.3: FTK56/H3, AFP Paris, France w/nx in FF at 1852, 350/50N (Ed.).
10635: SUC, Cairo Aero, Egypt w/coded aero wx at 2300, 850/50R (Ed.).
10904.6: An Egyptian embassy (possibly Washington DC) w/tfc in EE & AA to "Khargia Cairo," ARQ (Hetherington, FL). Time not stated-- Ed.).
10911: HGH29, Budapest, Hungary w/nx in FF at 1640, 425/50R (Hetherington, FL).
11006.9: AP/UPI nx via AFRTS, FDM 50R at 2050 (Ed.).
11012.5: Nx in SS from Jiji, Tokyo, Japan at 1032, 850/50R. Yes, I know that DyN in Buenos Aires sends nx in SS on 11013, but this Jiji bc was beamed to Argentina & each item was numbered with a "JP" header (Ed.).
11133.5: PBC, Goeree Island Navrad, Holland w/RYYR, 170/75R at 2035 (Ed.).
11448: KNY37, GDR embassy, Washington, DC w/economic nx in GG, 425/50R. Went off at 1930 & returned at 1936 w/short msg, 425/100R then s/off (Ed.).
11450.2: RDD77, Moscow Meteo, USSR w/coded wx at 1530, 850/50R (Ed.).
11493.6: SOL249, PAP Warsaw, Poland w/nx in Polish at 1208, 425/50R (Ed.).
11498.3: Un-ID IS mil sta w/"very" quick brown fox tape at 1545, 2240 & 0115, was 850/75R (Hetherington, FL).
11535.7: HMF49, KCNA, Pyongyang, N. Korea w/nx in FF at 1802, 300/50N (Ed.).
11625.1: Un-ID Soviet sta w/tfc in RR at 0045 (Cyrillic alphabet) (Hetherington, FL).
11638: DDK8, Hamburg Meteo, FRG w/coded

wx at 1825, 425/50N (Brumm, IL).
11642.5: RUES, US State Dept., w/foxes (see Fig. 2) at 1336, 850/75N (Ed.).
12171: PWZ, Rio de Janeiro Navrad, Brazil w/RYRY & SGSG at 0105, 850/50N (J.M., KY).
12195: RFLI, French Navrad, Fort de France, Martinique. Was TDM 850/96 at 1224 (Ed.).
12266: UN-ID sta w/encryption at 1439, TDM 425/96B (Ed.).
12482.8: BXT11, location unknown, w/RYRY at 0855, 425/75R (W.H., USA). It's a PRC embassy somewhere according to Kneitel's Guide To Embassy & Espionage Comms-- Ed.
12493.5: GBQM, the British tanker G.A. Walker w/wx obs to Metea Washington, DC, ARQ at 1810 (Ed.).
12510: UZIS, a Soviet ship, calling UFN at 1850 in ARQ (Kneitel, NY).
12518: HCGI, the C.C. Las Galapagos, an Ecuadorian ship, w/telexes to Guayaquil reporting that ship was being delayed because of a union strike. Was ARQ at 0231 (Ed.).
13081: LGJ3, Rogaland Radio, Norway w/nx in Norwegian at 1736, FEC mode (Ed.).
13084.5: NMP, USCG Commsta, Honolulu, HI w/CQ/QLH/SITOR tape at 1727, then GRU NAV-AREAS tape at 1730. FEC mode (Ed.).
13771.5: NBA, USN Balboa, Panama w/encrypted RY's & SG's! Was 850/75R at 1052. Just prior to this xmsn, NBA was sent tfc in SS & suddenly went into crypto mode. The ap forgot to revert to plaintext when running test marker tape. I knew what was being sent, however, because of familiar rhythmic pattern that RYRY & SGSG makes. Took op a little while to realize the goof & shift into plaintext (Ed.).
13415: PCW1, MFA The Hague, Holland w/ID in CW then ARQ phasing sig at 2105 (Ed.).
13490: RCG77, TASS Moscow, USSR w/nx item re USSR/India trade & economic cooperation. Was 425/50R at 1110 (Ed.).
13538: Y7A54, ADN Berlin, GDR w/nx item in EE re the Warsaw Pact Parliament wishing closer cooperation w/NATO to strengthen mutual trust. In 425/50R at 1105 (Ed.).
13540: LRO81, TELAM Buenos Aires, Argentina w/nx in SS at 1526, 850/50R (Ed.).
13563.1: 3MA22, CNA Taipei, Taiwan at 1326 & 1510 w/RYRY, 850/50R (Ed.).
13576.1: HBD44, Swiss embassy, Stockholm, Sweden w/5L msg in ARQ at 1408 (Ed.).
13580: HMF36, KCNA Pyongyang, N. Korea

w/nx in FF at 1243, 200/50R (Kneitel, NY).
13592: RFFA, Defense Ministry, Paris, France w/encryption or "controle de voie." Was TDM 850/96 at 2130 (Ed.).
13602.4: Warsaw Radio, Poland w/tfc list in FEC at 1402 (Ed.).
13610: 3VF40, TAP Tunis, Tunisia at 1650 w/nx in FF, 425/50R (W.H., USA).
13866: Y2V65, ADN Berlin, GDR w/RYRY beamed to Southern Asia at 1247, 425/50N. Seems to be a new ADN xmsn (Dallas Williams, CO). Congrats on your new RTTY book!-- Ed.
13895: Y2V47, ADN Berlin, GDR w/nx items at 1516, 425/50N (Ed.).
14362: Warsaw Radio, Poland w/ship tfc list at 1147, 425/50R (Ed.).
14367: BZP54, XINHUA Beijing, PRC w/nx in EE at 1152, 425/50R (Ed.).
14460: Y7A57, MFA Berlin, GDR sent 5L msg to Algeria at 1125, 425/50N (Ed.).
14501: PTT Moscow, USSR to PTT Karachi, Pakistan. Xmsn indicates "no traffic" to be sent. Was TDM 425/96B at 1326. The other end of this contact was a 17382.5 kHz (Ed.).
14508.2: D4B, Sal Aero, Capr Verde sending RY's at 1805, 850/50N (Ed.).
14541: MKK, RAF London, England w/RYI's at 1207, 170/50R (Ed.).
14568.8: HMF32, KCNA Pyongyang, N. Korea at 1209 w/nx in FF, 425/50N (Ed.).
14604: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes at 1825, 170/50N (Ed.).
14616: MFA Prague, Czechoslovakia w/5F tfc to their embassy in Tokyo, 170/75N at 1351 (Ed.).
14632: YZC2, TANJUG Belgrade, Yugoslavia w/nx item re African children, 425/50R at 1217 (Ed.).
14660.5-14662.5: 9 channels going full blast w/crypto at 1509, 170/75R. Probably USN stuff (Ed.).
14685.5: A Czech diplo sta somewhere w/crypto or Czech tfc to CWB, KSA & DSR. Was 425/75N at 1322 (Ed.).
14703.5: Diplo tfc in Bulgarian from one of their embassies somewhere. Was 425/50R at 1456 (Ed.).
14728: MSS, British Army, Belize City, Belize w/RYRY & foxes to MUL at 1455, 850/50R. The question is, who/what/where is MUL? (Ed.).
14760: 2 different nx bc sigs here: CNM61, MAP Rabat, Morocco at 1042 in FF, 425/50R; also BA793, XINHUA Beijing, PRC w/nx in FF at 1429, 425/50R (Ed.).
14764: A9M70, GNA Manama, Bahrain w/nx in AA at 1419, 425/75R (Ed.).
14776.2: SUC, Cairo Aeradio, Egypt, w/coded wx at 1505, 850/50R (Ed.).
14783: Nx in EE from KCNA, Pyongyang, N. Korea at 1000, 425/50N (Ed.).
14785: ATP65, MEA Delhi, India w/nx in EE at 1508, 425/50N (Ed.).
14786.5: 9PL, Kinshasa Aero, Zaire w/coded wx at 1142, 425/50N (Ed.).
14795.7: FT079A/He, AFP Paris, France w/nx in FF re Charles Glass, American (former) hostage in Lebanon. Was 350/50N at 1230 (Ed.).
14799.5: Y2V, ADN Berlin, GDR w/nx in FF at 1545, 425/50N. Y2V also simultaneously sends nx in EE on adjacent 14800.5 kHz. On the 14799.5 channel, there's SS nx around 1000 (Ed.).
14808.5//14809.5: GXQ, British Army, London, England w/RYI's & foxes at 1236, 350/50N (Ed.).
14835: 9KT33, KUNA Safat, Kuwait w/nx in AA at 1239, 425/50N (Ed.).
14857: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes at 1241, 170/50R (Ed.).
14880.1: JMG4, Tokyo Meteo, Japan at 1315 w/coded wx, 850/50R (Ed.). ID'ing as JMG2/3/4/5 when sending RY's at 1215, into coded wx at 1219 (Kneitel, NY).
14901: TASS Havana, Cuba at 1442 w/EE revelations about how the war in Afghanistan is "an American war." Was 425/50N (Ed.).
14932: APS Algiers, Algeria w/nx in AA at 1447, 170/50N (Ed.).
14964.5: CLP1, MFA Havana, Cuba w/5F tfc to embassies at 1450, 425/50N (Ed.).
14990.5: Un-ID sta idling at 1503, TDM 425/96. Closest RTTY listed here is on 14989.3 kHz & used between Congo & Chad-- unless anybody has a better guess (Ed.).
15480: APS Algiers, Algeria w/nx in SS at 1543, 200/50R (Ed.).
15550: RFLI, French Navrad, Fort de France, Martinique idling or saying "controle de voie," TDM 850/96 at 1609 (Ed.).
15593: KRH51, US embassy, London, England w/foxes at 1531, 850/75R. Was //15597 where xmsn was 850/75N (Ed.).
15710: RWN76, TASS Moscow, USSR w/nx in FF at 1505, 425/50R (Ed.).
15730: Tfc in Polish from a Polish diplo sta somewhere, 425/75N at 1626 (Ed.).
15845: SUA289, MENA Cairo, Egypt w/nx in AA at 1656, 425/50R (Ed.).

15890: RB179, TASS Moscow, USSR w/nx in PP at 1707, 425/50R (Ed.).
15950.5: CXR, Montevideo Navrad, Uruguay w/repeated msg for sta PWZ in Brazil. Was 850/75R at 1838. Ran a long time-- hope it finally was received by PWZ! (Ed.).
16090: NMN, USCG Portsmouth, VA calling sta ZRH in the RSA. Ran RY/foxes at 1307, 850/75R (Ed.).
16136: BZR66, XINHUA Beijing, PRC w/nx in EE at 1230, 425/50R (Ed.).
16234.3: 4UZ, UN Geneva, Switzerland w/EE tfc at 1227, 350/75R (Ed.).
16260: RWN75, TASS Moscow, USSR w/nx in FF at 1304, 425/50R (Ed.).
16265: An ARQ noted at 1310 beneath the sig of an idling US mil teleprinter which was so strong that a printout of the ARQ sig was impossible (Ed.).
16277: Un-ID w/5F tfc, 850/75N at 1338 & 1422 on different days (Ed.).
16295.8: Un-ID w/crypto tfc, TDM 425/96B from 1232 to 1248; also TDM 425/96A from 1255-1303 (Ed.).
16296: GXQ, British Army, London, England calling VER, Canadian Forces in Ottawa. Sent foxes & RY's and asked "Pse To Meet Ops On Chan Two." Was 170/50R on 1415 (Ed.).
16325: Y2V43, ADN Berlin, GDR w/nx in AA at 1224, 425/50R (Ed.).
16343: YZ14, TANJUG Belgrade, Yugoslavia was //YZJ on 20204 at 1300, 425/50R. Sent RY's & "Attn We Are Starting Our Transmission Nw." (Ed.).
16377.3: RUWFSGG w/nx item at 1217 re aborted plan for Egyptian AF attack upon Libyan AF. Was 850/75N. Must be from AFRTS Los Angeles (Ed.).
16382.8: VNA30, VNA Hanoi, Vietnam w/nx in FF at 1212, 425/50N (Ed.).
16397.5: FTQ39, DIPLO Paris, France w/nx in FF at 1320, 425/50N (Ed.).
16403: Y2V57, ADN Berlin, GDR w/RY's, le brick & foxes + "Emissions en Francaise Destinees a l'Afrique." Was 425/50N at 1405 (Ed.).
16433: GXQ, British Army, London, England w/RYI's & foxes at 1206, 170/50R (Ed.).
16664: EHQH, a Spanish container ship, Baroja, w/telexes at 1647, ARQ (Ed.).
16667: 5MOS, Liberian wood/chip carrier New Independence w/telex in ARQ at 1748. Had just rounded Cape Horn (Ed.).
16674.5: 4PKK, a Sri Lanka cargo ship, Atlantic Universal w/wx obs for Portishead Radio, ARQ at 1846 (Ed.).
16676.5: SFMY, the Swedish vehicles carrier Tosca sending a call marker in ARQ at 1558 (Ed.).
16680.5: PIBY, Dutch tug Typhoon w/telex in Dutch at 2123, ARQ (Ed.).
17403: BAL32, PTT Beijing, PRC w/RY's at 1249, 425/50N (Ed.).
17411: Y7K32, MFA Berlin, GDR w/nx in GG at 1325, 425/50R (Ed.).
17427.5: OFD, PTT Helsinki, Finland w/tfc in Finnish, ARQ at 1253 to s/off 1256 (Ed.).
17547.5: HDN, Quito Navrad, Ecuador w/RY's & SG's at 1313, 850/75N (Ed.).
17599: "CKX" w/RY's & SG's at 1318, 850/75R. Appeared to be from GDR embassy at Havana judging from the format of 5F/5L tfc. Couple of days later, RY's logged at 1332 w/YBU YBU YBU 7/2213, then 5L tfc at 1334 (Ed.).
18042: Un-ID Yugoslav diplo sta w/crypto at 1438, 425/75N. A popular freq for Yugoslav MFA comms (Ed.).
18106: SUU9, Cairo Meteo, Egypt w/coded wx at 1532, 275/50N (Williams, CO).
18295: SDU9, STA Stockholm, Sweden w/telegrams to PTT in Vietnam at 1350, TDM 425/96A (Ed.).
18502: RFFA, Defense Ministry, Paris, France w/nx in FF at 1449, TDM 850/96A (Ed.).
18602.8: VOA Greenville, NC w/RYRY & tfc for VOA at Kavala, Rhodes, Munich & Tangier. Was 85/75R from 1343-1526 (Ed.).
18742.5: VOA Greenville, NC at 1557 w/RY's then "American Republics File" nx in EE, 425/75N (Ed.).
19313: 4UF, UN Addis Ababa, Ethiopia sending its grocery list to someone at 1309, 425/75N (Ed.).
19438.4: LOR, Puerto Belgrano Navrad, Argentina w/warnings in SS/EE to mariners at 1916, 150/75N (Gleit, PA).
19914.8: VOA Tangiers, Morocco w/nx in FF at 1233, 425/75N (Kneitel, NY); "European File" nx in EE at 1215, 425/75N (Ed.).
20040: Cuban embassy at Bissau, Guines-Bissau w/telegrams to MFA Havana at 1720, 425/50N (Ed.).
20085: ISX20, ANSA Rome, Italy w/RY's at 1535, 325/50N (Williams, CO).
20420: CLP1, MFA Havana, Cuba w/crypto tfc (ZZZZ headers) & SS msgs to CLP45, Embacuba, Luanda, Angola at 1538, 425/75N (Ed.).
20519: CXR, Montevideo Navrad, Uruguay w/RY's & SG's at 1550, 170/75N (Brumm, IL).

