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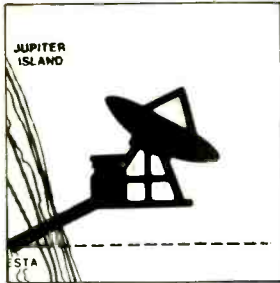
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AN EDITORIAL

Where Are They Now?

Those golden oldies, where are they now? Anna Maria Alberghetti—Gary Coleman—Tiny Tim? People come to your attention at some point in your life and before you know it, *poof*, they've somehow blended back into the crowd and can no longer be singled out. You may not even realize they have left, until something triggers a memory of them in your mind and you wonder what they're up to with their lives.

A couple of years ago, the cellular telephone industry sent its lobbyists to Washington to dig up someone to wave the flag around for the idea they had to create the Electronic Communications Privacy Act. They couldn't get just any *old* politician to lay this concept on, they needed someone very special. After all, when you're going to lobby for a law that endeavors to make it illegal to listen to certain radio frequencies, you can't expect too many people to take you very seriously. Especially when receivers to pick up those frequencies are already in the hands of the public. Especially when

transmissions are sent unscrambled. Especially when violations of such laws can't be detected, nor evidence obtained. Especially when no federal agency is willing to bother enforcing such an absurd law.

I suppose that if you look hard enough in Washington, you can get someone to sponsor damned near anything - like maybe a law regulating the color of golf balls, or how many teeth a chicken can have. There must be people in Washington who specialize in sponsoring the many pieces of useless and meaningless junk legislation proposed by various industry groups for their self-serving purposes. It wasn't long before one of the Washington types realized the importance of taking the ECPA ball and running with it for a touchdown. It was none other than Rep. Robert Kastenmeier (D-Wisconsin).

It wasn't that Kastenmeier went along with a lukewarm attitude, he really went after it with what appeared to be a consuming passion. The point of the law was so that the cellular industry could create a phony sales

pitch about "communications privacy assured by federal law". After Kastenmeier gave it the ol' Washington twist, it emerged as a proposed law that was intended to stop federal agencies from snooping on the citizenry.

It was such an outrageous smokescreen to blur the reality of the ECPA that it was almost laughable. I said *almost* laughable, because somehow Kastenmeier generated a sufficient number of scary sounding pronouncements about the need for the ECPA that he finally got it passed into law in 1986. Maybe they voted it just to shut him up and get the cellular lobbyists out of their offices.

During the approximately one year there was hysteria about whether or not the ECPA would actually make it into law, Kastenmeier's name became all too familiar to most of us in communications. It hovered in status somewhere between that of a laughing stock and a ogre. For better or worse, it

(Continued on page 72)

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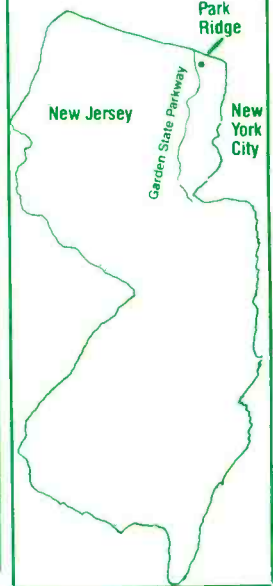
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Each month we select representative reader letters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons. All letters submitted for consideration must be signed and show a return address. Upon request, we will withhold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

The Search For Alice

When not glued to my shortwave receiver listening to the BBC, I enjoy reading romantic novels set in the British Regency period (early 19th century). Much to my surprise, the novel I just finished appears to touch upon the Alice Brannigan mystery as related in the August *Beaming In*. The book is titled *Return To Cheyne Spa*, by Daisy Vivian, published 1988 by the Walker Publishing Co., New York (ISBN 0-8027-1019-0). This is Daisy Vivian's seventh Regency era novel.

On pages 101 and 102, one of the story characters asks someone to stop at the library and pick up some reading material. She says, "That new novel by Mr. Kneitel would be most pleasant, if it is available, though I daresay it may not be. He is very popular, you know. Perhaps the new Alice Brannigan is in."

I pass this curious reference along to those who collect this type of data for whatever value it may have. How did Mr. Kneitel and crew end up in England of 1815.

Mrs. Mary Wallace,
Newport, RI

The mystery deepens! — Editor

High Tech Mil Spec

Are any of the popular VHF scanners used by the military services? I'd think that a scanner would have many military applications. What are the military nomenclature numbers for the Bearcat and other scanners?

Harry Brown, KIN8NC
Marion, IN

I'm not aware of any of the commonly encountered scanners used by the military, although scanners are used. One I've seen, is known as the R-2412/U, made by Cubic Corporation (9333 Balboa Ave., San Diego, CA 92123). It's made especially for the military services and scans 20 through 1200 MHz, FM, AM, and SSB. It can be programmed for 100 channels, which it scans at 50-per-second. A novel feature of the R-2412/U is its employment of modular construction with components located in in-

dependently shielded diecast modules. The unit is equipped with fault monitoring circuitry that localizes any problem to a specific module. Therefore, malfunctioning components can be located and related within minutes. — Editor

He Handed You A Line

The term "jiggling the wire." What does it mean in respect to wiretapping? I understand it has something to do with deliberately causing clicks on the line to let someone know their phone is tapped. I'm hearing clicks on my telephone line and suspect it is tapped. A neighbor says they're "jiggling the wire."

J. Polacek
Reno, NV

"Jiggling the wire" isn't a technical term, it's a strategy used in connection with wire-tapping. If a wiretap isn't producing any useful information, those who have placed the tap will cause an incident to take place that (they hope) will be sufficiently significant to cause the subject whose phone is tapped to dial up someone and start talking about matters of interest to the wiretapper. For instance, Let's say that four persons are being investigated in connection with certain criminal activity. Phone taps have not produced any any incriminating information. One of the four persons may be arrested primarily to "jiggle the wire" of the other three in the hopes that they will become so rattled, that they'll panic and discuss it over the tapped phones. If you're hearing clicks, it probably has less to do with a phone tap than it does with faulty telephone hardware. — Editor

How Close Is Close Enough?

I just purchased my first scanner (a Bearcat 800-XLT). I would like to know if a frequency is listed with four numbers after the decimal point, and the scanner will accept only three numbers past the decimal, will it still receive transmissions on that frequency? Also, I just sent in for a subscription to *Popular Communications*.

Ronald L. Kaiser,
Highland, MI

Without getting into a lengthy dissertation, the answer is "yes" for frequencies in the VHF bands. If you attempt to program in a frequency such as 171.3875, and your scanner displays 171.385 or 171.390 MHz, then you'll hear any activity you'd have heard had the scanner accepted the frequency you attempted to enter. On the UHF bands, it will work only if the displayed frequency is within 5 kHz of the one you tried to program. Some scanners will only accept UHF channel programming at 25 kHz increments. If you try to program in

477.3375 MHz, and the display reads 477.325 or 477.350 MHz, then you won't hear activity on your desired channel. However, some scanners will accept 477.337 MHz, and that's close enough to do the job for you. — Editor

A Mode Is A Mode Is A Mode

In your August review of the Universal M-7000 RTTY reader, there was an illustration showing the keyboards used to select the different modes. One button was marked VFT. This is a mode unfamiliar to me and the review didn't mention it, so I'm hoping you'll give it a few words when you get a chance.

Will Richardson
Sauk City, WI

There are a large number of printing modes now in use, not all of which are popularly known by the same names to persons involved in communications. Basically, some of the names used for these modes within hobby monitoring circles don't always match up with the correct terminology. Probably because it was designed for professional applications, the M-7000 uses the correct terms. Therefore, what most of us would refer to as FDM (frequency division multiplex) is referred to as VFT on this equipment. Other examples of hobby vs. professional terms for the same thing include FEC, which should be correctly called SITOR-B. What we call ARQ is more properly known as SITOR-A. The mode we usually call 2-channel TDM is correctly called ARQ-96. I'll be the first to agree that it's confusing.

Old Soldiers Never Die

I came into possession of an old BC-474 portable military transmitter and receiver. My question is, can it still be used for anything if I can figure out what tubes the transmitter uses (all three are missing) and can get it working?

Ben Crowhurst,
Cool, CA

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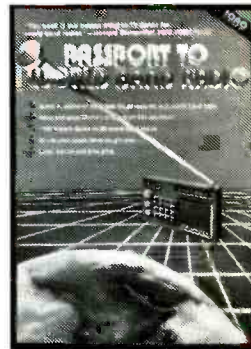
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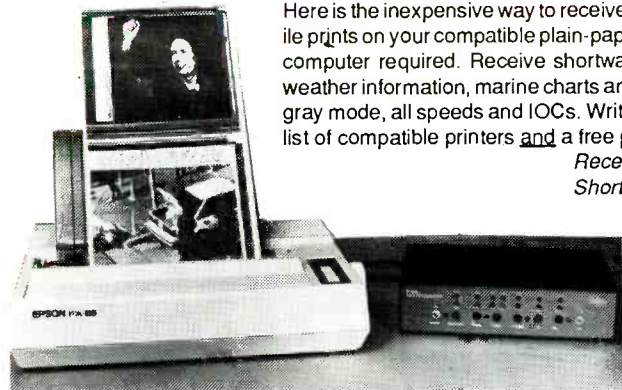
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OFFICIAL NEWS COLUMN OF THE SCANNER ASSOCIATION OF NORTH AMERICA

SCAN Files Official Comments to FCC On Scanner Labeling

SCAN has filed its official comments to the FCC on the proposal to require labeling of scanners and other communications receivers to notify users of the Electronic Communications Privacy Act. There were some difficult issues involved, but in general, we support the proposal. The FCC is to be applauded for resisting the intense pressure from some narrow interest groups to ban, or restrict, the frequency ranges of scanners. A notification label is a far superior solution and the FCC presented some solid reasoning and facts to back it up. Still, we have concerns and questions over the proposal and how it may be implemented. We'll let our reply comments speak for themselves . . .

Comments Of The Scanner Association Of North America

1. The Scanner Association of North America (hereinafter "SCAN") is a not-for-profit Illinois corporation founded in 1978. SCAN's statement of purpose, as contained in its incorporation records, is to act as "the unified voice of scanner operators in North America, dedicated to the advancement of scanner monitoring and to the mutual understanding between citizens, public safety officials and government." SCAN has a membership of over 20,000 readers monthly through the publication *Popular Communications* magazine. SCAN has worked closely with the law enforcement community. Use of scanners is endorsed by the International Association of Chiefs of Police and the National Sheriffs' Association in their Neighborhood Watch programs.

2. SCAN generally supports the thrust of NPRM, but takes issue with the statement, "prior to the enactment of the ECPA, the degree to which the interception of radio communications was prohibited was unclear." (NPRM at 2.) SCAN submits that following the ECPA's enactment, the degree to which interception of radio communications was prohibited became not only *more* unclear, but positively opaque in some areas. For example, the ECPA pronounced easily received radio communications to "be not accessible to the general public" (18 U.S.C. 2510(16)).

3. SCAN agrees with the Commission's observation that some classes of radio frequencies may be used for unprotected as well as protected communications. We concur with a requirement that reception of certain frequencies be blocked or filtered "is not a practical one" ((NPRM at 5). Frequency allocations are not static. Changes to the table of allocations and to the uses and services permitted are increasing. Particularly as new technologies are deployed, eventual modification and reclamation of the spectrum now used by certain classes of common carriers are not outside the realm of possibility.

4. Blocking of frequencies would have serious implications for vendors and users of radio test and laboratory equipment, who must have access to the entire radio spectrum for repair, educational and experimental purposes. If blocking were required, the Commission would probably have to issue licenses for some categories of test equipment, and might be pressed to investigate claims that some receiver types are "not sold for use by the general public."

5. SCAN believes that advisory labeling of cellular telephones and other kinds of ECPA-protected transmitters is necessary as suggested by the Senate report language cited in the NPRM at 6. The Public Utilities Commission of the State of California found that sixty percent of cellular telephone owners and users were unaware of the potential lack of privacy of cellular originated calls. If directed cellular carriers to notify customers of the potential lack of privacy in conversations with a cellular telephone. SCAN believes nationwide implementation of this policy to be in the public inter-

est. In denying the Washington Legal Foundation petition RM-5577, the Commission found the ECPA sufficient to persuade it not to require labeling of cellular telephones. The NPRM is silent as to why scanners warrant labels yet cellular telephones apparently do not.

6. SCAN believes that somewhere, in the owner's manual or elsewhere, is needed as clear an explanation as is possible of "protected communications." The FCC's emphasis that "we are not suggesting that lengthy opinions accompany each scanner" (NPRM at 7) is no excuse for withholding thorough information on exactly what types of reception, under which circumstances, are prohibited by the ECPA. Without such an explanation, the label might merely serve to disturb the consumer, or might convey the wholly unwarranted and highly objectionable impression that scanner purchase and use is automatically legally suspect. This is especially important given the fact that many scanner purchasers are law enforcement and fire personnel.

Other Comments Should Be Most Interesting

We wonder what the reaction will be from some of those in the cellular phone industry and others who have been pushing for manufacturing bans of equipment with certain frequency ranges. SCAN now has a professional representative in Washington following FCC Docket-88-281. If publication deadlines make it timely, we plan to bring you a summary of those comments in this column. In any case, as an original filer, SCAN will be able to reply comments to the FCC and will also receive the reply comments of other filers on this issue. It should make for some interesting reading!

Your financial support is still needed by the way. \$5 . . . \$10 . . . or whatever you can. It will be greatly appreciated and put to good use in the defense of all scanner owners. AS a token of appreciation, we will send you a newly revised FCC Frequency Assignment wall chart which includes the new 800-900 MHz frequencies. Send your donation to SCAN Defense Fund, P.O. Box 414, Western Springs, IL 60558. Thanks for your help!

Comments On Ham's Loss Of 220-222 MHz Portion of 220-225 MHz Band

While most every licensed Amateur Radio has probably heard the news (and the decision may be under appeal as you read this) it appears as if the FCC has taken away part of the 220-225 MHz Amateur band and assigned it to narrow-band Private (commercial) Land Mobile two-way radio use. This is a most unusual occurrence in modern times. Amateurs, through action by the American Radio Relay League (ARRL), plus license Amateurs in influential places and a very active and vocal Amateur community—almost always prevail . . . especially since the arguments they present are well thought out and based on solid fact. It was no different this time and a good case was made for the use of this spectrum for packet, repeater control links, and other applications beside the repeater input and outputs that were the basis for some of the FCC rationale in their initial proposal. Still, the FCC decision at this writing appears to be final.

We don't think the decision indicates any lack of support for amateur radio. Rather, we think it may be the first move by the commission to force better spectrum utilization. The call for using narrow-band technology in the reassigned spectrum is most significant. FM communications, such as you hear on your scanner, is a terrible waste of spectrum space. It's there because it is inexpensive to build, sounds good, and requires no operator skill. It also works

(Continued on page 74)

DX'ing The War Zones

Nasty Little Wars Proliferate. Here's How to Tune In On the Words That Accompany the Bombs and Bullets

BY GERRY L. DEXTER

"Bang, bang . . . you're dead!" That old cry of kids playing at war is heard for real in all too many places around the globe. Wars, rebellions, guerrillas and uprisings are happening in a lot of places the average person isn't aware of.

An early June column by James Reston in the *New York Times* summarized a report from the Washington, DC research institute World Priorities which says that, as of the end of 1987, there were some 25 wars of one sort or another taking place in various parts of the world. In fact, said the report, the number of conflicts was higher in 1987 than at any time since records have been kept. The study included only those conflicts accounting for more than 1,000 lives per year.

Reston noted that news about such wars is often limited by "indifference, censorship . . . and unwillingness on the part of major governments to share what information they have on these wars with the general public." They are largely "forgotten wars." Reston concluded by saying "As of now, if a war isn't on television, it's not happening."

Television aside, those who are equipped with shortwave radio can get at least a little bit closer to what's happening out there. And even if it's not possible to tune in on direct reports from the countries involved—which, of course, are one-sided anyway—it's still usually possible to get news via the larger international broadcasters providing service to the areas involved or special programs for that area. Thus, it's easy to stay up with African events by following African-related programming on the BBC, Radio France International, Voice of America, Radio Netherlands and so on.

In most cases, though, the well-equipped shortwave monitor can receive broadcasts from the areas involved, though not so often with listenable clarity. Here, then, is our *PopComm* guide to tuning in on the war zones.

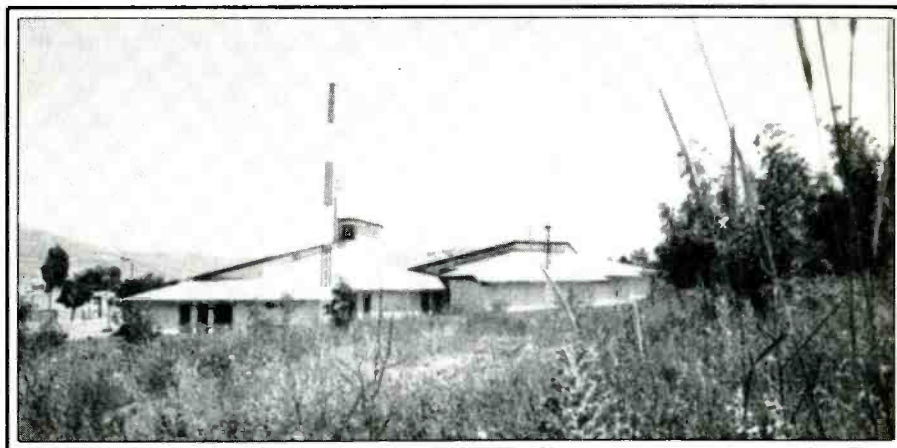
AFGHANISTAN—Although the Soviets have begun to pull their troops out of Afghanistan, the Mujahadeen continue to wage war and are expected to keep it up until the Soviet-backed Kabul government goes down. Since the Soviets came into the country in 1979, 14 thousand Soviet troops and 85 thousand Afghans have been killed (all figures quoted are from the World Prior-

ities report). Radio Afghanistan is on the air with English programs at 0900 to 1030 on 4450, 6075, 9635, 15225 and 17665, beamed to south and southeast Asia and Europe at 1900-1930 on 9685 and 11755. Many of the transmitters used are actually located in the USSR.



The Mujahadeen opposition's main clandestine outlet is the Voice of Unity, scheduled in Dari and Pushto at 0130-0230 on 11490, 12230 and 15685 and 1515-1615 on 12230, 15685 and 17540.

ANGOLA—Jonas Savimbi's UNITA organization, with the support of the U.S. and South Africa, still fights to replace the Luanda government's People's Republic. Between the fighting in Angola and Namibia (see below) some 213 thousand have been killed since 1975. The government's main station, Radio Nacional de Angola, is listed for English at 1600 to 1700 on 7245, 9535 and 11955 daily and from 1700 on weekends, though these segments include programs produced by other freedom groups and the station isn't well heard in any case. Programming in Portuguese is sometimes noted around 0300 or 0400 on variable 4952. Several regional stations are rather harder to hear and often inactive.

The UNITA station, Voice of the Resistance of the Black Cockerel is occasionally noted at 0330 sign on in Portuguese on 4972 and also recently to 2100 sign off on 7145.

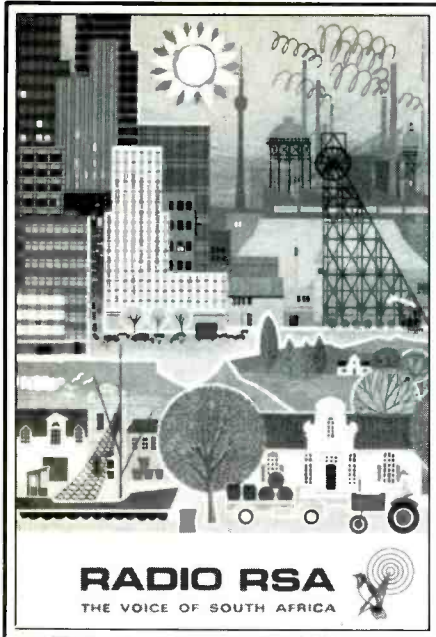


High power aside, Iran's VOIRI is better heard here in Farsi than in English.

VERIFICATION CARD	
 Burma Broadcasting Service	OSL
	Location: U.S.A.
	Wavelength: 4725 K112
	Date: 26.12.86
	Time: 15.30 (GMT)
	Your reception report has been examined and found correct/неоцзет.
	 Director (Broadcasting) Information and Broadcasting Department, Rangoon, Burma.

There's little opportunity to hear news in English from the Burma Broadcasting Service. 4725, with local languages, offers better—but still poor—reception.

BURMA—Some 2,000 have died in Burma since 1985 as the Rangoon government fights against armed ethnic groups such as the Karen people who want their own separate nation. The Burma Broadcasting Service is best heard on its 4725 channel which carries a number of nationalities programs, from 1030 till 1445 or 1545 sign off, depending on what month it is. English from the BBS comes at inopportune times for reception in North America. At 0200 on 7185, at 0700 on 9730 and 1430 on 5985 but these are rarely, if ever, reported here. A station run by the Burmese military operates on 6570 and was widely heard around 1200 UTC during the past winter.



Easily heard, Radio RSA in South Africa offers different views on apartheid, Angola and Namibia.

CAMBODIA—The Cambodian government, with strong Vietnamese military assistance, tries to hold power against a variety of anti-communist groups, including those led by Prince Sihanouk, the Khmer Rouge and Son Sann, an effort said to have cost 24 thousand lives since 1979. The government's station, Voice of the Kampuchean People, has an English newscast at 1200 airing on 9695 and 11938 but it's a tough one to pick up.

Beijing facilities broadcast the Voice of Democratic Kampuchea at 0900-1000 on 15110 and 17680, 1300-1400 on 4130, 5150, 11675 and 15360, 1800-1900 on

7385 and 2330-0030 on 7350, 8345 and also 0400-0500 on 9440. The Voice of the National Army of Democratic Kampuchea also broadcasts from China, at 2310-0030, 0430-0630 and 1000-1530 on 5200, though it's been more recently heard on 5408. The Voice of the Khmer, believed based in the border area near Thailand is sometimes heard between 1100-1400 on 6325. None of these opposition station broadcasts any English.

CHAD—The government in N'djamena, with the help of the French, has fought Libyan troops on and off for several years; to the tune of 7 thousand dead since 1980. Libyan leader Khadafi wants a leadership in Chad more amenable to his views. The government station, Radiodiffusion National Tchadienne has a tendency to come and go but when it is active, check 4904 for sign on around 0500. Programming is mostly in French. A regional government station, Radio Moundou in the far south, can sometimes be picked up from 0500 sign on in French and Arabic on 5288.

An opposition station, run by the Libyans, is Radio Bardai, sometimes audible to 2030 variable sign off on 6009.

COLOMBIA—Communist guerrilla groups have been active within this country for some 30 years, accounting for about 1,000 dead every year. Colombia has a number of stations on shortwave, including the main [Caracol] network outlet on 4755 and that net's outlet in Neiva on 4945. Another easily heard Colombian is La Voz del Llano at Villavicencio on variable 6117. All can be heard with programs in Spanish during the evenings and early morning hours. The government's Radio Nacional is sporadically active on 11795 at 1600-2130 and 0200-0600 and 15335 at 1600-0600. Frequencies may vary a bit. Programming is in Spanish and is largely classical music.

La Voz de Resistencia is operated by the

opposition Revolutionary Armed Forces of Colombia but so far there have been only one or two reports of this being heard in the U. S., and then poorly. Broadcasts are Sundays only listed at 1600 on 10257, 1330 on 6835, 1630 on 7215, 2130 on 7422 and 2300 on 14285.

EL SALVADOR—One of shortwave's puzzles is why, with a multi-year guerrilla war still going on, the government never got its Radio Nacional station back on shortwave. No private shortwavers are on the air either so there's no way to get this one direct. The FMLN's Radio Venceremos is known even by people who don't own shortwave sets and can usually be found in the evenings floating or jumping around the area from 6550 on up. Venceremos can also be noted occasionally around 3465. 65 thousand have died since 1979.

ETHIOPIA—The Marxist government here still battles breakaway movements supporting independence for the provinces of Eritrea, Tigre and others. The Voice of Ethiopia operates from 1200 to 1900 on 9560 and can occasionally be heard during the latter part of that schedule. English is scheduled at 1500. An anti-government station, believed aired via the Sudan, is the Radio Voice of Ethiopian Unity which airs at 1800-2000 local languages on 7100 and 9425. The Eritrean and Tigre resistance radios are virtually never heard in North America. These conflicts and the famine related to it account for some half a million death since 1980.

GUATEMALA—The media rarely report on Guatemala, yet the World Priorities report states that 138 thousand have died since 1966 in guerrilla raids and assassinations. There are a number of Guatemalan stations active on shortwave, though all but the government station are religious/cultural broadcasters. TGW—the national Guatemalan radio—is recently being heard on 6180 very late at night.

The URNG opposition has local Wednesday and Friday broadcast on variable 6970 from around 0000, in Spanish and usually with weak to fair signals at best.

INDIA—Separatist violence in India has cost 5,000 lives since 1984, including that of former leader, Indira Gandhi. All India Radio has an extensive, multi-language schedule and seems slowly to be building its shortwave broadcast power and schedule. At present, English from AIR is probably best received in North America at 1530 on 9950 and 11620. There are no known opposition broadcasters on shortwave at this time.

INDONESIA—The government seized the eastern half of the island of Timor in 1975, a quarter century after the Dutch half automatically became part of Indonesia at the country's creation. East Timor elements have supported violent resistance to Jakarta since and even several years later tourists were not allowed in without military permit. There are no reliable estimates of the death toll over the East Timor problem. The Voice



The Polisario Front established the Saharan Arab Democratic Republic and now fights to split the area from Morocco. RASD is a ham station operating in the area.



The battle against the government in Luanda has been waged for years by the UNITA opposition.



A programming meeting at All India Radio. India has ethnic separatist problems to deal with.

of Indonesia from Jakarta has English daily at 1500 on 11790 and 15150. Radio Republic Indonesia, at Dili, East Timor, is a difficult log on nominal 3306 around sunrise in North America. The local broadcasts are in Indonesian, of course.

IRAN—The full-fledged conflict with Iraq had, by the end of 1987, cost an estimated 377 thousand lives on both sides. The high power transmitters of the Voice of the Islamic Republic of Iran don't carry English at the best times for North America. Currently scheduled at: 1130-1230 on 11790, 1330-1430 on 9520 and 9685; 1930-2030 on

9022 and 3778. 15084, largely in Farsi, is receivable most of the day and evening. There are numerous anti-Khomeini broadcasters—too many to include here, especially since the other side of the war question can be received directly. Time will tell if the truth has any lasting value.

IRAQ—Ever so slowly Iraq was winning the war it started with Iran, even though no true once-and-for-all can yet be claimed. Radio Baghdad has two hour broadcast in English for North America, currently aired at 0000-0200 on 11775. There's also English for Europe at 2000-2200 on 9770 and 15230 which should be receivable here.

LAOS—Government forces are still battling against various ethnic groups which once served the US during the Vietnamese war and now get their support from the Chinese. Lao National Radio is a rough one to log in North America. There's a 15 minute newscast in English at 1345 on 7111 variable but it's heard only rarely. The regional station at Savannakhet doesn't have English but is perhaps better received on 7385 variable from 1100 to 1330. The main national station is also relayed via Radio Moscow facilities in French for Europe at 1100 to 1130 on 15190. The tally for the Laos/Vietnam area amounts to 30 thousand since 1979.

LEBANON—Reception of any broadcasts from this torn and tattered land are difficult. The government broadcaster hasn't been on shortwave for years and the other active stations are heard only occasionally and not with much strength. 52 thousand have died in the Lebanese turmoil since 1982. High Adventure Ministries (KVOH in California) operates the Voice of Hope in Southern Lebanon with programs in English, Arabic and other languages daily from 0300 on 6280. The Phalangist Party runs the Radio Voice of Lebanon on 6550 with an 0400 sign on. A third station, the Druze-run Voice of the Mountain is listed for operation on 6052 but it's very likely this one is not active.

MOZAMBIQUE—The Marxist government here has had the Mozambique Nation-

al Resistance snapping at its heels for years, to the point where Mozambique is in very sad shape. The resistance, known as Renamo, is accused of numerous atrocities against the civilian population. Radio Mozambique is listed for English at 1100-1130 and 1800-1900 on 9525 and 1118. But better reception opportunities exist for the broadcasts in Portuguese with sign on at 0255 on 7240, 0400 on 9618 and 11818 and 0255 on 3210. Or try the interprovincial service from 0255 on 7110 or 3338. 400 thousand have been killed here since 1981.

NAMIBIA—South Africa retains control over Namibia (Southwest Africa) despite efforts by the UN to wrest it away and make it an independent state. That's what the Southwest Africa People's Organization (SWAPO) wants, too, and it runs a resistance effort out of neighboring Angola—one reason why South Africa is also involved in Angola. The Southwest Africa Broadcasting Corporation operates on shortwave from 2100 to 0400 (to 0500 on Sundays) and 0440 to 0610 Mondays to Fridays on 3270, 3290, 4930 and 4965. The two 90 meter channels will be most often heard.

SWAPO produces the 'Voice of Namibia' program which is carried over several African stations. Best bet would be via Radio Nacional Angola at 1630 on 9535 or 11955 though it's not well or often heard.

NICARAGUA—This hardly qualifies as a 'forgotten war' and, despite peace talks, is not over yet. The government's Voice of Nicaragua is active again on 6100 with English at 0300 and 0600 and Spanish at other times. Contra stations Radio Liberacion operates on 5889 around 1100-1200 and 0100-0300 and Radio Liberacion/SSRN (sometimes till going by the older Radio Quince de Septiembre name) operates on 5929 and 6215 with broadcasts in local evenings. The Nicaraguan conflict has cost 30 thousand lives since 1981.

PERU—The Sendero Luminoso (Shining Path) marxist guerrillas have run a terror, bombing and assassination campaign in

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Peru for years and accounted for 10 thousand deaths since 1981. There are dozens of broadcasters in Peru but not many can be heard well and reliably. Many operate with low power in the tropical bands and on low frequency out of band shortwave channels. Three of the more regularly heard are Radio Union in Lima on 6115 slightly variable, Radio Ancash on variable 4990, and Radio San Martin on 4810. All in Spanish and hearable in the mid to late evenings and early mornings.

THE PHILIPPINES—A communist guerrilla army has plagued the current government and the Marcos government before it, costing 60 thousand lives since 1970. Government broadcasts on shortwave have seemed to shrivel during the past few years, down to nothing, or virtually so. The Catholic station Radio Veritas Asia has English for Asia at 0130-0200 on 15330 and 15365 and 1000—1500 on 9495 and 1130 to 1400 on 9670, to 1430 on 15465.

SOUTH AFRICA—The African National Congress (ANC) takes violent exception to the South African government's race policies. ANC efforts plus riots and such have cost 4 thousand lives since 1985. Radio RSA is perhaps the easiest station to hear of all those in the "war zones". There's a two hour broadcast in English daily for North America at 0200-0400 on 6010, 9580 and 9615. The ANC produces its 'Radio Freedom' broadcast and has it running on several African stations but, like SWAPO's effort, it's not heard well here. Try at 1730 over Angolan radio on 9535 and 11955.

SRI LANKA—Although relatively quiet now, the Tamil separatist movement got so rough Indian troops had to be called in. 6 thousand have died since 1984. Best bets to hear the Sri Lankan Broadcasting Corporation appear to be between 1215-1515 in English on 9720 and 1500-1700 on 15425. Trans World Radio, the religious station, via SLBC facilities is scheduled at 1200-1330 on 11920, 1335-1425 on 11895, 1430-1535 on 11830 and 1515-1545 on 11895.

THE SUDAN—The southern, Christian part of the country, represented by the Sudan People's Liberation Movement/Army is trying to achieve independence for the southern portion. Things are made no easier with great numbers of refugees from wars in Chad and Ethiopia and problems with Libya to the north. The toll in the Sudan is 10 thousand since '84. The government's national radio is listed for 5039 at 0400 sign on but hasn't been reported recently. The government also seems to be running something called National Unity Radio, in Arabic from 1400-1500 on 9435. The resistance station, Radio SPLA, is on from 1100-1400 on 9550 and 11710. An English newscast goes on at 1300.

UGANDA—Still suffering violent fallout from the Amin years, Uganda counts 102 thousand dead since 1981 thanks to fighting between various tribal groups and political factions. Radio Uganda is not often reported but is believed still active at 0300 sign on

with English, either on 4976 or 5027.

WESTERN SAHARA—The Polisario front seeks independence for this region in what is now southern Morocco. The Polisario group says the Saharan Arab Democratic Republic it established in 1976 is recognized by some 70 countries. The effort has, so far, cost 10 thousand lives. The Polisario Front has a program called the Voice of the Free Sahara (La Voix du Sahara Libre) which runs at 2200-2300 daily over Algerian radio on 9640 and 15215 which has been heard by a number of North American DX'ers.

Moroccan government radio, Radiodiffusion Television Marocaine, now carries some English language programming, most recently scheduled at 1630 to 1700 on

17595 and 1700-1800 on 17815.

And that, is the deadly story. Times and frequencies quoted are subject to change at any time.

Since the end of the World War Two in 1945 the death toll from wars, rebellions and other conflicts—including the current sore spots in this article—totals an estimated 17 million people, according to the World Priorities report.

As average citizens there isn't a lot we can do the bring an end to this seemingly endless pattern of conflict and killing. But as people equipped to listen in on the voices of the world, we can at least do that much and thus become more aware of what's happening out in the world beyond TV's coverage.