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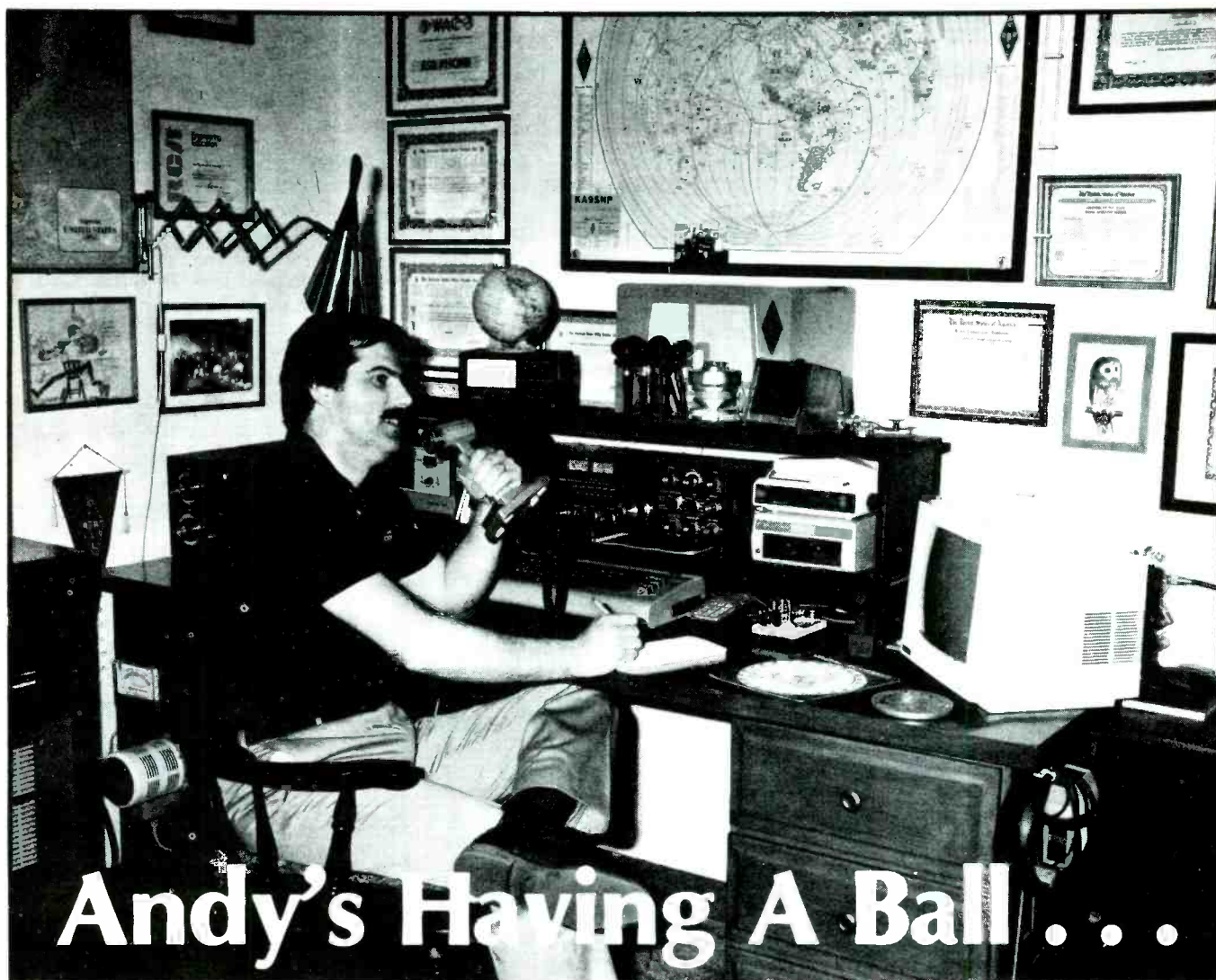
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WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

People may end up designating 1987 as the Year of the Islands, insofar as shortwave broadcasting is concerned. First, the DX community was astounded by the sudden appearance of WSZO in the Marshall Islands on shortwave last spring. Then came the news that New Zealand's Radio Rhema would be building a combination AM-FM-shortwave station in the Tonga Islands.

Now, several sources are reporting that a shortwave station is to go on the air from Aruba, off the coast of South Africa. Aruba was, until a year or two ago, one of the "A-B-C" islands of the Netherlands Antilles, the other two being Bonaire and Curacao. Aruba choose independence.

Anyway, the story is that Radio Victoria, a station in Aruba which already has mediumwave and FM, has been given a 100-kW shortwave transmitter by the Far East Broadcasting Company in San Francisco (KGEI). The new transmitter will be spotted on Aruba's southeast coast, near an old oil refinery. Once the station gets on the air it will program in English, Spanish, French and Portuguese, beaming to Southern Europe and Africa. At the moment there is no indication of when we might expect the new station to get on the air but it could well be sometime in 1988. We'll try and keep you posted.

If you did much listening to Radio Finland International last summer you may have noted some technical glitches here and there—things such as unexpected and unplanned breaks in the transmissions. RFI says the difficulties were a part of ironing out the bugs in the new 500-kilowatt transmitting system. It's likely all the bumps have been smoothed out by now.

Although it was scheduled to have begun

test broadcasts in late spring, construction delays have further postponed that activity for the new BBC relay station at Hong Kong. The tests may be occurring now. Once it becomes fully operational the BBC relay in Hong Kong will carry BBC programming in Mandarin, Cantonese and Japanese, as well as World Service relays.

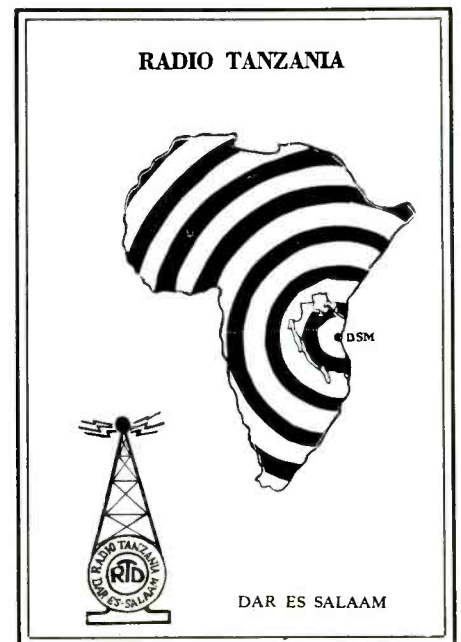
One very difficult target for serious SWBC DX'ers in North America is the Burmese Army Station at Taunggyi. This station was using 5060 and transmitting with an estimated 1 kilowatt but was never heard in the U.S. using that configuration. Now there is word that the frequency has been moved up to 6570 and some reports say the power has been upped to 10 kW, too. Apparently it is also operating under a new name—the Maymyo Defense Forces Broadcasting Unit—and is scheduled from 1030 to 1300 in Burmese and other local languages. That improves potential hearability in the U.S. and, indeed, there's been a least one tentative log made of this one since the change took place.

Your editor was totally surprised and very gratified at being named the 1987 "North American SWBC DX'er of the Year" at the convention of the Association of North American Radio Clubs in Canada this past July. Sincere thanks to all who had a hand in the outcome. The other annual ANARC awards went to Fred Osterman of Universal Shortwave Radio as Specialty Band DX'er of the Year, Michael Murray, who heads ANARC's European counterpart The European DX Council, who was named International DX'er of the Year, and Bob Thomann of Swiss Radio International, named as International Broadcaster of the Year.

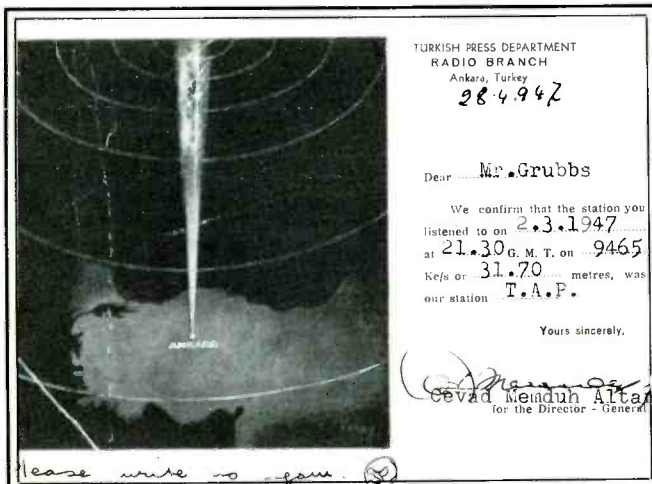
The World Service of the Christian Sci-

ence Monitor, WCSN, held an open house at its Scotts Corner, Maine, transmitting plant last July. This is an excellent idea and we can fault it only in the area of advance publicity. We hope they'll do it again next summer and provide three to four months lead time so as to allow us to notify you of the event.

Two annuals that are extremely useful are both from the Danish Shortwave Clubs International. They are the 12th edition of *Tropical Bands Survey*, which lists stations



J.D. Stephens owns this QSL from Radio Tanzania.



This card from the Voice of Turkey is over 40 years old. (Courtesy R.C. Grubbs)



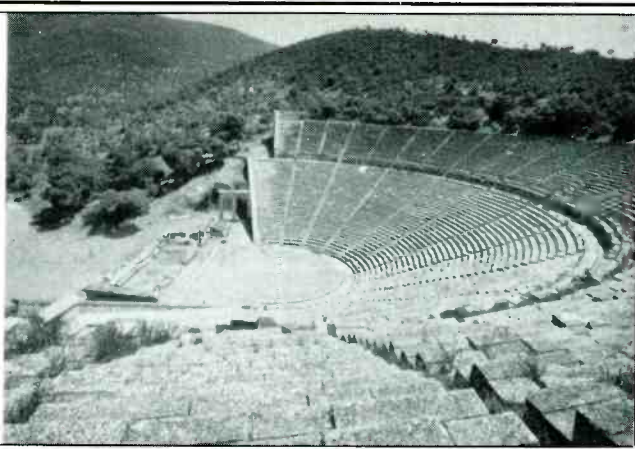
Charles Lescaut of Radio France Int'l.



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GREEK RADIO - TELEVISION

Η ΦΩΝΗ ΤΗΣ ΕΛΛΑΔΑΣ
THE VOICE OF GREECE

ΕΠΙΔΑΥΡΟΣ / EPIDAUROS
View of the theatre



This QSL from the Voice of Greece is one of a dozen different cards issued by the station.
(Courtesy William Moser.)

from 2 to 5.985 MHz (that's where most of the real DX is to be found) and *Home Service Stations Outside the Tropical Bands*, which lists local and regional broadcasts on the major international bands. The TBS is eight International Reply Coupons, the Home Service booklet costs seven IRC's, via airmail from the DSWCI Treasurer address: Betty Nansens Alle 49, DK-2000 Frederiksberg, Denmark.

THE MAIL: Mike Yohnicki in London, Ontario says he's having trouble getting a reply out of Syria and is also curious as to whether there are stations that don't accept mail due to war, etc. Syria has been a problem for about one out of every two people since they returned to shortwave. Just keep trying and you'll get them. Unless a war actually interrupts mail service to or from a country there usually isn't much effect on whether a station will reply or not. Iran, for instance, has been an excellent verifier throughout the Iran-Iraq war and even through the long hostage crisis. Iraq is less reliable but they always have been, even long before the war.

Roger Diercks of Plainfield, Illinois says he toured the VOA relay at Bethany, Ohio recently and he recommends it to anyone who happens to be passing through the Dayton-Cincinnati area. Bethany is right on Interstate 75.

J.D. Stephens in Huntsville, Alabama recently went on a DXpedition with James Pogue of Memphis. J.D. says they were able to snare some good loggings. Radio Kiribati, says J.D., came in "like a dream." J.D. also clarifies a point from an earlier column: AWR Africa does have offices in the Ivory Coast and does broadcast a program in French over Africa Number One, on 9630 at 1700 to 1800.

J.D. also wonders if anyone has heard Tonga yet. Assuming you mean the low power feeder and not the station not yet built, we've seen no loggings for this 49 meter band outlet. As a feeder it wouldn't really be countable as a shortwave broadcasting station anyway. Fortunately, we'll all have a

shot at Tonga when Radio Rhema gets on the air.

We've logged in a fair number of very basic type questions this month, from what UTC is all about to where to find the address for the BBC. Newcomers should note that all of the answers to such fundamentals can be had simply by reading the magazine you are reading now, and by responding to offers of catalogs and other information that appear in *POP'COMM*. That, in turn, will lead you to still more sources of information. "How To" material on shortwave is a thousand times more available today than it was thirty years ago. All it takes is a little initiative on your part!

Which is not to say that we do not enjoy hearing from each of you as often as you care to write. We encourage your letters with questions, comments, shortwave-related clippings, program schedules, copies of QSL's, or the real thing if you can spare them, shack photos, station information and so on. And, of course, your loggings are the backbone and very important. Just be sure to include your last name and state abbreviation after each, list each logging separately and by country and leave some room for them to be cut apart. We look forward to hearing from you often!

Here's what's being heard. Remember, all times are in UTC and programs are in English unless noted otherwise.

Shortwave Broadcast Loggings

Alaska: KNLS on 9710 at 1205 in CC, but QRM'd by R. Australia. Classical mx, religious readings, EE/CC ID (Kline, CA).

Algeria: R. Algiers, 17745 at 2038 to s/off 2059, excellent level w/mx variety & nx briefs in SS (Tuchscherer, WI).

Angola: R. Nacional, 11955 heard poorly & tentatively at 0545 in vernaculars w/African mx (Waller, OH).

Antigua: DW relay on 6040 at 0102 (Diercks, IL); 0500 on 6120 w/slight QRM from Spain-6125 (Kline, CA); 15105 at 0048-0100 w/mx & multilingual ID's (Tuchscherer, WI).

Argentina: RAE on 9690 at 0337 w/nx (Gollobitz, MO); at 0400 (Gilbert, CA, & Ross, WA); 11710 at 0140 w/local nx, mx (Ross, WA).

Ascension Island: BBC relay on 15400 at 1700, severe fading (Kline, CA).

Australia: R. Australia, 5995 at 0800 to Papua New Guinea (Robbins, CA); 9580 at 1523 (Kline, CA); 15240 at good level w/nx,

ID 0402-0408 (Tuchscherer, WI); 11660 at 0119 in GG, 0135 into EE, 15320//15395 at 2315, 17795 at 2300 (Gollobitz, MO); 17795 at 2233 (Ross, WA).

VLH9, Melbourne, 9680 at 0700 w/nx, rx pgm (Yohnicki, ONT). This station now closed down, apparently forever-- Ed.

VLW9, Perth, 9610 at 1321 (London, MN).

Austria: R. Austria International, 9550 at 0400 (Gollobitz, MO); 0200 w/DX pgm Sat. nites (Petarra, FL).

Bangladesh: R. Bangladesh, 15525 at 1220-1300 (Waller, OH); 1225 w/haunting IS, ID at 1230, nx, commentary & press review but vy poor sig level (Stephens, AL).

Botswana: R. Botswana, 3355//4820 at 0440 (Waller, OH).

Brazil: R. Nacional/Radiobras at 0050 on 11745 (Robbins, CA); 0210 w/ID (Diercks, IL); 15265 at 1824 in FF (Ross, WA).

R. Nacional Cruzeiro do Sul (presumed) on 4765 at 0305 w/mx (Diercks, IL).

R. Cultura, 17815 at 2300 in SS (Gollobitz, MO). Not Portuguese??-- Ed.

R. Nacional Manaus on 4845 at 0326 in SS (Ross, WA). Again, not PP?-- Ed.

R. Suriname International (via Brazilia xmters) 17755 at 1700 in Dutch & EE (Kline, CA).

Cameroon: R. Cameroon, Yaounde, 4850 at 0505 (Johns, TX).

Canada: RCI at 0130 on 5960//9755 w/"As It Happens" (Petarra, FL); 11945 at 2140 to Africa (Diercks, IL); 11960 at 2113 (Ross, WA); 15265 at 1825 (Levine, IL); 17820 at 1500 s/on in Ukrainian (Hall, FL).

CBC No. Quebec Svc., 6195 at 0210 (Hall, FL).

CHU time station on 3330//7335//14670 w/time pips & ID's in EE/FF (Diercks, IL). Time heard not given-- Ed.

CFRX Toronto, 6070 at 2154 w/commercials (Diercks, IL).

Chile: R. Nacional on 15140 at 1742, football pgm (Kline, CA); 2200 (Johns, TX).

China: R. Beijing at 1200 on 9535, QRM from VOA in SS on 9540. Also 1300 9550//9730, ending at 1355 (Kline, CA); 9570 at 1749 (Ross, WA).

Congo: RTV Congolaise, 15190 at 0033 w/excited anncr & play-by-play sports event, sound effects, "vernaculars" (Gollobitz, MO). Did you get a positive ID on this one? Sounds more like R. Inconfidencia in Brazil, widely reported on 15190 during recent months-- Ed.

Cook Islands: R. Cook Islands, 0600 on 11760 in EE & Maori w/call-in pgm, pops & island mx (Johns, TX); 0440-0510 but only audible when Tahiti-11825 is strong (Waller, OH).

Costa Rica: R. Reloj, 4832 at 0707 w/mx & talk in SS (Gilbert, CA); At 0905 (Nunez, GA).

R. Impacto, 6150 at 0330 w/mx by YL, ID & more nx by OM in SS (Tuchscherer, WI).

R. Lia International, 15460 at 2208 s/off in SS/EE (Watts, KY).

Cuba: R. Havana Cuba, 6035 at 0402 w/nx (Ross, WA); 9655 at 0045 (Robbins, CA); 2358 w/IS (Diercks, IL); At 0200 (Levine, IL).

R. Rebelde, 5025 w/mx at 0005 (Diercks, IL).

Czechoslovakia: R. Prague, 7345 at 0102 w/nx (Ross, WA); 0338 w/"Scrapbook" (Gilbert, CA); 11990 at 0146 (Hall, FL); 0230 (Gollobitz, MO); At 0320 (Ross, WA).

Denmark: R. Denmark, 15165 w/IS 1258,

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

ID & into Danish (Landon, MN); S/off 1729 (Ross, WA).

Djibouti: RT Djibouti, 4780 s/on in AA at 0300 (Waller, OH).

Dominican Republic: R. Clarin, 11700 at 1400 in SS (Lauterbach, MI); At 0103 (Gilbert, CA).

East Germany: RBI at 0150 w/African Svc. on 6125 (Hall, FL); 9560 at 0338 w/world nx (Ross, WA); 9730 at 2332 w/talks about shipping (Diercks, IL); 9770 at 0055 w/nx (Gilbert, CA).

Ecuador: HCJB on 9745 at 0242, 15250 at 0023 in GG, 15155 at 0051, 11715 at 0200 (Gollobitz, MO); 9870 at 0211 w/rx pgm (Diercks, IL); 17790 at 2147 (Ross, WA).

R. Rio Amazonas, 4870 at 0300 w/lively Latin mx, many ID's, strong sigs (Stephens, AL).

Radifusora Tarqui, 4970.7 (varies) at 0153-0240 w/US pops, Latin songs, several ID's. Brilliant at 0320 retune (Tuchscherer, WI).

Egypt: R. Cairo, 12050 in AA at 2054 (Diercks, IL); 15220 at 0030 in AA (Gollobitz, MO); 15355 at 2121 in FF, 15375 at 2123 in EE, 12050 in AA at 1730 (Ross, WA).

England: BBC (some via relays) 6120//7325//9590//9915 at 2200 w/ID (Diercks, IL); 0200 on 6175, 1900 on 12095 (Levine, IL); 15260 at 1732, 15070 at 1828 (Ross, WA).

Finland: R. Finland Int'l., 11715 at 0445 excellent in //11755 (London, MN); 11755 at 0325 IS at s/on in Finnish & EE (Gilbert, CA).

France: RFI on 11670 at 2300 in SS (Ross, WA).

French Guiana: RFI relay, 0417-0430 tune-out on 6055, excellent level w/world nx, ID & address at 0429 (Tuchscherer, WI).

Gabon: Africa #1, 4830 in FF at 0429 (Ross, WA); 7200 at 0623 w/mx & talk in FF (Gilbert, CA).

Ghana: GBC on 4915 at 0600 w/nx (Robbins & Gilbert, CA).

Greece: V. of Greece, 7430//9420 at 0144 w/mx (Hall, FL); 9420 at 0143 mx into nx (Ross, WA); 11645 nx 0340-0350 s/off (Watts, KY); 15630 at 0400 to Arabia & Indian Ocean in Greek (Petra, FL).

VOA Kavala at 0137-0145 tune-out on 7205 Tuchscherer, WI).

Guam: K-TWR on 11715 at 0930 s/off (Gilbert, CA).

Guatemala: R. Cultural/TGNA, 0300 on 3300 w/ID, rx pgm (Scolese, NY); 0627 w/mx pgm (Gilbert, CA).

Hungary: R. Budapest, 9835 at 0237 in a Slavic language (Gollobitz, MO).

Iceland: Icelandic State BC Svc., 13759 at 1215-1302 in Icelandic. OM & YL w/IS & brief mx, noted Sat & Sun (Waller, OH).

Iran: VOIRI on 15084 at 1852 in Farsi (Ross, WA); At 0100 (Gollobitz, MO).

Iraq: R. Baghdad, 11705 at 0020-0043, vy good EE w/AA singing, ID "This is a broadcast from Iraq - Radio Baghdad..." then more mx (Ross, ONT); 11705 at 0103 (Hall, FL).

Israel: Kol Israel, 9435//11610 at 0118 w/science pgm (Gollobitz, MO); 9815 at 0400 w/nx (Gilbert, CA); 9435//9855//11610 at 0002 w/nx (Diercks, IL); 11585 at 1805 (Ross, WA); 13725 to NA & W. Europe at 1900 in SSB w/AM //11610//11665//12077//17630 (Petra, FL); 15485 at 2120 in FF w/EE ID, freqs at 2130 over jommer, switched to 15585 which was clear (Tuchscherer, WI).

Italy: RAI in FF at 0122 on 9575 (Diercks, IL).

Ivory Coast: Radiodiffusion TV Ivoirienne, 11920 at 2101 in FF, QRM from R. Marti. Listed as 500 kW (Diercks, IL).

Japan: R. Japan, general svc on 11705 at 1900 w/nx (London, MN); Via Africa #1 in Gabon, 11800 at 2204 in JJ (Diercks, IL); 17755 at 2058-2133 tune-out w/nx & commentary (Tuchscherer, WI).

JJY time station at 1200 on 8000 (Johns, TX).

Kiribati: R. Kiribati at 0555 abrupt s/on in middle of song. Trumpets, ID by YL, island mx, local nx by YL. Announced that, due to tech problems, there would be no BBC newsfeed. Strong sigs (Stephens, AL). Frequency?-- Ed.

Lesotho: R. Lesotho, on 4800 but vy weak at 1529, nx & ID (Ross, WA); 0500 w/nx (Johns, TX).

Libya: R. Jamahiriya, 7245 at 0035 in AA, ID & mx (Scolese, NY); 0321 in AA (Gilbert, CA).

Mali: RTV Malienne, 4783//4835 at 2345 w/pops (Waller, OH).

Malta: DW relay on 6085//11785 at 0106 (Diercks, IL).

Marshall Islands: WSZO on 4940 at 0958 signing off (Gilbert, CA).

Mexico: XEWX relaying BCB sta XEW, 15160 at 2200 (Johns, TX).

Mongolia: R. Ulan Bator, 12015 at 1200-1224. Listed for weekdays but logged on a Saturday (Waller, OH).

Montserrat: DW relay at 0104 on 9545 (Diercks, IL).

Morocco: RTVM 15105//15335 at 0030-0100 in AA (Waller, OH).

Netherlands: R. Netherlands, 11730 replaced 9895 at 0230 to NA, //6020, 6165//9590, also 17605 (Bonaire)//21685 at 1850 (Petra, FL); 1843 on 21685 (Ross, WA).

Netherlands Antilles: R. Netherlands, 15560 at 2300 in PP, 15315 at 0017 in SS (Gollobitz, MO); 17605 at 1230 in FF (Petra, FL).

TWR, Bonaire, 9535 at 0323 (Ross, WA).

New Zealand: R. New Zealand, 9540 at 0805 (Waller, OH); 11780 at 0605 w/National News (Gilbert, CA); At 0656 (London, MN); At 0500 (Johns, TX); 0238 on 15150 (Gollobitz, MO); 0300 w/local & world nx (Robbins, CA).

North Korea: R. Pyongyang, 1100 on 11745 (Johns, TX).

Northern Marianas: KYOI Saipan at 1400 w/pops on 11900 (London, MN).

Norway: R. Norway Int'l., 9620 at 0100 to NA (Petra, FL); 2200 on 15165 (Johns, TX); 15230 at 1000 in Norwegian (Gollobitz, MO); 15310 at 1825 in Norwegian (London, MN).

Pakistan: R. Pakistan on 15115 at 0215 to s/off 0245, poor in language to 0230, then EE ID & commentary (Tuchscherer, WI).

Papua New Guinea: NBC Port Moresby at 1000 on 4890 w/nx & mx (Gilbert, CA).

Philippines: R. Veritas Asia on 9710 at 1500 (Johns, TX).

FEBC on 11850 at 1300 (Johns, TX).

VOA relay on 15290 at 0000 w/nx to Northeast Asia (Waller, OH).

Poland: R. Polonia on 9525 at 0303 (Gilbert, CA); 0351 in Polish (Gollobitz, MO); 15120 at 0200 w/nx (Johns, TX).

Romania: R. Bucharest on 9570 at 0157 (Gollobitz, MO); Nx at 0048 on 11990 (Ross, WA).

Saudi Arabia: BSKSA on 9720 at 1836 & 2020 (Ross, WA).

Seychelles: FEBA on 11865 in Farsi at 0300 (Johns, TX).

Singapore: R. Singapore's Radio 1 svc, 11940 at 0720 w/mx (Robbins, CA); 0945 w/US pops & "Radio 1" ID (Johns, TX); 1427-1602 closed w/rock & pops (Kline, CA).

BBC relay on 15435 at 0000 w/Asia svc (Waller).

Solomon Islands: SIBC at 0730 on 9545 w/nx, lost at 0745 w/Moscow-9540 & VOA-9550 (Yohnicki).

South Africa, Rep. of: SABC at 0324 on 4880 (Ross, WA). Presume this is Radio 5 svc-- Ed.

R. RSA at 0200 on 6010//9615 (Diercks, IL); 9585 at 2115 (Ross, WA).

South Korea: R. Korea on 5975 at 1557 in Korean, at 2304 on 15575 (Ross, WA); 1300-1359 on 9750 (Kline, CA).

Spain: Spanish Foreign R. at 0317 w/nx on 9630 (Gollobitz, MO); 15125 at 2227 in SS (Diercks, IL); 1832 in EE on 15375, 2227 in SS on 15125, 0126 in EE on 9630 (Ross, WA).

Sri Lanka: VOA relay at 0101-0112 tune-out on 15120. Not heard daily (Tuchscherer, WI).

Sweden: R. Sweden Int'l. at 0346 w/nx & mx on 11705 (Ross, WA).

Switzerland: Swiss R. Int'l. at 0200 on 9885 (Nunez, GA); 12035 at 0500 in FF (Robbins, CA); At 0200 in EE (Levine, IL); At 0220 on 6135//9885//12035 (Diercks, IL).

Int'l. Committee of the Red Cross monthly bc at 0310-0325, best on 9725//9885//12035 (Watts, KY).

Syria: R. Damascus, 9950 at 2150 (Hall, FL); 12085 at 2100 (Lauterbach, MI); 1938 in FF, 2036 in EE (Ross, WA); EE to Europe at 2005 on 15020 (Petra, FL).