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Extending UHF Scanner Reception

By Breaking a Few "Rules" It's Possible To Double The Receiving Distance Your Scanner Can Copy Between 400 and 900 MHz. A Neat Trick!

BY CHANDLER HARRISON, KCT1JX

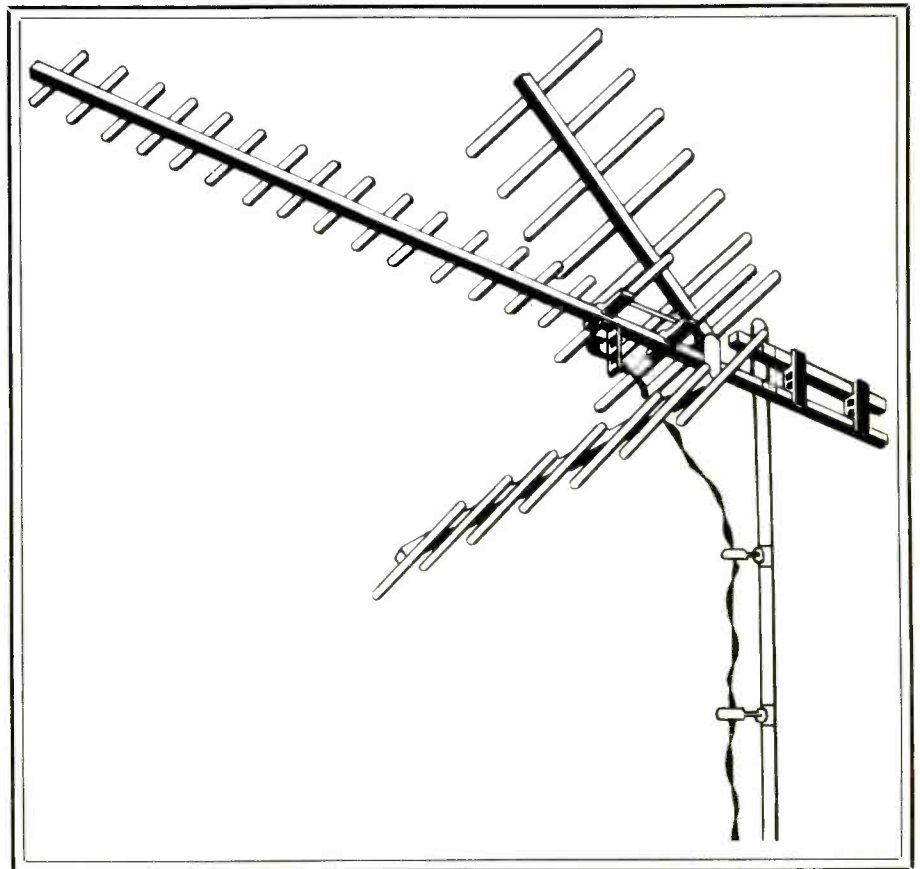
How would you like to make your scanner reach out further than ever before on the UHF bands? I found a good way to accomplish this by trying an idea that I had been chewing on for a long time. Aside from the fact that purists may scoff, it really works.

My location is in Connecticut, slightly more than fifty (air) miles from New York City. While I enjoy monitoring my local public safety services, there's far more of an exciting variety going on in the Big Apple. When I got started in scanning, years ago, most of the NYC public safety comms were taking place in the VHF bands and I had no trouble hearing them.

Like many major cities, NYC eventually began shifting much of their vital comms to the UHF bands. Also, there has been an increasing amount of activity there noted by business, federal agency, and other communicators, to say nothing of 800 MHz operations. What I did find, sadly, was that while I was in range on VHF, when it came to anything above 400 MHz, I was mostly out of range with just about every type of scanner antenna I tried. Seems that UHF signals just don't have the punch of those below 174 MHz.

Other scanner owners from around the nation have also complained that they can't copy distant UHF communications. Problem was that there hasn't been much that you could do about the situation. I heard about a Utah scanner owner located in the sticks who got good 450 to 512 MHz coverage when he hooked his scanner to the beam he had put up for use on the 420 to 450 MHz ham band. Said that gave a big boost to his listening range. I checked out this idea and came to the conclusion that if a person already had an existing yagi for that ham band, it's excellent to use for a scanner operating between 400 and 512 MHz. That is, providing the antenna is mounted for vertical signal polarity.

Buying a large beam for this band, however, starts to get expensive (I priced a 24-element beam at \$90). Also, someone who uses this arrangement tells me that reception above 512 MHz is only so-so, at best.



The Archer U-120 UHF-TV beam, as it is intended to be installed for TV reception out to 120 miles.

In looking over the frequencies involved (400 to 900 MHz) I noted that the so-called UHF-T band (470 to 512 MHz), as well as the 800 MHz cellular and industrial bands have all been carved out of unused UHF-TV channel space. The UHF-TV band, it should be recalled, runs continuously from Channel 14 (470 MHz) through to Channel 83 (890 MHz).

That is to say, a UHF TV antenna is designed to cover just about all of the frequency spectrum I wanted to monitor with increased distance. Of course, TV antennas are intended to receive signals that are hori-

zontally polarized, while two-way communications are vertically polarized. Also, TV antennas are designed to be used with 300-ohm twinlead while scanners are designed to be fed with 52-ohm coaxial cable. The basic idea was most certainly there, somewhere.

In looking through a Radio Shack catalog, I spotted their largest, highest gain, super-duper whizbang UHF-TV antenna was the Archer U-120. This has 33-elements and sells for about \$35. The specs claimed that it offered reception "up to 120 miles." That meant reception of TV station signals,



Modifying the antenna for receiving vertically polarized signals was simple. Drilling through the aluminum took only a few seconds.

and they run tens of thousands of watts (ERP). Two way communications stations run only a minute fraction of that kind of power, and their antennas are usually not located as high. So, all things considered, I was hoping that I might be able to use it for receiving communications from 50 to 60 miles away and I didn't feel that was expecting too much . . . that is, if it worked at all in this type of application. I took a chance on my hunch.

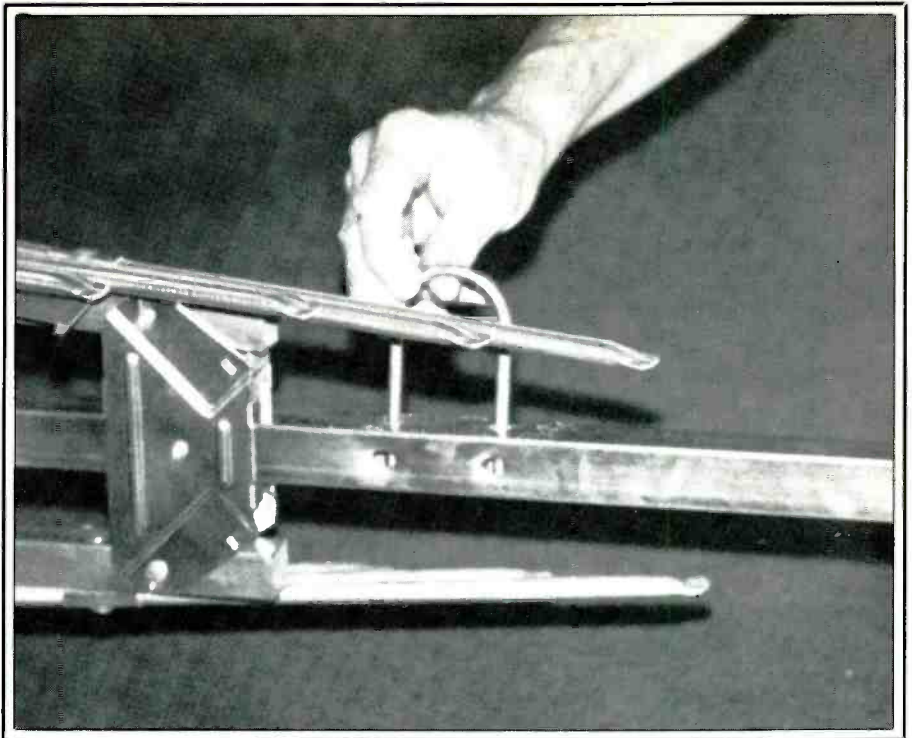
Getting Started

The Archer U-120 is built on an 8 ft. boom; everything is aluminum and the whole thing weighs only a couple of pounds. The carton it comes in is long and bulky, since it has to accommodate the 8 ft. boom. The antenna comes almost entirely preassembled.

The first major consideration was that the antenna is intended for being mounted (by means of two U-bolts) for reception of horizontally polarized TV signals. The holes for the U-bolts (predrilled in the main boom and shorter support boom) were examined and it was determined that the antenna could very easily be modified for vertical polarity, mounting by drilling new mounting holes in the main boom. That's all there was to the modification. Using a felt point marker, a U-bolt was held up against the boom and the drilling points were marked. The aluminum drilled through like butter.

The catalog claimed that the elements "simply snap open." The two "wing elements" do snap into place, however, you'll need a screwdriver to help you pop their fourteen tubular reflecting elements into position. The instruction sheet shows how. Nothing to this at all.

Once you've inserted some plastic plugs in the ends of the booms (to keep out the rain), you suddenly realize that it's practically ready to put upon the roof and you've on-



Double check the new mounting holes to make certain the spacing is correct. This can be done by dropping in one of the U-bolts used for mounting.

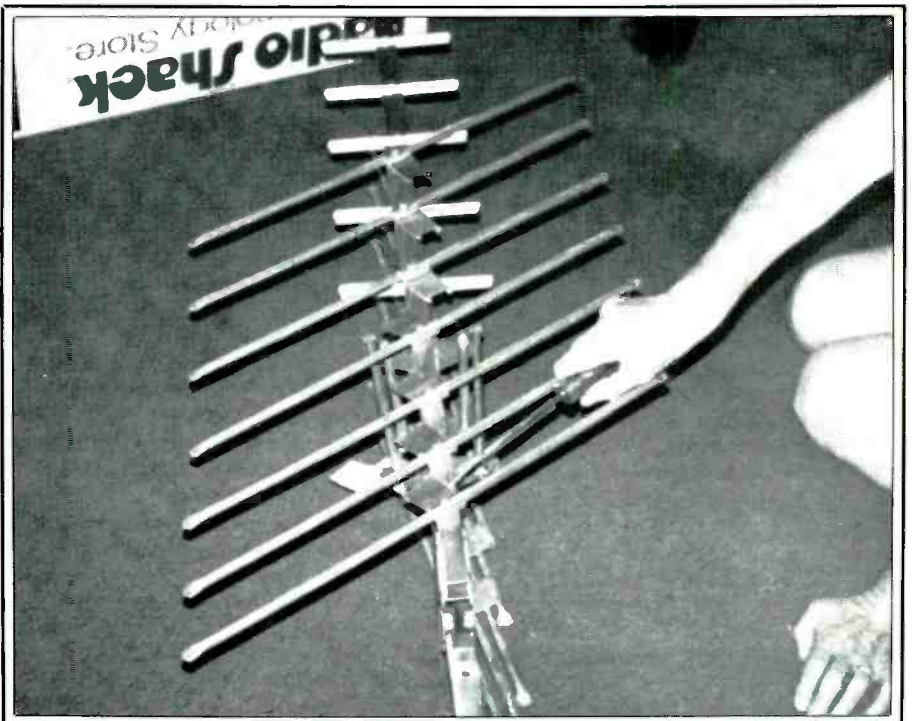
ly had it out of its box for about twenty minutes. A lot easier than putting an antenna together from bits and pieces, I thought.

Feed Me, Feed Me!

Next on the agenda was addressing the 300-to-50 ohm feedline disparity. Actually,

there was no simple solution to getting a 300 ohm antenna matched a 50 ohm scanner input. I opted for a quick-and-dirty solution that goes against common sense, lots of rules, as well as the advice of several purists and experts.

I picked up an antenna-mounted



The reflecting elements pop into their slots with the aid of a screwdriver.

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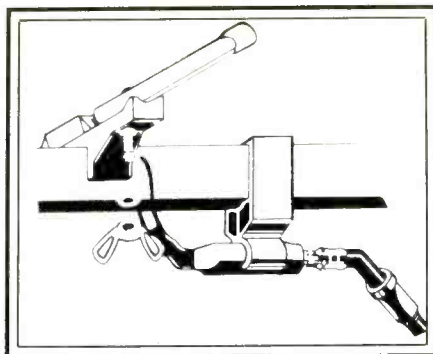
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CIRCLE 51 ON READER SERVICE CARD



To match the 300-ohm antenna to 75-ohm coaxial cable you'll need a matching transformer. Here's how the Archer 15-1143 looked on its instruction card.

300-to-75 ohm matching transformer (Radio Shack #15-1143) for \$4 and attached it to the antenna's input point. In a flash, and without any tools, this turned my antenna into one with a 75 ohm feed point that could be fed with 75-ohm coaxial terminating in one of those awful little F-type connectors used in TV work.

My decision was to feed the signals to my scanner with 75-ohm cable, despite the impedance mismatch. It was less of a mismatch than I started out with, in any event. Even though there would be some reduction in system efficiency due to this mismatch, if I picked up any distant UHF signals at all, I'd still be better off than I had been. That's what my hope was.

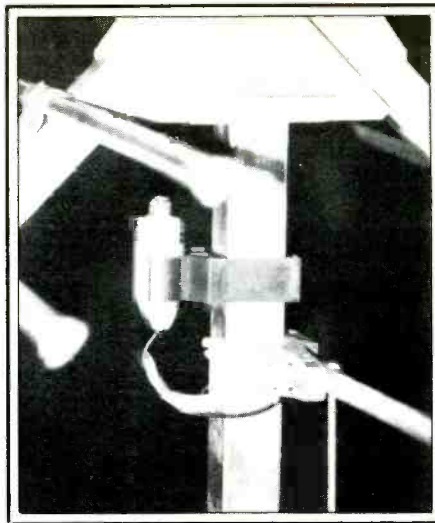
Therefore, I obtained a 50 ft. length of 75 ohm low-loss foam coaxial cable, complete with F-type connectors at each end (Radio Shack #15-1526, about \$9). One end of this cable has a rubber weather boot that can be slipped over the connection to the matching transformer. A similar boot is supplied with the matching transformer; throw it away. Then, I put electrical tape over the ends of the weather boot to further weather-proof this connection.

Up, Up and Away!

The antenna was then ready for placement on my rooftop. I decided to attach it to an existing mast that runs up along the side of the house, being careful to make certain that it wasn't possible for it to come into contact with overhead power lines during or after installation.

I found that it was most easily mounted by two persons, one holding the antenna while the other attaches the U-bolts. The antenna was aimed towards the general direction of the target receiving area.

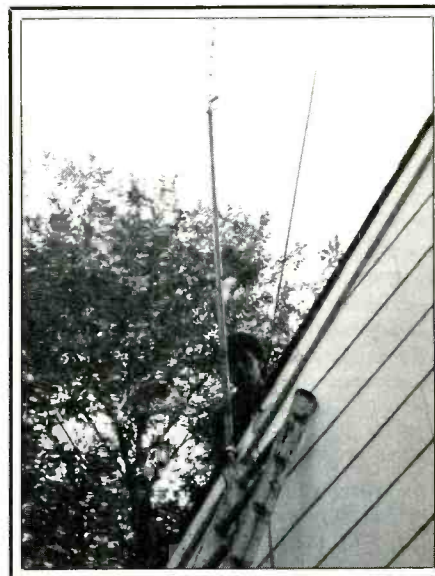
The other end of the coaxial cable was dropped down and the F-type connector was snipped off so the cable could be fed through the wall and into the shack. After the business-end of the cable was through the wall, a standard PL-259 plug was soldered on, which I use with a type UG-255/U adapter to connect to my scanner (which has a BNC-type fitting). All my downloads terminate in PL-259 plugs in



The matching transformer, mounted and ready to go.



An existing and unused mast was selected.



This antenna, although large, doesn't weigh very much. I had one person hold it in place while I attached it to the mast.

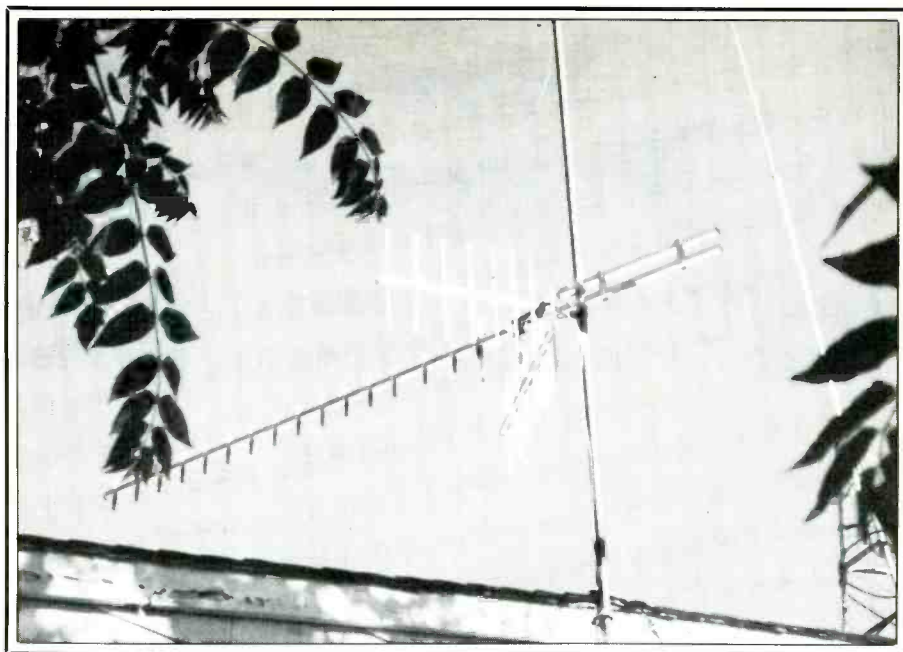
order to enable to attach them (sometimes via assorted adapters) to various pieces of equipment. I could have optionally soldered on a male BNC-type (UG-88) plug for hooking to the scanner without the need for the adapter.

The Test of Steel

After crossing my fingers, I programmed a bunch of New York City UHF frequencies into the scanner and let the scanning begin. I'm not going to tell you that distant UHF stations came booming in and cracked the glass in the frame of Grannie's photo. Neither am I claiming that each and every frequency I would have liked to monitor produced results for me.

But, lots of UHF frequencies I had selected were observed as being active with readable communications. Those very same frequencies had never before produced even a peep for me, no matter what I had tried in the past. Signals between 800 and 900 MHz were also copied. So were signals in the 406 to 450 Mhz band (even though they were beyond the primary frequency range of the U-120 beam). Fact was, that I found that the antenna did a reasonably good job of picking up VHF high-band (150 to 174 MHz) signals, as well as signals coming from areas outside of the main direction of its beam.

On this basis, I'd have to say that I have substantially improved my ability to hear distant UHF stations. I would recommend



From TV antenna to long-range UHF communications antenna in less than an hour. Here it is, ready for action.

this system to the many other scanner owners who share my desire to monitor UHF stations beyond the normal distance range of their stations. It was relatively inexpensive and easy to put into operation.

The thought has occurred to me that it might be interesting to see what would hap-

pen if this antenna was put on a rotor in order to point it at many different areas of interest. And, what about adding a 10 dB in-line TV signal booster to the system? They're only about \$16 and could further increase weak signal UHF monitoring. Might be worth a try.

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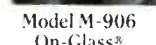
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Monitoring Our Protected Airspace

Tune In On Military Comms From Those Who Watch For Intruder Aircraft or Missiles!

BY HARRY CAUL, KIL9XK

There's no doubt about the fact that a significant amount of effort is put forth to protect our nations borders from unauthorized entry and enemy attack. While much of this surveillance is carried out by satellites and other systems beyond the monitoring abilities of the average scanner or communications receiver owner, still, there are ways at least some of this activity can be monitored.

FACSFAC

One such system is called FACSFAC, the acronym for Fleet Area Control and Surveillance Facility. The Navy FACSFAC mission is to provide scheduling, communications links, control, containment, coordination, Search and Rescue and a variety of other services to all other military and civil aircraft operating in the Warning Areas and offshore Operating Areas (OPAREAS) along the U.S. Atlantic, Gulf, and Pacific coasts, and around Hawaii.

Giant Killer is the tactical ID for FACSFAC at the Oceana NAS, VA. This station operates USB on 2252 and 4373 kHz. In the VHF aero band, it can be monitored on 127.65, 135.225, 133.725, 135.875 MHz. In the military UHF band, listen on 233.7, 239.2, 249.8, 251.6, 255.0, 305.0, 310.1, 338.1 and 350.0 MHz.

Sealord is the on-the-air ID for FACSFAC in Jacksonville, FL. For HF operations, listen in USB mode on 3130, 6723, 6742 and 11252 kHz. In the VHF aero band, listen on the primary frequency of 120.95, with the secondary being 134.65 MHz. Other secondary transmitters are in Beaufort, SC on 135.975 MHz, and at Patrick AFB, FL on 135.825 MHz. UHF primary frequency is 267.5 MHz, secondary 284.5 MHz. UHF secondary at Beaufort is 313.7, with 369.9 the secondary at Patrick AFB.

Seabreeze is FACSFAC, Pensacola, FL. Listen on HF (USB mode) on 6835 kHz. VHF operations are on 118.425 MHz. Other operations are in the UHF military band on 274.2, 275.6, 280.7, 303.4, 306.8, 313.2, 346.5, 353.2, 362.8, 382.0, 383.8 and 385.2 MHz.

Beaver is FACSFAC, San Diego. Listen in the VHF band on 118.65 and 120.85 MHz. Military UHF band operations are on 266.9, 272.6, 285.7, 289.9 and 314.7 MHz.

NORAD

Another group watching the airspace over North America is North American Aerospace Defense Command (NORAD), composed primarily of Air Force components. NORAD is headquartered in Colora-

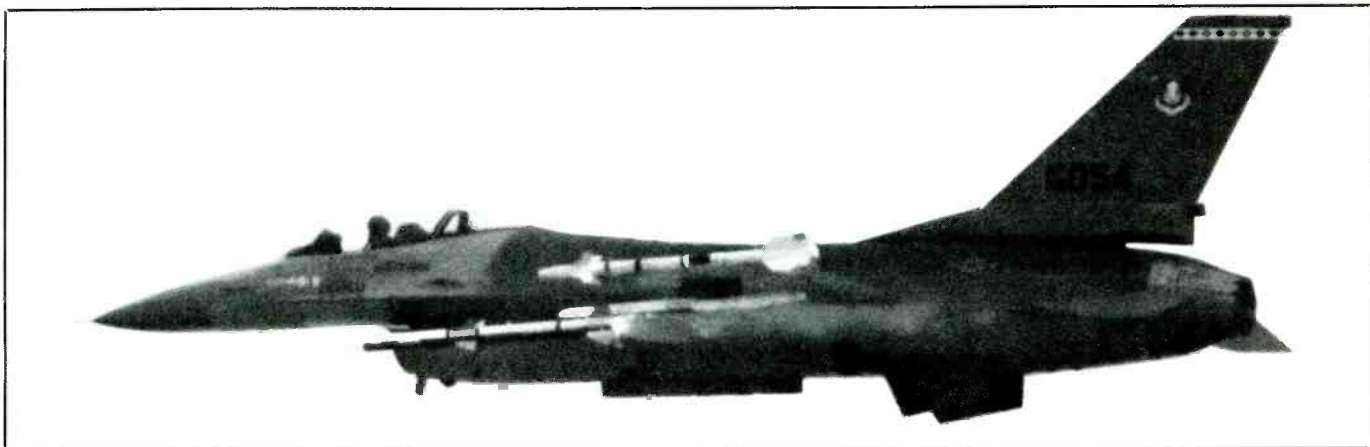
do, and remote transmitter sites are located in several areas distant from HQ.

NORAD's HF (USB mode) communications have been monitored on 4872, 5297, 6708, 9023, 9723, 9793, 11441, 14894 and 20855 kHz. The UHF military band frequencies commonly attributed to NORAD include; 228.7, 233.6, 238.7, 239.2, 251.8, 254.2, 255.8, 258.0, 260.8, 264.6, 270.2, 273.4, 276.1, 278.4, 283.8, 288.7, 299.5, 312.8, 313.6, 318.4, 320.6, 329.0, 338.1, 355.2, 361.6, 361.8, 364.2 and 364.9 MHz.

Tactical ID's recently used by NORAD stations include; Ringmaster, Dragnet, Dragnet Tango, Dragnet Victor, Challenge Charlie, Goliath, Arizona Pete, Huntress, Incognito, Celestial Gulf, Fred and Band-saw Gulf.

Monitoring NORAD frequencies produces plenty of training exercises with no shortage of "angels," "bogies," and reports of vectors. If it were real, it would indeed be horrifying. Even when you know it's just an exercise, it still manages to bring a chill to the spine with very little difficulty.

There are, of course, other military activities concerned with watching the protected airspace around the edges of our nation. These, however, are the ones that seem to be easiest to monitor and which are most often reported. **PC**



A report of an unknown aircraft approaching our borders causes lots of aircraft to take flight from our bases. This, in turn, generates much two-way communication activity you can monitor.

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Radio, As It Was

How About Those Stations That Were once On The Air?

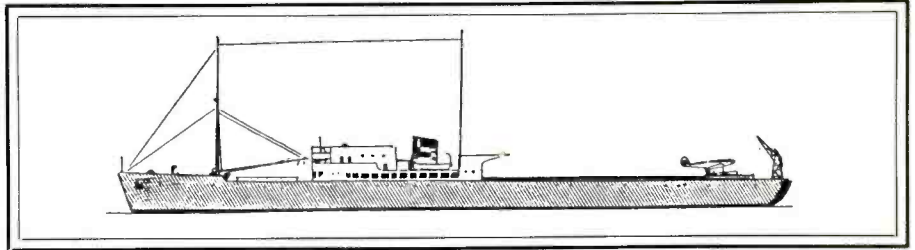
BY ALICE BRANNIGAN

When it comes to floating radio stations, history has mostly failed to record four unique seagoing stations that began their careers in the late 1930's under the German flag. These were not only floating radio stations, but also refueling points for long distance airmail flights between Germany and South America.

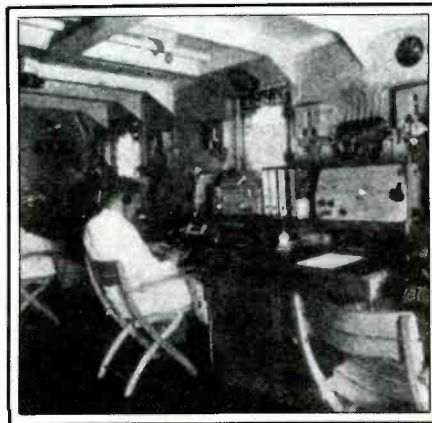
This intercontinental mail service began operation in 1935, and to accommodate planes on flights, Deutsche Lufthansa converted several ships. This included the old freighter *S.S. Westfalen* (5,400 gross tons, built 1906), *M.V. Schwabenland* (8,200 gross tons, built 1925 as the liner *Schwarzfels*), and the *M.V. Ostmark* (1,300 gross tons, built 1936). These ships were stationed about 600 miles off the coasts of Africa and South America.

The aircraft wouldn't actually land on the decks of the ships, they would land on the water, using their pontoons. A crane would lift them aboard, where they would be serviced and refueled. Takeoffs were from the decks by means of catapult.

The star of the fleet was the *M.V. Friesenland*, the only ship specifically designed and built for this purpose. It was built in 1937; a 5,400 gross ton vessel, 427 ft. in length. The communications equipment was most impressive. A 3 kW low frequency transmitter (100 to 500 kHz range) was employed for radiobeacon purposes. The shortwave



The *M/V Friesenland* was a floating communications and aircraft service station put in the South Atlantic by Germany just prior to WWII.



The elaborate radio shack aboard the *M/V Friesenland* had three operating positions.

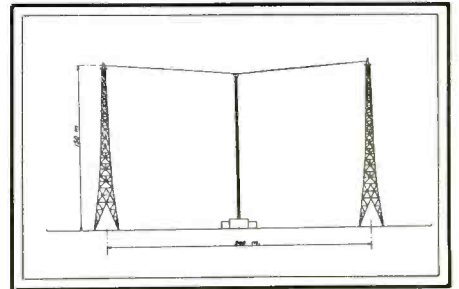
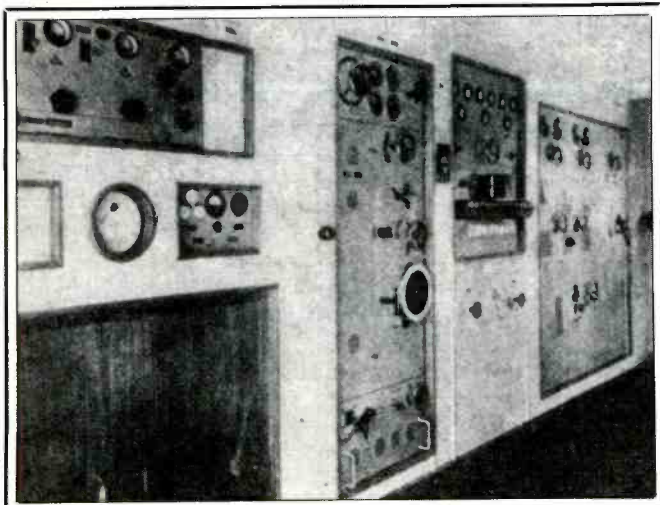
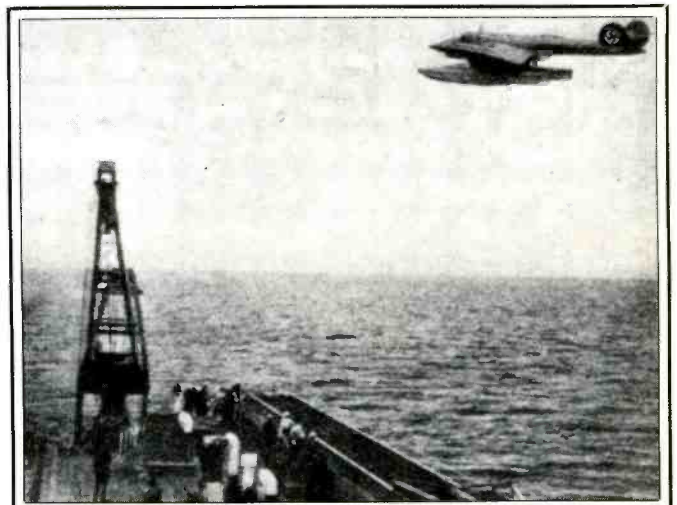


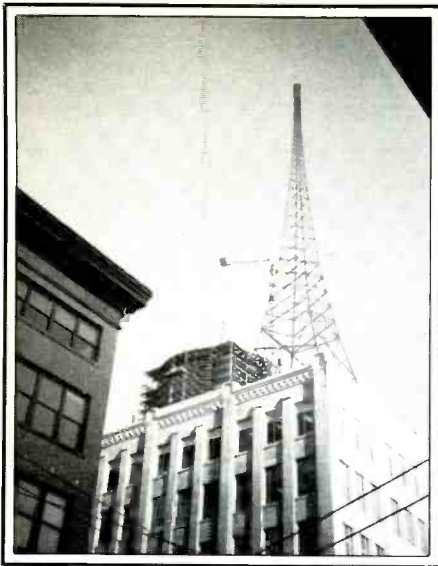
Diagram of the Spanga station's antenna reveals that the radiating element was the 450 ft. vertical that was supported by cables strung between the two large masts. This arrangement made it possible to connect 3-phase AC of 30 KVA to the antenna in order to keep it clear of snow and ice.



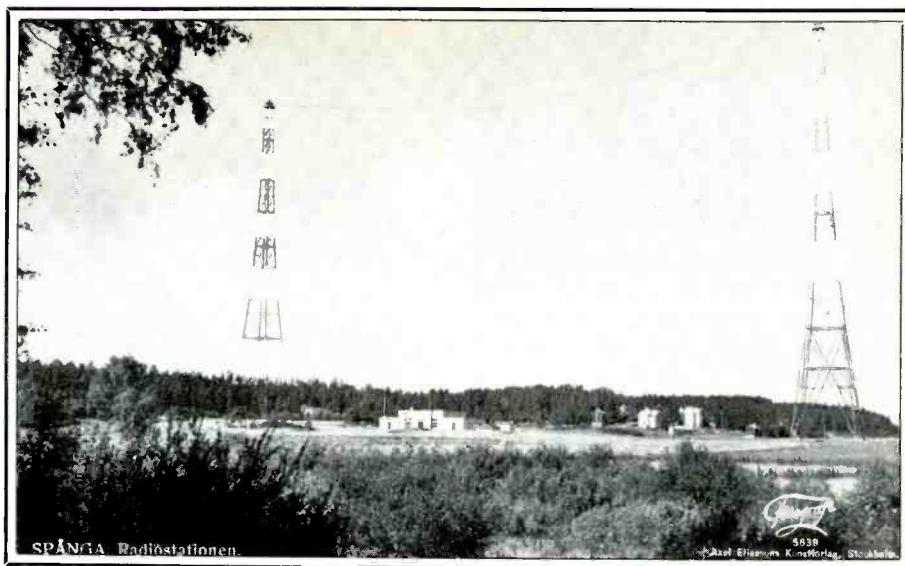
Aboard the *Friesenland*, two shortwave transmitters are seen at the left. The 3 kW longwave radiobeacon transmitter is at the far right.



A Blohm and Voss freight carrier seaplane gets ready to land near the *Friesenland's* stern. Note crane at the left, catapult to the right.



One of the towers atop the Bigelow Building in Seattle. Turns out it was once used by colorful broadcaster KXA.