Taiwan: VOFC, 17845 at 2300 in SS, 15130 at 0053 in oriental language (Gollobitz, MO).

V. of Asia, weak on 5980 at 1059 in an oriental language, EE ID at 1100 then nx & CC mx (Stephens, AL); 7445 in EE at 1100 (Johns, TX).

Thailand: R. Thailand, 0354 in an oriental language on 11905 (Gollobitz, MO). Did you get an ID on this one?-- Ed.

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George Jacobs, W3ASK
and
Theodore J. Cohen, N4XX

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Tunisia: RTV Tunisienne at 0400 in AA on 7310//12005 (Waller, OH).

Turkey: V. of Turkey, 9560 at 2207 w/nx (Diercks, IL); At 2230 (Johns, TX); At 2234 (Hall, FL); At 0337 (Ross, WA).

Ukrainian SSR: R. Kiev, 7165 at 0203 w/nx (Diercks, IL).

Unidentified: On 3290 at 0445-0530 w/rx pgm in a native lingo, possibly some EE. Poor sigs. Rooster crowing & bugle IS at 0500. Swaziland BC Svc. on SW? (Waller, OH). No word of such an event. R. Southwest Africa (Namibia) has moved to 3290 in this time period-- Ed.

United Arab Emirates: UAE Radio, Dubai, 15435 w/nx at 0330 (Petarca, FL).

V. of the UAE at Abu Dhabi, 9900 at 0245 in possible AA (Gollobitz, MO).

United States: WYFR on 9535//11845 at 1908 w/rx pgm, 5985 at 0010 w/VOFC in CC (Diercks, IL); 15215//15225 at 0025 in SS (Gollobitz, MO).

KGFI in SS at 0100 on 15280 (Lauterbach, MI).

WINB on 15145 at 0052 w/mx (Gollobitz)

R. Marti (via VOA) at 1856 in SS on 11930 (Diercks, IL).

KCBI on 11735 at 1841 (Ross, WA).

KVOH on 9495 at 0206 w/"Hall of Fame Theatre" (Diercks, IL); 17750 at 1839 in SS (Ross, WA); 17775 at 2230 (Gollobitz, MO).

WHRI w/rx pgm at 2115 on 9770 (Ross, WA).

VOA on 9670 at 1401 w/nx (Diercks, IL); 17800 at 2119 (Ross, WA).

WRNO at 2116 on 11705 (Ross, WA); 1700 on 15420 w/"Hall of Fame" (Levine, IL); 1939 w/rock mx (Diercks, IL).

WCSN at 0134 on 7365 (Hall, FL); 0430 on 9465 w/features pgm (Petarca, FL); 15390 w/IS at 1955 & 2154 close. Pgm. included "Kaleidoscope," "Roundtable," & "Letterbox" (Kline, CA); 1959 w/IS (Diercks, IL); 15400 at 1825 (Levine, IL).

AFRTS on 6030 at 2333 (Diercks, IL); 1050 on 9530 (Hall, FL); 1800 w/newsfeeds for overseas affiliates on 9700 (Kline, CA).

Uruguay: R. El Espectador, 11835 at 1105 w/nx, ID as "El Espectador," & bank commercial followed by "Hoy en Nuestra Historia" feature (Stephens, AL).

USSR: R. Moscow's World Service at 1731 on 9640, at 2127 on 12030 (Ross, WA); 0200 on 9705 (Levine, IL); 11710 (via Havana) at 0146 (Gollobitz, MO); 11840 (via Havana) at 1910 (Diercks, IL); 13605 at 0300 (Petarca, FL).

R. Peace & Progress, 12020 at 0146 to 0200 off in SS w/RR mx, short talks, ID at close (Tuschcherer, WI).

Radio Tikhy Okean, 12010 at 0826 in RR w/odd Middle-Eastern type mx, sked indicates nx bc but not heard. Off 0900 (Stephens, AL).

RID time sta, Irkutsk on 15004 at 1715 w/pips & CW ID. Listed as 1 kW (Waller, OH).

Vatican: Vatican R., 9645 at 0530 w/IS & bc in II (Gilbert, CA); 11780 at 0110 s/off in EE (Gollobitz, MO).

Venezuela: R. Rumbos, 9660 at 0205 in SS (Gilbert, CA); At 2100 (Johns, TX).

R. Tachira, San Cristobal on 4830 in SS at 0224 (Scolese, NY).

Vietnam: V. of Vietnam on 15010 at 1330 (Waller, OH); 1735 in Vietnamese (Ross, WA).

West Germany: DW, 6040 at 0139, 6185 at 0321 (Ross, WA); In Bengali at 0126 on 7285, in Indonesian at 2230 on 9605, in GG at 1912 on 17860 (Diercks, IL); in GG at 2310 on 15410 (Gollobitz, MO).

Sudwestfunk, 7265 at 0615 in GG w/US mx, nx (Scolese, NY).

Zaire: La Voix du Zaire, 15245 in FF at 2300, nx bc. Very weak (Yohnicki, ONT).

That's it! Our thanks to: Mike Yohnicki, London, ONT; Lee Hall, Orlando, FL; Doug Waller, Bay Village, OH; Robert S. Ross, London, ONT; John Tuschcherer, Neenah, WI; Debbie Levine, Arlington Heights, IL; Jim Ross, Vancouver, WA; Nick Gollobitz, St. Louis, MO; Warren Gilbert, Sherman Oaks, CA; J.D. Stephens, Huntsville, AL; Rob B. Robbins, Newbury Park, CA; Chris London, Princeton, MN; R.C. Watts, Louisville, KY; Bill Lauderbach, Horton, MI; Terry Petarca, Ft. Lauderdale, FL; Roger Diercks, Plainfield, IL; Ryan Nunez, Athens, GA; Andy Johns, Tyler, TX; James Kline, Santa Monica, CA and Paul Scolese, Amherst, NY.

'Til next month, good listening!

PC


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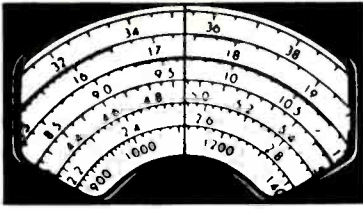
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BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

R. Watts, KY sent me an extra copy he had of the AT&T Fingertip Guide which describes the High Seas Radio Service. This booklet, while primarily intended for boat owners, contains a lot of interesting and helpful information for SWL'ers. For instance, there is an excellent description of propagation factors that relate to frequency usage. In addition, there are frequency/channel designation charts for KMI, Point Reyes, CA; WOM, Ft. Lauderdale, FL; and for WOO, Manahawkin, NJ. These charts show the Coast Station and Ship transmit carriers. The booklet also has a conversion table for UTC/Local Time.

I think the booklet is probably obtainable from any one of the three AT&T High Seas Stations. Mailing addresses (also for QSL's) are as follows:

AT&T Dixon Coastal Radio KMI
P.O. Box 8
Inverness, CA 94937

PENNSUCO AT&T Radio WOM
1350 NW 40th Avenue
Ft. Lauderdale, FL 33316

AT&T Ocean Gate Radio WOO
P.O. Box 550
Manahawkin, NJ 08050

Andy Dimler, WA wrote in asking about a transmission he heard on 8138 kHz that carried various news items relating to Western Hemisphere countries. Andy, this really should have been directed to Bob Margolis, the RTTY Editor, but I am sure Bob won't mind if I take a crack at answering your question. You probably were listening to Prensa Latina (Cuban Press Service) with an indicated frequency of 8140 kHz, RTTY 75/425, callsign CLN219, Havana (Bauta), Cuba.

M. Morton, FL offered two additional frequencies to the list presented in the June '87 POP'COMM article "Strength in Numbers." The two frequencies were 4670 kHz and 6802 kHz.


Cyprus Telecommunications Authority

Our Ref: SS.65

Your Ref:

Mr. Jerry Brumm

U. S. A.



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May 6th, 1987

Dear Sir,

RECEPTION REPORT

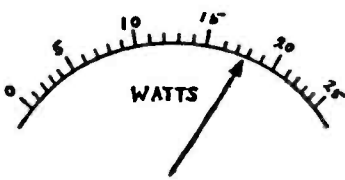
I am directed to refer, and thank you very much for your reception report of the April 12th, 1987..... on one of our transmissions.

Details of our transmission are given below:-

Assigned Fcy	: .14564KHz.....
Call Sign	: .Test Frequency..
Service	: .Radiotelephone..
Transmitter Type	: .TMC NET-10KVA..
Power in KW	: .10KW.....
Aerial Type	: .LPH Bidirectional
Aerial Height	: .140FT.....
Direction	: .East/West.....
Remarks	: .USA (-16qbs)....

Yours faithfully
J. S. Ioannides
CHIEF ENGINEER

Jerry Brum, IL received this AWL from the Island of Cyprus.



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U.S.A.

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FM _____ TO _____ UTC, SINPO _____ RCVR _____
FSE QSL. TNX, 73,

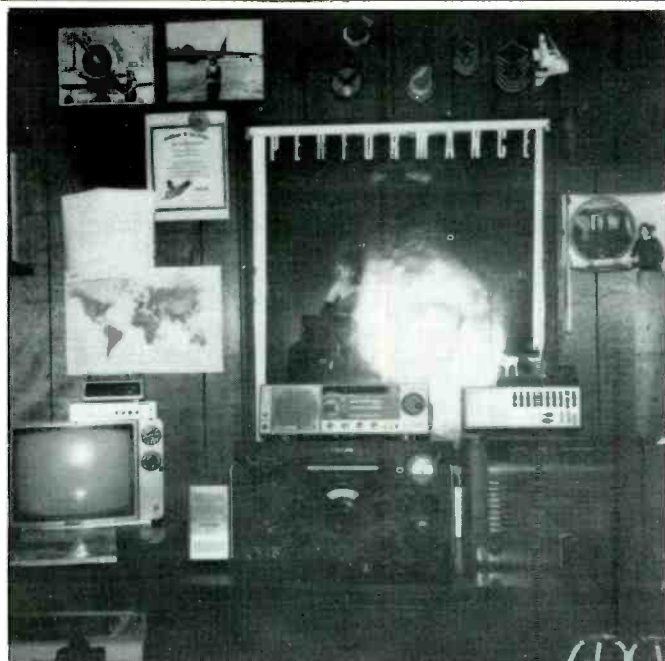
Here is a clever QSL card used by R. C. Watts, KY, registered monitor KKY4CD.

**FROM
RADIO STATION**

Manahawkin, NJ

CALL SIGN	LOCATION			
THIS IS TO CONFIRM THAT PAUL G. BUESCHER (N8HNG), OF 375 BAYSTONE CREEK LN. IN TWINSBURG, OHIO, USA, HAS PROVEN RECEPTION OF THIS STATION AND THE TRANSMISSION INDICATED BELOW:				
DATE	FREQ.	TIME	MODE	TYPE OF TRAFFIC
_____	_____	_____	_____	_____
RECEPTION VERIFICATION				
OFFICIAL STATION				
SIGNATURE & TITLE				

Reception verification received by Paul Buescher, OH, for his intercept of a Beacon station.



Thomas Haygood, GA, owns this equipment. Shown are his Kenwood R-2000, Collins R3888, old RCA tabletop model, Regency Scanner, Vic 20 computer and a MFJ1225 interface. Thomas says he has been into SWL off and on for about 10 years.

Joseph P. Sepulvado, WI says he likes to listen to riverboat traffic on 4410.1 kHz and wondered if there were any other frequencies that carried similar type traffic. Joseph, there sure are other frequencies—see Table 1.

Table 1

WJG	WGK	WCM	WFN
Memphis	St. Louis	Cincinnati	Jeffersonville Louisville
2086	2086	2086	2086
2782	2782	2782	2782
4087.8	4410.1	4063	4115.7
6209.3	6212.4	6515.7	6518.8
8201.2	8737.5	8213.6	8725.1
12333.1	13109.9	12333.1	13103.9
16518.9	17291.8	16518.9	17291.8

Ed. Note: I have also heard WIX Lakin, WV on 6521.3 kHz.

Larry Marshall, CA reports he is using a Yaesu 8800 with a multiband dipole antenna and has lately been doing a lot of checking of parallel frequency use relating to numbers station broadcasts. His results are shown in Table 2.

Table 2

Freqs (kHz)	UTC	Type of Traffic	Mode
6802/9074	0220	SS/YL 4F	AM
6802/5812	0330	SS/YL 4F	AM
8124	0610	SS/YL 4F	AM
Note: 6773 up at same time but with different message			
9074/11532	0100	SS/YL 4F	AM
9074/6802	0200	SS/YL 4F	AM
11532/9074	0100	SS/YL 4F	AM

Tim Tromp, MI has also been doing quite a bit of numbers monitoring and his entries are contained in Table 3.

Table 3

Freqs (kHz)	Details
4028	YL/SS with 5F groups in AM at 0111.
6840	YL/EE with 3/2F groups in AM at 2310.
Note: Parallel to 5090 kHz.	
7404	YL/GG 5F groups in USB at 0045.
7435	5F groups in CW at 0219.
7482	YL/SS 5F groups in AM at 0408.
7663	YL/SS 4F groups in AM at 2030.
7827	YL/EE 3/2F groups in LSB at 0409.
9844	YL/EE 3/2F groups in AM at 2220.
11490	YL/SS 4F groups in AM at 1725.

For you readers who like to follow maritime activity here is a list of ships with their respective callsigns. The list was prepared by Jerry Cody, WA. Thanks a lot, Jerry.

Table 4

Exxon Baton Rouge	Wafa
Exxon Lexington	KIYP
Exxon Princeton	WGDB
Exxon Long Beach	WHCA
Exxon Valdez	WHCB
Exxon Benecia	KPKL
Exxon Baytown	KFPM
Exxon New Orleans	WNDM
Exxon Washington	KIYN
Exxon Wilmington	WBBL
Exxon Houston	KHBA
OMI Hudson	KNJL
OMI Champion	KIGP
Sealand Endurance	KGJX
Sealand Liberator	KHRP
Sealand Independence	WGJC
Sealand Defender	KGJB
Sealand Innovator	WGJF
Overseas Boston	KRDB
Overseas Chicago	BVCS
Overseas Juneau	WWND
Overseas New York	WMCK
Sansinena 11	WSIL
ARCO Spirit	KLHD
Chevron Colorado	KLHZ

Tim Tromp, MI sent along a note with his loggings. Tim indicated he is 15 years old, has been DX'ing for about three years, and really enjoys "UTE" monitoring the most. I am always happy to see new contributors sending in intercepted items. I want to encourage those readers who have not as yet shared with us to do so.

In an interesting letter from Patrick O'Connor, NH he mentioned receiving a nice QSL for a RTTY reception of CETEKA (Czech. News Agency) station OX5. "Although the station normally doesn't verify reports from individual listeners, the person at the station filled out my PFC as a courtesy to a fellow SWL! Just goes to show that there is no such thing as a station that will never QSL!"

Patrick also forwarded two addresses for USAF weather recon unit aircraft.

GULL No.
Aircraft Commander/Communications Officer
c/o 53rd Weather Recon Squadron
Keesler AFB, MS 39534

TEAL No.
Aircraft Commander/Communications Officer
c/o 815th Weather Recon Squadron
Keesler AFB, MS 39534



Jerry Cody, WA took this fine photo of the USS Vincennes, CG-49. The ship, commissioned 6 July 1985, is 567 feet long and 55 feet wide. Weighing in at 9400 tons, it is one of the larger of the ships comprising the 1987 fleet. It employs an AEGIS missile system to defend against enemy missiles. Note all the antennas including some COMSAT dishes. Callsign: NVIN.

Pat went on to say that both of these units fly the WC-130H "Hercules" transport aircraft in weather recon missions. "They seem to be good verifiers overall. Between the two units, I have seven out of eight reports verified."

Wayde Carlson, MT wanted to know what the "KL-43" was. While specific details on this equipment are of course not readily available to the public, the item has been identified as a cryptographic device used by the U.S. Government.

In addition to the report on jamming signals, Table 5, Jeff Hall, WA provided some other great loggings plus an informative letter. In part, here is what he had to say. "The fishing fleet out of Seattle in Alaskan waters on 4125 kHz USB has heated up considerably with nearly nightly loggings of Coast Guard rescues of sinking bottom scrapers and adrift salmon boats . . . It is a miracle that so few real casualties occur up there."

Table 5		
kHz	UTC	Details
9520	1520	Jammers NU, SK, RA working on RFE/FRG Relay
9680	1513	Jammer RB over VOA Middle East Service
9705	1508	Jammers RA, NF working on RFE/Biblis FRG Relay to E. Europe
11805	1531	Jammer NU, noted on 9520 also, working on RFE/FRG Relay
11835	1535	Jammer KM over VOA USSR Service but also jamming RM Tashkent Service
11875	1544	Jammer IL over RFE
11915	1547	Jammers RA and GD7 over Deutsche Welle USSR Service
15235	2053	Jammer 4F working on unidentified Arabic station
15370	2046	Jammer MW over RFE/FRG Relay. MW also heard on 15380 where RFE is sending RR via their Portuguese Relay. Also MW appears on 15290 against the RFE/RL RR Service via Pals, Spain.
15485	1550	Jammer AL over Kol Tel Aviv RR Service

Jamming signals observed by Jeff Hall, WA.

Jeff also advised he had discovered a book that he highly recommends to anyone interested in Soviet Maritime activity. The title is *Understanding Soviet Naval Developments*, (NAVSO P-3560). The cost for this paperback is \$6.50 and it contains moderately detailed descriptions of the entire class structure of the Russian Navy, from subs to the smallest patrol craft. The book bears catalog number 0515-LP-945-6003 and can be ordered from:

Commanding Officer
 Naval Publications and Forms Center
 5801 Tabor Avenue
 Philadelphia, PA 19120

In closing, Jeff reported that the "Cascade Mountain DX Club" had folded. This was a regional radio club with most members residing in Washington, Oregon and Canada. Perhaps this is just a temporary thing and Editor/Publisher Guy Atkins will soon be able to resume publication of the very fine, professional appearing, twice-monthly *SW Monitor*. I had received several issues of this club bulletin and while the content had initially been SW Broadcast oriented, UTE loggings had just recently been added. Thanks, Jeff, for all the items you contributed.

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News Flash

I just learned from Patrick O'Connor, NH that time is growing short for obtaining QSL's from British time station MSF because the station will cease operations in February 1988. The station can be heard with CW identifications every 10 minutes, under WWV/WWVH on 2500, 5000, and 10000 kHz. The address is:

Standard Frequency Service
 National Physical Laboratory
 Division of Electrical Science
 Teddington, Middlesex TW11 0LW
 United Kingdom

Patrick also said that rumor has it that Australian time station VNG (Lyndhurst) is also doomed, but no time frame has been reported. VNG operates on 4500 kHz (0945-2130 UTC); 7500 kHz (2245-2230) and 12000 kHz (2145-0930). Identification is every 15 minutes by voice. The address is:

Radio Station VNG
 Reference Measurements Section
 Telecom Australia Research Laboratories
 Box 249
 Clayton, VIC 3868
 Australia

As always, Pat, thanks so much for this timely contribution.

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identifier/location
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)

**UTE Station Intercepts
(All Times Shown Are UTC)**

224: Beacon GVA, Henderson, KY at 1453 (J.M., KY).
 281: Beacon SGK, Knoxville, TN at 0613 (J.M., KY).
 306: Beacon R, St. John's LS, FL at 0637 (J.M., KY).
 308: Beacon EQZ, Seymour, IN at 2055 (J.M.).
 332: Beacon QT, Thunder Bay, ONT at 0701 (J.M.).
 365: Beacon JET, Frankfort, KY at 0448 (J.M.).
 374: Beacon OVO, N. Vernon, IN at 1529 (J.M.).
 388: Beacon CDX, Somerset, KY at 1650 (J.M.).
 395: Beacon XEN, Xenia, OH at 1410 (J.M.).
 396: Beacon GOI, Ft. Knox, KY at 1411 (J.M.).
 398: Beacon G, Windsor, ONT at 0311 (O'Connor, NH).
 400: Beacon G, Charlottetown, PEI at 0607; Beacon FGX, Flemingsburg, KY at 0633 (J.M., KY).
 530: Beacon YCH, Chatham CFB, NB at 0400 (O'Connor, NH).
 3295: SS #'s w/5F at 0511 (McDonough, PA).
 3379.5: Un-ID CW sta w/5L gps at 0621 (Bob Margolis, IL).
 3485: New York Radio w/aviation wx in LSB at 0407 (McDonough, PA).
 3963: "Operation Shakedown" (MO earthquake drill) Net Control Frequency w/NCS's KA0IPM, KOORB, WA0FYA hrd LSB 1445-1930. Part of Missouri Emergency Operations & Weather Net (A. Nonymous, MO). A good freq to mark down for reference-- Ed.
 4020: Missouri Army MARS net in LSB at 1550 w/AAR7NF (Hillsboro) passing Operation Shakedown tfc to AAA7MO (Pierce City) (A. Nonymous, MO).
 4125: Fishing vessel *Anna Marie* foundering in bad wx & rough seas 24 miles off Gore Pt., AK wkg NOJ, USCG Commsta Kodiak which was conducting several simultaneous SAR's. CG-1707 (an HC-130) returning from an earlier mission diverts & works vessel here & on 5696 kHz along w/NOJ. CG-1707 reports fuel-critical and while on-scene of vessel is unable to pick up pumps at life rafts; also says has only 6 survival suits for 7 crew members. CG-1970 (a HH-3 helo) later arrives at scene and switches to marine VHF freqs. Meanwhile helo CG-1485 is enroute fishing vessel *Eric J.* which is dead in the water south of Montague Island. All USB around 0557 (Hall, WA).
 4223: ZRQ2/3/4/5, Simonstown Naval R., RSA w/CW call marker, but buried 'neath RTTY at 0100 (Ponak, NC).
 4878: SS/OM ops in USB at 0507 w/sta Romeo Kilo Primera wkg several stas, but weak sigs (Hall, WA).
 4950: SC-12 answering called from SC-9, USB at 1633. These are Missouri National Guard units (A. Nonymous, MO).
 4953: CW sta at 0058 running 5L/F gps at 10 GPM. Possible unwanted station breaking in. Suddenly silent at 0108. An SSB station popped up but unknown if related (Ponak, NC).
 5230: CW net at 0657 w/stas VK & VC wkg eachother for time checks. May be connected to similar ops on 4890. Other stas here too, but weak (Hall, WA).
 5233: These CW stas might be some guys logged on 5230. Sent 2L gps then PS WK PS WK QXG QXG K. Hrd at 0610 (Hall, WA).
 5322: Two OM/EE Canadian bottom fishing vessels inbound from Bering Sea to Victoria, BC in USB at 0500-- talk of fish, depth, docking, etc. No ID's or callsigns used (Hall, WA).
 5550: New York Aeradio wkg various airliners w/position reports & wx, USB at 0242 (Haygood, GA).
 5610: Continental Air 30 in USB at 0044

to New York Aeradio. Aircraft #606 from Miami to London having no joy w/#3 engine asking for patch to Continental maintenance (Haygood, GA).
 5696: Miami USCG to CG Rescue #143 (near Portsmouth, VA) w/info on SAR mission, USB at 1447 (Haygood, GA).
 6418: DGF, un-ID sta w/FRG allocated call in CW at 0115 w/call marker (Ponak, NC).
 6509: KVJ, Pacific Marine Center, Seattle, WA in USB at 1736 wkg WTES, NOAA ship *Surveyor* & exchanging morning reports. Alternate freq is 4431.8 kHz (Hall, WA).
 6553: South Pacific aviation tfc in USB at 0640. ID's as "Nandi" (Fiji) aii (Hall, WA).
 6630: Southern Calif. area commercial fishing boats in USB at 0315, rather "salty" language adds a touch of macho color (Marshall, CA).
 6655: Singapore #12 in USB at 1348 giving Honolulu flite position report (Szalony, CA).
 6738: MQP, the RAF, Upavon, England in USB at 0400 w/wx bc (Margolis, IL).
 6812: SAM-970 in USB at 1534 w/US Secretary

of State aboard. Passed several 'phone patches, then shifted to 11180 LSB (A. Nonymous, MO).
 7528: CW sta at 0642 w/cut #'s using ADGIMNR-TUW system (Hall, WA).
 8002: 9YJ3 in CW at 1313 w/VVV DE 9YJ3 QSA IMI (J.M., KY). Similar callsigns reported 2 years ago on 10814.6 & 13453.6 kHz & at various other times/freqs. Believed to be a Soviet circuit-- Ed.
 8048: QRA DE D60 sent in CW at 0640. Auto sent msg NR 67 -EAG- A1503 GR120 BT then into 5L gps (Hall, WA).
 8063: YL/Hebrew in USB at 2335 with 3/2F grps. Repeated 2338-2350 (Margolis, IL).
 8198.1: ICCO, ship *Carla C* in USB at 0412 w/patch via WOM (O'Connor, NH).
 8291: Intership net in USB at 0541 w/cruise liners *Holiday/3EYK3*, *Carnival/HOKL*, *Jubilee/ELFK6*, *Tropicale/ELBM9*, *Mardi Gras/3EQN*, & *Festivale/HPPFG* (Hall, WA).
 8568.7: XFM, Manzanillo Colimas, Mexico calling CQ in CW at 0206 (Tromp, MI).

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8679: IQX, Trieste, Italy w/call marker in CW at 0135 (Tromp, MI).
8696: PKF, Makassar, Indonesia in CW at 1326 calling CQ then into tfc (Hall, WA).
8698: 9MG2, Penang, Malaysia w/CQ tape in CW at 1329 (Hall, WA).
8830: Un-ID sta in SSB at 0438 w/wx (McDonough)
8987: McClellan AFB in USB (/11239 kHz) at 2205 w/aviation wx bc; at 0205 lagged UDAF tanker Kuala 36 regarding refuelling of two F-16's in Area 603 (Marshall, CA).
9042: Beacon U in CW at 1400 (Szalony)
9073: YL/SS in AM at 0100 rptng 411 1-0 until tones at 0110, then Grupo 166 & into 4F gps. Similar ops previously reported on 5238 kHz. Has anyone suggested a 2-week cycle repeat for time/freq for these stas? I've been watching them & suspect a pattern (Ponak)
9117.7: PCW1, MFA The Hague, Holland in CW at 0010 w/ID marker & ARQ phasing sigs (Margolis, IL).
9890: Un-ID CW sta at 0240 repeating "8955" continuously until 0245 (Lingenfield, PA).
10053: New York Radio w/wx for North Atlantic region US airports, USB at 0140 (Ponak).
10075: VR BJQ aircraft giving position report to Houston Center, USB at 0250 (J.M., KY).
10470: YL/EE w/5F gps, AM mode at 2158 (J.M.).
10620: Un-ID MCW sta at 0301 sending 973 several times then into 5L/F gps (J.M., KY).
11179: Loring AFB, ME w/SAC EAM in USB at 1650 (J.M., KY).
11239: USN flight Romeo Uniform 442 in USB at 2340 w/patch to Miramar NAS. Needed 6,000 lbs of fuel (Marshall, CA).
11288: Rockwell Flight Test (location not known) in USB at 2206 to Gulfstream 380TT regarding cams problem (J.M., KY).
11300: SUC, Cairo Aeradio, Egypt at 2128 in USB calling Aiflight (Aeroflot?) CW702 (O'Connor, NH).
11420: YL/EE at 0435 w/5F gps (McDonough, PA).
11430: SPW (Polish call allocation) calling CQ in CW then into RTTY (Rappel, IA). Time not given, but this seems to be Warsaw Radio, a maritime sta-- Ed.
11495: DHQ3 (an FRG allocation) in CW at 0521 w/lengthy callup then into cut # tfc (Hall, WA).
11606: Un-ID CW sta at 1135 repeats cut #'s 4VA4 6MAV (Margolis, IL).
12075: Un-ID CW sta at 1809 w/5L gps (Margolis).
12499: CLF95 (Cuban callsign alloc.) in CW

at 0322 sends MWMMWV De CLF95 VVV then later calls CLXU12. Comms may be in EE (Hall, WA).

12546.5: 3EV53, Alexia II in CW at 1541 then calls RKB, Moscow Meteo, USSR. Also called RKB on 12547.5, 12548.5 ("Up 581 K") then back to 12546.5, apparently no luck w/establishing contact. Never went to 12581 kHz. Ship is a Panamanian tanker (Margolis, IL).

12549: HLG, Seoul, S. Korea in CW at 0333 calling CQ (Kirk, CT).

12555: 5LZB, Pac Glary calling NMR in CW at 1700 (Rappel, IA).

12657.5: JNA, Tokyo, Japan in CW at 1454 calling CQ (Szalony, CA).

12705: DHJ59, FRG Navy in CW at 2230 calling G23B (Kirk, CT).