We ran this photo of the station in Spanga, Sweden, last June and asked our readers for more details. Two readers in Sweden obliged and advised that the station operated between 1930 and 1956.



Fifty years ago, these threads were predicted as what we would all be wearing in 1989, as envisioned by Vogue Magazine. The belt contained a two-way radio, the hat supported a "halo" type antenna.

equipment (3300 to 20000 kHz capabilities) ran 600 watts, with a backup rig of 150 watts. There were no less than six receivers, each with a range of 15 to 20000 kHz.

Of the ship's crew of sixty, there were enough radio operators to keep the station staffed with two (sometimes three) people on duty at all times. Usually two handled traffic and one tended the radiobeacon and direction finding gear (there were backup radiobeacon and direction finding stations installed in addition to the primary units).

Whether these vessels were placed in operation with an eye towards their eventual military potentials is speculative, although probable. After war was declared, the *Schwabenland* acted as a ruthless South Atlantic raider and sank several ships (among them the Booth liner *Clement*), before being sunk herself.

(and running a country music format over its 50 kW transmitter).

Jerry Starr claims the original station, KFQX, was built for the famous bootlegger Roy Olmstead and featured a program where "Aunt Vivian" was actually Mrs. Olmstead, and her apparent kiddie stories contained coded instructions for Mr. Olmstead's extensive network of bootleggers and fleet rumrunners. By 1925, Prohibition agents figured out the ruse and shut down KFQX. It was off the air for several months, until a new management team could lease the facilities.

The towers in the photo are on the Bigelow Building and were erected about 1941 and supported a "T" type antenna which was in use for many years. The antenna for the station was eventually replaced by the more common ground-mounted vertical radiator type—and at another location.

Update

In the July issue we ran a photo of an apparent broadcast tower on the roof of an office building in Seattle, WA. We asked if anybody knew what station is, or was, hooked to that structure. Our question brought in many responses, including one from John W. Price, an engineer at KEZX-AM/FM in Seattle; from Dean Manley, of Honolulu; from John S. Dresser, of KMPH-TV in Fresno; Jim Murphy of Montrose (CO); Pat Martin, of Seaside (OR); Jerry Starr, of WHOT in Youngstown, OH; and Jack Strayer, of WA.

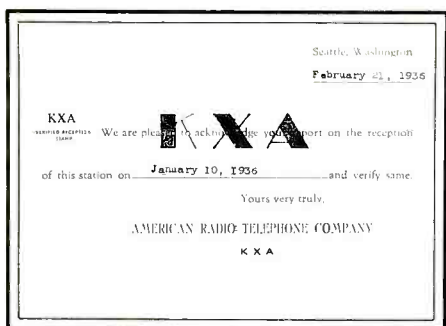
These good folks all knew that the towers once belonged to Seattle broadcaster KXA, which operated on 1290, 1260, 980, 560, 1080, 760, and ultimately 770 kHz. Between 1924 (when it began broadcasting) and 1927, the station used the call signs KFQX, KTCL, KGFA, and KXA, later changing to the present call sign of KRPM

The old rooftop wire broadcasting antennas are virtually gone, points out Jerry Starr. In the west, the last ones left are those of KGFJ (Los Angeles) and KPPC (Pasadena). In the east, there's only WSAJ, Grove City, PA. Others are operational, but maintained only for back-up use—like KDKA's in Allison Park, PA. Some of the old towers still stand, but the antenna systems they once held are long gone (as with the antenna system once used by WBZA, Springfield, MA).

Looks as though the old Bigelow Building in Seattle is to be torn down, thus removing the picturesque old KXA towers from the Seattle skyline. Very sad. We do appreciate all the information supplied on KXA's tower.

KTHS Thoughts

On a happier note, our report on Arkansas station KTHS (July issue) mentioned that the wonderful rural comedy team



A QSL from KXA dated 1936. Courtesy of Joe Hueter.

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CIRCLE 4 ON READER SERVICE CARD



One of our readers provided the operating specs for this WWII spy transceiver. Says it ran 5 watts and had a 500 mile range!

(LUM and Abner) got their start on this station in 1931. That brought a letter from reader Sam A. Brown, V.P. and co-founder of the National Lum and Abner Society, the NLAS exists to keep alive the memory of these two cranky characters whose antics filled the airwaves for twenty three years. A yearly convention is held in Pine Ridge (formerly Waters), AR each June and attracts fans from across the nation. They publish (6 times a year) a newsletter, and can be contacted in care of Tim Hollis, Route 3, Box 110, Dora, AL 35062. Incidentally, the original *Lum and Abner* programs are available for use on commercial broadcast stations from Program Distributors, Jonesboro, AR. The NLAS also maintains a tape library for use by members.

Undercover Rig

Also in July, we ran a photo of a WWII British spy transceiver in a small suitcase, although we didn't give any details of the unit shown. That rewarded us with a letter from "Poco," in Cherryfield, ME who reveals that this unit ran 5 watts from 3200 to 9000 kHz, in two bands. It weighed in at about 5.5 lbs, had a 2-tube (crystal oscillator and amplifi-

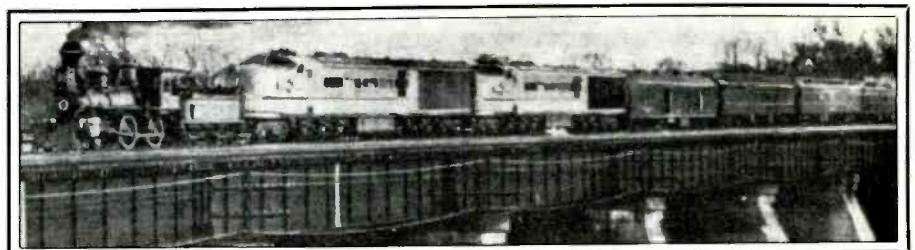
er) transmitter coupled with a 4-tube super-het receiver. The suitcase in which this set was housed measured only 13 by 9 by 4 inches, adding only 3.5 lbs to weight of the radio alone. Poco reports that it was much admired by experts and regularly handled comms on 500-mile circuits. In fact, he is presently using a similar set that was made from WWII-era parts and finds it very reliable.

In addition to our information (in July) on German WWII submarine comms, Poco advises that during that war, he was involved with communications intelligence work relating to Nazi sub wolfpacks. He says to add to our list of German coastal stations used for wolfpack t/c, station MMA, located southeast of Paris, France and operating on 7770, 9965, and 13665 kHz (as well as other frequencies).

Poco, by the way, is a cryptology fan as well as a member of the ACA.

Digging Back to June

Our mystery photo in the June issue was of an imposing broadcast station in "Spanga," which we surmised was in Sweden. That was enough to bring in letters from



Home of WOG was aboard UP's "Century of Progress" exhibition train that went from coast-to-coast. It was pulled by two dieselectrics and an antique woodburner.

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Station WOEG operated on 2000 kHz from a Union Pacific train in 1939. G.E. radio engineer, Bob Lingle, on loan from station WGY, is shown at the controls.

Johnny Larsson, SM2FIJ, of Boden, Sweden; also from Haken Widenstedt, Swedish Telecom Radio, Ystad, Sweden.

Both readers advised that this station was, indeed, located in Sweden, about two miles to the northwest of Stockholm. It operated from 1930 to 1956, broadcasting the

Swedish National Programme on 689 kHz (later changed to 704 kHz).

The transmitter was a 75 kW Marconi type that was usually run at about 55 kW. The towers were 450 ft. tall and separated by 720 ft. These towers supported an antenna consisting of three vertical copper wires

supported by cables strung between the masts. The station was replaced by a 150 kW station on 773 kHz located in Nacka - which, itself, was replaced in 1985 by the 600 kW station on 1179 kHz in Solvesborg.

New Business

Having taken care of old business, let's go to a question posed by John M. Dresser, Fresno, CA. John tells us that he's been trying to track down information on an old station, KCRJ in Jerome, AZ. He asks if we can tell him the frequency, or anything else about this station.

Well, for starters, we do know that Jerome, AZ is presently classified as a ghost town, although there are 400 people still living there in a quaint arts and crafts community (at least that's what it was two years ago when I visited Jerome).

Jerome is located on the side of 7,700 ft. Mingus Mountain, which was a huge pile of copper ore when the town was built up in the 1890's. By 1929, Jerome was a thriving community of 15,000 souls whose livelihoods were based on the extensive mining operations.

Years of intensive mining, however, riddled Mingus Mountain with 85-miles of mine tunnels which began to undermine Jerome. Add to this, the effects of heavy winter rains, leakage from the Jerome water supply, plus the earth shocks from the many underground explosive charges connected to the mining operation on Mingus Moun-

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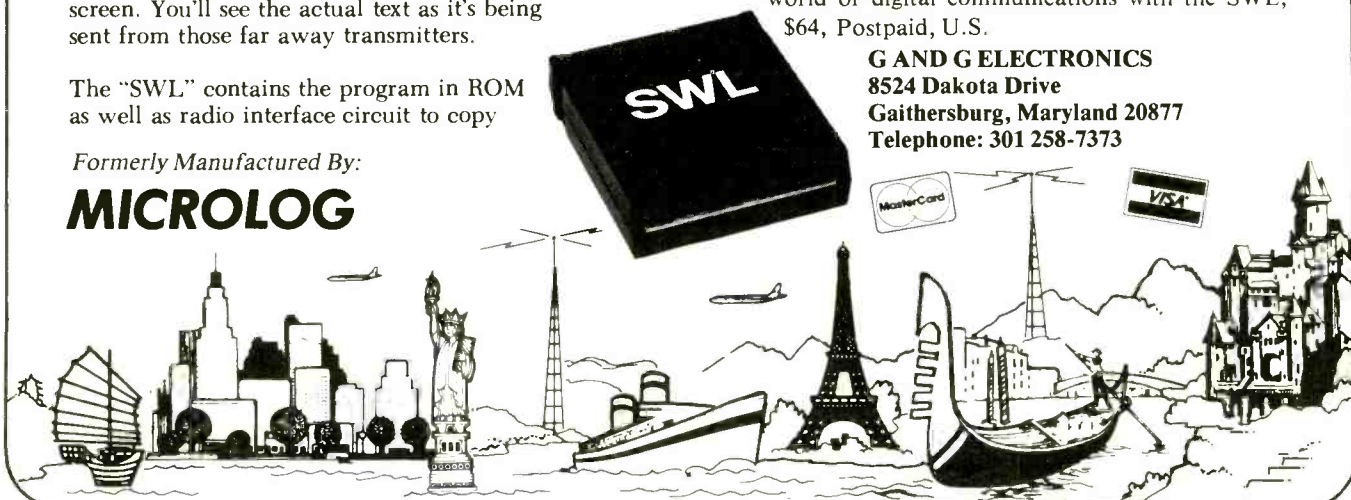
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tain, and the city of Jerome was in trouble. When the powder shack blew up, that was all Jerome needed to start sliding slowly and gracefully down the slopes of Mingus Mountain—the entire city! It's still sliding. The jail is now 300 feet from where it once was. Between the moving town, plus labor problems, the big mine was shut down in 1953, and that was the end of Jerome. There were only 100 residents left there at the time.

In its halycon years, the late 1920's and early 1930's, Jerome was by no means a rinkydink little mining camp. You can still see its large and impressive buildings even though the adobe and brick walls are cracking. Most buildings are unsafe and abandoned, although Jerome covers a large area. What with \$29- million per year in copper being extracted from Jerome's mine, there were many features of civilization there not found in other mining communities, like schools, movie theatres, and the radio broadcasting station.

KCRJ went on the air about 1930, being licensed for 100 watts into a 145 ft. tower on 1310 kHz. It was owned by Charles C. Robinson, 711 Main Street, in Jerome. The station appeared to thrive for about ten years, and by 1940, was running 250 watts. In early 1941, it shifted frequency to 1340 kHz, and was owned by the Central Arizona Broadcasting Co. But, the station's shifting frequency was less important to its fate than Jerome's shifting streets. It wasn't long before the fortunes of KCRJ slid down the hill along with all of the buildings in Jerome. By 1945, KCRJ was silent.

You can still visit Jerome, it's 78 miles southwest of Flagstaff on Alternate Route 89. But don't listen for KCRJ, it's one of the eerie ghosts of Jerome's glorious past. Gone, but still not totally forgotten!

Still In Training

In several recent issues, I've presented information on novel experimental stations located aboard railroad trains. For whatever reasons, this information has brought in lots of mail asking for more coverage of this type of daring experimentation during radio's "golden era." Glad to be of service, but I'm beginning to run out of trains!

I do have good ol' WOEG, a railroad-borne station that ran 50 watts on 2000 kHz. This operated in 1939 aboard the Union Pacific's *Century of Progress* exhibition train that went across the nation from the west coast to Boston, MA. General Electric's station WGY (Schenectady, NY) built this station in a specifically constructed, soundproofed room in a standard baggage car which followed the 2-unit 5,000 h.p. diesel-electric "EMD" E-series locomotive, headed up by an antique wood burning puffer from an earlier era.

WOEG's antenna ran for 200 ft., and was stretched out on top of three railroad cars. The stations average transmitting range was 15 to 20 miles, and its transmissions were intended for pickup and rebroadcast by the

NBC Radio Network from various locations enroute.

This month, I leave you with a look towards the future, at least the future as it looked fifty years ago to the editors of *Vogue* magazine. In the February 1939 issue of *Vogue*, they presented the startling photo showing what they thought a person from fifty years hence (that's now) might be wearing. The main features of the outfit are

a personal two-way radio transceiver in the wide belt. It's fed into an outrageous "halo" hat which serves the transceiver's antenna.

Don't laugh! It's probably the next stage in the design of cellular telephones. Still, the whole outfit's not quite as comfortable looking as a *Calvin* T-shirt, a pair of *Levi 501's*, and a quarter hidden away in the *Addidas* for use in a pay phone.

See you next issue? Hope so!

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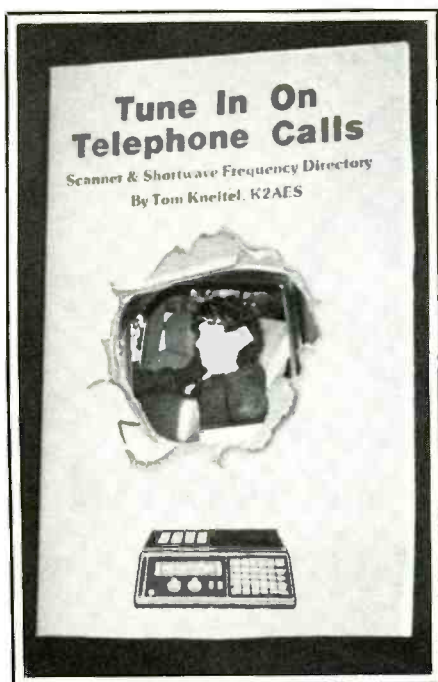
CIRCLE 46 ON READER SERVICE CARD

BOOKS YOU'LL LIKE!

BY R. L. SLATTERY

Calls Of The Wild

What do people talk about in their private telephone conversations? They reveal their personal and business secrets and problems, plan felonies, wheel and deal, buy stocks, make investments, offer/accept bribes/kickbacks, get engaged and divorced, accuse, cheat, conduct lurid and illicit romances, deal in drugs, brag, spy, plot, arrange little wars, get hired and fired, gripe about money, lie, argue, engage in highly charged family hassles, cry, beg forgiveness, make indecent proposals, gossip, spread rumors, ridicule their neighbors and co-workers, and more. These are business leaders, politicians, professional people, members of the news media, show business celebrities, and the people who live next door to you. It's juicier than any soapopera ever hoped to be, and it's all real and taking place "live" and spontaneously.



Thanks to a host of telephone technologies (many perfected in recent years), lots of these telephone conversations are going out over the airwaves via cellular and other car phones, cordless telephones, ship/shore radio, high seas radio, phones aboard airliners, and other sources.

Few people engaged in these conversations appear not to have the foggiest idea that their chats can be readily monitored by persons with standard scanners and communication receivers tuning the HF, VHF and UHF ranges. This has spawned a new "insider" underground pastime, eavesdropping on those calls. It's also become a valuable tool used by private investigators, intel-

ligence gathering and law enforcement agencies, and the news media. This, despite virtually unenforceable legislation enacted to try and dissuade the public from listening in on at least some of these private conversations. If anything, that has served only to create an even bigger interest in eavesdropping.

Everybody has a bit of "snoop" in them. Probably the biggest busybody of all is Uncle Sam, himself, who (via his CIA, NSA, and several other agencies) eavesdrops on the world's telephone calls by means of many terrestrial and satellite-borne monitoring facilities.

A new 160-page illustrated book, *Tune In On Telephone Calls*, by Tom Kneitel provides all of the details on how average people are using scanners and communications receivers to do this eavesdropping. In 21 chapters, Tom explains how and where the calls are to be heard, he discusses the equipment needed, tips and techniques, the relevant laws, the types of calls being monitored, the bands and frequencies used. In fact, the book contains several thousand specific station and frequency listings throughout the U.S. and Canada used for these telephone calls on the (1600 kHz to 22 MHz) shortwave and scanner (VHF/UHF) bands. One-way radio paging is also covered. The book has many photos and other illustrations. It is the A-to-Z of using a scanner and shortwave receiver to tune in on telephone calls from homes, cars, offices, ships, airliners, Air Force 1 and other VIP military aircraft, trains, MARS stations, hams, oil drilling platforms, and whatever. These calls take place every hour of the day and night, seven days a week. Indeed, they are plentiful.

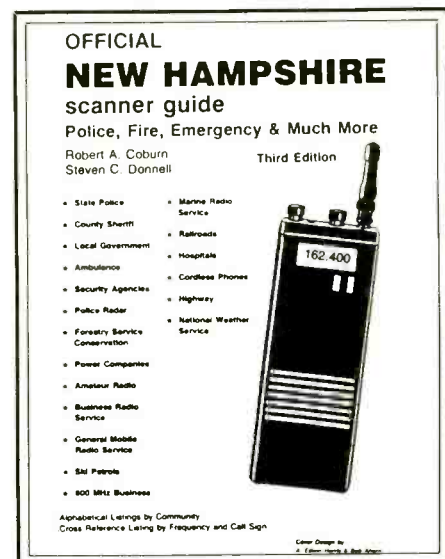
The old "party line" telephone may be a thing of the past, but people can still listen in. *Tune In On Telephone Calls* tells the whole story of just how easy it's being done using hobby-type receiving equipment. There are many extra tidbits scattered throughout. One is the sneaky (and illegal) way some folks have car phones without shelling out \$600 to \$2,500 for a cellular unit, without paying a monthly service charge, without spending 55 cents per minute air time for incoming as well as outgoing calls. They've done it with \$160 transceivers, no monthly service charge, no charge for incoming calls, and less than \$4 each for outgoing 3-minute local calls! He also explains how folks with ham tickets legally get free car phone telephone calls. Then, how people using the cheaper model "numeric" beepers have figured out how to make them do the work of the more expensive "alpha numeric" type pagers. Lots of interesting information like this throughout the book.

Tom Kneitel's *Tune In On Telephone Calls* is available from selected leading communications equipment suppliers. It can also be ordered directly from its publisher at \$12.95 per copy (plus \$2 postage/handling to addresses in the U.S. and Canada). Order from CRB Research, P.O. Box 56, Commack, NY 11725. New York residents add sales tax.

Live Free And Scan!

The Third Edition of Bob Coburn's *Official New Hampshire Scanner Guide* is out, and looking plumper and more informative than ever. This edition has 223 pages and has an updating on all of its listings.

Listings are shown by community, with a master cross-reference according to frequency, callsign, and licensee. Included are state, county, and local systems along with system maps, codes, signals, frequency usage information and many other vital pieces of information.



It should be pointed out that business and industrial licensees, including those in the 800 MHz band, are part of this comprehensive and worthwhile directory which has been compiled with accuracy and care, Bob Coburn, W1JJO, has been a scanner fanatic for years and knows his state communications systems like a book - this book!

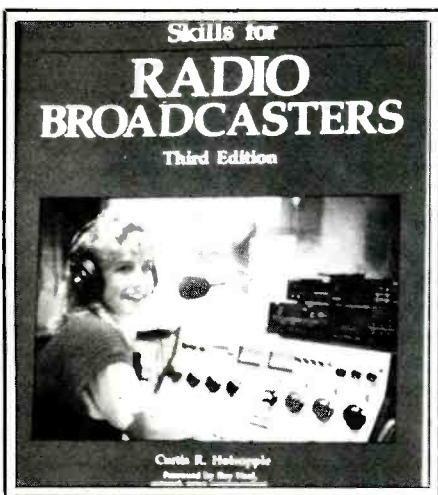
The Official New Hampshire Scanner Guide, by Bob Coburn, is \$4.95 from Official Scanner Guides, P.O. Box 712 Londonderry, NH 03053.

Broadcast Beginners Unite!

Skills for Radio Broadcasters, by Curtis Holsopple, is a 200-page book providing information on how to get started in broadcasting. The author is an experienced

broadcaster who is director of communications at college in Virginia.

As he points out, to get into broadcasting, you need a variety of skills such as energy, enthusiasm, a knack for writing, reporting, producing, and more. Small stations, where most newcomers begin, look for persons who can become adept at several jobs, from writing news copy to keeping track of records and tape carts. Then, as a person becomes more experienced, there are opportunities to specialize. This book provides many tricks of the trade in all areas for progressing through the menial jobs to the point where a rewarding career in broadcasting becomes a reality.



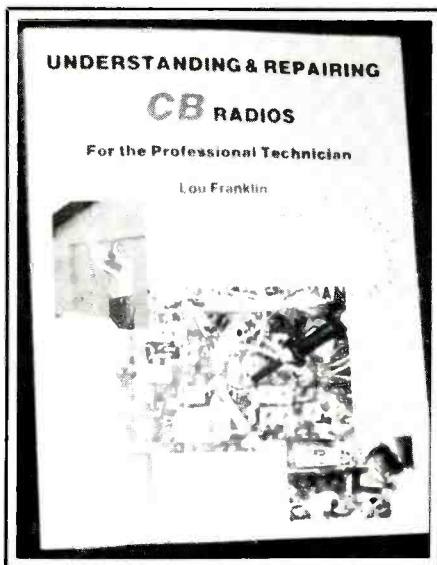
Holsopple's ideas are quite clever, and he approaches his topics on a realistic basis rather than on the sugarcoated level of some books we have seen. Let's face it, getting started in broadcasting isn't easy. If you expect to get anywhere, you've got to be prepared to work hard at a lot of very dumb tasks before they'll give you a chance at screwing up anything important. Holsopple lets you know how to tough it out and get through those early barriers so that your natural talents will be recognized sooner than those of the smarter person they hired two weeks ahead of you.

Chapters cover station equipment, announcing, writing, FCC rules, production techniques, and many other topics of value. There are plenty of photos, plus cartoons. The only things detracting from the text are the very amateurish and poorly drawn illustrations.

This book is \$14.95 from the many dealers who sell TAB Books.

Fix Thy Transceivers

Lou Franklin has put together a dandy book "for the professional technician" who



repairs CB transceivers. Lou's 365-page book is called, *Understanding and Repairing CB Radios*, and is intended to help the person with some electronics know-how solve CB service and repair problems. Even if a person hasn't performed any of this work previously, if a person can deal with schematics and understand some tech talk, they can probably learn how to service CB rigs from this fine book.

The book covers all types of rigs, domestic, export, and some foreign units. These are rigs built for AM, SSB, and even CW modes on 23 and 40 channels. These are crystal and PLL-synthesized, tube and solid state models. He's got all of the bases covered, plus info on antenna problems, accessories, test gear, etc.

Chapters include basic troubleshooting, receiver circuits, transmitter circuits, SSB circuits, power supplies and T/R switching, noise and interference problems, and antennas. To be sure, this isn't a book on how to operate or talk on CB, or how to get a message to the REACT monitor. This is a book on repairing broken transceivers that assumes that the reader has some basic understanding of communications technology beyond being able to press a mike button and change channels.

It's quite a good book which is recommended for all brave souls who can face a circuit board, soldering gun in hand, and not break out in goose flesh.

Understanding and Repairing CB Radios, by Lou Franklin carries a price tag of \$34.95, however, if you order the book before December 31st, 1988, the price of the book is \$29.95, plus \$2.50 mailing to U.S. addresses, or \$5 mailing to Canada. Order from CB City International, P.O. Box 31500, Phoenix, AZ 85046.

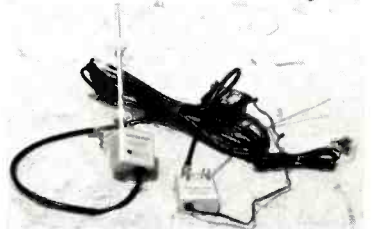
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Tequesta (Almost) Gives Up Her Secrets

Conclusion of a 2-Part Feature on the Search for a "Spy Numbers" Transmitter in South Florida.

BY HAVANA MOON

I continue to feel discomfort; ill at ease with some of the mysterious sites, facilities, and people in the Jupiter/Tequesta area in Florida. There's a haunting and ghostlike quality in the air around Tequesta. It's difficult to put it on a magazine page so that you can catch the exact feeling without being here.

So, too, is at least some of my discomfort caused by some of the tantalizing things said and left unsaid by others who have attempted to unlock the mysterious transmitter in the Jupiter/Tequesta area that sends coded messages, apparently to espionage agents. Why had there been no references made to prominent local geographic reference points such as U.S. Highway 1, the U.S. 1 drawbridge, the "Beacon J" antenna? Surely, a personal visit to the Jupiter/Tequesta area, or even a cursory examination of aerial photos would have revealed these and other reference points I have discussed last month.

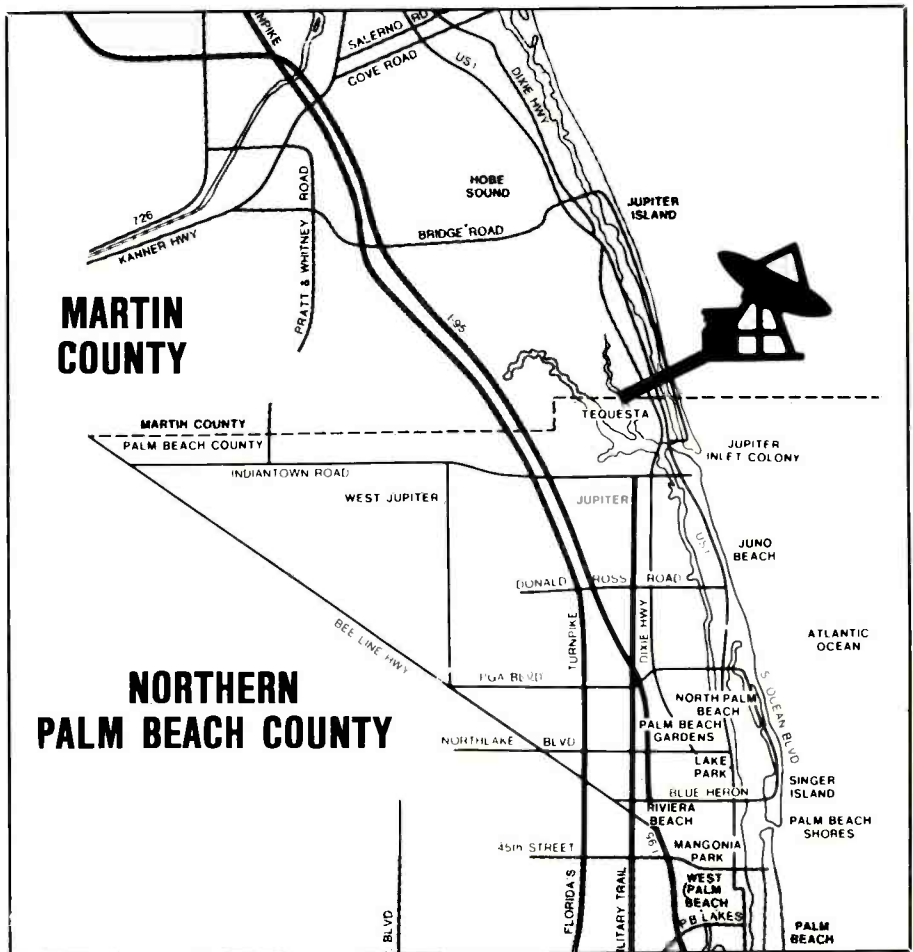
According to what others would have us believe about this area, there are supposed to be three circular HF antennas positioned in a triangular formation. I didn't see them; couldn't find them where they were claimed to be, south of the Jupiter Inlet. How do you hide something like that?

There was supposed to be a passive repeater to the south of Jupiter Inlet. No way! Care to make that north or northwest of Jupiter Inlet? The site just north of Jupiter Inlet and Light does have possibilities. This is a spot across Beach Road, or C-707. During WWII, it used to be a U.S. Navy intercept station. And let's not rule out the nearby USAF site on County Line Road in the Village of Tequesta. But south of Jupiter Inlet? I think not.

I've carefully examined aerial photos of this area and couldn't find anything even remotely resembling circular HF antenna systems, although it was easy to spot the lighthouse, inlet, the Intercoastal Waterway, U.S. 1, the drawbridge.

A Job Well done

Yet, despite these things, the basic information that cited the Jupiter/Tequesta as



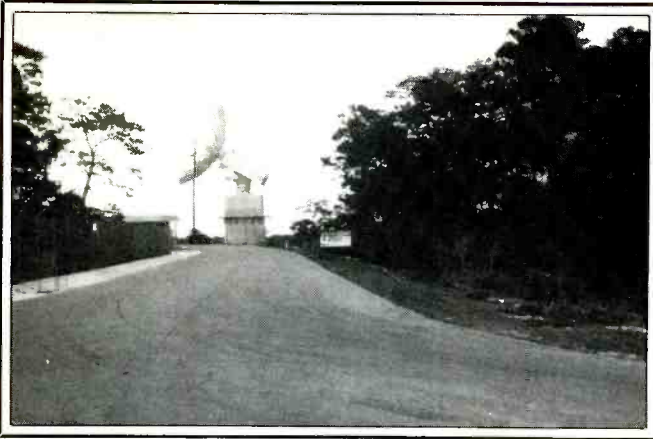
Map of the area around Jupiter Inlet, FL shows Tequesta to the northwest of the inlet.

the location of a mystery transmitter sending out four-digit coded messages was a job well done. Still, I could easily nitpick over the claims that one-time pads are used to decrypt the messages. And some of the statements quoted from Mario Casagrande's interview in an Italian weekly were slightly out of kilter.

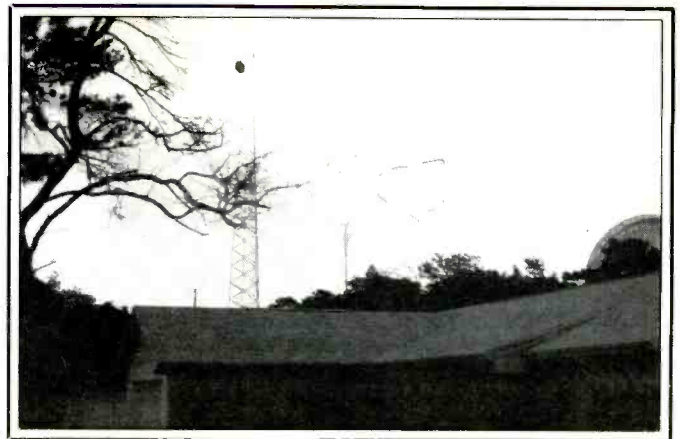
However, the feature in last June's *Monitoring Times* did specify that mysterious transmissions were taking place on 4670 kHz at 2100 UTC from 26 degrees, 56 min-

utes north, by 80 degrees, 5 minutes west. Although these coordinates would have been more useful had they been tied to visual reference points, I have no doubts whatsoever that at one time some 4670 kHz transmissions came from somewhere in the vicinity of these coordinates.

The question is the exact and specific present location of the mysterious Tequesta area 4670 kHz numbers transmitter. Much to my chagrin, I'm simply not certain. At this time, I'm partial to the site on County Line



Entrance to the County Line Road tracking station.



One of the towers at the County Line tracking station.

road. My instincts say so, although I have no real proof.

A Look Back

During WWII, Nazi U-Boats sank the tanker *Republic* offshore just north of Jupiter. Many other ships followed in deadly succession. The U.S. Coast Guard was on constant watch of the coastline, especially because of the Navy Intercept Station and other coastal installations in the area.

It was during this period that civilians were not allowed on the beaches at night. The inlet was closed in the winter of 1942 and stayed closed for the duration of WWII! U.S. Coast Guard personnel continually patrolled the beaches on horseback. Jupiter became used to nightly blackouts and heavily armed combat troops.

Then it was over; some years later, the tracking of missiles(?) became the next activity in this area around the historic Jupiter Light. So, the Village of Tequesta would come into existence in 1957.

Rest assured that this "ghost" will attract villainous figures with the initials KGB and DGI (Cuban Intelligence) to the areas of Jupiter/Tequesta, River Ridge, Riverside Memorial Park, Tequesta Pines and North

River Plantation! Could be that some of these villainous figures will even stop for pizza and a bottle or two of Corona at County Line Bar before proceeding west on County Line Road?

Helpful Information

During the later months of 1986, while preparing the final manuscript of my book, *UNO, DOS, CUATRO*, I was forwarded a somewhat mysterious and unsigned letter with a Florida postmark! This letter dealt with my research into "numbers" transmissions. There were some very sinister overtones in that letter!

Here are a few excerpts of this mysterious letter:

"First of all, the Spanish 4-digit transmissions are for the *most part*, (emphasis mine - HM) disinformation by U.S. Intelligence. I might add that these transmissions have been directly linked on numerous occasions to DOD installations, and is generally well known and considered to be a minor inconvenience to the Cubans."

This writer also made mention of the five-digit Spanish transmissions. Here's a portion of those mentions:

"The Spanish 5-digit number transmis-

sions are run by DGI (Cuban Intelligence). They have an established net that includes several U.S. installations as well as facilities on Cuba. However, one should note that a small portion of these type transmissions are sponsored by anti-Castro Cuban terrorists both in this country and in Cuba."

My correspondent continued:

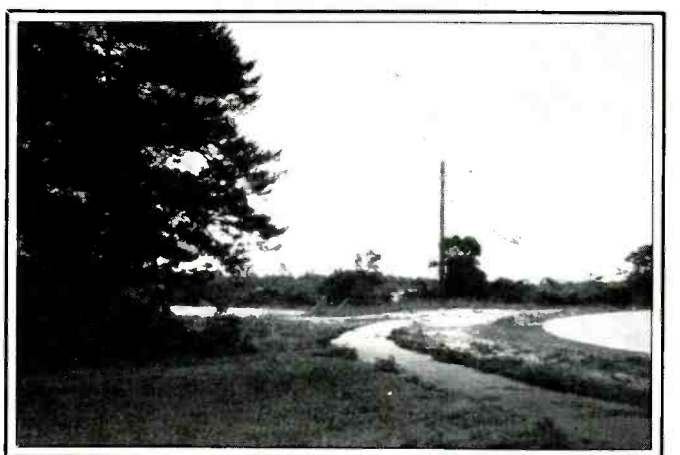
"There has been, for example, one 5-digit Spanish numbers station run by DGI in South Florida for nearly 15 years. Most of the time, this station has been located in various residences in the Hialeah area. Other times in Key Largo, etc. The occupant takes great strides to conceal its identity as it is moved around quite a bit (which tends to give NSA Miami a bad time) and by engaging in "signal laundering. These techniques are too numerous to list here . . ."

This writer even made mention of the crypto systems in use! This mystery person said:

"The code format is typical of KGB nets with some step/pattern variation, but nevertheless one can tell that distinctive "made in Moscow" (by KGB 8th Directorate alma mater). I'm familiar with this code formula and have seen a copy of the code book and instructions."



One of the (possible) HF towers at the tracking station.



Friendly signs are in abundance to greet curious visitors.

Feel free to reach your own conclusions on the above.

Meanwhile . . .

While in Cypress Gardens, FL in early April of 1985, I was amazed at the signal strength of a 4030 kHz "numbers" transmission! The time was 1530 UTC and the antenna of my Sony 2001 was fully collapsed. The signal strength of this five-digit transmission was amazing!

Daytime transmissions on Saturdays and Sundays on 3090 and 5080 kHz (now—for the most—dormant) were extremely well received in the vicinity of Ocala, FL! The five-digit Spanish transmissions and five-character MCW transmissions were thought to be coming from a site near the Kennedy Space Center or Patrick Air Force Base!

Additionally, strong daytime signals in excess of S9 were once monitored on 3090 kHz in the vicinity of Pensacola, FL and Mobile, AL!

A Boca Raton, FL source once told me there was a possibility of 1330 and 0500 UTC five-digit Spanish on 4825 kHz (no longer used by AUTECH) coming from a site very near Palm Beach International Airport in West Palm Beach, FL!

There's also Hialeah, FL and Keys! The Keys, They are America's islands of intrigue!

The traffic from "numbers" stations? Think of these number groups as you would a "shell game!" Just about any time of the time of the day or night you'll hear two and often three transmissions at the same time on different frequencies. The big question: which frequency has the real traffic? Think "shell game" when you think "numbers!"

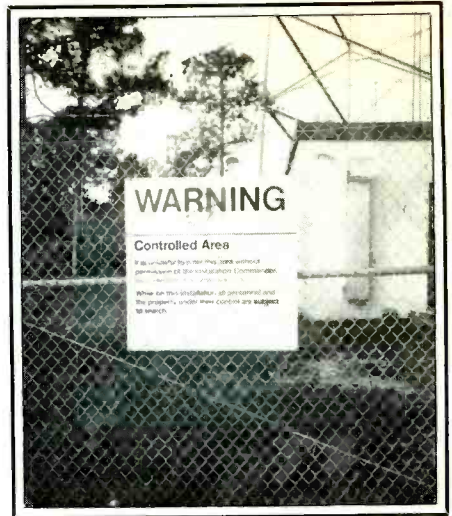
In UZI City (Miami) there is the U.S. Army Communications Service Detachment. This site is located just west of the Metro Zoo. The site description is:

Three fenced lots and two wooden buildings. Two lots contain HF log periodic antennas. A large number of VHF/UHF directional and omnidirectional antennas on buildings and towers.

My source tells me that—at one time—high speed encrypted RTTY on 149 MHz was being transmitted north from this location. A Wackenhut security guard armed with a .38 cal. revolver and UZI—or so my source says—patrols this compound on foot! The man with the UZI does not answer questions!

Could This Be The Home Of KKN39 on 4857.2 kHz?

Rest assured that where you find a station with a KKN prefix, you'll find a "numbers" station nearby! And I do mean frequency wise!



The Stuart microwave relay annex. This is about 20 miles north of Tequesta.

And here's a somewhat ominous thought for you to think about: Why—after 25 years—has no individual who was at one time associated with a "numbers" station ever come out of the cold? Just what keeps their lips sealed? Is it money, or what?

You'll often hear the following words if you visit the Jupiter/Tequesta area in search of the 4670 kHz ghost:

"This is a secure US Government installation and a TOP SECRET security clearance is required to enter. I'm sorry. Now please leave!"

I've heard these words. I've also heard worse words! So be it!

Time now for a Tecate and . . .
Havana Moon y Amigos
00932

It is a near impossibility to give adequate thanks to those who have assisted in the preparation of this two-part article. They gave so very generously of their time and talents. Assisting in the preparation of this article: Eric Conners and Detective Lt. John Fuard.

A very SPECIAL THANKS to Diana H. for her valuable assistance in regards to historical research and assistance in locating areas of Jupiter/Tequesta.

And a very BIG Thanks to a certain law enforcement officer of the Jupiter and Stuart areas of Florida, an official of the Florida Department of Natural Resources, certain members of the Martin County Sheriff's Department and the US Coast Guard.

Thanks are also extended to Captain Carl R. Roderick of the Village of Tequesta Police Department.

And those who requested anonymity have their request honored.

I'll even extend a Thanks to those who could have helped but chose not to do so. Their reluctance to speak out answered—in a tacit sense—more questions than they might realize!

Thanks to one and all!



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Talking On An Army "Bird"

Portable Radio Systems Link Soldiers Around the World

BY SANDY CLAWSON - FORT MONMOUTH, NJ

Today's lightweight, portable radio and satellite antenna is not just another radio. It can link one soldier with another soldier any place in the world.

Two versions of the portable tactical satellite communications system have been approved by the military, the AN/PSC-3, a portable manpack unit, and the AN/VSC-7, a vehicle-mounted unit.

The vehicle-mounted unit is normally used as a command center, controlling up to fifteen manpack stations. The radios have been in use since May 1985 and the initial series of fieldings was completed last January with plans to field more of each unit.

"It is a great piece of equipment. We've had few complaints from the soldiers who use it," said Donald J. Blue, chief, Tactical Terminals Division of the Logistics Directorate, Satellite communications Agency. "In fact, all we hear is what a good and useful piece of equipment it is."

"An example of this type of mobile satellite communications radio appears in the recent action novel, "Red Storm Rising," by Tom Clancy. Although not identified specifically by name, the AN/PSC-3 plays an important role in the story line of the best-seller," Blue said.

The Army Satellite Communications Agency provides engineering design, test and logistics support during the development, procurement and operational phases of all ground-based defense satellite communications systems including the portable communications systems. The agency's primary mission is the acquisition of all ground-based strategic and tactical satellite communications systems.

The basic radio was specifically designed to send and receive messages from around the world by a satellite link. The Army needs long distance communication for the extremely mobile Army of today. The satellite link used by the manpack radios is provided by a group of satellites placed in a geostationary orbit. In this type of orbit the satellite follows a circular path above the equator, with a rotation period of twenty four hours. As a result, the satellite appears motionless to an observer on the earth.

"Thus, once its location in the sky is known," said MAJ Robert Maynard, of the Canadian Army, an international exchange



officer here, "there is no need to be able to track the satellite. This is why we can use such small and simple antennas. Distances for command headquarters are expanding for the mobile modern Army of today."

"The AN/PSC-3 is user friendly. With very little training, anyone can use it," Maynard continued.

With metal casing, the radios are durable and can take the kind of abuse exposed to it in the field or when used by airborne troops.

The manpack unit, including antenna and battery pack, weighs only twenty eight pounds, which makes it easy to carry. It is 670 cubic inches, much smaller than most boom boxes seen on the streets these days. The manpack can be set up and in use in about a minute. It is usable in any kind of weather.

Specifications required a mean time between failure of no less than 2000 hours. The unit has exceeded the requirements by

achieving 5000 hours. This means that the average time before a unit needs repair is much longer than expected.

The battery pack was designed to use lithium, magnesium or rechargeable nickel cadmium batteries. The units can use the battery pack or can be connected to a 24-volt battery or any household voltage, using a special power converter.

With an additional piece of equipment, a digital message device, a message that would normally take 30-45 seconds to send verbally can be sent in 1-2 seconds. This type of message, a burst communication, is sent with electronic impulses and can be especially useful when it is critical that a soldier not be detected.

The Army Satellite Communications Agency is preparing an upgrade package which will improve the unit. (U.S. Army Communications-Electronic Command Public Affair)

PC

Highway Patrolman Pulls Man From Burning Car

At one point, Leroy Farrar didn't think he would get out of his burning car alive.

Farrar, a 59 year old insurance and real estate broker, was on his way to play his regular Wednesday game of golf.

He was traveling over the Santa Clara River bridge in Saticoy, California, when traffic slowed to a stop. Farrar later said that dogs were loose on the road, causing the traffic tie-up.

Farrar stopped, waiting to move again when his car was rear-ended. The impact pushed his car into the car ahead, then up against the railing of the bridge. At that point, Farrar's gas tank burst into flames.



was one person who tried to help, but the flames were too intense. I thought I wasn't going to make it."

Farrar later recalled that while he was trying to get out of the car, he was thinking of his family and looking forward to seeing two of his sons that were flying in for the holidays. He thought he would not be there to see them.

"At that point I was sucking a lot of fumes," he told the *Star Free Press*. "I had already done everything I could. I was desperate.

Farrar then saw Officer Grant Clemens of the California Highway Department, but he doubted Clemens could get him out of the car.

"I was fully engulfed in fire by then," Farrar said. "They had to put the fire down with an extinguisher to get close enough to get me out."

But Clemens was able to get through the flames and brake one of the car's windows with his baton. With the help of Ken Vandegrift of Oxnard, California, Clemens was able to pull Farrar to safety.

"I stuck my hands out and they dug me out, both of them," Farrar said. "I'm just amazed I didn't get burned in that ordeal and the other people around me did."

Clemens suffered second-degree burns on his face, neck and forehead. He was treated and released at a local hospital. Vandegrift's hands were burned but he did not need treatment.

Clemens said he did not think about the danger at the time of the rescue. "I was just determined to get him out," he told the *Star Free Press*.

Clemens acknowledged that what he did was dangerous, and he said he could have been hurt much worse. If a similar situation arises again, Clemens said that he would do the same thing.

According to Claude Lemond of the California Highway Patrol, Farrar probably would not have lasted a minute longer in the burning car due to the intense heat.

For his heroic rescue, California Highway Patrol Officer Grant Clemens will receive the SCAN Public Service Award, which consists of a special commendation plaque and a cash prize. For making the nomination, Lawrence T. Smith of Ventura, California, will also receive a plaque. Congratulations to both of you.

SCAN PUBLIC SERVICE AWARD

Farrar took off his seatbelt, which he credited for keeping him conscious during impact. He then tried to open both doors, but found that they and the electric windows were jammed.

"I tried to kick out a window, but that didn't work so I tried to push them out with my shoulder and pound them with my fist and I couldn't do that," Farrar told the *Ventura County (Calif.) Star Free Press*.

"I could look through the fire and there

Best Equipped

Chuck and Deb Ballinger are both scanner enthusiasts and recent amateur radio novices.

The husband-and-wife monitoring team uses a realistic PRO-2004 scanner, Regency K500, and a handheld regency HX-1000 for monitoring local transmissions. Both of the base scanners are tied into an AEA Pakratt 232 for reception of packet and CW into their IBM PC-XT.

The pair also use Yaesu FT-101B and Kenwood 904S transceivers with a Kenwood 220 MHz unit. ICOM 02AT and mobile 144 MHz units have been recently added in anticipation of a license upgrade to technician class.



SCAN PHOTO CONTEST WINNERS

Current interests for the Ballingers include 80 and 40 meter CW and SSB and packet on the 10 meter amateur bands.

They use an 11-meter vertical, 10-80 meter dipole, 10 meter dipole and two scanner antennas. All signals can be fed through the PK-232 into the computer with a hard disk, twin floppy disks, tape backup and two high speed printers.

Best Appearing

You don't need a lot of equipment to have an attractive, functional listening post, as this photo from Roland J. Soderholm of Virginia Beach, Virginia, demonstrates.

Roland has a Realistic PRO-2004 300 channel scanner with a Motorola TSN-6000 mobile speaker, Realistic TRC-216 40 channel five watt citizens band walkie talkie, Regency ACT-R-106 10 channel scanner with another TSN-6000 mobile speaker,



National-Panasonic RF-4900B communications receiver and a Hallicrafters S-120 shortwave receiver. Accessories include a Grove Minituner and a General Electric computer program data recorder to record various transmissions from the RF-4900B.

The PRO-2004 is connected to a Grove Omni antenna, and the two shortwave radios share a 58-foot dipole antenna on the roof. Not shown in this photo is a Uniden BC-70XLT 20-channel pocket scanner. In addition to the set of reference books, Roland has two clocks set to Eastern Standard Time and Greenwich Mean Time.

PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS

IC-32AT Dual Band Handheld

ICOM presents the IC-32AT dual band handheld. Featuring five watts of power output on each band, the IC-32AT receives



138-174 MHz and 440-450 MHz; and transmits 140-150 MHz and 440-450 MHz.

The IC-32AT features:

- Full duplex capability—transmit on one band and receive on the other.
- 40 memory channels—program in 40 simplex frequencies (20 in 2-meters and 20 in 70cm) or duplex frequencies (10 in 2-meters and 10 in 70cm)—each memory stores frequency, offset and subaudible tone.
- Programmable scan—scan all frequencies between two programmable frequencies.
- Memory scan—scan all memory channels in succession except those you lock out, scan all 2-meter memory channels or scan all 70cm memory channels.
- Optional UT-40 tone squelch unit—silently monitors a busy channel for your calls. When the pre-programmed subaudible tone is received, the unit beeps and the LCD flashes. Works like a beeper/pager.
- DTMF keyboard access/direct frequency entry from keyboard.
- Repeater input monitor—by pushing the MONITOR switch you can check the repeater input frequency.
- Splash resistant—rubber gaskets protect the transceiver from dust and moisture.

• Priority watch—monitor the call channel, memory channel or all memory channels every five seconds while operating on another frequency.

• Dial select function—for quickly changing the 1 MHz, 100 kHz digit or the memory channel directly, simply depress the DIAL SELECT button.

For information, contact ICOM America, Inc., P.O. Box C-90029, Bellevue, WA 98009-9029, or circle 104 on our Readers Service.

New Super Wideband Antenna

RF Limited's Palomar D-130 Super Wideband Discone Antenna has been designed to provide the reception and transmission capabilities of several antennas in one.

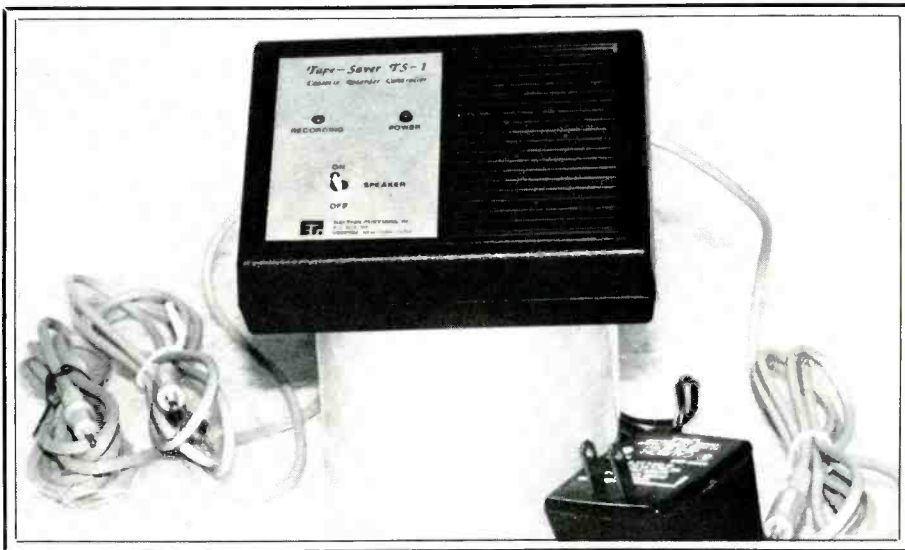
The D-130 covers the entire 25-1300 MHz frequency range, receiving all television and radio signals including broadcast, commercial, marine, aircraft, public ser-

vice, CB and amateur. It also transmits at the amateur bands of 6 m, 2 m, 70 cm, 33 cm, and 23 cm.

The radial rods on the antenna all have the same length, producing a perfectly omnidirectional antenna capable of receiving signals evenly from any direction.

Assembly of the D-130 takes less than 2 hours and installation can be done in a variety of locations with a universal mounting bracket. Its compact, lightweight design is especially suited for an apartment balcony railing. The antenna can be made even smaller by removing the top element assembly if lower end frequency reception is not required. Stainless steel construction ensures durability in the harshest of weather conditions.

The Palomar D-130 Super Wideband Antenna has a suggested retail price of \$175.00. For more information, contact: RF Limited, P.O. Box 1124, Issaquah, WA 98027, (206) 392-0399, or circle 101 on our Readers' Service.



Scanner Recording Interface

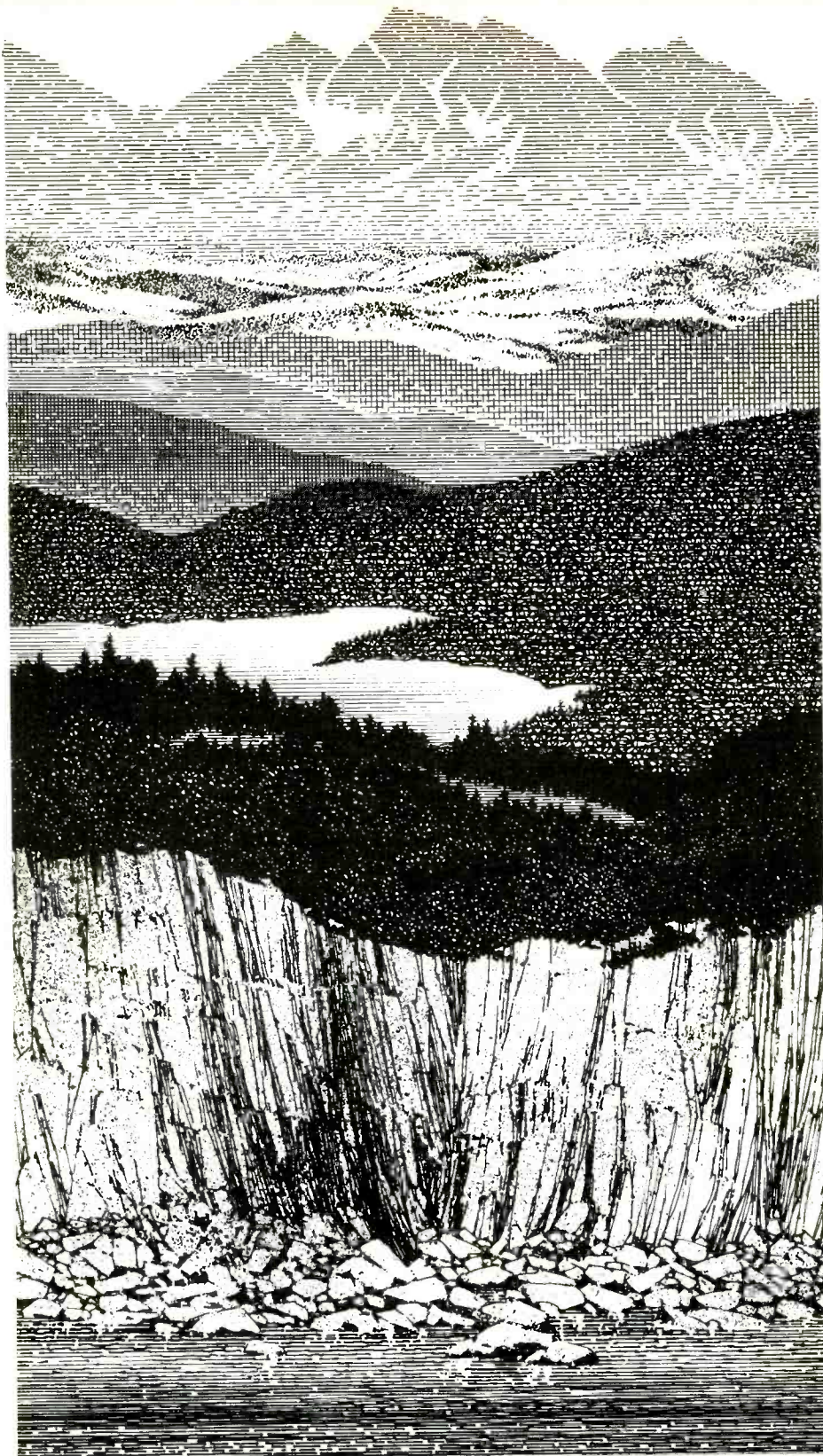
Electron Processing, Inc. added another innovative product to their line of SWL and Scanner accessories. The TAPE SAVER TS-1 provides scanner owners a means of connecting their cassette recorder to the scanner so that they do not waste recording tape during periods of scanner inactivity. The TAPE SAVER TS-1 automatically switches the cassette recorder on and off by means of the remote control jack on the user-supplied recorder.

The TAPE SAVER TS-1 connects to your scanner and tape recorder via standard mini plugs. A sub-mini plug connects to the

recorder for ON/OFF control. Recorder control is via a high-quality isolated reed relay and will accommodate control currents up to 1 ampere. An internal speaker is provided so the unit can be left plugged in during normal use yet switched off when silent recording is desired. Front panel control of the speaker mode and indicators for power and recording are provided. Power required is 115VAC at 4 watts maximum.

Pricing starts at \$49.95 with quantity discounts available. For additional information, contact the Sales Department, Electron Processing, Inc., P.O. Box 708, Medford, NY 11763, or circle 103 on our Readers' Service.

PC



Scanning Ontario

Here's the inside scoop on monitoring this Canadian province.

BY L.S. COKER, VE3GGR

In order to get the most out of scanning in Canada you should know how the Federal Department Of Communications manages the VHF/UHF radio spectrum. You'll find this article useful whether you're in Canada, just across the border, or receiving DX during an opening. All frequencies listed are in MHz unless otherwise noted.

The D.O.C. and F.C.C. must cooperate on channel assignments, especially along the U.S.-Canada border.

New Radio Systems

Certain channels are set aside for interim use for new two-way systems to set-up on until they are assigned a specific channel. 154.940 MHz is used for experimental, demonstration and short on-the-air transmissions as well as interim use. Listen to these interim "Test" channels to find new stations starting up:

VHF Low: 34.06, 41.42, 49.94 MHz
 VHF High: 142.395, 154.49, 167.73, 170.94 MHz
 UHF: 460.950, 462.50, 465.9625, 467.65 MHz

Private commercial ("Business Band") licenses are typically \$36 per mobile and \$94 for a base, per year. These are minimum fees for a single frequency operation.

Maritime

There is a domestic plan for the Maritime Service. Channels 01 to 05 are presently allocated to Canadian railways in the land mobile service. They may be assigned to Maritime Mobile Service stations on the West Coast only. Railway priority on these channels is recognized by D.O.C. and protected from interference.

Channels 61A, 62A and 04A (simplex) are available to the east coast fishing industry. Channels 10, 67 and 73 may be used for communication between ships, aircraft and participating landstations engaged in search and rescue or anti-pollution operations. The first three preferred channels are 06, 09, 70 and 72.

Channels 68, 69, 11, 71, 12, 13, 14, 74, 79 and 80 are preferred for ship movement. Channel 86 may be used for a calling channel if required in an automatic radiotelephone system. There are seven Weather Channels in use:

Ch.1	162.550	Ch.5	162.450
Ch.2	162.400	Ch.6	162.500
Ch.3	162.475	Ch.7	162.525
Ch.4	162.425		

Land Mobile

Low-capacity fixed and mobile services are allocated in the following bands: 138-144, 148-149.9 (excluding 148.64-148.7 and 149.48-149.54) and 150.05-150.8. Channel Spacing is 30 kHz. Most systems in the first two bands are in rural areas. 148.25 ± 15 kHz may be used for space telecommand.

Paging

Common Carrier Radio Paging providing

a Land Telephone Wireline Service channels are: 35.22, 35.58, 43.22, 43.58, 152.48, 157.74, 454.10 or 454.35 MHz. Other Common Carrier paging are on: 163.44, 167.10, 459.10, 459.35. Maximum power is 500 watts. Some paging is done on a secondary basis on R.C.C. two-way channels. Private paging (example: in-plant or hospitals) is done on 149.02 or 149.29 up to 125 watts. Low-band channels are: 30.02, 30.22 and 30.42 at 30 watts.

Private Land Mobile

Channel Spacing is 30 kHz for 150.8 to 174.0, 60 kHz for 152.0 to 174.0 and 50 kHz for 450 to 470. Maximum transmit power is 30 watts E.R.P. for mobiles and 125 watts E.R.P. for bases.

Privacy

D.O.C. allows computer modems to be connected externally for data exchanges or privacy. Speech scrambling may be used if it meets three requirements: 1) radios must be capable of clear speech, 2) transmitter operation is degraded, 3) calling and identification of all units must be in clear speech.

R.C.C.M.R.S.

The most commercial action will be on R.C.C.M.R.S. (Restricted Common Carrier Land Mobile Service) channels. This is a shared service or a common base station of automatic repeater facility. 14 VHF and 7 UHF channel pairs are available (see Table 1). Listen to the Base channel for best results. Then, see if you can pick up the mobiles directly on the Mobile channel. How many repeaters can you pick up? How many different users are there on each and

Table 1 RCCMRS Channels (In MHz)

Base	Mobile	Base	Mobile	Base	Mobile
163.470	167.130	164.400	168.420	451.350	456.3625
163.500	167.160	164.430	168.450	451.375	456.3875
163.680	167.460	164.460	168.480	451.400	456.4125
163.710	167.490	164.490	168.510	451.425	456.4375
163.740	167.520	164.520	168.540	451.450	456.4625
164.340	168.360	164.550	168.570	451.475	456.4875
164.370	168.390	164.580	168.600	451.500	456.5125

who are they? I find it's most interesting checking them out!

Police channels are usually between 138.75 and 143.7 MHz. Fire Departments can be found in the 154.62 to 155.9 band. Railways usually operate between 150.16 and 161.475. Private Commercial operations are scattered throughout the spectrum and not confined to specific segments.

Low Power Operations

Some industrial plants and special events operations use two-watt handhelds on 151.055, 151.070, 151.85, 151.100, 151.115, 151.580 and 154.570 MHz.

Common Action Channels

The Ontario Provincial Police usually 42.060 Base and 42.220 Mobile with some areas using 41.96 MHz for their Base channel. The O.P.P. system has not upgraded their system much since 1946. Aging equipment and skip rolling in during openings is forcing them to go VHF-Hi. Digital scrambling will be used much to the dislike of scanner buffs. Skip can prove very confusing to our local force as the Huntsville, Alabama State Police dispatcher often overrides the local Huntsville, Ontario base station! Muni-

cipal/City Police Forces can usually be found between 138-142 MHz.

Ambulances are usually found on 150.100 MHz, the intersystem channel. Listen to 129.275 and 413.6875 for air-ambulance operations. Some cities will have a few private ambulance services usually on the UHF band.

Fire departments favour the 153-154 MHz band. Some areas will find 46.70 MHz (Southern Ont.) and 46.74 (Northern Ont.) in use. The Fire Marshall channels are 154.07, 154.19, and 410.3125 MHz.

Railways are allocated a number of channels but the second most-used are 161.415 for Canadian National and 161.475 MHz for Canadian Pacific. These are the main dispatch and "end-to-end" channels.

The Future

What does the future hold? The D.O.C. is running out of spectrum to hand out. They are pushing assignments in the UHF band and frequency sharing is becoming more and more commonplace in the VHF-Hi band. 30 to 50 MHz is wasting away as nobody wants the noise and skip problems associated with it. Perhaps the new 800 MHz equipment will solve the need for Canadians to keep in touch by radio? **PC**

VHF/UHF Canadian Allocations (in MHz)

From:	To:	Service Category	Bandwidth	From:	To:	Service Category	Bandwidth
29.700	50.000	Mobile/Fixed	20.3	156.8375	174.000	Mobile/Fixed	17.1625
30.005	41.015	Space Satellite	11.01	174.000	216.000	Broadcasting (TV)	42
50.000	54.000	Amateur Radio	4	216.000	220.000	Maritime Mobile	4
54.000	72.000	Broadcasting (TV)	72	220.000	225.000	Amateur Radio	5
72.000	73.000	Mobile/Fixed	1	225.000	328.600	Mobile/Fixed	103.6
73.000	74.600	Radio Astronomy	1.6	328.600	335.400	Aero Radionavigation	6.8
74.600	74.800	Mobile/Fixed	.2	335.400	399.900	Mobile/Fixed	64.5
74.800	75.200	Aero Radionavigation	.4	399.900	410.000	Space Satellite	10.1
75.200	76.000	Mobile/Fixed	.8	410.000	430.000	Mobile/Fixed	20
76.000	108.000	Broadcasting (FM)	32	430.000	450.000	Radiolocation	20
108.000	117.975	Aero Radionavigation	9.975	430.000	450.000	Amateur Radio	20
117.975	137.000	Aero Mobile	19.025	450.000	470.000	Mobile/Fixed	20
137.000	138.000	Space Satellite	1	470.000	608.000	Broadcasting (TV)	138
138.000	144.000	Mobile/Fixed	6	608.000	614.000	Radio Astronomy	6
144.000	148.000	Amateur Radio	4	614.000	806.000	Broadcasting (TV)	192
148.000	149.900	Mobile/Fixed	1.9	806.000	960.000	Mobile/Fixed	154
149.900	150.050	Space Satellite	.15	902.000	928.000	Radiolocation	26
150.050	156.7625	Mobile/Fixed	6.7125	902.000	928.000	Amateur Radio	26
156.7625	156.8375	Maritime Mobile	.075	960.000	1215.000	Aero Radionavigation	255

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- 24 HOUR BENCH TEST is a complete checkout and realignment for optimum performance.
- SPIKE PROTECTION - the voltage spike protector is installed where it will do the most good - inside the receiver.

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THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Because we received so many top-notch intercepts this month, we'll forego our usual text and jump right into them!

Keep up the good work!

**RTTY Intercepts
All Times Are UTC
Settings- Hz/Baud/Polarity**

2246: EPVP, a Soviet fishing vessel off Nova Scotia w/msgs in EE & RR at 0000, 170/50N (Fred Hetherington, FL).
2306.4: AAR2BV, US Army MARS sta w/tfc at 0210, 170/45N (David Agnew, DE).
2423.5: SAG, Goteborg R., Sweden, w/telex to a ship, ARQ at 0117 (Hetherington, FL).
3238: DE DAISY CHAIN TESTING + RYR RYR & foxes at 2001, 850/50N (Wolfgang Palmberger, FRG).
3253: LZFB, Sofia Meteo, Bulgaria w/wx at 0042, 425/50R (Harold Manthey, NY).
3273.4: USAF MARS tfc at 0021, 170/50N (Agnew, DE).
3435: GYA, Royal Navrad, London, England w/crypto at 2000, 75 baud (Birse, England).
3999: HZJ, Jeddah Meteo, Saudi Arabia w/coded wx at 0004, 425/50N (Manthey, NY).
4002.3: YRR2, Bucharest Meteo, Rumania w/RYRY at 0004, 425/50R (Manthey, NY).
4234.4: 71HGEE, a Spanish Navrad w/wx & crypto at 0233, 850/75R (Agnew, DE).
4515: NNNFBP, USN/USMC MARS w/net tfc at 0007, 170/75R (J.M., KY).
4764: CCS, Santiago Navrad, Chile w/tfc for RMTE at 0257, 850/50R (J.M., KY).
4813: LZA4, Sofia Meteo, Bulgaria w/regional wx at 0012, 425/50N (Manthey, NY).
5117: STK, Khartoum Aero, Sudan w/RYRY at 0152, 425/50R (Richard Gleitz, PA).
5137.5: FDY, Fiench AF, Orleans, France w/RYRY & "le brick" tape at 0500, 425/50R (Dallas Williams, CO).
5140: RWW73, Moscow Meteo, USSR w/coded wx at 0502, 1000/50R (Williams, CO).
5305: FSB, Interpol HQ, Paris (St. Cloud), France w/tfc in EE, ARQ at 1459 (Birse, England).
5395: RFQP, a French mil sta w/much tfc in FF at 1222, TDM 425/96B (Birse, England). RFQP is the French Navrad, Djibouti-- Ed.
5544: CAK, Santiago Aero, Chile w/RYRY, 850/50N (Gleitz, PA). Time??-- Ed.
5740.2: HZN, Jeddah Meteo, Saudi Arabia w/regional wx at 0035, 850/50N (Manthey, NY).
5808: FDY, French AF, Orleans, France w/RYRY & "le brick" at 0217, 425/50R (Gleitz, PA).
5912.5: RIFB, Italian Army, Rome w/RYRY & "Giacomo ti stimo mandol sarchiopone alt." Was ARQ at 1020 (Palmberger, FRG). ARQ? Would have thought 170/50-- Ed.
5930: GXQ, British Army, London, England w/RY's & foxes at 1120, 50 baud (Birse, England).
6098: War games involving US Army stas 13Q & R3Q from Ft. Bragg, NC. Were 170/75R at 1720 (J.M., KY).
6334: RPFN, Lisbon Navrad, Portugal w/5L & plaintext msgs to RPTI, Ponta Delgada, Azores at 0145, 850/75R (Gleitz, PA).
6494.5: UHK, Batumi R., USSR idling in ARQ at 0100 w/CW ID's (Fred Hetherington, FL).
6496: PCH, Scheveningen R., Netherlands w/tfc list in FEC at 0503 (J.M., KY).