12709.3: 9HD, St. Georges, Malta, in CW at 0915 w/VVV marker (O'Connor, NH).

12710: FJP23, Naumea, New Caledonia in CW at 0445 calling CQ (Rappel, IA).

12754: UDK2, Murmansk, USSR in CW at 0555 clg 4LS-- also listed as Murmansk! (Rappel, IA).

12755: UTA, Tallinn, Estonian SSR in CW at 1716 w/4F gps. Was rapidly keyed until 1718, then telegrams in RR to various ships (Margolis, IL). See "Historic Ham QSL's" in this month's issue for some background on the Estonian SSR-- Ed.

12788: JFA, Chuo Fisheries Radio, Japan calling CQ in CW at 1320 (Kirk, CT).

12969: XSV, Tianjin, PRC calling CQ in CW at 1249 (Kirk, CT).

13244: GULL-05, a USAF WC-130H wx recon aircraft, in USB at 1817 wkg Lajes AFB, Azores passing 'phone patches (O'Connor, NH).

13247: Navy 49676 (member of Joint Chiefs aboard) in LSB at 1648-1725 running patches thru Andrews AFB while enroute Washington, DC (A. Nonymous, MO).

13382: GFT, Bracknell Meteo, England w/CW call marker at 1900 (Tom Kneitel, NY).

13404: Un-ID CW sta at 1710 w/5F gps, zero was cut as letter T (Margolis, IL).

13615.5: SON261, Warsaw, Poland in CW at 2059 w/fc list (Margolis, IL).

13638: Beacon D in CW at 1826 (Margolis, IL).

13732: KGA67 in CW at 1417 calls KGA66 & vice versa. At 1420, KGA66 sends 5L tfc, then KGA67 replies in kind. Xmsns end at 1432 with #8 TI AQS TM SK (Margolis, IL). Our guess is that it's a federal agency-- Ed.

14100: JAZIGY & KH60/B ham beacons. The 1st one is in Ise City, Japan, the other is in Honolulu. In CW at 0654 (Hall, WA).

14443: LGB, Rogaland, Norway in CW at 1131 w/nx in Norwegian (Margolis, IL).

14498: "Moscow Radiotelephone Station transmission for circuit adjustment purposes," voice mirror (VM) recording repeated by EE/YL in LSB at 1212 (Kneitel, NY).

14559.9: XG0XT, un-ID sta in USB at 1532. OM/EE op sending coded tfc to XAP24 & XFJ7L (Margolis, IL).

14946: CLP1, Havana, Cuba in CW at 2056 w/call marker (Lingenfield, PA).

15024: CCCP-86523, an Aeroflot aircraft in CW wkg COL, Havana (O'Connor, NH).

15863: Un-ID sta in CW at 0155 w/5F tfc, cuts zero as letter T, aff 0253 (Margolis, IL).

16455: Un-ID CW sta at 2316 w/hand sent 5F gps, excellent "fist." Sent about 200 groups then slowly sent BT ASM twice, followed by hi-speed dots, then NW NW, followed by mare 5F groups. Each time op resumes groups the text is led-off with 111770 (Hall, WA).

16457: Possibly some CW sta/op logged on 16455, but heard at 2306. Loggings about 3 weeks apart, this time sta sent prefixes NR 11T GR119 NR119 GR61, then ASM BT sent X2 & into 5F cut # tfc. Ended up w/BT QRU SK sent twice. Again hi-speed #'s, the lead-ins slowly (Hall, WA).

16587: KHT, Rockwell Int'l, Cedar Rapids, IA in USB at 1714 w/patch for Exxon Yorktown (WFKW) (J.M., KY).

16912: SUH, Alexandria, Egypt w/VVV marker in CW at 1742 (O'Connor, NH).

16936: CLF95 (Cuban allocation) in CW at 1809 w/callsign marker, but QRM'd from a signal that occupied 16933-16988.5 kHz (Kirk, CT).

16925: URL, Sevastopol, USSR in CW at 1403 w/call marker (Kirk, CT).

17093.6: JOR, Nagasaki Radio, Japan at 1213 calling CQ in CW (Kneitel, NY).

17175: CLS, Havana, Cuba (fishing industry HQ's) calling CQ in CW at 1915 (Lingenfield, PA).

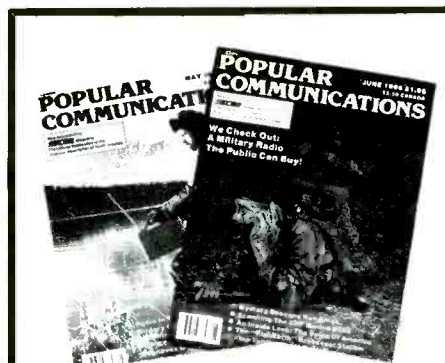
17189.6: D3E71, Luanda Radio, Angola in CW at 1219 calling CQ (Kneitel, NY).

18020: Army Aircraft #23145 in USB at 2024 w/patch request via Albrook AFB (Lingenfield).

19955: Beacon K8 in CW at 1900 (Margolis, IL).

20225: NAM, USN Norfolk, VA w/wx in CW at 2104 (Lingenfield, PA).

22707: WLO, Mobile Radio, AL w/wx & tfc list in USB at 2308 (J.M., KY).



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NEW AND EXCITING TELEPHONE TECHNOLOGY

R & R For Your Telephone

Is your phone beginning to look a bit tired and tacky? Wondering if you will ever get the mystery goop off the handset? No problem. What your phone needs is some R & R. No, not a weekend in Bangkok, R & R in telephonese is Repair and Refurbishment.

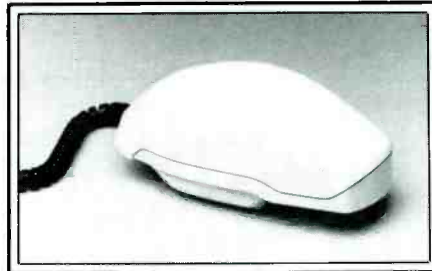
Telephone equipment is remarkably rugged and will last for years. Whereas the phone may work flawlessly, over the years dirt, grime, wear and tear will take its toll. Way back when the Bell system owned and designed all of their equipment, phones could be repaired and refurbished easily. In the old days, when a subscriber moved, the phone company picked up the phone and took it to an R & R center. What came out the other end was a phone that looked new. Your "new" phone supplied by the phone company could have been ten years old. These days AT&T sells refurbished phones in its phone stores. These phones look new, are fully tested and are excellent value for the money. By the way, one of the reasons for modular cords was to make phone refurbishment easier.

The repair part of R & R usually consists of swapping out parts from phones that don't work. The working parts of a phone consist of connectors, the transmitter (microphone), the receiver (earpiece), bell, dial, speech network, hook-switch and cordage. If you're doing your own repairs, you can either cannibalize these parts from other phones or purchase them from phone equipment distributors.

The plastic that an American or a good quality imported phone is made of is called ABS, usually referred to as "T grade ABS." Some cheap and nasty phones use polystyrene. Polystyrene is light and fragile. ABS will withstand high temperatures and considerable abuse such as several drops onto a concrete floor.

For simple day to day cleaning of a phone, *Windex* is adequate. For heavy duty dirt, grease, grime and pizza remnants, *Fantastik* does an excellent job. For those of you with the Howard Hughes complex, a disinfecting cleaner can be used, but I have good news for you. Despite the fact that phones are held up to the head, they don't appear to be a vector of contagious disease. Bell Labs looked into the problem years ago and found that diseases are not transferred via telephone handsets.

So much for just keeping the phone clean, but what about taking that battered thing off the table and making it look like new. The R & R companies do this on a mass production basis, but the same techniques can be used on an individual



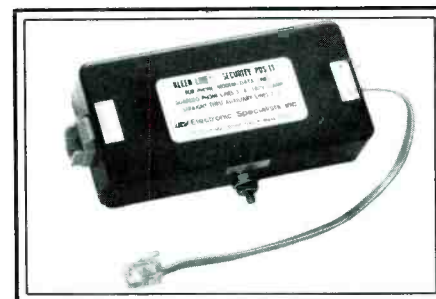
The "Grillo," a new designer phone from Italy. Yes, the plastic case is ABS.

phone. Some of the things the pros do may seem a bit drastic, but they work.

When touring one of these establishments, it can be a real surprise to see a regular *Maytag* washing machine in the middle of a hot wash cycle. No, the staff doesn't do laundry at work. In the *Maytag* is ten pounds of curly handset cords. Yes, well-made handset cords that meet the full AT&T specs will do well in the washing machine. For domestic harmony's sake, do not try to slip a couple of black 25-foot cords in with the socks.

If you are going to give the phone a real going over, the first thing to do is disassemble it. Separate the electronics and metal from the plastic. First step is to remove the cordage. Open the handset, usually by unscrewing the end caps, and remove the receiver, transmitter and wire. Don't forget the little piece of cotton wool in there. (If you have a modern "K" type handset there may be some screws in the handset, then you have to grab it along the longest length and push on it until the two halves pop.) Taking the top shell off the base is usually just a question of a couple of screws.

For a Touch-Tone phone, there is a face-



Possible relief from RFI on your phone or modem. The "Kleen Line" RFI filter and protector. Available from Electronics Specialists, Inc., Natick, MA.

plate and, of course, the number to be opened with a paper-clip. A rotary dial phone can have the dial disassembled. This is done by opening the round number window, still using the special tool known as a paper-clip. Beneath that, real tools like screwdrivers are needed to further disassemble the thing. All the above makes the rash assumption that the phone is a standard U.S.-made desk phone. If you are working on any other kind of phone, you're on your own. Use common sense and a note pad to take phones apart the first time—a *Polaroid* camera helps.

All the plastic needs to be cleaned and degreased. As it is metal free, it shouldn't rust and can be popped in the family dishwasher. I can also be soaked in a bowl of detergent and water. Or, you may just spray with *Fantastik* and wipe.

If there are any mystery stains left, certain solvents may be tried. Safe on ABS are denatured alcohol (shellac thinner) and mineral turpentine (paint thinner). Acetone should be safe, but some of it seems to have other solvents in it which soften the ABS. Do not use MEK (Methyl-Ethyl-Ketone) which is a solvent of ABS. In fact, if the phone is cracked and needs repair, it can be cemented with MEK or ABS cement sold in plumbing supply stores. Don't forget to read those warning labels.

The phone should now be squeaky clean, but it may be scratched. Fine scratches can be removed, but there is no hope for deep gouges. To polish the phones and remove scratches, the professionals use a buffing wheel and a fine abrasive called *Tripoli* paste. At home you may use rubbing compound or car polish. Metal polish such as *Brasso* can also be used for really fine blemishes. The best job would be done with coarse and fine rubbing compound finished off with car polish. With care and perseverance it is amazing how you can restore that "showroom finish" to your battered relic.

The cordage, handset cord and line cord, can be soaked in detergent and water or sprayed and rinsed just like the plastic shell. Curly cords can be rewound on the handle of a wooden spoon. If the cordage is really battered, bite the bullet and buy some new. It's inexpensive.

So there in a nutshell is all you need know to snazz up the phone. The same techniques can be applied to radio cabinets and other electronics. Be warned, though, that not all expensive electronics boxes use high grade plastics such as ABS and polycarbonate. Before you splash the cleaners and paint about, try them on a hidden part first.

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

The French Connection

Radio Determination Satellite Services

NOAA's Polar orbiting Advanced Tiros-N weather satellites do more than broadcast video pictures of weather conditions. They carry two other important systems: Argos and SarSat. Both are French-designed equipment packages. SarSat is the U.S. version of the International Search and Rescue transponder, which is a joint project of Canada, France and the U.S. The French also supply the same onboard equipment for the Soviet's version of SarSat known as COS/PAR. It is carried by Soviet Meteor weather satellites.

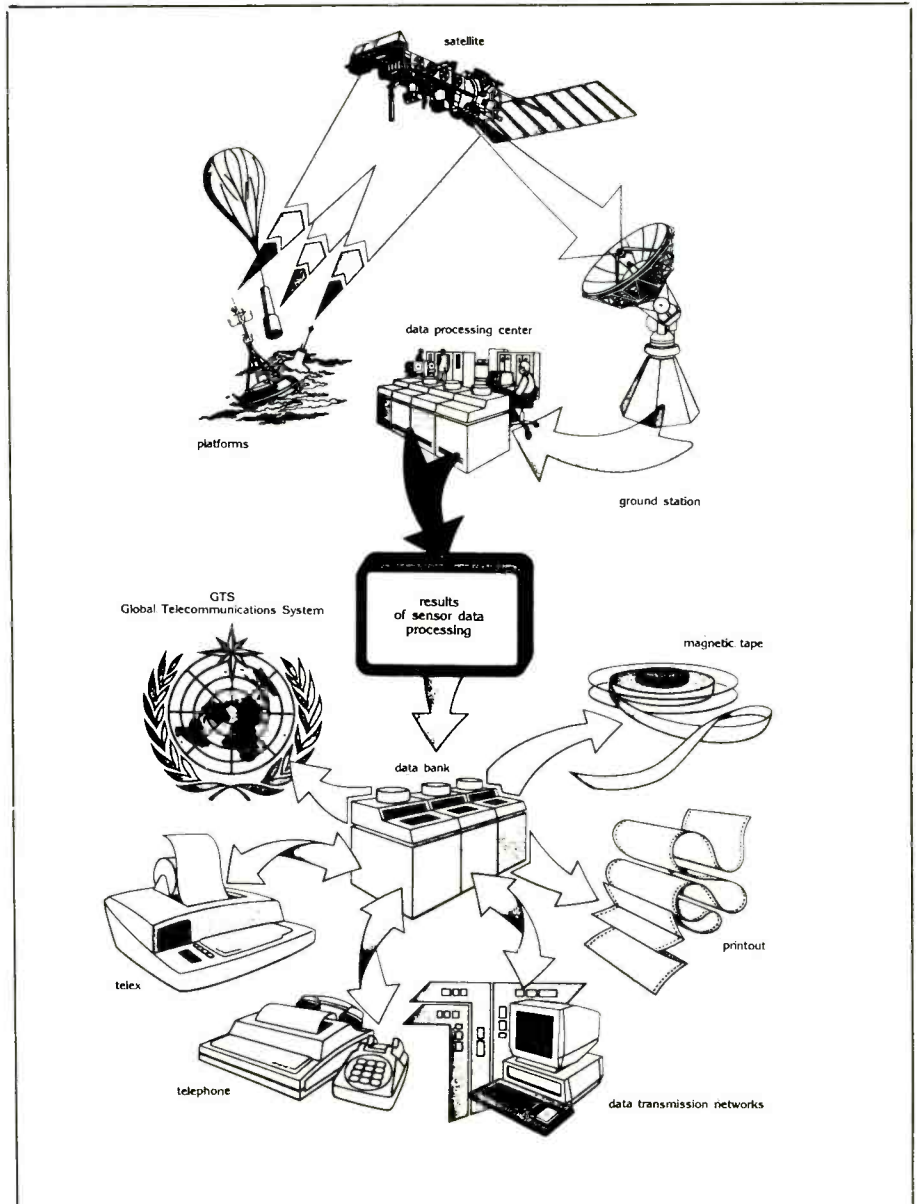
Argos

Argos is a meteorological data collection and radiolocation system. It uses doppler tracking techniques (an apparent shift in frequency noted as the spacecraft passes over the transmitting station). This is the same way the SarSat system locates emergency Search and Rescue transmitters. Argos tracks weather balloons, ocean weather buoys, ship and aircraft weather platforms and remote and isolated weather stations. The system simultaneously collects basic weather information, temperature, wind speed, ocean currents, humidity and barometric pressure. The system has even been used to track the migration of whales, caribou and birds. Argos can locate a transmitter with an accuracy of three miles.

The weather and radiolocation platforms transmit data to the satellite on a frequency of 401.65 MHz. The signal consists of encrypted data sent in four to nine milli-second bursts at one to three minute intervals. The satellite is capable of receiving and processing 1,200 signals at a time. The satellite then relays this information to one of three ground stations: Wallops Island, VA; Gilmore Creek, AK; and Lannion, France. These ground stations send the data by cable to CNES (National Center for Space Study) in Toulouse, France for storing and distribution. It is from this center that a worldwide weather service, known as World Weather Watch, has been established. They supply global weather information to governments and commercial users around the world. The information is sent to users via telex, telephone data and computer terminals.

Geostar

The Argos and SarSat systems have been operational since 1978. The reliability and



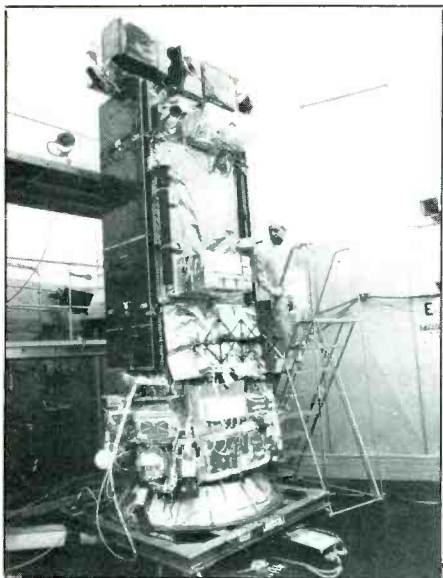
Argos data processing. (Courtesy CNES.)

Advanced Tiros-N Frequencies

	Downlink (MHz)	Uplink (MHz)	Mode
Argos	136.77/137.77 1698/1707	401.65	PSK
Command Link		148.56	AM/FSK
SarSat	1544.5	121.5/243/406	

Geostar Frequencies

	Downlink (MHz)	Uplink (MHz)	Mode
Geostar	2483.5-2500.0	1610-1626	
Command Link	5117-5183	6500	Spread spectrum



NOAA's Advanced Tiros-N weather satellite, which also carries Argos and SarSat transponders, being readied for launch. (Photo courtesy of NASA.)

accuracy of the SarSat system is such that the French Space Agency (CNES) has announced that they will offer worldwide radiolocation services, known as the Radio Determination Satellite Service (RDSS), to government agencies and commercial transportation companies. This service will use the Argos/SarSat technology to monitor the movement of trucks, planes, ships and company cars. An agency or company will be able to pinpoint the exact location of their freight and personnel.

An American corporation, Geostar, will market this service in the U.S. This will be a test market for the service as demand is expected to be greatest in the U.S. Geostar is expected to launch its first satellite in 1987. A total of six spacecraft should be in orbit by 1994. According to Stephen Cheston, Geostar's Senior Vice President, the Geostar satellites will be controlled by a spread spectrum command link. This will provide high security for the spacecraft. The uplink will be on 6.5 GHz. Downlink for telemetry will be between 5.1 and 5.2 GHz. The main transponder will have an L-band uplink of 1.6 and a S-band downlink of 2.4 GHz. Rather than dedicated spacecraft, Geostar transponders will be carried into orbit on host satellites. GTE's Spacenet may carry the first transponder for the Geostar system.

The handheld transceivers used in the Geostar system will measure six by four in-

ches and have two modes of operation, automatic and manual. In the manual mode the push-button keypad can be used to send specialized data. The automatic transmitters on motor transport will be miniaturized and provide location information only.

International RDSS

The French will launch their own RDSS system, Locstar, during 1990. It will serve Europe, North Africa and the Mid-East. In May of 1987, ten countries met in Paris to discuss plans for an International Radio Determination Satellite Service. The French, Australian (AUSSAT), Indian (ISRO), and Chinese (CAST) space agencies are trying to standardize construction and frequency use for an International fleet of RDSS spacecraft. They met with the WARC (World Administrative Radio Conference) Mobile Service Conference in October to discuss the proposed frequency allocations.

The French are making quite a mark for themselves in two areas of space exploration—international cooperation and spacecraft instrumentation. For example the Argos/SarSat equipment packages, found on both Soviet and U.S. satellites, have paved the way for the new RDSS service. The French equipment on the Soviet's Vega probe, which intercepted Halley's Comet, gave an international body of space scientists assembled in Moscow an extraordinary view of the comet and detailed analysis of its make-up.

Perhaps the most impressive French system is the Spot earth resources satellite. It may be the best unclassified photo imaging system in use today. The U.S. government is so impressed with it, it plans to use Spot equipment on the next generation of U.S. weather satellites. It's also interesting to note that the government recently gave a research grant to Space Services Incorporated (SSI) of Houston, Texas. They are looking for ways to improve U.S. photo imaging technology in order to surpass the capabilities of the Spot system. If successful, SSI's new system will also become part of the SDI (Strategic Defense Initiative).

It's interesting to note that due to the shortage of U.S. spy satellites, or more accurately, a shortage of launch vehicles to place them in orbit, the CIA has been placed in the embarrassing position of paying the French for the use of their Spot satellite to fill the gaps in our own system!

Send your comments, questions and suggestions to *Satellite View*, c/o *Popular Communications*, 76 North Broadway, Hicksville, NY 11801.

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CIRCLE 51 ON READER SERVICE CARD

RADAR REFLECTIONS

RADAR DETECTORS AND THEIR USE

BY JANICE LEE

Georgia Town Courts Speed Trap Reputation

If you're passing through Sasser, GA, on U.S. Route 82, heed the signs that say 45 mph. Unlike many small towns, Sasser is working to earn a reputation as a speed trap.

Located near Albany in the southwest corner of the state, Sasser has no police department of its own. Nevertheless, Mayor Jim Varner says, "We're going to slow down the speeders through Sasser. We want to be a speed trap." Enforcement will come from the Georgia State Patrol and the Terrell County Sheriff's Department, both of which have agreed to begin issuing speeding tickets in Sasser.

U.S. 82 curves through the town, creating a blind spot for motorists trying to cross the highway where it intersects with Main Street. In March an elderly woman died in a two-car accident at the intersection.

Insurance Suspended For Detector Violations

Through persistence Dr. George Meredith of Norfolk, VA, was able to convince his insurance company that radar detector citations are non-moving violations. The result was that the Erie Insurance Group reissued Meredith's policy, deleting the three radar detector violations it showed on his and his wife's driving record.

In 31 years of driving, Meredith had not been cited with a single moving violation; his wife had three speeding violations that were over three years old. Yet because three radar detector citations were logged as moving violations by their insurance agent, the couple was refused coverage.

In fact, the agency, W. Taylor Johnson Company of Virginia Beach, informed Meredith that "a radar detector conviction is considered a major violation," and observed that "if a person uses or owns a radar detector device, they are more apt to break the law by speeding and more likely to be involved in an accident." Ironically, the speeding tickets were all Mrs. Meredith's, the radar detector citations Dr. Meredith's.

Through RADAR's efforts, the Merediths and their attorney questioned the agency's attitude toward radar detectors and its interpretation of state law and the couple's policy was finally reissued—without the radar detector citations.

Montana Highway Patrolman Defends Wife In Speeding Case

Montana Highway Patrolman Rodger Bovee testified recently during a hearing on his wife's speeding ticket that Bozeman police officers aren't certified to handle radar equipment, so their readings may be unreliable. The hearing was called to suppress

evidence of a radar reading taken by Bozeman police.

Bovee was testifying for his wife, Rena, who was arrested for allegedly speeding.

It was only the third time in his 13 years with the Highway Patrol that he had testified on the accuracy of radar equipment, Bovee said. The last two times, he was defending the accuracy of the equipment because he had written the speeding tickets.

Rena Bovee was arrested by Bozeman Police for allegedly going 29 mph in a 15 mph school zone. She was found guilty of the offense and appealed the verdict.

Rodger Bovee testified that he had received radar training from the Montana Highway Patrol's radar instructors in Helena, and was certified to measure speeders with all types of radar equipment.

"Many factors can interfere with the accuracy of radar equipment. Untrained officers can feel the vehicle nearest them is the offending vehicle," Bovee said.

City prosecutor Karl Seel said Bozeman police could read the radar equipment accurately, though they hadn't been certified.

Bovee estimated that the police officer who arrested his wife was using a handheld radar device from a patrol car parked about 415 feet away.

After the arrest, Bovee said he used his radar equipment in the same area where his wife was arrested. He said that although there were no cars in that area, his radar set registered 20 to 25 mph.

"I use radar for a living," Bovee said. Radar is an excellent device to enforce the speed limit, but "officers should be properly trained and the equipment should be working well," Bovee said.

Gallatin District Judge Joseph Gary will rule on the case.

'Speed Trap' Cops Booted From Town

An angry Sheriff Jim Hickey ordered four police officers from Kendleton, TX to leave Nueces County because he said they were using intimidation to collect fines levied in an alleged speed trap.

Sheriff Jim Hickey confronted the Kendleton officers when they showed up on the doorstep of Hickey's neighbor threatening to arrest him and take him to jail in Kendleton, located on U.S. Highway 59 some 200 miles away, if the neighbor did not pony up a \$400 fine on the spot.

Hickey termed Kendleton, located about 50 miles southwest of Houston, "nothing but a speed trap" and said he had a firsthand experience with the town's law enforcement last summer.

Hickey said he was pulled over for allegedly speeding in Kendleton, but was not speeding and was not issued a ticket once the officer learned he was a sheriff.

The sheriff said it was legal, but not common, for police to go to other cities to collect overdue fines, alleging that the "vast majority" of the 200 arrest warrants that the Kendleton officers brought seeking some \$20,000 in fines "are drawn up from false complaints."

"If anyone's rights were violated," Sgt. Lee Ward of Kendleton said, "it was ours when the sheriff ordered us out of the county. I've never been so humiliated in my life. But we'll be back."

Ward said Corpus Christi police assisted Kendleton officers in tracking down addresses of people named in the warrants, but Assistant Police Chief Ken Bund said the local officers "didn't know any better."

"We've been told to tolerate but not to cooperate with members of the Kendleton Police Department. They come here frequently, and we don't condone the way they harass people," Bund said.

Man Harassed For Protesting Speed Trap On Own Property

A Corry, PA, man complained about a state police radar trap on his own property, and for his trouble troopers cited him with two minor vehicle equipment infractions.

Peter Baker is calling the action police harassment.

Baker, who owns a livestock auction house at the outskirts of this northwestern Pennsylvania town, says radar-equipped state police have frequently set up in his parking lot, where the speed limit changes from 55 to 35 mph. "Over the last three years I've told them seven or eight times that I don't want them here. It's bad for business," he comments.

However, this past January when he arrived one morning to find an unmarked police car parked there, he again told the troopers he didn't want them on his property. But this time, Baker says the officers told him he would be cited for a noisy exhaust on his truck if he didn't allow them to stay.

When he pressed the matter, Baker was cited \$67.50 for a noisy muffler and a dirty license plate, and was given a warning for a balding tire.

After giving him the tickets, the trooper left. But Baker says he will contest the charges. "I can't believe something like this could go on. It's asinine," Baker says. "If that's not private property, I wish they'd help me pay the taxes on the thing."

While the commander of the local barracks would issue no comment on the incident, the commander of an Erie station said state policy requires securing the owner's permission before setting up radar on private property.

PC

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



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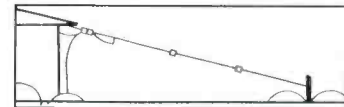


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CIRCLE 156 ON READER SERVICE CARD

GETTING STARTED AS A RADIO AMATEUR

Christmas Comes Early For Novices And Technicians

Christmas came nine months early this year for Novice and Technician Hams, and the bands are still buzzing with the news. On March 21, 1987, the FCC threw open 28-MHz territory to voice and data communication by Novices and Technicians, and authorized Novice code, voice, data and image communication at 222.1 and 1270 MHz. Reports differ as to exactly how a certain S. Claus got the enormous package down the chimney without bursting a seam, but the efficiency of the operation probably had something to do with E-skip and the center-loaded 10-meter whip on the back of the sleigh.

It didn't take Novices and Technicians long to learn that their new privileges are hot. Fred Liddell, KB2BUY, Baldwin, New York made 33 28-MHz contacts on March 21, including one with Mexico—his first DX contact—and Curaco (Netherlands Antilles)! Writes Fred, "During the next couple of months, I contacted many DX stations in South and Central America, and the Caribbean. I also made my my first transatlantic contacts: Morocco (CN2AQ) and England (G4YLO, a YL named Hazel). My best contact? VP8BGX in the Falklands Islands! Needless to say, I'm having a lot of fun on 10 meters!"

The new Novice privileges also arrived just in time for terrific summer sporadic-E propagation on 28 MHz. On many midsummer nights, sometimes for more than a week at a stretch, the 10-meter Novice band sounded like one big party on voice, digital modes and CW. Here in Connecticut, signals from Hams all over the eastern half of the U.S. and southern Canada boomed in from early evening until well past midnight.

Ten-meter sporadic E paid off fast for SWL Ken Kuzenski of Jackson, Louisiana. August POP'COMM was waiting for him when he got home from work one day, and so was Novice phone fun via exciting 28-MHz propagation: "I punched up 28.3 and 28.5 MHz as search limits on my Sony ICF-2010, hit USB and SCAN, and within seconds was reaching for my logbook! Cindy, NOGAL, in Colorado, and Joe—missed his call—in California, were all strong and clear. The time was around 2223 UTC—a good three hours before dark, local time!"