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
RYRY	"RYRY..." test tape
SS	Spanish
tfc	traffic
w/	with
wx	weather

6500: WLO, Mobile R., AL w/wx in FEC at 0547 (J.M., KY).
6501: KPH, San Francisco R., CA w/wx in FEC at 0520, then ARQ at 0525 (J.M., KY).
6736: ETD3, Addis Ababa Aero, Ethiopia w/RYRY, 850/50R (Gleitz, PA). Time??-- Ed.
6772: TNO, ASECNA Pointe Noire, Congo w/RYRY & testing at 0156, 425/50N (Gleitz, PA).
6816: Un-ID sta w/nx in EE at 0258, 425/75R (J.M., KY). It's VOA at Kavalla, Greece-- Ed.
6835: GFL22, Bracknell Meteo, England w/wx at 2035, 425/50 (Birse, England).
6896: CLN48, PTT Havana, Cuba w/RYRY & foxes at 1440, 425/50R (Williams, CO).
6978: CCS, Santiago Navrad, Chile w/5L tfc at 0232, 850/50R (Gleitz, PA).
7403: AAR6CC, US Army MARS w/foxes & net tfc 1538-1545, in ASCII, 170/110N, + same tfc in FEC at 1547 (J.M., KY).
7438: Un-ID USN sta w/very quick brown foxes at 0242, 75R (Ed.).
7485: Tests of various modes between USS Guam & Charleston Test Control at 1852. Included RTTY (foxes at 850/75N), CW & USB/LSB (Agnew, DE). The USS Guam (LPH-9) is an "Iwo Jima" class amphib assault ship commissioned in '65-- Ed.
7521: MAP nx in FF from Rabat, Morocco at 1008, 425/50R (Agnew, DE). Seems this is a sput of xmsn from 7842.4 (CNM20-1X)-- Ed.
7555: Y2V34, ADN Berlin, GDR w/nx in EE at 1445, 425/50N (Williams, CO); same w/nx in SS 2350-0020 (Hetherington, FL).
7585: 6VV41, Dakar Meteo, Senegal w/coded wx at 0023, 425/50R (J.M., KY).
7756.2: WFB37, ITT New York, NY w/telegrams in SS at 0024, 850/50N (Manthey, NY). This circuit to PTT Havana-- Ed.
8023.7: FT12H3, AFP Paris, France w/nx in FF at 2359, 375/50R (Ed.).
8348: IRNA Teheran, Iran w/nx in EE at 1740, 425/50 (Birse, England).
8065: Y2V7, ADN Berlin, GDR w/nx in EE at 2100, 425/50R (Birse, England).
8070.3: ZRH, Cape Town Navrad, RSA w/RYRY & foxes to NMN at 0008, 850/75R (Ed.); w/wx to NMN at 0047 (Manthey, NY).
8123.2: TNL48, ASECNA Brazzaville, Congo w/RYRY at 0117, 425/50N (Dr. Gary Zaid, WI).
8348.5: HPWC, the Panamanian flag floating crane ship Pacific Constructor w/telexes in ARQ at 2119 (Ed.).
8439.5: PBC3, Goeree Navrad, Holland w/RYRY & list of oval stas for tfc at 0420, 850/75R (Ed.).
8458: 78JU of Spanish Navy w/RYRY & SGGG to 78RQA at 2336, 850/100N (J.M., KY).
9072.6: TLO50, ASECNA Bangui, Central African Rep., w/wx to ASECNA Brazzaville at 2330, TDM 500/96A (Hetherington, FL).
9223.3: TJK, ASECNA Douala, Cameroon w/RYRY at 0028, 425/50R (Manthey, NY).
9252: ELRB, Monrovia Aero, Liberia w/RYRY at 0725-0740, 50R (Brian Webb, CA).
9318: DHJ51, Giengen Meteo, FRG w/RYRY & CQ at 0027, 425/100N (Manthey, NY).
9391: PAP Warsaw, Poland w/RYRY at 0726, 425/50R (Gleitz, PA).
9420: GYU, Royal Navrad, Gibraltar w/foxes at 1946, 850/75R (Agnew, DE).
9993.7: CSY, Santa Maria Aero, Azores w/wx at 2003, 850/50N (Agnew, DE).
10111: 5YE, Nairobi Meteo, Kenya w/coded wx at 2125, 425/75R (J.M., KY).
10144: Un-ID w/RYRY + DKI at 2128, 425/75R (J.M., KY). It's the Czech embassy, Havana-- Ed.
10150: SUA246, MENA Cairo, Egypt w/nx in AA at 1915, 425/50R (J.M., KY).
10200: JAE50, Ji Ji Tokyo, Japan w/nx in SS at 1030, 815/50R (Hetherington, FL).
10235: 3MA99, CNA Taipei, Taiwan w/nx in EE at 1045, 790/50R (Hetherington, FL).
10248.9: CLP1, MFA Havana, Cuba w/crypto to Embacubos in Africa & Cent Amer, 425/75N at 0434 (Zaid, WI).
10258: Un-ID Navcommsta w/very quick brown foxes at var times/days, 750/75R (Williams, CO).
10390: EEQ, Interpol Madrid, Spain relaying tf from Interpol Bogota at 0016, ARQ (Agnew, DE).
10464: Y7A45, MFA Berlin, GDR w/RYRY at 0401, then 5L & GG tfc at 0405, 50R (Ed.).
10551: Bracknell Meteo, England w/coded wx & solar activity report at 0548, 50R (Ed.).
10635.3: SUC, Cairo Meteo, Egypt w/coded wx at 0032, 850/50R (Ed.).
10670: GYU, Royal Navrad, Gibraltar w/RY's & foxes at 1935, 850/50R (J.M., KY).
10802: Telexes w/Konzulat SFRJ Hamburg (Yuga

consulate) in the headers. Was 144/FEC-A at 0630 (Ed.).
10972: VOA Tangier, Morocco w/European File nx in EE at 0541, 425/75N. A spurious xmsn of this found on 11000.7 kHz (Ed.).
11002: Possibly MFA, Belgrade, Yugoslavia w/telex in Serbo-Croat, 425/75N at 0548. S/off 0459 w/QRU DAM CW (Ed.).
11174.9: 5HD, Dar es Salaam Meteo, Tanzania w/RYRY in ARQ (ARQ?-- Ed.) at 2330 (Zaid, WI).
11014: SUU, Cairo, Meteo, Egypt w/coded wx at 0554, 425/50R (Ed.).
11025.8: RPITH, Horta Navrad, Azores w/RYRY & foxes at 0248 then clg RPFNN at 0244, 850/50N (Williams, CO).
11317: KNY29, Egyptian embassy, Washington, DC w/nx in EE, ARQ at 0028 (J.M., KY).
11419.9: VNA86, VNA Hanoi, Vietnam w/nx in Vietnamese at 1340, 500/50N (Hetherington, FL).
11638: DDK8, Hamburg Meteo, FRG w/coded wx at 0830, 425/50R (Ed.).
11639.8: 70C, Khormaksar Aero, So. Yemen w/RYRY at 0256, 850/50N (Zaid, WI).
12075: 9KT292, KUNA Safat, Kuwait w/nx in EE at 1315, 425/50N, QRM from CW sta on 12076 sending a 5L msg (J.M., KY).
12117.7: Un-ID, possibly FDY, w/aero wx for specific French cities at 2330, TDM 350/96 (Ed.).
12186.3: 5AQ62, JANA Tripoli, Libya w/nx in EE at 1744, 425/50R (Brian Alexander, PA).
12238: CLP2, Embacuba, Panama City, Panama w/crypto at 2223, 425/75N (J.M., KY).
12249.7: A N. Korean embassy somewhere w/RYRY, no ID, then tfc in Korean. Was 950/45N at 1214 (Williams, CO).
12517: Soviet ship Professor Zubov w/telegrams to Leningrad R. at 0200, 170/50N (Zaid, WI). This is a hydromet svc research ship-- Ed.
12693.3: 98OQJ of Spanish Navy w/RYRY, SGGG & crypto at 1807, 850/75R (Alexander, PA).
12891: UFN, Navarossisk R., USSR w/tfc in RR at 0053, 150/70N (Alexander, PA).
13021: NMF, USCG Boston, MA w/wx in FEC, 1700-1717 (J.M., KY).
13366.8: 5YD, Nairobi Aero, Kenya w/RYRY at 2300, 425/50N (Zaid, WI). The actual callsign here is 5YD9-- Ed.
13520: Un-ID Navcommsta w/very quick brown fox at 1928, 850/75N. This is the sta that usually sends crypto & ruins my copying of Interpol tfc that's run on this freq (Ed.).
13540: LRO81, TELAM Buenos Aires, Argentina w/nx in SS at 2240, 850/50R (Mark Miller, NY).
13580: HMK25, KCNA Pyongyang, N. Korea w/nx at 0430, 240/50R (Patrick Sullivan, CA). Pat, regarding your letter, we'd be very interested in seeing those satellite TTY loggings-- Ed.
13665.5: 6VU73, Dakar Meteo, Senegal w/RYRY at 1928, 425/50R (Agnew, DE).
13766.3: Un-ID Navcommsta w/very quick brown fox at 1113, 850/75R (Ed.).
13779.2: BCA95, PTT Shanghai, PRC w/RYRY at 1118, 425/50R (Ed.).
13868.7: No. Korean embassy, Havana (GGUBA in Korean), w/RYRY & tfc in Korean at 1250, 950/50N (Ed.).
13927.1: DFN92, PIAB Bonn, FRG w/RYRY & freq list at 1358, + nx in GG at 1400, 96/FEC-A (Ed.).
13927.5: NPG, USN San Francisco w/kg hams on 14095.5 kHz, 45 baud at 0152 (A. Nonymous, MO).
13937: HSF212WSN, Thai embassy, Washington, DC w/telexes in EE relayed to HSF212BNN in Bonn, FRG, at 1203, 375/100N (Ed.).
13938: CLP55, Embacuba, Managua, Nicaragua w/msg in SS to CLP1 at 2235, 500/75N (Hetherington, FL).
13987.5: AIR, Andrews AFB, MD w/kg ham aps on 14087.5, 45 baud at 1910 (A. Nonymous, MO).
14360.3: Un-ID Navcommsta w/very quick brown fox at 1250, 75N (Ed.).
14367: BZP54, XINHUA Beijing, PRC w/nx & EE at 1242, 425/50R (Williams, CO).
14373: YIL71, INA Baghdad, Iraq w/nx in EE at 1415, 425/50R (J.M., KY).
14418: 9KT469, KUNA Safat, Kuwait w/nx in EE at 1256, 425/50N (Agnew, DE).
14422: 9KT469, KUNA Safat, Kuwait w/nx in AA at 1301, 425/50R (Agnew, DE).
14435: FJY4, Martin de Vivies R., Amsterdam Island, w/RYRY & "le brick" at 1155, 425/75R (Hetherington, FL).
14460: Y7A57, MFA Berlin, GDR w/RYRY at 1256, 425/50N (Agnew, DE).
14486: Severe fading prevented a positive ID here but seems to have been P6Z, MFA Paris w/5L

ffc at 1019, 425/75R (Ed.).
14547.9: JAL44, KYODO Tokyo, Japan w/nx at 0720, 850/50R (Sullivan, CA).
14605: Y7K30, MFA Berlin, GDR w/5F tfc at 1509, 425/50R (Ed.).
14643: Un-ID w/ARF308 & book reviews at 1845, 425/75N (Zaid, WI). This is WFK54, USIA New York, NY. The ARF means American Republic File-- Ed.
14698.2: MFA Ankara, Turkey w/nx in Turkish 1525-1532, 850/75R (Ed.).
14722: TNL, ASECNA Brazzaville, Congo w/RURY at 2330, 850/50N (Miller, NY).
14880: JMG4, Tokyo Meteo, Japan w/coded wx at 0055, 850/50R (Sullivan, CA).
14937.7: 5UA, ASECNA Niamey, Niger w/RURY & QJH1 at 2238, 425/50N (Zaid, WI).
14989.4: TNL, ASECNA Brazzaville, Congo w/RURY at 2220, 425/50N (Zaid, WI). Actual call here is TNL77-- Ed.
15560: TASS Moscow, USSR w/nx in EE at 1727, 500/50R (Ed.).
15705: YZJ6, TANJUG Belgrade, Yugoslavia w/nx in FF at 1320, 425/50R (Tom Sundstrom, NJ).
15710: RWN76, TASS Moscow, USSR w/nx in FF at 1500, 425/50N (Sundstrom, NJ).
15812: Un-ID Italian diplo w/crypta to var embassies incl the one in Morocco. Was ARQ at 0910 (Peter T., England). Sounds like MFA, Rome-- Ed.
15865: RBK70, TASS Moscow, USSR w/nx in FF at 0425, 850/50R (J.M., KY).
15925: Un-ID Navcommsta w/very quick brown fax at 1340, 75R & the same on 15929 kHz at 1812 (Ed.).
15935.5: Un-ID w/o 5F msg in ARQ at 1018 (Peter T., England).
15992: 4UZ, UN Geneva, Switzerland w/RURY at 0954, 425/75R (Ed.).
16015: MFA Prague, Czechoslovakia w/tfc in Czech at 1114, 425/75N (Ed.).
16016: Probably MFA, Prague w/5F msgs & encryption to "Nikozyi" (Nicasio) & "Viena" (Vienna) at 1217, 425/75N (Ed.).
16065.3: JAQ46, Jiji Tokyo, Japan w/nx in SS on Buenos Aires beam at 1239, 850/50R (Ed.).
16075: APN Moscow, USSR w/nx in EE at 1111, 425/100R (Ed.).
16094: WSN, Patterson Shrimp Co., Patterson, LA w/telex at 1521, 170/100N (Ed.).
16119.8: HBD20, MFA Berne, Switzerland w/5L tfc at 1220 in ARQ (Sundstrom, NJ).
16135: RBI72, APN Moscow, USSR w/nx in RR at 1056, 425/100R (Ed.).
16145: RWM77, APN Moscow w/nx in EE at 1104, 425/100R (Ed.).
16196: CLN526, PTT Havana, Cuba w/RURY & foxes at 1620, 500/50N (Ed.).
16246.5: VOA Tangier, Morocco w/RURY to Greenville, NC at 1453, 85/75N (Ed.).
16268: Y7A65, MFA Berlin, GDR w/nx in GG at 1210, 50N (Ed.).
16328: Un-ID w/5L tfc in ARQ at 1557. Ends xmsn at 1600, but announces time as 1800 (Ed.).
16674: Un-ID Italian vessel w/callsign ICE1 wkg IAR in ARQ at 1645 (Peter T., England). That's the passenger liner Enrico C.-- Ed.
16929: Un-ID w/tfc in ARQ at 1630 (Zaid, WI). The copy you mail us shows this to be telex in PP from SPW, Warsaw R., Poland-- Ed.
17095: RETJ, Madrid Novrad, Spain at 1212 in 850/100R. List of ship names + names of individual crew members, then crypto tfc (Kneitel, NY).
17181: UDH, Riga R., USSR w/tfc for ships at 1348, 170/50N (J.M., KY).
17197.5: 9VG82, Singapore R., Singapore w/telexes to ships at 1632, ARQ (Ed.).
17198: GKE6, Partishead R., England running a tape loop: Ships are requested to listen out for the idle/free signal before attempting an ARQ connection. Was FEC at 1700 (Ed.).
17199: WLO, Mobile R., AL w/plaintext wx in FEC, 1735-1805 (Webb, CA).
17200.5: EHY, Pozuelo del Rey R., Spain w/CQ & tfc list in FEC at 1108 (Peter T., England). This FEC mode must be new for EHY as has is listed as an SSB telephone sta-- Ed.
17203: NRV, USCG Guam (a/k/a/ Mariano Islands-- Ed.) w/wx in FEC at 1900 (Peter T., England).
17206: OXZ, Lyngby R., Denmark w/tfc list in FEC at 1934 (Ed.).
17462: HDN, Quito Novrad, Ecuador w/monthly comms report to LOL at 2011, 850/75N (Ed.). Tom Kneitel (NY) notes HDN w/Cinto de Puebla ID at 1049 running RY/SG & count tape on 12086.2 kHz.
17470: BZS28, XINHUA Beijing, PRC w/RURY & QRA at 0832, 425/50R (Palmerberg, FRG).
17518.5: MFA Bonn, FRG w/encryption at 1154, 96/ARQ-E. Then at 1217 a s/off msg in GG that begins "Hallo Pretoria" & ends w/bibi. At 1223, crypto to FRG embassy in Addis Ababa (Ed.).
18037.2: Un-ID w/telex in romanized Japanese at 1140, ARQ (Ed.).
18040.5: TCY4, AA Ankara, Turkey w/nx in FF at 1052, 850/50R (Ed.).
18164.5: D4B, Sal Aero, Cape Verde w/coded wx to Lisbon at 1119, 425/50R (Ed.).

18263.2: HBD20, MFA Berne, Switzerland w/5L tfc, 1036-1049, ARQ (Ed.).
18310: RD157, APN Moscow, USSR w/nx in PP at 0938, 100N (Peter T., England).
18311: 9KT349, KUNA Safat, Kuwait w/nx in AA at 1449, 425/50N (J.M., KY).
18363.7: VOA Munich, FRG w/RURY to VOA Greenville, NC at 1440, 85/75N (Hetherington, FL).
18388.7: CSZ, Lisbon Aero, Portugal w/coded wx for Algerian villages at 1013, 425/50R. Was beam'd to Cape Verde (Ed.); 5AF, Tripoli Meteo, Libya w/coded wx at 1745 + RURY at 1752, 425/50R (Hetherington, FL).
18602.7: LOL, Buenos Aires Novrad, Argentina w/RURY at 1927, 380/75N (Sullivan, CA).
18670: FTS67H3, AFP Paris, France w/nx in FF at 1331, 425/50N (J.M., KY).
19075: Un-ID in an odd lang mentions "Jeneva" & "Bwlgar" several times. Was 75R at 0836 (Peter T., England). Your baud rate leads me to believe this is OMZ, MFA Prague which has been logged on 19074-- Ed.
19113.6: MFA Jakarta, Indonesia w/tfc in Indonesian at 1412, 425/50N (Ed.).
19223: CLP7, Embacuba Brazzaville, Congo w/RURY & diplo tfc at 1636, 425/50N (J.M., KY).
19225.3: FDY, French Air Force, Orleans, France w/RURY & "le brick" at 1042, 425/50R (Ed.).
19237.9: CLP1, MFA Havana, Cuba w/5L tfc to Managua, Nicaragua at 1420, 425/50N (Ed.).
19389.7: Y7A76, MFA Berlin, GDR w/RURY at 1443, 50N (Ed.).
19400: VVD69, Delhi Meteo, India w/coded wx at 0246, 425/50N (Williams, CO).
19432.8: Un-ID sta w/foxes at 1959 one day & 1400 the next, 325/50R. Format typical of British mil (Williams, CO).
19443.1: Y7A77, MFA Berlin, GDR w/RURY at 1448, 50N (Ed.).
19529.1: JMG5, Tokyo Meteo, w/coded wx at 1457, 850/50R (Ed.).
19747.2: 6VU79, Dakar Meteo, Senegal w/coded wx at 1352, 425/50R (Ed.).
19756.5: MFA Jakarta, Indonesia w/nx in EE & Indonesia at 1615, 170/50R (Ed.).
19759.5: "27 DE 53" + RURY & foxes, 425/100N at 1355. Switched to 425/96 single channel TDM at 1358 (Palmerberg, FRG).
19865.5: YZJ4, TANJUG Belgrade, Yugoslavia w/nx in SS at 1507, 425/50R (Ed.).
20020: Y7A80, MFA Berlin, GDR w/nx in GG at 1408, 425/50N (J.M., KY). Same w/"Komminiques" in GG at 1512 (Ed.).
20085: ISX20, ANSA Rome, Italy w/RURY at 1256, 425/50N (J.M., KY); w/nx in FF at 1611, 350/50N (Ed.).
20160.3: RURY w/a ID at 1442, 425/50N, then into CW at 1443 to send only TU 1, then off (Ed.).
20345: GYU, Royal Navy, Gibraltar w/foxes at 1820, 800/100R (Williams, CO).
20355.5: Un-ID w/QLS 22/23 QRK NEXT FAR? in ARQ at 1225 (Hetherington, FL).
20515: FDY, French Air Force, Orleans, France w/RURY, foxes, counting & Essai de FDY at 1415, 425/50R (J.M., KY).
20760.3: CLP1, MFA Havana, Cuba w/crypta after ZZZZZ header to Zambia at 1435, 500/50N (Ed.).
21862.5: An un-ID No. Korean embassy w/5L tfc at 1740, 950/50N (Hetherington, FL).
22040: CLP1, MFA Havana, Cuba w/cables to Embacuba Sao Tome at 1535, 550/50 (Zaid, WI).
22193.1: DNPX, the FRG ship Austral w/telex in GG at 1515, ARQ (Zaid, WI).
22356.7: SAB93, Gateborg R., Sweden idling in ARQ at 2225 (Ed.).
22565: PCH75, Scheveningen R., Holland w/telexes at 2056, ARQ (Ed.).
22572: WCC, Chatham R., MA w/wx in FEC, 1700-1715 (J.M., KY).
22578: GKP7, Partishead R., England w/telex to GWIQ, M/V Royal Service at 1724, ARQ (Ed.).
22728.3: JMG, Tokyo Meteo, Japan w/coded wx at 1631, 850/50R (Ed.).
22771.5: NBA, USN Balboa, Panama w/RURY & SGSG at 1805, 850/75R (Agnew, DE).
22955: Y7A87, MFA Berlin, GDR w/RURY at 1453, 425/50N (Ed.).
23370.3: Un-ID w/coded aero wx at 1502, 800/100N (Ed.).
23561.7: PCW1, MFA The Hague, Holland w/tfc in ARQ at 1513 (Ed.).
25077: LYAO, an un-ID Soviet ship w/tfc for UDH at 1929, 170/50N (J.M., KY).
25086: UKHP, an un-ID Soviet ship w/RURY to URB2 at 1743, 170/50N (J.M., KY).

FAX Loggings

All by Tom Kneitel using a Universal M-7000

3650: Madrid Meteo w/wx charts at 0414, 120/576.
 14737: RXO72, Khabarovsk Meteo at 1145 w/wx charts, 120/576.
 18093: Buenos Aires Meteo, Argentina at 2008 w/wx charts, 120/576.

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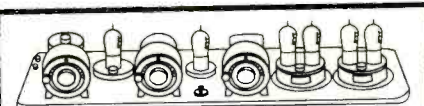
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LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Scratch another one! It looks as though it is no longer possible to hear broadcasts from the Canary Islands on shortwave. These islands, off the coast of Morocco, have long been the site of a pair of 50 kW transmitters used to relay Spanish Foreign Radio from Madrid. For a time, there were even local programs aired from this facility. Although these local programs are still being aired, those broadcasts are coming from Spanish transmitters and those at Tenerife are silent. It's not certain what brought this all about, though the general assumption is that the transmitters are old and no longer worth the upkeep.

The BBC, which put its relay on the air from Hong Kong only last year, is about ready to add still another relay site, this one in Seychelles. The two - 250 kW transmitters will beam the BBC into Africa.

The Voice of Germany's troubled Trincomalee relay station in Sri Lanka was plagued by the Tamil uprising almost from its first day on the air and has been closed for much of the time since. But it was hoped that it would be back in service this summer, with full operations, from this high power relay slated to be in effect by the end of the year.

On the U.S. scene, look for World Christian Radio to begin broadcasting on shortwave from Nashville, Tennessee any time now. They had hoped to start up by July, but that's now been pushed back to some time in the fall. Check 7520 and 15590 for test broadcasts.

WHRI in South Bend, Indiana had a fire in its studio facility in mid-June, and a great deal of damage was done. Thanks to an emergency studio located at the Nobelsville, Indiana transmitter site, they only lost about one hour's worth of air time. Everything should be back to normal by now, though.

By now, Radio Japan should have another transmitter swap going, this one with Radio France International. Radio Japan broadcasts in Spanish and Japanese intended for Latin America should be coming via RFI's French Guiana relay station. RFI's Asian broadcasts will go out over Radio Japan's newly re-built Yamata transmitter site.

Radio Netherlands Media Network show says that the station has been looking at methods by which it could improve reception of its programs in Asia. The conclusions include the setting up of a Radio Netherlands relay station somewhere in Asia, possibly Brunei, the Philippines or Thailand. Or simply arranging for time on existing transmitters in Asia. If a decision is made to build a relay station, the on-air date will, of course, be years in the future.



Ed Turner of Youngstown, OH with part of his collection of Hallicrafters gear.



John Visser's Riverside, CA shack features a classic Zenith Transoceanic receiver.

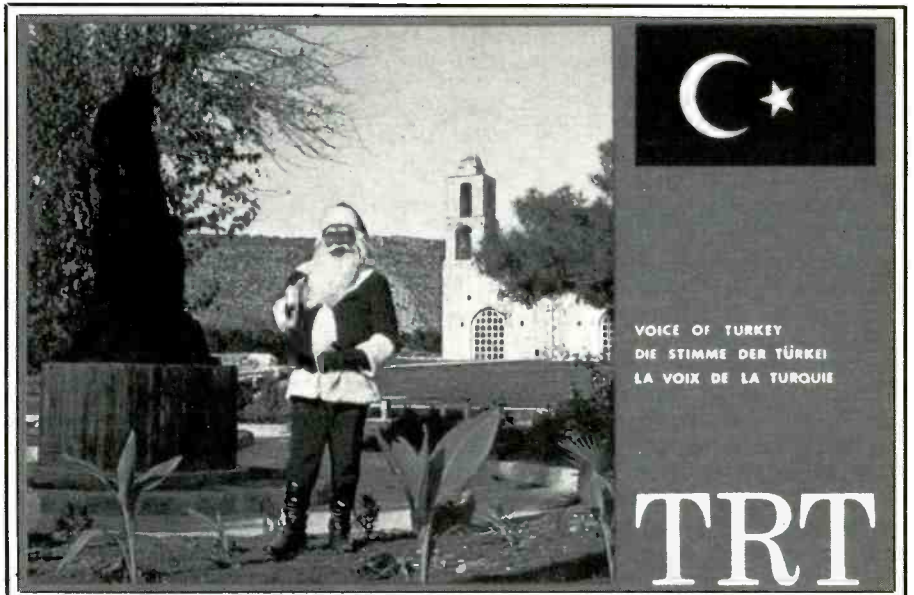
Let's open some mail: Like many listeners, a Hallicrafters S-38 got George V. Roberts of Wareham, MA going on shortwave many years back, and he's been going at it ever since. On the way, he took time to add a Ham license (KA1GQI). George is especially proud of the commercial grade general transceiver he picked up used at a fantastic bargain. New, he says, the Sunair GSB900DX sells for about \$12-thousand!

Jack E. McMahon of Buffalo, NY is puzzled over a station he picks up on 5930 from 1730 sign-on to after 2100. He says it's in Spanish and hears ID's for "Radio Martinique". Dunno, Jack, as Martinique has been off shortwave for many years and, even if it was on, would most likely be in French, not Spanish. You must be hearing something that sounds like "Martinique". Anyone have any ideas?

Radio del Pacifico in Peru is noted on 9950 by Robert Pizzi in Newbury Park, CA, who can't find this listed and wonders if it's new. The frequency is fairly new, Robert, but Radio del Pacifico has been around for many years. To answer your question, no, we do not limit our log reports just to things which are new or not listed elsewhere. Send in what you believe is the best of what you hear each month.

Thanks to Paul J. Horak in Niles, IL for the clipping on the new VOA-Israel relay (still a long way away). Paul says his interest in shortwave goes back to the 50's, though he was lost in scannerland for some years.

K.J. Hobbs (88 Hillview St., Hamilton, ONT L8S 2Z5, Canada) is nursing along a club for owners of the DX-400 receiver. Write to him at the above address if you want more info.



The Voice of Turkey is all set for Santa Claus. QSL courtesy of Sander Rabinowitz, MI.



Bob McPherson operates this monitoring post in Etowah, NC.

We received a number of excellent shack photos this month, including one from Bob McPherson of Etowah, NC who is using a Japan Radio Company NRD-525 and Bearcat 800XLT with several antennas in the attic. Bob is proud of such QSL's as Guinea-Bissau, Sao Tome, Somalia, Burma and several others which adorn the shack walls.

John J. Visser in Riverside, CA says he's been a SWL since 1929 and his first radios were built by a friend. A classic Zenith Transoceanic still sits in the shack, along with a more youthful Yaesu FRG-8800.

Ed Turner of Youngstown, OH collects those great old Hallicrafter receivers and sent several photos of his "Hallishack." Boy, there's a couple in there yours truly wouldn't mind owning!

Thanks to all those who wrote or sent in logs, photos, QSL's or other material. It is always welcome, always appreciated. Just remember, please include your last name and state abbreviation after each log and to double space between each item. 'Fraid we can't use them otherwise.

This Month's Logs:

SWG Loggings All Times Are UTC All EE Except As Noted

Afghanistan: R. Afghanistan, 6085 in un-ID lang at 0410 w/mx only & DW GRM (Ross, WA).
Argentina: LOL time sta, 15000 w/pips, CW ID at 0004 under WWV (Mayo, NE). No more SS ID's?
Australia: R. Australia, 9580 at 1200 (Roberts, MA); at 1040 (Neff, FL); at 0830, also an 9710 at 1145 (Garcia, MD); 17795 at 2247 (Ross, WA); at 0240 (McKenney, FL).
Austria: R. Austria Int'l., 15410 at 0410. Into GG at 0445 after ID/IS (Johnson, AZ).
Belgium: BRT, 9925 at 2220 in Dutch to 2233, IS 2258 & SS ID (Garcia, MD); 21810 at 1130 opening in Dutch (Mierzwinski, PA).
Bolivia: R. San Salvador, Totoro, 3215 at 0845 in SS w/mx & weak sigs (Garcia, MD). Was this a definite ID? Not reported by those who specialize in DX'ing Bolivia & Peru-- Ed.
Brazil: Radiobros, 11745 w/paps at 0241 (Bauman, UT).
 R. Cultura do Para, Belem, 5045 at 0230 w/mx, commercials, ID 0235 (Garcia, MD).
 R. Inconfidencia, Belo Horizonte, 6010 in PP at 0054 w/commercials & mx (Garcia, MD).
 R. Cultura Sao Paulo, 17815 in PP at 0234 w/mx & commercials (Garcia, MD).
 R. Italia, 4805 at 0203 after R. Amazonas s/off. OM/YL w/PP talks (Mierzwinski, PA).
 R. Amazonas, 4805 at 0145 to s/off 0203, all PP w/talks between mx (Mierzwinski, PA).
 R. Nacional Maunas, 4845 in PP at 0235-0315 w/ID 0300, mx (Mierzwinski, PA).
Bulgaria: R. Sofia, 11860 at 2143 in SS w/pgm

sked for Latin Amer, ID (Garcia, MD); 15140 at 0302 w/nx, folk mx, ID's an Africa beam (Johnson, AZ).

Canada: RCI xmtrs being used for R. Japan relay at 0115. RCI, 15245 at 0456 w/IS, 0500 into EE/FF ID's, then nx in FF (Johnson, AZ); 17875 at 2025 (Neff, FL).

CFRX Toronto, 6070 at 0645 (Bauman, UT); at 0405 (Ross, WA).

China: R. Beijing, 5075 at 0300 w/ID, worldwide pgm sked, anthem (Garcia, MD); 15100 at 2301 in SS (Ross, WA); 15110 at 1232 w/talk, letterbox & ID, 15455 at 1155 w/ID & aff 1200, but back right after (Mayo, ME).

BPM time sta, 15000 w/pips & ID under WWV/WWVH, CW/voice ID's (Mayo, ME).

Colombia: La V. del Llano, Villavicencio, 6115 in SS at 0911, mx & ID 0915 (Garcia, MD).

Caracol Neiva, 4945 at 0653 in SS w/nx & ID (Garcia, MD).

R. Macarena, Villavicencio, 5975 in SS at 0946, local time check, ID, Music to Remember (Garcia).

La V. de los Centauros, Villavicencio, 5955 in SS at 0741 w/Latin mx (Garcia, MD).

Costa Rica: R. Far Peace Int'l., 13660 at 2130 w/Global Peace Magazine (Miller, GA).

TIFC Faro del Caribe, 5055 at 0230 in SS w/soft mx ID (Garcia, MD).

R. Reloj, 4832 in SS w/mx at 0444 (Ross, WA); 6006 in SS at 1116 (Neff, FL).

Cuba: R. Havana Cuba, 6035 at 0357 w/ID (Ross, WA).

R. Rebelde, 5025 in SS at 0350-0400, talks, ID, brief drop in sig strength 0400 (Mierzwinski, PA).

Czechoslovakia: R. Prague, 5930//7345//9540 at 0100 (Fabinowitz, MI); 7345 at 0140 w/ID, commentary (McKenney, FL); 11990 at 0315 (Ross, WA) at 0100 (Roberts, MA).

E. Germany: RBI, 9730 at 2347 w/commentary, DX pgm; also at 0203 (Rabinowitz, MI); 11785 at 0146 til DW s/on 0155; 17775 at 0523 ending nx to Asia; 17880 at 1311 to Asia (Johnson, AZ); 21540 at 1320 w/ID (McKenney, FL).

Ecuador: HCJB, 15150 at 0023 w/ID in FF/EE (Garcia, MD); 15155 at 0230 (Neff, FL); 17890 at 1530 (Roberts, MA).

R. Rio Amazonas, Macas, 4870 at 0218 in SS w/mx, ID (Garcia, MD).

R. Catalina Nacional, Quito, 5055 in SS at 0253 w/nx, mx, ID (Garcia, MD).

R. Centinela de Sur, Loja, 4890 at 0228 in SS w/Top 10, ID/Centinela del Sur Internacional (Garcia, MD).

R. Quito, 4920 w/SS ID at 0451 (Ross, WA); 0220 w/US style jazz (Mierzwinski, PA).

HD21CA time sta, Guayaquil, 3810 in SS at 0923 (Garcia, MD).

Egypt: R. Cairo, 9475 at 0059 & 0230 in AA, also 9900 at 0123 (Bauman, UT); 9475 at 0204 (Rabinowitz, MI); 9900 in AA at 0318 (Ross, WA).

England: BBC, 18080 at 1525 (Roberts, MA).

Equatorial Guinea: R. Africa, 9555 at 2110 w/Faith Power Broadcast, ID at 2205 (Miller, GA).

France: RFI, 7135 at 0432 in FF (Ross, WA); 15135//15155//15300 at 0515 in FF (Johnson, AZ).

French Guiana: RFI relay, 15200 at 0025 in FF w/ID (McKenney, FL).

Greece: V. of Greece, 9395//9420 w/ID & nx (McKenney, FL); 9420 at 0232 (Ross, WA); 11635 at 2335 (Roberts, MA).

Guam: KSDA Adventist World R., 11980 at s/on 0900 (Garcia, MD).

KTWR Trans World R., 11805 at 0811 w/ID, rx (McKenney, FL); 0853 at ID 0856 (Garcia, MD).

Guatemala: R. Tezulutlan, Coban, 3370//4835 in SS at 0217 w/local info & ID 0225 (Garcia, MD).

TGNA R. Cultural, 3300 at 0438 in SS w/EZ listening mx, OM w/ID 0445 (Mierzwinski, PA).

Honduras: HRR1 Soni R., 4755 at 0035 w/country, OM in SS, EE ID (Neff, FL).

HRVC La V. Evangelica, 4820 at 0439 in SS (Ross, WA); 0400 in SS w/rx mx, ID 0432 (Mierzwinski, PA).

India: AIR, 11620 at 2100 w/nx by YL, ID's, Indian classical mx (Miller, GA).

Indonesia: RRI Jakarta, 11865 in Indonesian w/strong sigs daily 1200-1700 (Bauman, UT).

Iran: VOIRI, 15084 at 2246 in AA (Ross, WA). Not AA, but Farsi-- Ed.

Israel: V. of Israel, 11605 at 0111 ending nx, ID & into listeners letters; 17685 at 0409 w/talks, sports scores, wx (Mayo, ME); 15640 at 2145 w/talks & features (Neff, FL); 17710 at 1257 w/IS, 1300 into un-ID lang, jammed; 17555 in Hebrew home svc 0553 (Johnson, AZ).

Italy: RAI, 11800 at 0245 in II to Latin Amer, 0305 into SS (Garcia, MD); 15330 in Somali at 0523 (Ross, WA); 17800//21560 at 1400 w/IS, anthem, into II (Johnson, AZ).

Japan: R. Japan, 5960 (via Canada) at 0103 (Rabinowitz, MI); 6120 (via Canada); at 1100 (Roberts, MA); 11870 in JJ at 0658 (Bauman, UT); 17825 in JJ 0225 (McKenney, FL); 21610 at 0328 ending EE & into possible JJ (Johnson, AZ).

NSB, Tokyo, 9760 in JJ at 1016 w/talk, YL anncr (Garcia, MD).

Kiribati: R. Kiribati, 14802 (USB mode) at

Abbreviations Used in Listening Post	
AA	Arabic
BC	Broadcast/Ing
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America/n
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/lous
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel frequencies

0604-0630 w/ID, nx, mx. Also 0834-0930 s/off in Kiribati (McKenney, FL).

Kuwait: R. Kuwait, 15495 at 1847 in AA w/main pgm to Australasia (Mierzwinski, PA); 0329 in AA (Ross, WA).

Liberia: VOA relay, 15600 w/Nightline Africa at 2030; 21485 at 1822 w/talks. Occasional woodpecker QRM (Mierzwinski, PA).

Libya: R. Jamahiriya (tentative), 15415 in AA at 0225 (Bauman, UT); Tent. on 15450 at 0000 in AA, also on 15415//15450 at 2030 (Rabinowitz, MI).

Madagascar: R. Netherlands relay, 17575 at 1211 w/Asian svc, Images pgm, IS 1227 & into another lang. Was //17605 this time, but not always (Mayo, NE).

Netherlands: R. Netherlands, 17605 at 1210 w/interview, ID/Radio Netherlands, we are not Number 1, you are. Off 1225 but back in FF 1227 to Africa (Mierzwinski, PA).

Netherlands Antilles: R. Netherlands Bonaire relay, 9630 w/world nx 0836, ID 0839 (Garcia, MD).

New Caledonia: RFO Noumea, 7170 in FF at 0848 (McKenney, FL).

New Zealand: R. New Zealand, 11780 at 0908 w/soft mx, ID (Garcia, MD); 12045 at 0603 w/nx, wx, QRM from Moscow 5 kHz up (Johnson, AZ); 15150 pgm mx, time sigs & ID 0500 (Mayo, NE).

Nicaragua: V. of Nicaragua, 6100 in SS at 0525, mx (Ross, WA).

Nigeria: V. of Nigeria, Lagos, 7255 at 2140 in FF to 2200 s/off w/anthem (Garcia, MD).

Northern Marianas: KYOI Soipan, 11900 at 1405 w/paps, nx from WCSN at 1430, more mx (Miller, GA); 0912 w/Top 40 an 11900 (Garcia, MD); 17780 at 0552; 11900 at 0807 (McKenney, FL).

KFBS, 12025 in CC at 0810, EE ID 1000 (McKenney, FL).

Norway: RNI, 15310 at 1300 (Roberts, MA).

Pakistan: R. Pakistan, 17660 at 0230 w/slow dictation nx, ID for overseas svc (Miller, GA).

Paraguay: R. Nacional, 9735 at 0031 in SS mentioning other member stas at La V. del Coloralismo (The Colorado Party) (Garcia, MD).

Peru: R. Union, Lima, 6115 at 0720 in SS w/ID as Union Radio & mx contest (Garcia, MD).

R. Chinchaycocha, Junin, 4860 in SS at 0937 w/mx (Garcia, MD).

R. Ancash, Huaraz, 4990 at 0943 in SS, mx, ID (Garcia, MD).

R. Tarma, 4776 in SS at 0932 w/local mx (Garcia, MD).

La V. de la Selva, Iquitas, 4825 at 1000 s/an in SS (Garcia, MD).

R. Origenes, Uchiza, 5198 at 0154 w/talks, mailbag, international addresses-- some fading (Garcia, MD).

Poland: R. Palania, 11815 at 0157 w/mx. Gud sigs but QRM'd at 0159 (Johnson, AZ).

Portugal: R. Portugal, 9705 at 0237 w/philatelic pgm (Rabinowitz, MI); 11800 at 0820 w/commentary (McKinney, FL).

R. Liberty, 21745 in RR at 1800 (Mierzwinski)

Qatar: QBC (tentative), 17840 at 0349 w/carrier, tone 0352, IS 0358 (guitar or sitar), 0400 anthem & ID w/possible mention of Doha, at 0402 into AA recitations, AA mx & talks (Johnson, AZ).

Romania: R. Bucharest, 9570 at 0203 (Rabinowitz, MI); 11940 at 0200 (Roberts, MA).

S. Africa, Rep. of: Radio RSA, 9615 at 0222 (Roberts, MA); 0200 w/Africa Today (Rabinowitz, MI); 0244 w/nx (Ross, WA); 21590//21535 at 1412-1515 w/ID, commentaries (McKenney, FL).

Radio 5, 4880 w/nx, paps 0320-0450 (Bauman, UT); 0402 headlines, nx, wx (Garcia, MD).

R. Orion, 3955 at 0126 w/ID, mx (McKenney)

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S. Korea: R. Korea, 15575 at 1425 in Korean (Bauman, UT).

Spain: REE, 9630 at 0015 (Roberts, MA); 11800 home svc for Spaniards at sea 2147, SS; 15395 at 2120 in AA (Garcia, MD).

Sweden: R. Sweden, 11705 at 2300 (Roberts, MA); 17840 (USB mode) at 0236 w/ID & nx (McKenney, FL).

Switzerland: SRI, 9560 at 0818 in II to Pacific (Garcia, MD); 9725 at 0220 (Roberts, MA); 9885 at 0217 w/features (Neff, FL); 21695 at 1335 w/ID, nx; also 12035 at 0217 w/ID, commentary (McKenney).

Syria: R. Damascus, 12085 at 0013 in SS, anthem 0015 (Garcia, MD); 15095 at 2000 w/nx, press review (Miller, GA); at 2008 (Neff, FL; Johnson, AZ)

Tahiti: R. Tahiti, 11825/15170 at 0559 w/mx. FF ID (Ross, WA); 15170 in FF at 0130-0400, also 11825 at 0818 (McKenney, FL).

Taiwan: VOFC, 11740 at 0210 (Roberts, MA); 15130 in SS at 2304 (Ross, WA). All via WYFR in Florida—Ed.

WYFR (via Taiwan), 15055 at 1335 w/call-in pgm, IS/ID (Mayo, ME).

Turkey: V. of Turkey, 9445 in presumed Turkish at 0145 (Bauman, UT); 15105 replacing 15225 at 0259, under VOA, IS/ID into Turkish, also 17760 at 2208 w/press review, ID, talk (Johnson, AZ); 0256 w/IS & ID, pips, ID, skeds, nx (Mayo, ME).

Ukrainian SSR: R. Kiev, 7165/7205 at 0200 w/nx & commentary (Rabinowitz, MI); 11790 at 0215 (Roberts, MA); 11790/11850 (via Havana) at 2130 (Garcia, MD).

Unidentified: 15300 w/carrier & chime-like IS at 0343. Reported this as un-ID at 11870 & 15300 a while back (Johnson, AZ). FEBA Radio, Seychelles uses 11870 & 15305—Ed.

15555 at 0425 in Asian lang, distorted; next day s/on 0315 (Johnson, AZ); 10242, very weak w/mx & talks at 1021 (Garcia, MD).

United Arab Emirates: UAE Radio, Dubai, 17775 //21700 in AA (Johnson, AZ).

U.S.A.: WYFR, 15225 at 2308 in SS (Ross, WA).

KUSW, 15580 w/ID 2340; & 15225 at 1600 (McKenney, FL).

WRNO, 7355 at 0114 (McKenney, FL).

WHRI, 7355 at 0300 w/Radio Earth pgm (Neff).

WCSN, 15300 at 2245 w/features, classical mx, letterbox (Neff, FL). Listen for Pop'camm commercials on WCSN!

AFRTS, 15330 at 2018 w/Paul Harvey, ID, nx (Neff, FL); 7571 (LSB mode)//6030 (AM mode) at 0215 (Rabinowitz, MI).

WINB, 15145 at 2330 w/ID, rx pgm (Neff, FL).

VOA, 14398 (LSB mode) at 0300; 6873 (LSB mode) in EE while USB mode of same freq in Bulgarian; 7651 (LSB mode) at 0130 in un-ID lang, Urdu at 0100 (Rabinowitz, MI); 17800 at 2100 w/ID, nx (Neff, FL); 15430 at 1300 (Roberts, MA).

USSR: R. Moscow, 15245 at 2310 (Ross, WA); 15475 to UK at 1950 (Rabinowitz, MI); World Service on 15500 to 2000 off; 15490 in an African lang at 0341, IS 0345 (Johnson, AZ); at 1305 (Roberts, MA); 17735 at 0344 in Swahili w/ID & IS, then RR to Africa (Johnson, AZ).

Home service relay from Cuba, 4765 in RR at 0928 w/mx & talks (Garcia, MD).

R. Peace & Progress, 12020 at 0002 in PP (Garcia, MD).

Vatican: Vatican R., 6150 at 0050 (Roberts, MA); 9605 at 0055 w/tx nx, aff abruptly 0109 (Rabinowitz, MI); 15090 rx pgm & ID (Mayo, NE).

Venezuela: R. Tachira, 4830 at 0115-0145 w/mx, commentary, ID (Mierzwinski, PA).

R. Capital, 4850 at 0316-0410 continuous mx, some SS, same EE lyrics, ID 0328 in SS (Mierzwinski, PA).

R. Rumbas, 9660 at 1135 in SS w/commercials, report on oil prices (Garcia, MD).

Vietnam: V. of Vietnam, 15010 w/nx 1901, ID (Mayo, ME); at 1338 w/nx, mx, ID, talks-- ganzo by 1359 (Johnson, AZ).

W. Germany: DW, 15105 (via Antigua) in SS at 2300 (Ross, WA); 17715 w/IS, ID in possible GG at 1854; 17825 (listed Malta-- Ed.) at 1330 in un-ID lang (Johnson, AZ); 21600 at 1545 to Africa (Rabinowitz, MI).

POPULAR COMMUNICATIONS

76 N. Broadway, Hicksville, NY 11801

QTY.	ORDER #	TITLE	PRICE	TOTAL

Book Total

Shipping Charge

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Shipping charges \$2.00 per order. Shipping charges waived on orders of \$50.00 or more. Books shipped best way. All orders are processed the day they are received, but please allow 30 days for delivery within North America.

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Signature required on all charge orders:

Many thanks to these warm weather troopers: John Miller, Thomasville, GA; Frank Mierzwinski, Mt. Penn, PA; Stanley D, Mayo, Westbrook, ME; Fernando Garcia, Baltimore, MD; James Ross, Vancouver, WA; Robert L. McKenny Jr., Niceville, FL; Joe Bauman, Salt Lake City, UT; Sander J. Rabinowitz, Farmington Hills, MI; Paul Johnson, Phoenix, AZ; George Neff, Tampa, FL and George V. Roberts, Wareham, MA.

See you next month and, until then, good listening!



FOCUS ON FREE RADIO BROADCASTING

A new FM pirate, based in Georgia, claims to have been on the air since last May. **WFEZ-103** says it is broadcasting in stereo over a 3 kW Gates transmitter, using 102.7 MHz. Programs are "the best in light rock and easy listening favorites" with no commercials. The station claims to be on the air four hours per day, seven days a week (Monday to Friday from 1300 to 1800 UTC, Saturdays and Sundays at 1400-1900). Reception reports should be sent to 656 Waddell Street, Marietta, GA 30353. Got to wonder how long this one will be with us, considering its apparently "open" address and relatively high power.

Pirate fans who logged **Radio Mauser Worldwide**, **Radio Mauser International**, or **NMN Mauser**, can get a QSL by sending a reception report to Radio Mauser, P.O. Box 6020, Lawrenceville, NJ 08648, according to an unsigned "communique" received here.

Neal West of Radio East Coast Commercial in England writes to provide us with an updated list of European pirates. I should note, however, that with the exception of **Radio Dublin** and **Radio Caroline/World Mission Radio**, Europirates are nearly impossible to log in the US, unless you live along the eastern seaboard. Even then they are tough. Broadcasting usually starts around 0900 Sunday mornings and runs on from there.

Neal notes that Radio East Coast Commercial has a 3-hour Free Radio DX program on the first Sunday of each month. The show needs someone interested in providing news of pirate activity in the U.S. on a regular basis. I'd guess this is a volunteer arrangement but if you are interested and have a pretty good finger on the pulse of pirate activity and are serious about a long-term arrangement, write to Neal at RECC, P.O. Box 5, Hunstanton, Norfolk PE36 5AU, England.

A new shortwave pirate is **Radio Garbanzo**, noted by David E. Binnie of Pittsburgh. He heard it on 7413 from 0410 at good strength, though it faded way down and then came back up just before 0419 close. The program included a satirical editorial, rock music and thunder or drums interval signals coupled with a wolf call. Just before closing, David heard a single sideband signal come up with someone requesting to "please send more Radio Garbanzo". Steven Rogovich in Virginia Beach, VA heard the station later in the evening on 7415, from 0348-0418 when they announced the Hilo, Hawaii address for reports (P.O. Box 5074 Hilo, 96720). Dave Borenstein in Centereach, NY heard them

European Shortwave Pirate Broadcasters

Station	Frequency	Notes
Radio Atlantis	6200	irregularly on Sundays
Radio Blond Pirate	6275	occasional on Sundays
Britain Radio Int'l	6305	occasional Sundays
Radio CLOG	6315	1 Sunday per month. (Clandestine Listeners Club Germany)
Cruisin' Solid Gold Radio	6310	occasional Sundays
Radio Dublin	6910	daily relay of MW/FM
Radio East Coast Comm'l	6230/6815	each Sunday
European Music Radio	6265/6511	occasional Sunday
Freewound Radio Int'l	6266	irregular, Sundays
Free Radio Service Holland	6205/6260	one Sunday per month
Guernsey Sound	6318	Sundays relay via R. Rainbow
Radio Luce	6320/7375	each Sunday
Radio Marabu Int'l	6310	occasional Sundays
Radio New Wave Int'l	6275	occasional Sundays
Radio Orion	6300	each Sat/Sun.
Radio Pamela Int'l	6815	most Sats/Sundays
Radio Pandora	6280	occasional relay via Westside R.
Pirate Freaks Bcstng Svc	6225	irregular Sundays
Premier Radio Int'l	6240	irregular Sundays
Radio Rainbow Int'l	6318	each Sunday
Riverside Radio Int'l	6305	occasional Sundays
RTR International	6257	occasional Sundays
Radio Scorpio	7445	occasional Sunday relays
Radio Skywave Int'l	6850	irregular Sundays
Starfleet Radio	6295	irregular Sundays
Radio Stella Int'l	6310/7490	occasional Sundays
Radio Suesan	7315	irregular Sundays
Radio Tonair Int'l	6200	irregular Sundays
Radio Waves Int'l	6320/7375	each Sunday
Weekend Music Radio	6317	irregular Sundays
Westside Radio Int'l	6280	each Sunday
Woodstock Lynda Radio	6318/7445	each Sunday
Wonderful Free Radio London	7385	occasional Sundays
World Mission Radio	6215	via R. Caroline
4IFR (New Zealand)	6280	irreg. relay via Westside R.
Radio 48	6285	irregular Sundays

at 0400 on 7415, I assume the same date.

Radio Clandestine has been quite active recently. Heard by Terry O'Laughlin in Barneveld, WI at 0326-0422 on 7415 with Dj R.F. Burns playing the "Monolithic Telephone." Sign off was announced at 0405, but the audio and signal levels merely dropped off and programming continues to 0422 when it went off with no announcement.

Clandestine was also heard by Robert Fletcher in Long Island on 3950 from 0420, claiming to be the pirate ship "Clandestine" off the coast of North America. R.F. Burns claims the station has been featured on an episode of "Miami Vice." No address was announced for reports. Kenny Wright of San Antonio caught the station (his first pirate) on 7415 from 0230-0245. **Radio**

Clandestine also proved the first pirate for J. Trask in New Hope, PA who heard them from 0153 to about 0233 sign off.

WNYS, on 1,000 kHz medium wave was found by Robert A. Nichini. The station plays only classical music and says it's on each Sunday from 2 to 5 pm. In between selections, there were editorial tapes from the John Birch Society which, it was noted, reflected the thoughts of the station's management. Listeners who wanted more information about the subjects discussed were asked to write to WNYS at RR1, Box 191, Elizaville, NY 12523. The announcer, however, claimed the station was in Taghkanic, NY which, notes Robert, is about 110 miles north of New York City. He makes no note of it, but the address given by the station.

(Continued on page 74)

27 MHz COMMUNICATIONS ACTIVITIES

Midland International introduced a professional grade CB rig with an advanced remote channel selection system called Mic-ro-Tune II. Model 77-158 is the latest addition to Midland's extensive line of portable, mobile, and base station CB rigs.

The Mic-ro-Tune II system makes channel selection safe and convenient with two-speed up/down buttons mounted right on the microphone. In addition, ergonomically (a \$5 word) designed channel selection buttons are located on the front panel, giving you a choice of standard or remote tuning. A series of sequential LED's monitors incoming signal level, transmitter output and modulation.

This rig also has an RF gain (highway/city) switch, instant Channel 9 and 19 switch, variable mic gain, switchable noise elimination system, large LED channel readouts, amber backlit controls, and a built-in PA system.

Nice rig, and we like the idea of instant Channel 19 selection. Personally, I've always thought that the ability to to instantly switch to Channel 19 is more useful than an instant Channel 9 switch. This rig lets you switch to either, but most can only switch to Channel 9.

Midland International can give you more information on their Mic-ro-Tune II if you contact them at Midland International, Consumer Communications Division, 1690 North Topping, Kansas City, MO 64120.

Aussie CB

Harlan Hitchell, SSB-54D, of Paris, TX says that he's heard some skip coming through from Australia and would like to know a little more about how the channels are arranged there. For the most part, CB down under is rather similar to CB in the U.S. and Canada. Stations run 4 watts on 40 channels from 26.925 to 27.405 MHz, although Channel 8 there, has the same purpose as Channel 19 in North America. There's also a UHF FM band (similar to the GMRS in the United States) on 476.425 to 477.40 MHz (40 channels), used with repeaters.

GME Electrophone and Colt are popular 27 MHz rigs in Australia.

Marty Semrau, Hammond, IN comments on observations we offered here a couple of issues ago. He says that power mikes and other power accessories may extend the range of a station, but that's not of any value unless a station can receive as far as it can transmit. In his area, such stations have always been known as *Alligator bases*,



The Midland 77-158 has lots of great features.

all mouth and no ears! In my own neck of the woods, an *Alligator Base* is an operator who never shuts up and give anybody else a chance to talk, but I suppose one definition is a first cousin to the other.

But Marty's point is well taken. If a station can't hear stations more than 10 or 15 miles out, there's little point in being able to be heard past that point. Anything beyond that is just interference!

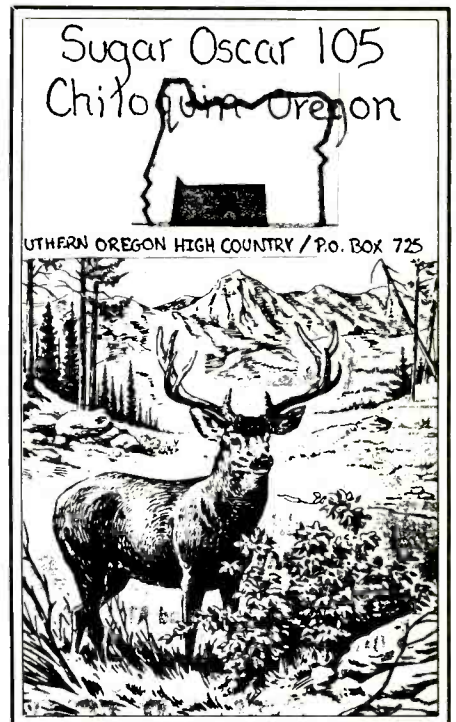
Capt. R.E. Cappella, San Diego, CA was kind enough to pass along his colorful photo QSL, showing his combo CB and all-band, all-mode monitor station. Capt. Cappella is into HF as well as VHF listening, and can copy FAX, CW, SITOR, RTTY, packet, and all voice modes. Rather an impressive station in all respects.

Some provocative thoughts arrived by mail from from Gregg A. Pohll, Chiloquin, OR. Gregg says that while he was copying two stations in AZ, it crossed his mind that the FCC's 150 mile (anti-skip working) restriction is senseless. The way the sunspots are creating skip conditions, it doesn't require the use of illegal high power to work skip. When the skip comes rolling in solid, CB channels can become absolutely useless for local communications anyway, so what harm would be done if operators were permitted to communicate with stations with 20-over-9 signals that were located 500 or 1,000 miles away?

A good question, Gregg, and one that was previously asked by 27 MHz operators during periods of high sunspot (DX) activity in the 1960's and 1970's. The FCC position has mostly been that the original concept of CB was that it would be a substantive short-distance communications, and that those who want to make new friends and random long distance contacts via skip propagation should consider obtaining ham tickets.



This desktop filled with goodies is called Cracker 878 on the air.

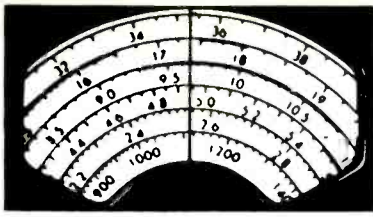


From the high country of southern Oregon, comes this QSL from Gregg Pohll, Sugar Oscar 105.

On a reality basis, many CB operators can't resist the temptation to go back to those friendly DX stations that they call with their evil offers of contacts and friendship. They're willing to take a chance and violate the distance rule against the low odds of getting caught.

The FCC has always ignored requests to change the rule. If readers have any opinions on any of this, we'd like to hear them.

Not long ago, we did ask for opinions on whether the FCC should continue licensing of individual CB stations. Responses that were typical of most we received came in from people like Jeffrey, of West Covina, CA.



COMMUNICATIONS CONFIDENTIAL

BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Newcomers to the SWL hobby often query about the "Woodpecker" QRM that is heard across many SW bands. This interference is believed to be caused by Soviet Over-the-Horizon Radar and official complaints have been lodged against the Soviet Government, but they have shown no signs of eliminating the transmissions.

Last month, we described a Bell telephone network, this led J.M., KY to send in a few more idents: WNIY791, Southwestern Bell, Houston, TX; WNHT324, SW Bell, Kansas City, MO. J.M. also provided additional facts. "All of the SW Bell stations participate in a weekly HF Radio Network meeting for a brief check-in at either 1400, 1500 or 2000 UTC. WNIY867 is the NCS for this group. Other stations, plus SW Bell WNIY867, meet monthly. WNFT417 is NCS for this presumed national net. I heard callsign KPA525 which is located in Chicago, IL but no other details were given. Some stations were using what sounded like ARQ transmissions. A few additional channels have been determined and they are: CH19 4610.5 kHz, CH50 7697.1 kHz."

Kurt Hallmeyer, CA writes, "I have been a reader for several years and a 'ute' listener on and off for some time, but finally got serious about it a few years ago. Most of my listening is done on a Yaesu FRG-8800 with a 65 foot long-wire antenna."

B.B., IL says he monitors with a pair of Kenwood R-1000 receivers, an ICOM IC-R71A, a Kenwood TS-930 transceiver and many WWII surplus receivers of the BC-348 and ARC-5 variety.

From Maine we hear from David Kingsbury, who does his SW listening with a Panasonic RF-2800 receiver with a 20 foot long-wire antenna.

On 11105 kHz, Rudolphe Poulet, Brazil, picked up a YL/PP in USB with number groups, but he later determined they were operation numbers of a local fertilizer factory.

Andy Gordon, CT furnished another batch of details on US Navy communications. NAVCAMSPAC is in Pearl Harbor, Hawaii. NAVCAMSMED is in Naples, Italy. New MARS callsigns are: NNNOCLL is for the USS O'Callahan, FF-1051; NNNONTI Long Beach, CA Navy Base; NNNNSF NAS Alameda, CA. MARS 20 MHz frequencies: 20,678.5 kHz, 20,936 kHz, 20,974 kHz, 20,987 kHz, 20,997 kHz.

In the letter which accompanied the QSL card from the USCG Group Woods Hole,



*WORLD
FRIENDSHIP*

THROUGH

SHORTWAVE

* ANDEX: 6329, ASWLC, GENERAL CLASS: KIRCY, RCMA: VT-005 *
 * Lance Micklus, 177 West St., Essex Junction, Vt. 05452 *
 * (802) 879-4079 / Receiver: SONY ICF-2010 w/AMECO TFA *
 * ELECTRONICS UTU-X1 w/TRS-80 MODEL 3: ST80-III TERM PROG *
 * NOTE: Signals shown as SIO=123, SINPO=12345, RST=(123) *
 * ANTENNAS: DP=Dipole, LW=Long wire, VERT=Verticle wire *
 * LP=Loop, +db=pre-amp gain setting *
 * PERMISSION is given to publish name & address *

S A M P L E L O G E N T R Y :

* * * * *

* 01/01/87 16:05 15.000 34544 USA: WWV, Time standard, Wx *
 * LSM-VT 16:12 AM: 100 LW+10db at 8 min after. *
 * * * * *

* On January 1, 1987 from 16:05 to 16:12 UTC on frequency *
 * 15.000 Mhz, station WWV transmitting from USA was heard *
 * with time standard and weather information at 8 minutes *
 * after the hour. Transmission mode was AM. The antenna was *
 * a 100 foot *long wire with a pre-amp boosting the signal *
 * an additional *10 db. The SINPO was 34544. The report was *
 * submitted by LSM-VT: Lance Micklus in Vermont. *
 * * * * *

Lance Micklus, VT uses this very neat logging form.

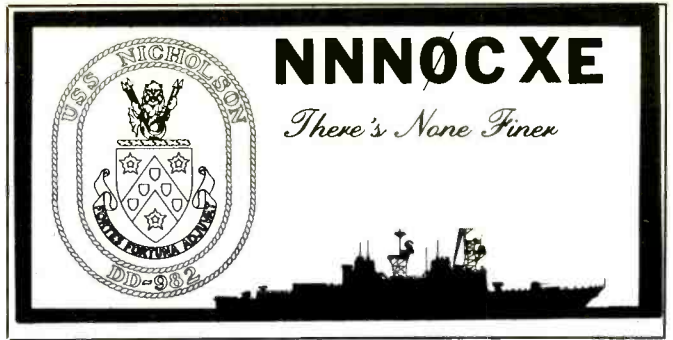
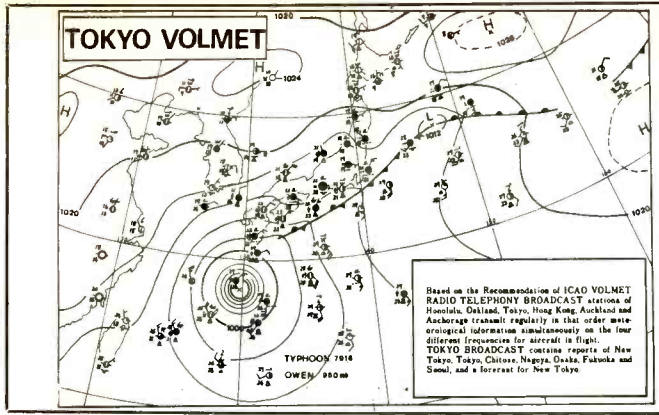
MA, R.C. Watts, KY learned that at the time of his reception, the Group Commo Center (NMF-2) had a search and rescue case going which involved the disabled fishing vessel Commonwealth, F/V Maria Joanne and CG Rescue 1475. The Commonwealth had a foot of sea water over her deck plates, but Rescue 1475 dropped pumps and took care of the problem. F/V Maria Joanne was nearby and assisted the Commonwealth to her homeport of New Bedford, MA.

Joseph Cafferky, MA noted a YL/SS 5F broadcast in which a digit was skipped causing two groups to be run together with a total of 9 digits instead of the normal 5F per

group. Joe, there are many mistakes that appear from time to time when intercepting numbers transmissions.

Richard Ipsen, CA wrote in to indicate that the "Numbers" messages have been around a lot longer than the 30 years mentioned in the two-part feature that ran in the May/June issues of POP'COMM. Richard, it is certainly true that digit traffic has been associated with "Spy" activity for some many years. However, popular reference is to the proliferation of such transmissions appearing on the air after WWII and continuing to date.

During his monitoring of a numbers mes-



Some more cards from the collection of Patrick O'Connor, NH. The VOLMET station was JMA, Tokyo, Japan. The card from the USS Nicholson was for their MARS station.

sage, B.B., IL observed the following incident. "At 0120, during a YL/EE 5F transmission on 5692 kHz, someone else came up on the frequency and said 'Shut-Up!' I guess that person that person had become irritated at hearing the long string of number groups and thought they could get the station to stop transmitting?"

Hugh Hawkins, TX forwarded the information that "Portishead Radio has a new QSL card. Yellow with black lettering". The signer of the card, a Mr. Bennett, apologized, as he thinks that the new card is inferior to the previous one. Budget cuts, he says. Hugh also pointed out "Norddeich Radio is no longer sending out QSL cards, according to the recent verification I received. They did send a picture post card along with my PFC, which was the same as the ex-QSL card." Note the text of the letter received by Hugh.

**Utility Intercepts
All Times Are UTC**

- 221: Beacon BO, Bristol, TN at 1613 (J.M., KY).
- 232: Beacon CO, Indianapolis, IN at 0653 (J.M.).
- 236: Beacon RZT, Chillicothe, OH at 0545 (J.M.).