Winter 10-meter action? Coming right up! Check out the ARRL 10-meter Contest, December 12 and 13. The complete rules appear in November QST; the festivities begin at 0000 UTC Saturday (Friday after-

Mount Pleasant Airfield, Falkland Islands.

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Falkland Islands DX! Fred Liddell, KB2BUY, worked this juicy one less than a month after 10 meters opened for voice operation by Novices and Technicians. Rig: a Kenwood TS-440S transceiver at 100 watts output. Antennas: a CB vertical mounted 60 feet above the ground on a backyard tree. Choice 28-MHz DX like this inspired Fred to qualify for his General-class license two months later.

noon or evening in the Americas), December 12.

CQ Launches New Awards for Novices and Technicians

Just when you thought the walls of your shack might have to stay bare, here are two new awards just for you! Both have been created by POP'COMM's sister publication, CQ:

The CQ Novice Century Club Award is a handsome numbered certificate attesting to

your activity on the Novice bands. How do you qualify? Contact and exchange QSL cards with one hundred different stations on any or all of the Novice bands using any mode. Prepare a list of your claimed contacts on a CQ Novice Century Club application form. Have the listed QSL's verified by two Technician (or higher) class licensees, and send the application to the CQ Novice Century Club Manager, c/o CQ Magazine, 76 N. Broadway, Hicksville, NY 11801. You can get the application form for an SASE marked "Novice CC."

ARRL Announces "We The People" Worked All States Award for SWL's and Hams

On September 17, 1787, representatives from the American states, convened in Philadelphia to bring unity and order to their newly created nation, approved a new national Constitution. Two hundred years later, Hams are celebrating this event on the air by working toward the "We The People" Worked All States Award, available from the American Radio Relay League. Shortwave listeners can qualify for a special "Heard All States" endorsement on the "We The People" WAS. No QSL cards are required. You can get an application form by sending an SASE (with 22 cents postage in the U.S.) envelope to "We The People" WAS Application, ARRL, 225 Main St., Newington, CT 06111 USA. More details appear in "Amateur Radio Celebrates the Bicentennial of the United States Constitution," September 1987 QST, pages 14-16. Start listening to, and contacting, your 50 states, gang: The qualification period—0001 UTC September 17, 1987, through 2359 UTC December 31, 1988—has already begun! Time's a wastin'!

The Worked Novice Zone Awards is an even greater challenge. Back in the mid-1930's, Radio magazine's DX crew divided the world into 40 zones and created the Worked All Zones Award. WAZ rapidly became one of Amateur Radio's most coveted DX awards because many of those zones are darned hard to contact and confirm. Working all zones remains an elusive goal for DX-minded Hams.

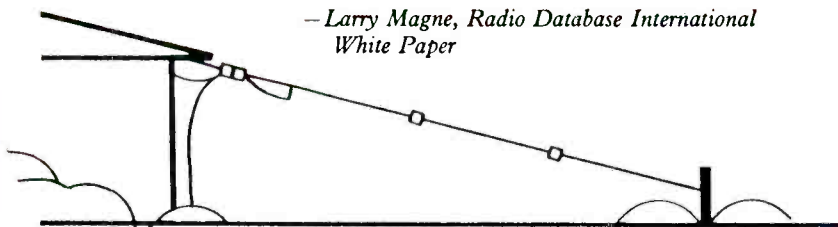
CQ magazine, which continues the challenging WAZ award program today, has announced the Worked Novice Zones Award. You can qualify for WNZ by achieving two-way communication, using the US HF Novice bands (80, 40, 15 and 10 meters) and privileges, with Amateur Radio stations in at least 25 of the 40 CQ zones. You must make all of the contacts as a Novice or Technician, but it's okay if you've upgraded by the time all of the necessary QSL's have trickled in. You can qualify for CW-only, SSB-only and mixed-mode WNZ's—and you can use your WNZ award to fulfill part of the application requirement for your WAZ later on. Rules for the WNZ award are essentially identical to the standard CQ WAZ rules.

Ready to gun for WNZ DX? Get your WNZ application and CQ zone map by sending an SASE to CQ (address above). Don't wait until your zone map arrives to start working toward WNZ. Work 'em first and ask questions later!

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—Larry Magne, Radio Database International White Paper



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CIRCLE 50 ON READER SERVICE CARD

Beaming In (from page 4)

siderations? *Wha happen?* Obviously, something's different.

The main difference we can see is that CMT has apparently attracted an audience with somewhat different demographics. It turns out that CMT's are the greatest asset to come along for our nation's booming drug business since the invention of the pit bull and crack. Prior to CMT's with their "illusion and expectation of privacy," junkies were horrified about all of the benefits of mobile telephones. Somehow, Mr. CMT neglected to mention anything about this to Ed Jones.

With CMT's, the drug dealers don't even bother to use voice scramblers. Not only have they been attracted by this wonderful "illusion and expectation of privacy," they are also fully aware that "the very technology which makes cellular radio appealing" makes it impossible for law enforcement agencies to know in advance which of a CMT's many available channels will be used by a particular subscriber's equipment.

According to a story by David Enscoe in the *Ft. Lauderdale News and Sun-Sentinel*, a leading Florida newspaper, the commander of the Broward County Sheriff's narcotics squad, Lt. Ron Cacciatore, said, "A cellular phone is a great tool for the drug traffickers, but for us it's a killer. It's the biggest hurdle we've run into."

Capt. Tom Thompson, head of the Palm Beach County Sheriff's organized crime bureau, stated, "We've found them almost every time we've made an arrest in the last year."

Bill Simpkins, of the DEA in Florida, observed, "Initial efforts to do interception were hampered by the fact that the guys were using cellular phones."

Enscoe's story pointed out that the largest heroin smuggling rings in history made its business deals via CMT. Regular telephone taps were therefore useless. The drug agents had to regularly subpoena CMT billing records to try and figure out who their contacts were. As you can see, CMT technology makes it a "unique" and useful tool for those who peddle drugs. I'm sure that the illegal drug industry just loves the massive industry efforts and federal laws that are being rubber-stamped into being in order to assure as much privacy as possible for CMT users! How's that grab ya, Bunky?

If you're wondering about how and why the FCC doesn't hold its CMT licensees responsible for what their subscribers are saying over the airwaves—well, I've been wondering about that, too. It's certainly a bizarre situation, to say the very least. The FCC appears to be looking the other way when it comes to these goings-on. Simultaneously, the agency has been harassing broadcasters about what their DJ's are saying over the air, causing Pacifica FM stations to worry about presenting programs that contain readings from James Joyce's novels, and hassling RNI's offshore operations.

The FCC's strange hands-off attitude towards some of the sick uses of CMT's, as well as the barrage of X-rated words that flow forth so freely there, does call out for answers. More importantly, it needs some action. Don't you agree?

All is not lost, according to the CMT exec. Ed Jones was told of a future with "pocket-sized phones you can carry with you everywhere. . . if you want to. At some point, there may be no more wire-connected phone systems. . . . Whether you're in Somerset, NJ or Tokyo, Japan, when

someone dials your number, your pocket phone will ring. It's a potential revolution in personal communications" But, the clincher is that people with communications receivers and scanners are perceived as a glitch in this great revolution. Jones was bluntly told, "If something is not done to ensure privacy of those communications, it won't ever happen." Aren't you impressed?

It's no wonder that those who are carrying on so frantically now about communications privacy don't want anybody to find out what so many of CMT's most ardent clients are using it for! Behind all of the chaff, smokescreen, platitudes about the rosy future of CMT's, and the eloquent diversionary statements, there's a sleazy story that the industry knows about but doesn't seem to mention amidst all of the hype and hogwash.

Our nation's electronics industry has always been dynamic and innovative in all aspects. Unfortunately, it is polarizing into several opposing camps that have conflicting goals and demands. Some members of the industry are caught in the middle. On the one hand, they are furious that there will be proposed legislation seeking to block highly portable miniature VCR's, Super VHS format VCR's, digital radio broadcasting, high definition TV, and digital audio tape recorders that don't include anti-copying devices. Yes, while one segment of the industry supported the ECPA which made certain scanner frequencies off-limits, other segments of the industry are hoping to get a federal law passed that would outlaw audio frequencies (in CD recorders) between 3.76 and 3.96 Hz, and recorder manufacturers aren't pleased at all.

The CMT exec, for one, attempts to establish ethical and legal restrictions and standards for the use of scanners, but his company is selling the cellular telephones which have become so popular with drug dealers. We also hear no moralizing about the sale of his company's computers and their applications by those who use them to vandalize data records of government and industry. It's an odd and illogical mixed bag of priorities and standards.

What next? What will happen when those who hate rock music lyrics demand an end to the sale of amplifiers, turntables, speakers, and FM radios? When those who oppose "adult films" push for an end to VCR's? You'll walk into your local electronics emporium and all you'll see on the shelves will be batteries, black electrical tape and cellular telephones!

Free access to monitoring all frequencies has been around for more than eighty years in the United States. I'm not at all impressed by these recent attempts to restrict this monitoring, especially when the motives seem so patently hokey.

Even less impressive is the CMT industry's expectations that people within telecommunications are as gullible as the public and the politicians!

Drug rings

Cellular car phones are driving agents buggy

By DAVID ENSCOE
Fort Lauderdale News & Sun-Sentinel

WEST PALM BEACH, Fla. — Tapping the telephone at Ernesto Benevento's West Palm Beach home didn't help federal agents crack one of the largest heroin-smuggling rings in history last year.

Benevento was doing his business by cellular car phone.

"We had a tap on his home phone for three or four months, but he wasn't using it," said John Carroll, a U.S. attorney in New York. "He was using the cellular phone in his car. We were unable to technically do the intercept."

Actually, the technology does exist to intercept cellular conversations, but it is a complicated and expensive procedure.

"We have the technology to intercept beeper signals and cellular phones," Carroll said. "We can intercept every phone transmission in the country. But it's not just technology. It's the cost of doing it."

Car phones now are standard equipment for south Florida's big-time drug dealers, authorities say.

"Everybody we deal with has them. I mean everybody," said Lt. Ron Cacciatore, who

commands the Broward County sheriff's narcotics squad. "A cellular phone is a great tool for the drug traffickers, but for us it's a killer. It's the biggest hurdle we've run into."

Capt. Tom Thompson, head of the Palm Beach County sheriff's organized-crime bureau, said, "We've found them almost every time we've made an arrest in the last year."

Drug agents say the high-tech cellular phones make it more difficult to keep tabs on the traveling drug salesman. The Benevento investigation is a case in point.

"Initial efforts to do interception were hampered by the fact that the guys were using cellular phones," said Bill Simpkins, a Drug Enforcement Administration agent.

Ironically, it was high technology that helped authorities break up the international heroin ring and put Benevento and his associates in jail. He kept all records of his criminal dealings in a personal computer.

"The phone tap wasn't productive, but the computer records. . . is what made our case," Carroll said.

Companies that sell cellular phones acknowledge the problem.

"It's a big concern for us, but there isn't a whole lot we can do to stop it," said Jim

Earle, a spokesman for BellSouth Mobility, the largest of the two cellular-phone companies serving south Florida.

Earle said drug agents regularly subpoena phone records to aid in criminal investigations, and "we work closely with them."

Catching drug dealers can help the phone company as well as the law. According to Earle, the same people who use cellular phones to deal drugs try to avoid paying their bills, often by altering the phone's electronic identification numbers.

Cellular phones are computer-controlled radios, but conversations on cellular phones are more difficult to bug than radios. Cellular conversations can be assigned to one of thousands of frequencies that may change as the car moves from one place to another.

Signals from cellular phones are beamed to specific "cells," which relay the signals. Each cell has only a limited range, so when a car drives out of the range of one cell, another cell takes over, and a different frequency is used.

"You never know what cell site the radio wave is going to," Cacciatore said. "It all depends on which cell he's closest to. It makes it very hard for us."

The cellular industry is well aware of the tacky uses to which its equipment and services are regularly put. Still, it diverts attention from itself by contending that those who own scanners are some sort of criminal element. Barnum had nothing on this crowd. Maybe the FCC should look into the rampant criminal use and filthy language related to cellular phones.

SCANNING TODAY

(from page 10)

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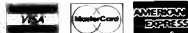


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WANTED: Radio & Wireless magazines 1922 thru 1943. Radio Digest, Radex, movie-radio guide. Ray Nemeck, 1424 Heatherton Drive, Naperville, IL 60540.

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Advertiser's Index

AMC Sales	50
ARRL	71
Ace Communications	11
All Electronics	49
Alpha Delta Communications	75
Antique Electronic Supply	63
Antique Radio Classified	47
Barry Electronics	63
CBC International	80
CRB Research	80
CTM	80
Capri Electronics	27
Cobra/Dynascan	3
Communications Electronics, Inc.	33
Com-Rad Industries	50
DECO	80
DGM Electronics, Inc.	47
Delaware Amateur Supply	63
EGE, Inc.	75
Electron Processing, Inc.	50
Electronic Center, Inc.	51
Elec. Equip. Bank	39, 40, 41, 42
Fair Radio Sales	47
Gilfer Shortwave	73
Grove Enterprises	63
Ham Station	79
IIX Equipment Ltd.	35
Imprime	47
Kenwood U.S.A. Corp.	Cov. IV
MFJ Enterprises, Inc.	15
Metz Communications	49
Michigan Radio	63
Mil Spec	21
OPTOelectronics	5
Pacific Cable Co.	35
POP'COMM Book Shop	51
RF Parts	31
Radio West	35
React, International	45
Regency Electronics	23
SONY Corp.	9
Satman	78
Scanner World, USA	1
SeaLutions Products Inc.	53
Signal Engineering	37
Star Circuits	53
Tiare	68
Uniden	Cov. II, 29
Universal SW Radio	7
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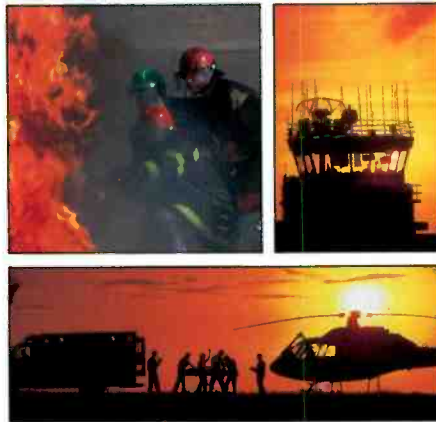


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