- 260: Beacon YAT, Attawapiskat, ONT at 0529 (J.M., KY).
- 302: Beacon RE, Burlington Bay LS, ONT (Roslawski, NJ). The E following the letter R indicates the emergency or backup xmttr is in use.
- 316: Beacon OP, Old Field Point LS, NY; Beacon SP, Stratford Point, CT; Beacon XR, Execution Rocks, NY all taking turns here, all day (Roslawski)
- 317: Beacon TB, Tybee LS, GA at 0545 (J.M.).
- 329: Beacon CH, Charleston, SC at 0550 (J.M.).
- 335: Beacon LUK, Cincinnati, OH at 0600 (J.M.).
- 344: Beacon RFE, Rutherfordton, NC (Williams, SC).
- 368: Beacon SLP, Shelby, NC (Williams, SC); Beacon RRJ, French Lick, IN at 1800 (J.M., KY).
- 371: Beacon XED, Medford, OK at 2334; Beacon GT, Great Falls, MT at 1113 (Pearce, TX).
- 385: Beacon GYB, Giddings, TX at 0429 (Blaise, TX).
- 407: Beacon CO, Colorado Springs, CO at 1044 (Pearce, TX).
- 520: Beacon AW, Arlington, WA (Arens, BC).
- 1743/5230: A cordless telephone and its very strong 3rd harmonic at 0403 (Kneitel, NY).
- 2182: PJDC, M/V Fast Sea clh Halifax CG in USB at 2118 (Ricks, PA).
- 2638: Fishing Vessel Endeavor in USB at 0142 wkg USCG Woods Hole (MA) req info on injured crew member in nearby hospital (O'Connor, NH).
- 2670: Fishing Vessel Barbara Anne in USB relaying distress call from 85 ft. lobster boat Courtney Elizabeth taking on water, no power. Hrd 0625-0800 when vessel reported under own power (Fernandez, MA).
- 2716: French warship Commandant Birot (F-796) clg NETC Newport at 0115 asking permission to enter port. Vessel used callign FACB; NEWZ, USS Deyo (DD-989) at 1115 clg Newport Port Control re permission to enter port on visit from Charleston,

- SC; Several units from Naval Surface Group 4 including NJRE, USS Edson (DD-946), NOAL, USS Affray (MSO-511), & NZLL, USS Connole (FF-1056) making comms checks & exchanging position reports, course/speed info re early morning exercises (Gordon, CT).
- 3018: Two scallop boats in USB discussing crew problems, strictly XXX-Rated language-- and on a bootleg frequency at 0625 (Fernandez, MA).
- 3109: Startan clg Sea Breeze in USB at 0335. Freq is very active on weekends during mil Reserve training (Thomas, TX).
- 3485: New York Radio, in USB at 0530 w/aviation wx (Cafferky, MA).
- 3993: WD0ELL, New Haven, MO as MCS on USB at 1800 w/drill. Radiological msg sent to W9ENW from WC0AAG, State Emerg Mgt Agcy, Jefferson City, MO. CIVEX drill (A. Nonymous, MO).
- 4030: AAE, San Antonio, TX wkg hams on 3915 kHz LSB at 0152 (A. Nonymous, MO).
- 4066: NCVV, USS Carl Vinson (CVN-70) clg San Diego CSS1 at 0955 re phone interphase to onboard Air Commander; NUSA, USS America (CV-66) clg Norfolk ICSB operator for phone interphase to NAV Master CINCLANTFLT. NUSA reported being dead in the water at 2300; NTJZ, USS William H. Standley (CG-32) wkg San Diego CSS1 at 0840 re injured crew member; Sailing Vessel Gloria gave a call to NUSA on 4066.1 kHz but since NUSA receives on 4360 kHz they didn't respond. The Gloria was sending in the blind & claimed it was transiting the Atlantic & loc near Azores (Gordon).
- 4120: High Seas Op w/patches at 0338 (Garafalo, NY). More than likely, this was a vessel on 4118.8 kHz working WLO in Mobile AL [4113.2 kHz]. See Kneitel's Tune In On Telephone Calls for more info.
- 4610.5: WNTM867, S.W. Bell Telephone, St. Louis, MO w/sig check for WNH1785, S.W. Bell, Little Rock, AR in USB at 1522 (J.M., KY).
- 4722: MVU, British RAF, W. Dayton, England in USB at 0353 w/VOLMET wx (O'Connor, NH).
- 4867: Vancouver Maritime Radio, OM op, handling ship patches at 0:00 (Hafeli, BC).
- 5263: CW sta at 0037 sending a cut numbers marker reading TBEB 66UB N4UE ENBU (Kneitel).
- 5529: Houston to var a/c giving pos reports & advising secondary freqs as 10075 & 13330 kHz (Thomas, TX).
- 5535: Speedbird London to var British Airways a/c at 0240 in USB. Secondary freqs 8921 & 8930 kHz (Thomas, TX).
- 5571: Anti-smuggler ops in S.E. USA. Many stations similar to 11288 kHz at 0200-- Lone Star, Omaha, Ping Pong, Blue 5, a/c Roadrunner 50 (over Marfa, TX) running a/c tail # checks. Some voice scrambling + data bursts (Thomas, TX). This freq listed as "Yankee Bravo" in Kneitel's Top Secret Registry.
- 5649: A/c Jordanian 272 in USB at 0326 w/pos report to Gander (O'Connor, NH).
- 5696: NMF, USCG Commsta Boston wkg Rescue 1719 (a C-130) from Elizabeth City, NC flying over capsized trimaran Edith, 180 mi E of Charleston at 0045, USB. Also comms w/NRXD, USCGC Evergreen, NYMZ, USNS Vega (T-AK-266). The Vega picked up survivor. Capsized vessel had drifted 55 mi from point where first distress call was made & received by Sat/Sat satellite (Ricks, PA).
- 5812: YL/SS in AM-mode at 0228 w/4F grips (Cafferky, MA).
- 6570: YL/GG in AM-mode from 1345-1350 repeating 40905. At 1350 changed to 30209 till 1354 when switched to CW & sent series of A's then off at 1400 (Mason, England).
- 6883: MAC 409/Albrook (Panama) in USB at 0350 re flight data & patches re picking up a burn patient from Army hospital in Panama (Fernandez)
- 6730: SAM 206 & Brandywine in USB at 2118 trying to correct satellite problems (A. Nonymous).

Place
Stamp
Here

HELLO !

THANKS FOR YOUR LETTER. I CAN CONFIRM THAT WE INDEED HAD TRAFFIC GOING ON SAID DATE AND TIME. WE HANDLE A HUGE AMOUNT OF CALLS EVERY CRUISE, SO IF YOU LISTEN IN YOU MAY HEAR US AGAIN SOON. WE HAVE 2 1500W E.B. M519 TRANSMITTERS WHICH MAY BE USED SIMULTANEOUSLY. WE HAVE 8 RECEIVERS, 3 OF THEM EB5001, 2 DRA M5000, AND 3 EXTRA BACKUPS. ALL SYNTHESIZED OF COURSE.

WE ALSO HAVE TELEX EQUIPMENT. TELEPHONE CALLS ARE SET UP THROUGH 2 SWITCHBOARDS TO ANY PHONE ON THE SHIP (ABOUT 800).

WE ARE THREE NORWEGIAN RADIO OFFICERS. THANKS FOR YOUR INTEREST, AND COME ON A CRUISE WITH US SOME DAY !

REGARDS, *Joyvind Palm* 1 R/S/BF

Royal Caribbean
*Song of Norway, Sun Viking, Nordic Prince.
 Song of America, Sovereign of the Seas.*

M/S Sun Viking
 April 21, 1988
 3272.5 KHz

Ships of Norwegian Registry.

QSL card received by R.C. Watts, KY with informative note. Reverse of card had picture of the Lines' ship.

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)

6800: YL/SS in AM mode at 0400 w/1-0 count fall by 545 (3X) til 0410 off (Mason, England).

6803: KKR39, DOE Paducah Plant, Paducah, KY clg KKR40, DOE Piketon, OH at 1530, USB. KAL23, DOE Y-12 Plant, Oak Ridge, TN; KAL23 remote, Unit 1 (mobile), Unit 2 (mobile) all in comms from 1538-1623, also in USB (J.M., KY).

6855: YL/GG at 2000 w/1-0 count & 225 (3X). After tones "Gruppen 195" & 5F grps. Had heard this sta on 6370 3-months earlier (Mason, England).

6875.7: YL/SS in AM-mode at 0652 w/tfc. End of 5F text at 0654 then another callup at 0700 + more 5F grps (Fernandez, MA).

6997.5: While trying to copy the CW text of the Sec. of Defense's Armed Forces Day comms test msg from WAR at 0300, up popped an EE #'s sta in AM-mode on 6998 kHz at same time! (Ricks, PA).

7485: NDVW, USS Nashville (LPD-13) testing in CW to Charleston Test Control at 1507 (J.M., KY).

7535: NLFI, USS Truckee, NAAR, USS Spiegel Grove, NGTA, USS Farragut, & USS San Jacinto testing in all modes to NAM on various days at different times (J.M., KY). The call for the San Jacinto is NJAC-- Ed.

7606: VLB2, Mossad (Israeli intelligence agency), w/YL op in USB at 0146 (Kneitel, NY).

8441.3: 9HD, Malta in CW w/marker at 0819 (Ross, ONT).

8577: YL/EE at 0422 w/#'s tfc (Hafeli, BC).

8609.1: CLJ, Havana Morflot Radio w/CW tfc to UJCP, Soviet reefer Akademik Bocharov, & UZSE, the Soviet tanker Adygeja (Ricks, PA).

8672.5: DAF, Norddeich Radio, FRG w/CQ marker in CW at 0640 (Micklus, VT).

8825: French Air Force Ft 8852 in USB at 0325 wkg New York Aeradio (O'Connor, NH).

8993: Carbon Copy & Red 40 w/departure msg to Furious, both enroute Palmerola Air Base, Honduras at 0040. MAC 60204 to MacDill AFB w/patch to MacGuire AFB CP at 0050. All in USB (Ricks, PA).

9040: Hotel Kilo, YL/GG w/5F grps in USB at 2322. At 2315 noted DK1 in RTTY on 9040.4 kHz. Looked like Bulgarian Embassy, Havana w/plaintext & cyrillic (Ricks, PA).

10180: YL/RR in AM-mode at 0500 repeating 873 as in intercept on 7537 kHz. At 0505 said Norma 44 Gruppi 34 then into 5F grps, ended w/00000 w/final Nulu emphasized (Mason, England).

10195: WWJ70, Fed Hwy Admin, Montgomery, AL asking KAZ599 (un-ID) to relay tfc to WWJ73, FHWA, St. Paul, MN at 1523, USB (J.M., KY).

10675: YL/SS w/5F grps at 0727, AM mode. "Final" at 0730. Repeated at 0735 w/Atencion & some msg. At 0749 hrd the tape being rewound (Cofferty, MA).

10780: Track Star/Cape Radio (Shuttle launch facility) in USB at 1520 w/patch thru Cape Radio (Fernandez, MA).

11028: KIJ44, FBI Tampa, FL w/msg re reserve fuel supply for KWB406 (un-ID) at 1625. WGY910, FEMA Bothell, WA clg KWB405 at 1628, neg contact. The FHWA at Lincoln, NE w/sig check for KIJ44 at 1845, all USB (J.M., KY).

11241: McClellan AF w/aero wx, Red Lion 53 by El Paso, patch to Red Lion Base at 2137 (Hafeli).

11288: Oceanside 300 w/calls to Shark 16 & Morning Star, anti-smuggling ops, USB at 0255 foll by M-50, K-1661, & M-1670 attempting to establish secure comms. M-1670 was a/c off west coast of FL. All QSY'd to "last nite's primary" at 0306 because they couldn't "go green" on this freq. (Sabo, CA). Kneitel's Top Secret Registry lists this freq as Yankee Delta.

11300: Nairobi R., Kenya to various a/c sending pos reports from African locations. Secondary freq was 5658 kHz (Thomas, TX).

11307: Possible a/c w/engine problems made a patch & was called Oscar-Oscar by station at other end (Garofalo, NY).

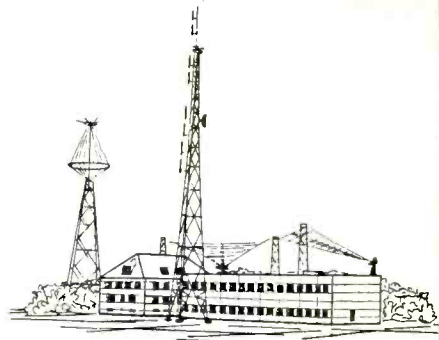
11463: YL/EE in AM-mode at 0607 w/callup of 339 (3X), 1-0 count repeated many times fol by 10

DEUTSCHE BUNDESPOST
Fernmeldeamt 6 Hamburg
Küstenfunkstelle
NORDDEICH RADIO

Norddeich Radio-Postfach 11 90-2980 Norden 1

Hugh M. Hawkins

United States of America



Ihr Zeichen, ihre Nachricht vom

Unser Zeichen, unsere Nachricht vom

☎ (04931)

Datum

N 8 C 1791-4

1 83-

10.05.88

oder 1 83-1

Betreif

Reception Report

Dear Sir,

we have received your letter concerning the reception of trans-
missions from Norddeich Radio (DAF).

Norddeich Radio is a coast station working in the maritime mobile
service. Most of the transmissions of this station are subject to
secrecy of telecommunication.

Therefore normally we do not verify reception reports, as we have
no QSL cards. So we exceptionally use your prepared card for a
verification of your monitoring.

Thank you very much for your given information and details

Best regards
for the Head of the Office

enclosure

verification card

hi-pitched short tones, then Count 152 foll by 3/2F grps at 0610 (Fernandez, MA).

11540: YL/EE in AM-mode at 1900 repeating 236. At 1905 into 5F text. At end of tfc sent 144 30 00000, then off (Mason, England).

11567: X01 asking Multiple to contact on VHF. Multiple replied that they had HF equipment only. At 1749 (J.M., KY).

12601.3: EIRP, tug Rowangorth in USB at 2021 w/patch thru Partisland R. The ship was off Angola (O'Connor, NH).

12573: 4X10, M/V Zim Ibiria, an Israeli container ship in CW at 0441 wkg VAI (McDonald, BC).

12582: DUOQ, Philippine vessel M/V Star Pioneer to DZJ at 2005 w/telegrams (Hall, WA).

12585: SQFM, Polish ship Gen. Madalinski wkg LJG w/telegrams. Ship is a bulk carrier (Hall, WA).

12682: DSZX, Liberian flag bulk carrier Hormac Dawn in CW wkg VAI at 1537. Was riding out a gale, and the lumber on deck had shifted to the point where the vessel was on a 10° list (McDonald).

12788: JFA, Chuo-Gyogyo, Japan in CW at 1143 clg CQ in CW (Ross, ONT).

12858: FUE, Brest Navrad, France in CW at 2325 w/VVV marker (Kneitel, NY).

12891: UFN, Novorossiisk, USSR in CW at 0040 w/tfc list, then sent it in RTTY (Ricks, PA).

13020.4: VPS, Hong Kong R., in CW at 1152 w/call marker (Ross, ONT).

13220: NCVV, USS Carl Vinson tried several times to contact Lanetree, but no joy. Hrd at 2344 (Hafeli, BC).

14170: UMS, Moscow Navrad, USSR sent short CW msg at 1320. Repeated msg 5 or 6 times then around 1245 sent 5 minutes of RTTY (Rowley, NC).

14356: GF24, Brocknell, England in CW w/coded wx at 1804, then RTTY at 1810 (Micklus).

14408: AGAOVE, USMAAG Venezuela in USB w/patch thru AFB2TL (Symington, OH).

14441.5: NNN0CZV, MARS aboard USS Hayler (DD-997) recognized NNN0YTN as a bogus MARS call & challenged YTN at 0100. After the challenge,

YTN left the air after responding in a rather nasty tone that they were an atloat unit. I checked with my own MARS sources and they agreed that NNN0YTN was a phony (Gordon, CT).

14461: VXV9, CFARS Golan Heights in USB at 1926 wkg CIW608 w/patches (Symington, OH).

14488.5: AAE, U.S. Army, The Presidio, San Francisco, CA in USB at 2053 wkg hams (O'Connor).

14489: IJL9CB, MARS patches from Japan to FL, USB at 0000 (Hafeli, BC).

14509: RIW, Khiva(?), USSR in CW at 1810 w/coded tfc (Micklus, VT).

15000: BPM, Xian, PRC in CW at 0100 w/CW ID then YL/CC w/tfc under WWV (Ross, ONT).

16005: IDR6, Rome Navrad, Italy w/VVV marker in CW at 1631 (J.M., KY).

16587: WYZ6567, Marriott Silver Queen clg un-ID sta at 1201, neg contact; KVR416, Inland Transportation wkg WTE8418, American Pride at 1320 w/tfc; KNJL, Omi Hudson w/patch thru KHT at 1318, all USB (Symington, OH).

16661: 3FNU2, Italian vessel Golfo de Chiriqui (Panama reg.). Apparently a new ship, poss Japanese built reefer. Hrd at 2046 (Hall, WA).

16788: 3ELW4, Panamanian flag bulk carrier M/V Sophia wkg J.M., Tokyo Navrad in CW at 0128 (McDonald, BC).

17080: UAL, Nakhodka, USSR in CW at 0101 clg CQ w/marker (Ross, ONT).

17978: Skyking bc w/Rockaway at 2103, Brimstone at 2110, Longbow at 2115 (Garofalo, NY).

18666: Anti-smuggler ops? IN LSB from 0100-0200 two stas talking re codes & Channel Victor-1. Also talking about some un-ID activity at a hotel somewhere & the wx condx at the hotel. Told Charlie 20 to go to HF emergency freq. At 0153 hrd faint sta say "This is Scott 2, we are shut down now" (Kingsbury, ME).

21458: NPG, US Navrad, Skaggs Island, CA in USB at 2034 wkg hams (O'Connor, NH).

22579: OXZ, Lyngby R., Denmark w/ID marker in CW at 1248 (J.M., KY).

PC

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

BY GERRY L. DEXTER

In the nearly three decades which have passed since Castro took power in Cuba, there has been a long list of voices raised against him on any number of radio stations, some legitimate - others secret. One of the latter, was *Radio Libertad Cubana*, based in the Miami area. The star of this station was "Commandante David," who claimed to have a considerable audience within Cuba. The station's began in 1978, and was quite active for a couple of years.

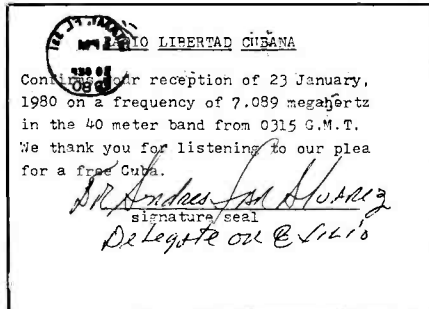
"David" and his station were tracked down, busted, then taken to court by the FCC in 1980. "David" turned out to be one Jose Gonzales, a 47 year old native of Santa Clara, Cuba, and now U.S. citizen. Gonzales, in fact, may not have been his real name. At any rate, charges against him were eventually dropped and, though "David's" on-the-air appearances were reduced, they didn't entirely disappear until 1984, when *Libertad Cubana* was last noted by shortwave monitors.

Now, some four years after that last reception, *Libertad Cubana* and "David" are back. Or they seem to be. A station using the *Libertad Cubana* name, but adding to that "...y Radio Felipe de la Cruz" has been heard since early May. The announcer is identifying himself as "Commandante David" although monitors who have heard both the earlier and current broadcasts, have their doubts as to whether it is the same person. The significance of the "Felipe de la Cruz" part of the name is unknown. The new version of *Libertad Cubana* is on the air Mondays, Wednesdays and Fridays at 0100-0130 UTC and has been heard on 7045 and 7076. Incidentally, "Commandante David" was the name used by Castro in his guerrilla days.

By the way, another anti-Castro outlet, *La Voz de Alpha 66* (run by the Alpha 66 organization) continues to be active. Strangely, the schedules of *Alpha 66* and *Libertad Cubana* are identical! *Alpha 66*, appropriately enough, operates on 6666.6!

Changes in the worlds political climate is the probable cause for the most recent changes in the line up of clandestine broadcasters. We mentioned the somewhat questionable future of the Nicaraguan contra station last month. Both are still active at this writing, perhaps partly because so little progress has been made with the peace talks.

With the Soviet pullout in Afghanistan underway, it will be interesting to learn the fate of the Radio Free Afghanistan service carried over US-supported *Radio Free Europe/Radio Liberty*. The same holds



Your Editor received this self-prepared QSL from Radio Libertad Cubana when it was active during 1980.

true for the more independent *Voice of Unity*, though one might expect a longer life from this one, since the mujahadeen make no secret about not yet being finished with their goals.

The resumption of diplomatic relations between Ethiopia and Somalia include an agreement to end hostile propaganda directed at each other. The signing of these agreements took place in early April, about the same time transmissions from *Radio Halgan* seem to have ceased. *Radio Halgan* was the United Voice of Somali Opposition Forces on behalf of the Somali National Movement and Democratic Front for the Salvation of Somali. It was believed that this station was using the facilities of the Ethiopian government-run radio. A number of DX'ers in the US were able to hear and verify this station. *The Voice of Western Somali* and *Somali Abo Liberation Fronts*, carried over *Radio Mogadishu*, have also left the air.

The station broadcasting against the current government of Columbia, is apparently still in operation, although we haven't monitored it yet at our listening post. The station is now said to be identifying as *La Voz de la Resistencia* and claims it broadcasts on behalf of the Simon Bolivar Guerrilla Co-ordinating Board which, in turn, is made up of the two main anti-government guerrilla forces: M-19 (aka the April 19th Movement) and FARC, the Revolutionary Armed Forces of Columbia—People's Army.

The station seems to be using very low power. If you want to attempt to pick up the broadcasts, try Sundays (the only day it's on the air) at 1330 on 6835, 2300 on 14285, 1600 on 10257, 1630 on 7215 or 2130 on 7422. All broadcasts are, of course, in Spanish and last only about fifteen minutes.

Some are either broadcast in sideband, or are better tuned using that mode.

There is a new anti-Libyan clandestine on the air that calls itself the *Voice of the People*, broadcasting on behalf of something called the Libyan National Movement. Broadcasts are in Arabic and noted between 1500 and 1600 on 17960. We have no address or any other information about this group.

The other anti-Khadafi station, the *Voice of the Libyan People*, which broadcasts on behalf of the National Front for the Salvation of Libya, announces additional broadcasts at 0600, 1600, and 2100 on 9500 and 11825. This station now issues a very nice QSL card. Reports go to this address: Al-Inquad, 323 South Franklin, Box A-246, Chicago, IL 60606-7093. This is one of those "instant Chicago mailing address" firms. Replies, sans return address, are post-marked in Britain.

La Voz Popular, the anti-Guatemalan clandestine, is still active on Friday only (Saturday UTC) from 0000, in Spanish on 6970. Signals, though, are not very strong.

From Japan, Takashi Kuroda, supplies some notes on Kampuchean clandestines, including the current schedule for the *Voice of Democratic Kampuchea*, which airs over *Radio Beijing* facilities. It's currently 0900-1000 on 15110 and 17680, 1300-1400 on 4130, 5150, 11675 and 15360 (this one's your best opportunity if you're in North America), 1800-1900 on 7385, 2330-0030 on 7350, 8345 and 9440 and 0400-0500 on 15110 and 17680. Takashi also notes the *Voice of the National Army of Democratic Kampuchea* on its new frequency of 5408 (ex-5199.8) though with quite a bit of interference at his location.

This column continues to seek information, especially mailing addresses, for the following stations: *Radio Caiman* (anti-Castro), *Radio SPLA* (anti-Sudan; Sudan People's Liberation Movement), *Radio Bardai* (anti-Chad), *The Voice of Ethiopian Unity* and the new Columbian clandestine mentioned above. Solid information, or even clues, would be very much appreciated.

And in the appreciation department, we can add the input you send to this column. Your clandestine station loggings, comments, QSL notes, background information, resistance newsletters, news clippings and related information are all highly useful. As always, we can protect those reporters who wish to keep their names out of print, so don't hold back! Till next month, best wishes and good hunting!

PC

NEW AND EXCITING TELEPHONE TECHNOLOGY

Three Short Rings? It's For You!

Roommates in an apartment, or in a college dorm, have been forever arguing over who the ringing phone is for. It could be an unwanted girlfriend, or another call for your popular partner, who invariably is not in. In the old days, the only way to find out who was on the other end, was to pick up the phone. You always got stuck taking messages for someone else. No one ever told you that having a phone meant secretarial chores.

The phone company, with its digital exchanges, has a solution... Distinctive Ringing. Besides Call Waiting and Call Forwarding, the phone company is now offering Distinctive Ringing. Now, when the phone rings and you are alone, you will know whether it is worth turning off the TV to answer the phone.

The way in which a phone rings is known as its "cadence" which is a musical term that has been used since the middle ages. Most musicians are familiar with the term cadence; it means the rhythm, beat or fall in a voice. In telephones, it means the rhythm, or timing, of the ring.

In the U.S., the standard ring cadence is two seconds of ring and four seconds of silence. This means, that on the third ring of the phone, fourteen seconds will have passed. Note, that some modern warble type ringers will change the cadence. Warble ringers will take the power from the standard ring, and use it to create a different cadence.

What we will be discussing here, is the standard cadence as heard on an old fashioned gong ringer. Fans of foreign movies and world travelers will know that every country has a different ringing cadence. Some ringing cadences seem to spend more time in ring than in silence. This type of cadence can be quite nerve wracking.

One of the features of modern digital exchanges, is that with software changes, three different "numbers" can be assigned to a pair of wires. So, whether you dial 555-1234, 555-4321 or 555-1243, it will connect you to the same physical pair of wires. What will differentiate the calls at the other end will be the ringing. For example, if Joe has 555-1234 calls, his number will have the standard 2 second ring with 4 second pause. Charlie, who has 555-4321, will get three 1/2 second rings with a 4 second pause. Fred, who has 555-1243, will now know the phone is for him when he gets two sequential 1 second rings with a 2 second pause.



In Britain, cellular phones are popular with "City Gents", the movers and shakers in the "City" as the financial center of London is called.

All well and good, but we still do not have a phone answering machine that can distinguish between various ring cadences. But, should distinctive ringing catch on, you can guarantee someone will make a machine with a "programmable cadence recognition". Then will see a machine that not only will recognize the ringing cadence, but will play a separate message for each subscriber's number. With more sophistication—

this means more software—the machine will only play back messages to the correct subscriber. This way, Fred will not have to listen to Charlie's boring messages about the upcoming YMCA picnic. If all this seems far fetched, consider that not that long ago, answering machines had no features at all. An old style machine picked up on the first ring. It had a fixed length announce message and a fixed length message. If you were lucky,

the machines used cassettes so the tape could be replaced. All this used to cost over \$600, a far cry from the micro-processor controlled machines that cost less than \$100 today.

The whole purpose of Distinctive Ringing, besides providing households with convenience, is to get more use out of the single pair of copper wires that wind their way down from the local exchange, to the various houses and apartments in each town. This wire costs money to install and maintain. To have it sit idle most of the time is a waste of resources. To enable two other "numbers" to share this pair of wires will provide revenue to the phone company. Of course, when a house has two actual lines coming in, it is possible to call from one number to the other, all you will get is a busy signal.

One problem that distinctive ringing is not going to sort out is the old "who made the call to Brussels" fight when the bill comes in. The phone companies will not be offering separate accounts for each number on the distinctive number plan. It is possible to allow separate accounts by dialing an "account code" before getting dialtone. Hopefully, this feature will be offered in the near future.

So, if there is more than one phone user in a household, here is the solution without the expense of extra lines and without the clutter of extra phone instruments. At last, a solution to teenage daughters. **PC**

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By Bob Grove
WA4PYQ

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BROADCAST TOPIX

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Log any of the super power FM stations that have come on the air? These are station running 100 kilowatts with a tower in excess of a thousand feet.

Chicagoland Radio Waves has published its second issue, and its third by the time you read this. This is a two dozen or so page pamphlet published by Media Ties and S. J. Peters. If you'd like a copy, send a SASE to mediates, Box 2215-W, Westmont, IL 60559. This booklet lists all the area stations, their format, telephone number and frequency as well as other interesting radio news. Did you know Chicago has over forty rock stations? Did you know there was a radio museum in Chicago? The Museum of Broadcast Communication was founded by WBEZ/WTTW personality Bruce DuMont. It is 14,000 square feet of photo exhibits, decade rooms, the Kraft Television Theatre, vintage gear and such as well as the Edgar Bergen exhibit, a WGN studio and more. MBC is located on the first floor of the River City Building at 800 S. Wells. The hours are noon to 5 PM on Wednesday, Thursday, Friday and Saturday and 10 AM to 5 PM on Saturday. Donations range to \$3.00. A couple of things found in the Peters' radio guide.

M.H. Schneider says a better way to get stereo is to purchase a stereo simulator, such as the one made by Recton, along with



a set of "AR Powered Partners" and listen to AM, FM and Shortwave in stereo. I have to agree with Manuel, the sound of much of radio today we're better off to take the output of our mono ICF-2010 and simulate our own stereo!

Another great AM station has bitten the dust . . . WCBM in Baltimore shut down their 10 kilowatt transmitters when the

owner was no longer making payroll. A recent trip to Baltimore confirmed that 680 is clear all over Maryland and most of Virginia. A sad loss to radio, especially to me, since I knew some of the employees. I hope someone will be able to restart WCBM.

Ken Kuzenski brings me joy. He built his own loop, mainly because of so many mentions in this column. His comment . . . "I'm

FN's main 5 meter dish was transported via flat bed truck. Here Luther Beasley, FN satellite engineer, attaches the hoisting straps. In the background is FN's transportable dish on a trailer being used as a temporary uplink.

Florida Net's studio with uplink dish in place and the portable parked beside it. One of three dishes on the roof is visible.



YOU AIN'T HEARD NOTHIN'..YET!

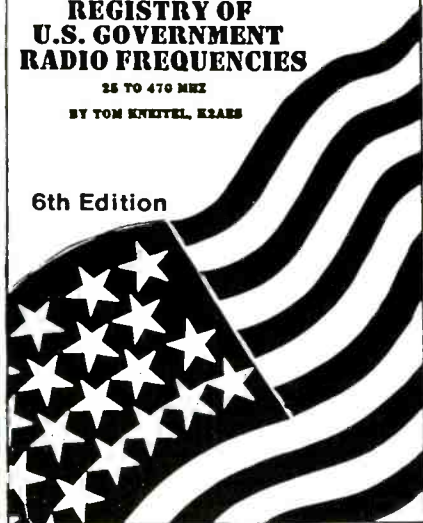
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Station Update

Call	Location	Freq	Pwr	Ant
AM STATIONS				
New	Lakeside, NJ	550	5/0	DA-D
FM STATIONS				
KGTS	Yakima, WA	89.5	.01	TRANSL.
New	Delaware Township, NJ	89.7	.5	174'
KUAT	Duncan, AZ	89.7	.01	TRANSL.
WRTI	Philadelphia, PA	90.1	13.96	934'
New	Farmington, MN	90.9	15.0	282'
KMTH	Roswell, MN	91.1	.01	TRANSL.
WTRM	Carlisle, PA	91.9	.001	TRANSL.
New	Hyden, KY	92.3	2.42	364'
WIL-FM	St. Louis, MO	92.3	98.5	984'
KNAQ	Rupert, ID	92.3	53.15	2468'
KTYL-FM	Tyler, TX	93.1	100.0	987'
KRXQ	Roseville, CA	93.5	25.0	324'
KFMF	Chico, CA	93.7	2.0	1128'
New	Woodstock, VT	93.9	.568	738'
New	Atwater, MN	94.1	3.0	328'
WAQT	Carrollton, AL	94.1	99.0	1007'
KWOC-FM	Poplar Bluff, MO	94.5	100.0	1005'
New	Standish, MI	96.9	3.0	328'
New	Henniker, NH	99.1	3.0	328'
KCIR	Salmon, ID	99.3	.01	TRANSL.
WQYK-FM	St. Petersburg, FL	99.5	100.0	984'
WKSZ	Media, PA	100.3	9.2	1145'
New	Jonesville, LA	101.1	3.0	327'
KLQL	Luverne, MN	101.1	100.0	984'
New	Haverhill, NH	101.3	3.0	328'
KBRW-AM	Kaktovik, AK	101.7	.01	TRANSL.
KBRW-AM	Nuiqsut, AK	101.7	.01	TRANSL.
KBRW-AM	Point Lay, AK	101.7	.01	TRANSL.
WRRR-FM	St. Marys, WV	101.7	17.0	390'
KRKC-FM	King City, CA	102.1	2.6	1820'
WEYQ	Marietta, OH	102.1	11.0	492'
New	Sand Springs, OK	102.3	3.0	300'
WRAU	Ravenswood, WV	102.3	.92	604'
New	Beaver Dam, KY	102.7	2.0	387'
New	Thief River Falls, MN	102.7	100.0	981'
New	Summerland Key, FL	102.9	3.0	328'
New	Quincy, CA	103.1	3.0	-497'
New	McConnellsburg, PA	103.7	.91	1817'
New	Sturtevant, WI	104.7	3.0	328'
KBVB	Crete, NE	104.7	30.6	613'
KJQN	Provo, UT	104.9	.01	TRANSL.
New	Eminence, KY	105.7	3.0	328'
New	Evansville, WI	105.9	3.0	328'
New	Grinnell, IA	106.7	3.0	328'
New	Sweet Home, OR	107.1	2.238	375'
New	Silverton, CO	107.3	100	1506'
New	Altus, OK	107.9	3.0	328'
WPFM	Panama City, FL	107.9	100.0	994'

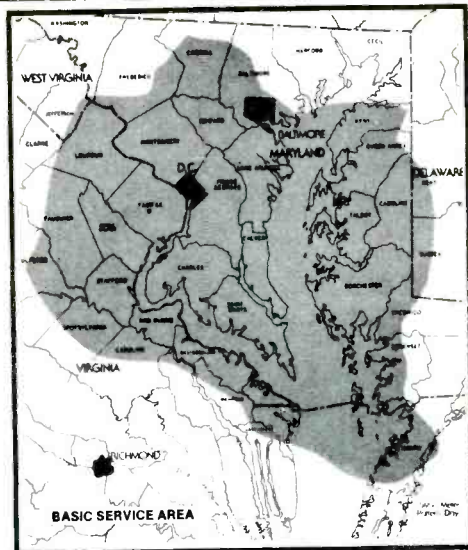
Key: D = Daytime, N = Nighttime, DA = Directional Antenna, DA1 = Same Pattern Day and Night, DA2 = Different Pattern/Power Day/Night, NDA = Omni Antenna Day and/or Night, * = Special Operation or Critical Hours, N/C = No Change.

umn from April where he describes an airplane ride in which he listened to the FM radio while on the flight only to find out after the fact that what he did was illegal. Isn't everything that's fun! All joking aside, there is a good point to be made here: Many of us are aware of the nearness of the aircraft

band to the FM broadcast band and have heard airplanes on the FM band due to images in our radios. A similar problem can occur if we listen to FM radio in an airplane. The small oscillator operating in the FM radio could be oscillating at 10.7 MHz above the station one might be listening to and this

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small minute oscillator could be right on the navigational channels of the aircraft in which you might be riding, possibly blocking the receiver being used to guide you safely across the sky. This is a serious matter and is why radio listening is not permitted in aircraft. All DX'ers have been tempted to listen while the stewards are busy elsewhere and I hope that all, like me, have allowed com-

mon sense to prevail. If not, please do so in the future, remember, it might be me riding on the plane! This is one place we cannot DX!

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CIRCLE 62 ON READER SERVICE CARD

Emergency Cellular Systems

Cellular telephones now play an important role in the emergency communications radio system. The predictability of service area, and reliability of instant access to a dial tone, makes cellular phones an ideal candidate for handling local emergency disaster communications.

There are over 300 operating cellular systems in the United States, Canada, Puerto Rico, Bermuda and the Virgin Islands. These systems support 1.3 million subscribers. The cellular system sees 60,000 newcomers coming up on channel every month!

Cellular phone equipment is at an all-time low. About \$975 is what it will take to buy a modern cellular set and have it installed in your vehicle.

Permanently installed vehicular cellular telephones amount to 60 percent of all cellular sets sold. Thirty percent of all cellular phones sold are transportable. These sets are characterized by their lunchpail size and contain a battery pack powerful enough to keep them going all day and night between recharges. Ten percent of cellular sales go to a new breed of portable cellular sets, slightly larger than a walkie-talkie, capable of giving you over an hour of talk time.

For the emergency communicator, transportables and portable cellular sets (40 percent of all sales), seem like the logical choice. These sets sell between \$1,000 to \$2,000; Radio Shack has one of the best lines of transportable and portable sets around! You have got to hear these sets in operation to appreciate the quality of a cellular phone call.

Most cellular carriers have developed a 911 emergency reporting system that rings a local dispatch center trained to handle mobile phone emergency reports. This allows them to route the call immediately to the local authorities in your particular location. In the early years of cellular, there was no telling who might get on a 911 call-up. That has now all changed, because cellular carriers realize the importance of the emergency call system.

In Southern California, the state is switching to wire line emergency freeway call boxes, to cellular emergency freeway call boxes. This self-contained system uses solar cells to recharge the built-in batteries, and a small marine-type 3 dB gain cellular antenna to access the local cell site.

In order to obtain the best area utility of your cellular phone set, you may need to prearrange operating agreements with dif-



ferent cellular carriers that serve your outlying emergency response areas. Operating on another carrier's system is called "roaming", some systems allow unannounced roamers with automatic billing, yet other systems may lock you out.

And then there are the non-wire line and wire line operating companies that operate on "A" block frequencies and "B" block frequencies. The wire line company is usually the local land line telephone service. The non-wire line company is the competitor and may, or may not, accept roamers on their extended area communication links.

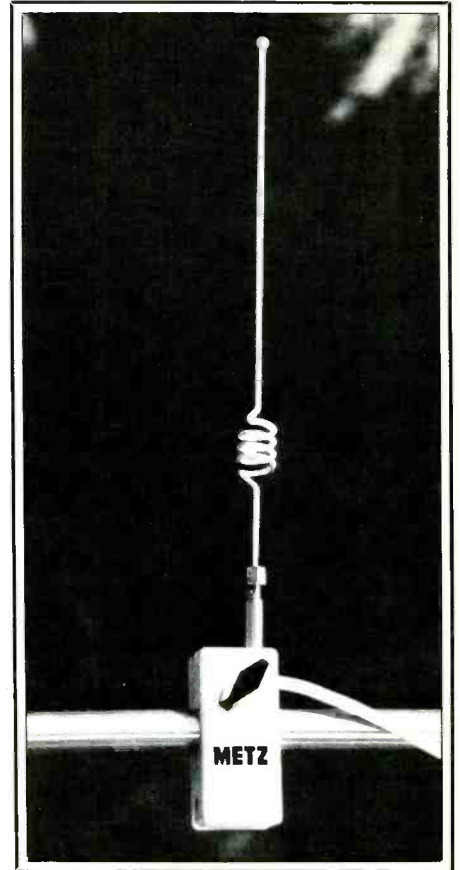
It's essential, as an emergency communicator, to check ahead of time before planning to operate your cellular phone system on another carrier's service. This requires a phone call and credit applications to those carriers that do not accept automatic roaming and billing.

Once you have set up an agreement, you may direct dial numbers without any hassle at that remote disaster area when time is of the essence. No telling how many different phone company bills you may receive at the end of the month!

Setting up a roaming agreement will also allow you to receive phone calls automatically that are dialed to your cellular telephone set.

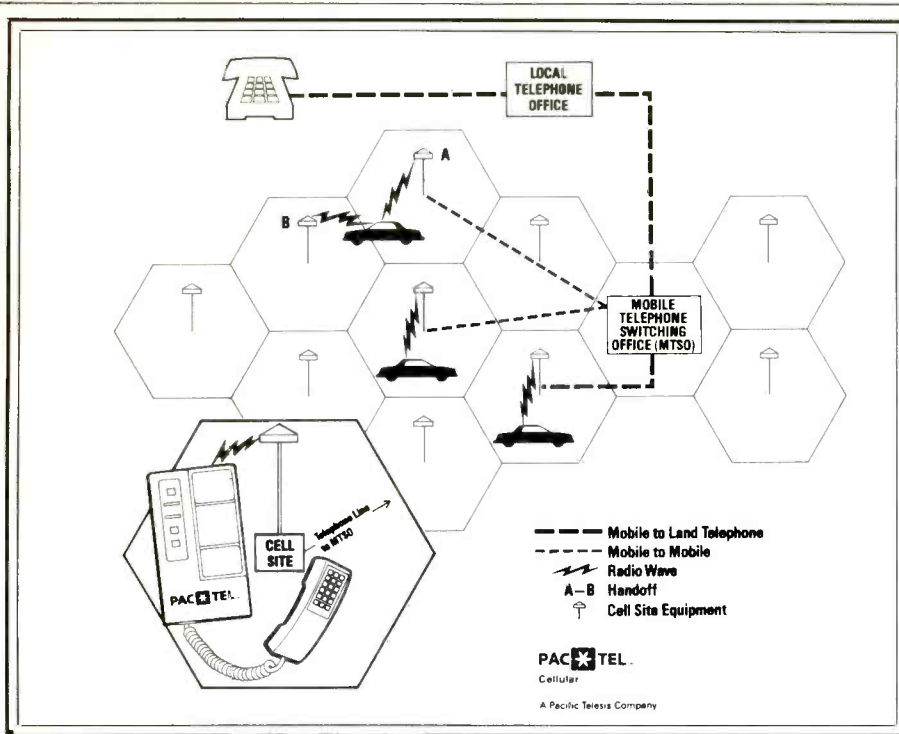
Signals at 800 MHz work well in large cities. If you are handling emergency communications in a city served by cellular phone service, your equipment will work almost anywhere.

However, out in the country, trees, hills



and foliage might impede your cellular signal. You may need to move your equipment around to several different locations to find a "hot spot". An outside antenna will dramatically improve range. Many emergency communicators are using white fiberglass marine cellular antennas because of their high gain. Both incoming as well as outgoing transmissions are boosted by as much as four times. These white fiberglass whips also contain a built-in ground plane which eliminates the need for trying to haphazardly rig your cellular antenna system. Just get these white fiberglass poles up as high as possible, move them around until your "ready" light comes on, and you are on the air. The marine antennas are also shipped with high-quality, flexible, coaxial cable.

Flexible solar panels may also replenish the internal batteries on small cellular sets. Rig this up ahead of time so you are ready



for prolonged communications during an emergency.

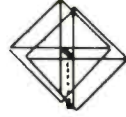
Finally, know your precise cellular coverage for each carrier giving service to your emergency response area.

Consider the possibilities of a cellular telephone as an integral part of your emergency communications plan. Its solid broad-area coverage makes it ideal to get your emergency call through, loud and clear.



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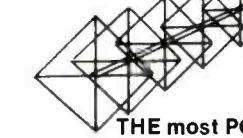


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INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Land Mobile Satellites

Even before the stock market crash, the commercial satellite industry was changing. With a limited demand for satellite services, competition from fiber optics and the risk and cost of doing business in space, several companies have had to cultivate newer and smaller satellite markets and scale down operations in general.

According to a recent report by International Resource Development, Inc., a market research firm, the satellite industry is expected to remain in a state of flux for several years. Demand for services has slowed. Current satellites have transponders waiting for customers. This has caused several companies to cancel plans for new satellites. For instance Ford Aerospace has canceled three satellites, Comsat three and GE may cancel as well. Part of the reason demand for satellite services is down has to do with the fact that present satellites are remaining operational well past their anticipated life expectancy and replacements are simply not needed.

Insurance companies have, with the recent loss of the Shuttle Challenger several expendable launch vehicles, increased the cost of their coverage. The average \$60 million satellite will, with the added cost of insurance, cost \$75 million before you add the cost of a launch vehicle. That will cost an additional \$80 to \$115 million. This coupled with the loss of government subsidies on commercial launches and current worldwide economic conditions, the future of space business looks somewhat uncertain.

The good news is that the newer and smaller markets, such as land mobile satellites and small business terminals, have the potential for rapid growth. The planned Land Mobile Satellite Service is just what it says. A satellite system designed for use by all variety of transportation vehicles: planes, cars, boats, trucks and other platforms.

There are four satellites and twelve ground stations planned for the MSAT system. The ground stations will interface with local telephone services. According to GLMS engineer Darryl Bauguess, the FCC has allocated a 27 MHz wide section of the L-band and an 8 Mhz section of the 800 MHz band for this service. Under the U.S. plan, twelve proposed ground stations will be assigned five narrow-band (15 KHz) channels and an assortment of wide-band channels.

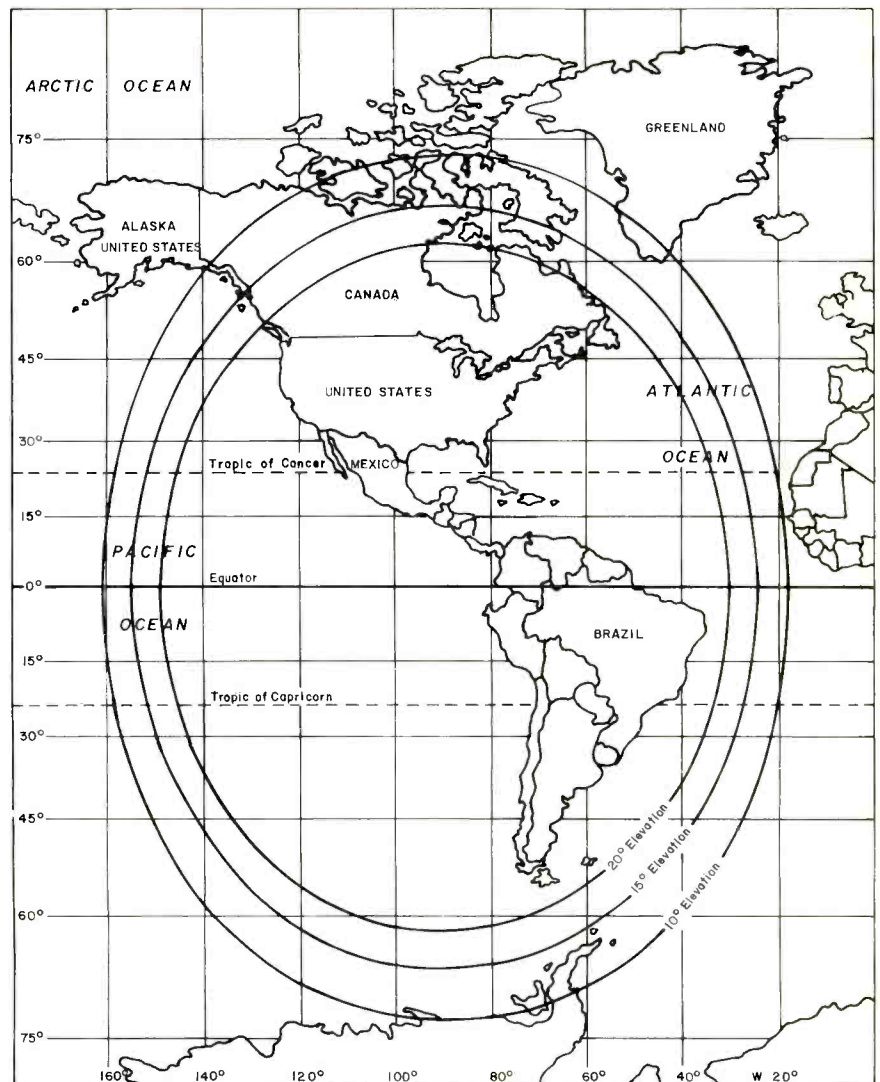
Telesat of Canada, the pioneer in this field has proposed the following frequency bands for the MSAT system. In the UHF band 821 to 825 MHz would be used for up-link in the Mobile Radio Service, 866 to 870 MHz would serve as down-link. Each UHF channel would be restricted to 5 KHz bandwidth. The L-band uplink would run from 1,626.5 to 1,660.5 MHz and the down-link from 1,530 to 1,609 Mhz.

The ground stations, called Gateway stations, a term borrowed by Amsat to describe their ground stations, will most likely use the

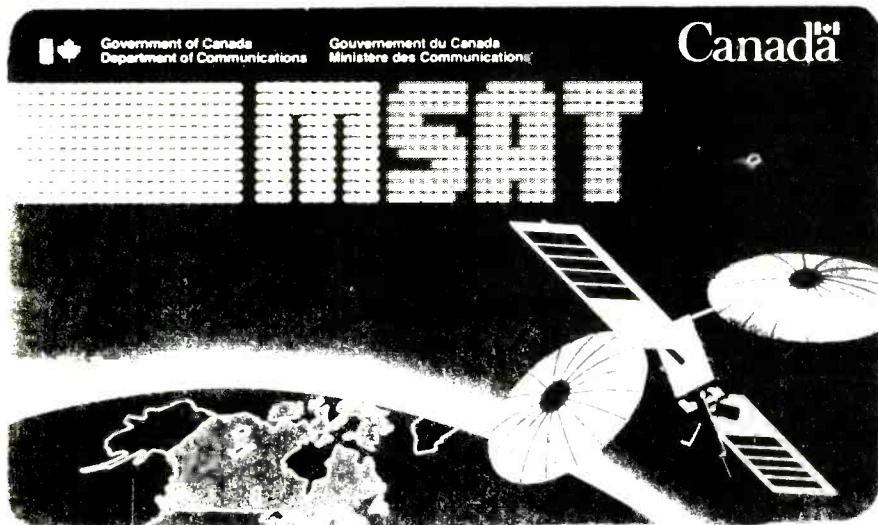
14/12 GHz or 13/11 GHz band for routing telephone calls.

The MSAT proposal also calls for possible use of cross-band operations between UHF and L-band, L-band and SHF, etc. UHF stations will be capable of simplex and half duplex operation. SHF would operate full duplex.

The exceptionally narrow 5 KHz UHF channels will be possible due to relatively new modulation techniques. Not unlike most of our high technology and advanced communications techniques, Amplitude



Proposed footprint of the Land Mobile Satellite system (Courtesy GLMS)



(Courtesy Canadian Government)

Companded Single Sideband (ACSSB) and Differential Minimum Shift Keying Modulation techniques have trickled down from the military and Intelligence Services to commercial use. ACSSB is even considered to be the next mode Amateur Radio operators in the U.S. will eventually switch to.

ACSSB is compatible with most other Analog Communication Networks, including our present telephone systems. It also, by its very nature, provides low level signal security without additional encryption. For this reason it is the most likely choice for the MSAT system. A more secure system, but one which will not work on mobile telephone is the Differential Minimum Shift Keying with linear predictive coding or simply LPC. LPC's one advantage is high security digital encryptions.

The customer's equipment will consist of small, low power mobile transceivers, portable transceivers, and roof mounted helical

antenna. The antenna will automatically track the satellite whether the vehicle is in motion or standing still. A prototype of the mobile antenna was recently used over a 300 mile circuit in Southern California by NASA's Jet Propulsion Laboratory. The successful experiment used Inmarsat Spacecraft as a tracking target. It is believed that this was the first experiment of its kind. The antenna is designed to operate between 20 to 60 degrees elevation and will drop into a search mode if line of sight is interrupted by terrain.

LPC's role in this portion of the project known as MSAT-LX is to develop the technology for the MSAT program. NASA was to launch the first MSAT in 1990 from the space shuttle, free (thus the term free enterprise). It has since been dropped from the shuttle manifest and we have yet to develop an ELV large enough to place MSAT in orbit. The Air Force, however, has been promoting their customized, heavy lift version

of the Titan 34. Initial plans call for two satellites to be located at 106 and 113 degrees west longitude.

General Motors is already planning to offer MSAT equipment on their 1993 models. The equipment package will be known as Mobile Star. GM recently bought Hughes Satellite division. They were expected to get the contract to build the satellites for the MSAT system, but General Electric, with its history of government contract work, was awarded the contract instead. Personally, I would have selected GM for this contract.

There are four types of ground stations proposed for the system. Twelve network operation centers will access the satellite using DAMA. The SHF gateway stations will connect mobile telephone communications with local networks. There will then also be district UHF and SHF stations providing multi-access to mobile radio users.

The services offered by MSAT will include data, one-way paging, TLM acquisition, full duplex voice, facsimile, real time paging, two-way messaging, electronic mail and range data transponding.

The two satellites and twelve ground stations will cost over \$600 million to deploy. Even at costs like these it is expected that customers can be charged as little as \$10.00 a month access fee.

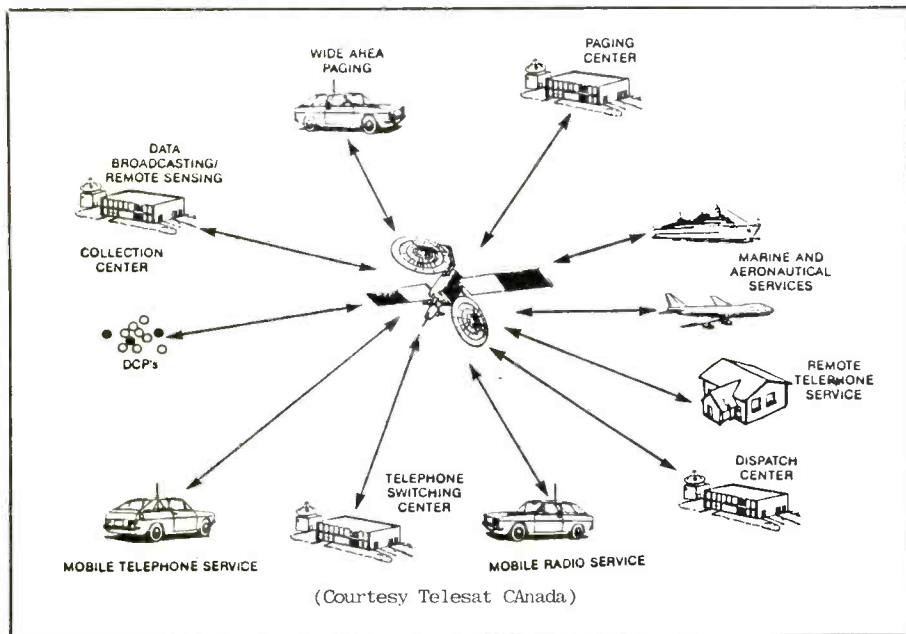
Two other areas in commercial satellite services are expected to expand. One is Radiolocation service (RDSS—see Dec. 87 issue). This service will be used by the transportation industry to locate cargo and vehicles (including ships at sea) to within an accuracy of three miles. Known as GEOSTAR, three satellites are planned for the system. The first transponders for this service will be carried by host satellites. The three dedicated satellites are expected to be launched from the shuttle in January of 1990, 1991 and 1994.

The second area of growth is expected to be the business data satellite links. They are known as VSAT's or Very Small Aperture Terminals because of the small size of the antenna they use. MCI and IBM both own spacecraft which operate in the Satellite Business System.

The satellite markets and services offered will continue to change whether good economic times or bad are around the corner. We may have, during the last ten years, seen the renaissance of satellite communications and space exploration come and go without realizing it. Of course, that may be an overly pessimistic view of the future as most companies that do business in space are large and wealthy enough to easily weather even the worst of economic times in good shape.

No matter what the future of commercial satellite communications, there will be plenty to listen to from space during the next several decades. The military will continue to put plenty of satellites into space and manned space projects will increase as well. This should give the Cosmic minded SWL plenty of exotic DX targets.

PC



(Courtesy Telesat Canada)

GETTING STARTED AS A RADIO AMATEUR

A New Ham Radio Voice in the Sky

Hams worldwide held their breaths last June 15 as a European Space Agency (ESA) Ariane 4 rocket left its pad at the Kourou Space Center in French Guiana. Would the latest ham satellite fly or fail? (To be fair, I add that ESA official—and the backers of the MeteoSat and PanAmSat satellites that sat atop the Ariane 4 along with hamdom's latest bird—were on the edges of their chairs, too. The Ariane program has had its share of failed launches in the past decade or so, one of which took another ham satellite—AMSAT® Phase 3A—and Firewheel (a nonham magnetic-field experiment) on a one-way trip into the Atlantic ocean in 1980. The Ariane program has had its solid successes—among them, the launch of hamdom's AMSAT-OSCAR 10 satellite—but this was the *first ever* launch of the Ariane 4 rocket!) Happily, the launch went off without a hitch. As a result, there's a new Amateur Radio satellite in the sky, and its name is AMSAT-OSCAR 13!

What's in a name? AMSAT is short for Radio Amateur Satellite Corporation—the nonprofit ham group responsible for building AMSAT-OSCAR 13. OSCAR stands for Orbiting Satellite Carrying Amateur Radio. The 13 means that AMSAT-OSCAR 13—AO-13 for short—is the thirteenth successful OSCAR. (OSCAR's aren't assigned a number until they've been successfully placed into orbit. AMSAT Phase 3A would have become AO-10 if it has been successfully launch; instead, Phase 3B became AO-10. Pre-launch, AO-13 was known as AMSAT Phase 3C.)

AMSAT-OSCAR 13 revolves around the Earth in what's known as a *Molniya* orbit (named after the Soviet spacecraft series designed to take advantage of this orbit's characteristics). See Fig. 1. The Molniya orbit is the next best thing to a geosynchronous orbit: It gives intercontinental communications coverage *much* of the time, as opposed to the continuous intercontinental coverage afforded by a geosynchronous satellite.

As I write this, AMSAT-OSCAR 13 is under test before being made available to hams for general use. So coverage of two-way AO-13 work will have to wait for a future Ham Column. In the meantime, you may be able to hear AO-13's 2-meter general and engineering beacons on 145.812 and 145.985 MHz, respectively. But you don't need a VHF receiver to learn more about

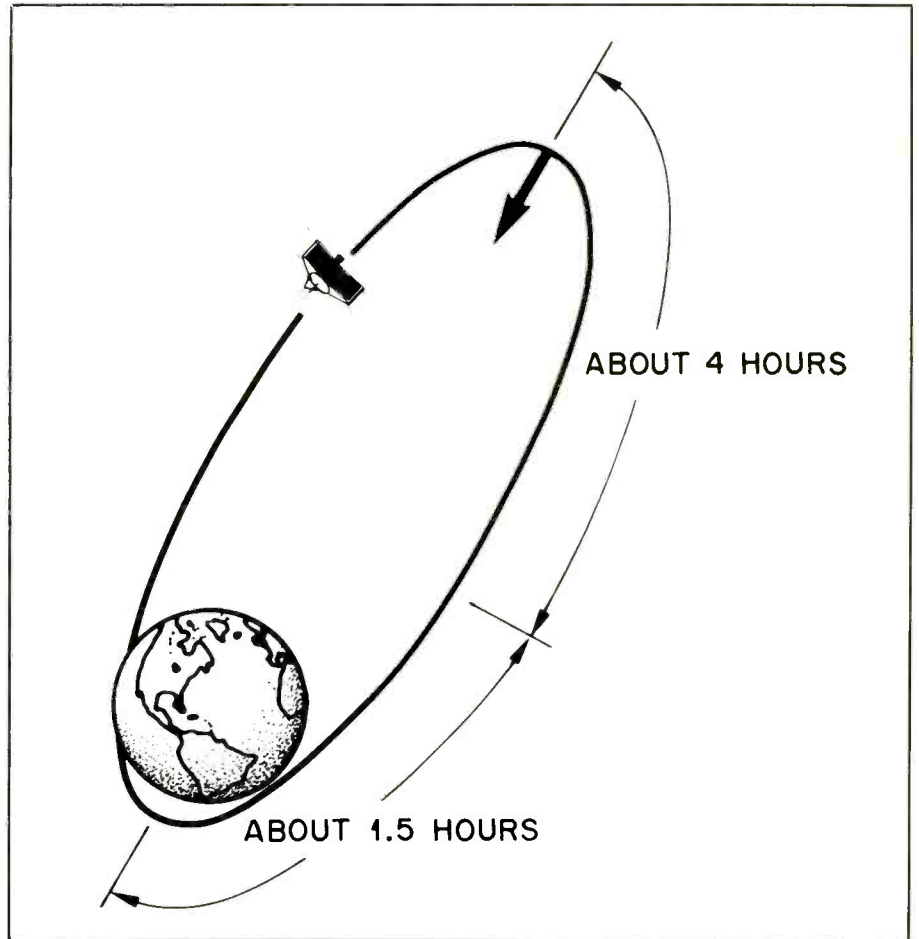


Fig. 1. AMSAT-OSCAR 13, Amateur Radio's newest satellite, revolves around the earth in an elliptical path known as a Molniya orbit. For much of each of its 11-hour orbital periods, AO-13 will provide exciting intercontinental ham communication over a footprint as large as that of a geosynchronous satellite.

AMSAT and ham satellites in general. Just tune in AMSAT's short-wave nets! These are on the air weekdays on 3855 kHz LSB at 0200 UTC (East Coast), 0300 UTC (central US) and 0400 UTC (West Coast); and Sundays on 21.280 MHz USB at 1800 UTC and 14.282 MHz USB at 1900 UTC (world-wide).

How About that DTMF Pad?

Future ham, Daniel Bailey of Sabine Pass, Texas, asks this question after scoping out the activities of local hams: "No matter where I go, whether it's the mall or theater, I always see neighborhood hams carrying hand-held transceivers that have DTMF

pads on them. What's the purpose of these DTMF pads and how do hams use them? Are they used to access local repeaters or for remote control of base stations?" Glad to oblige, Danny. DTMF stands for Dual-Tone Multi-Frequency. A DTMF pad is a special keypad/audio oscillator module that generates two audio tones whenever one of its keys is pressed. (Table 1 shows DTMF frequencies versus keys for 12- and 16-key pads.) Touch-Tone™ telephones use 12-key DTMF pads; most newer DTMF-equipped hand-held ham transceivers have 16-key pads because the additional four keys make a DTMF pad more useful for ham purposes.

Table 1
DTMF Audio Frequencies

Low Tone	1209 Hz	1336 Hz	High Tone 1477 Hz	1633 Hz
697 Hz	1	2	3	A
770 Hz	4	5	6	B
852 Hz	7	8	9	C
941 Hz	*	0	#	D

The DTMF system was devised at Bell Labs for telephone signaling and control purposes. It wasn't long before DTMF pads and decoders found application in many non-telephone control and communication circuits—including many Amateur Radio setups.

As Danny surmises, repeaters and remote bases are among the Amateur Radio systems that use DTMF signaling and control. In the two-way radio world—ham radio included—a *repeater* is a device that automatically retransmits the radio signals of another station. (Hams also refer to repeaters as *machines*, by the way.) Nowadays, though, a ham repeater is usually much more than a transmitter, receiver and antenna perched atop a high building or mountain. For one thing, many ham repeaters include an *autopatch*—automatic phone patch—a user-controllable connection between a repeater and commercial telephone lines. Some ham repeaters can be linked to other repeaters or additional receivers for improved coverage of a region. As if repeater links and autopatches don't provide enough signaling and control possibilities, more and more ham repeaters are computer controlled—and most repeater-control computers can be commanded with DTMF tones. So it's no wonder that DTMF pads are almost as common on hand-held ham transceivers as they are on telephones!

A *remote base* is a ham station operated by remote control. Some hams control their remote bases by means of DTMF signals transmitted over the remote base control link. If a given ham transceiver operates at frequencies of 220.5 MHz or higher, it can be used to control a remote base station. (Under the FCC rules, a station that transmits signals to control another Amateur Radio station is in *auxiliary operation*. The FCC rules prohibit auxiliary operation on frequencies below 220.5 MHz. Repeater operation is okay below 220.5 MHz because merely "bringing up" a repeater by transmitting on its input frequency doesn't constitute remote control as defined in FCC's Amateur Radio rules.)

More Novice Nets

The *Mobile County Alabama Talk Net* meets every Wednesday night at 8:30 PM Central Time on 28.325 MHz USB. A bit

farther to the north, the *Middle Tennessee Amateur Radio Phone Net (MTARPN)* holds forth nightly at 0200 UTC on 24.4 MHz USB. James Turner (KC4BSZ), of MTARPN writes that "We offer a free certificate for an SASE and a statement of two kind deeds performed for another person. The net is informal and proceeds as a roundtable as propagation permits."

There's Only One Reason

If your Novice/Technician net isn't listed above, or if your shack photo or comment or gripe or ham-radio question didn't make it into the Ham Column this time around, that's probably because you didn't send it in to the Ham Column! Rev up that writing stick and drop me a line at ARRL, Dept PCN, 225 Main St., Newington, CT 06111.

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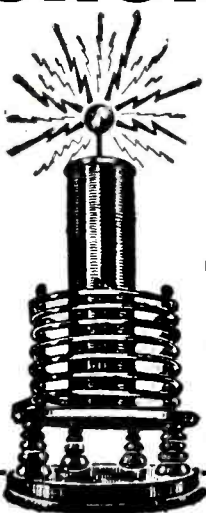
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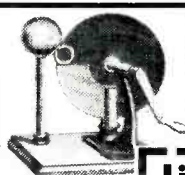


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CIRCLE 59 ON READER SERVICE CARD

ANTENNAS AND SIGNAL IMPROVING ACCESSORIES

Limited Space Utility For Hams And SWB Listeners

Many of the popular wire antennas used by hams are single-band types like dipoles, slopers and inverted-V's. Each can be directly matched to a transmitter without the use of a tuner. Except for the 15-40M combination, they are seldom used on more than one band. However, the advent of better automatic tuners, now permits operation on bands other than the one for which the antenna was cut. Such other band operations vary from good to just acceptable. Several arrangements were checked here.

In the initial test, a 3/2 wavelength wire was set up on 15 meters, Fig. 1. It resonated on 21.287 MHz and was an excellent performer. This same antenna has a length very near to a quarter wavelength on 40M. A tuner was used to obtain proper match over the complete 15 meter and 40 meter bands. In the latter case, it performed the same as a resonant-cut 40M half wavelength sloper.

How did things work out on the other bands between 10M and 40M? It did its very best on 15 and 40 meters, but, results were surprisingly good on 20 and 30 meters as well. 12 meters was fair, and 10 meters poor, but workable.

Good SWB reception was the rule on most of the shortwave bands 13 through 41 meters and it did well on 49 meters, too. Results indicated a broad pattern in the direction of the wire slope for both ham and SWB application. Side pick-up was good, while opposite direction pick-up was down. The poorest performance was on the 19M band. On receive, a tuner is not really necessary, because improvement was only minor except on the 19 meter band, which was improved significantly with the use of a tuner.

Quarterwave Sloper on 80M with Counterpoise

The basic plan of Fig. 1 can also serve as a fine utility installation which includes 80M operation. For example, it is simple to free the wire at its low end, to a level at which you can place a jumper very easily across the center dipole-to-coax connector to form a quarterwave sloper, Fig. 2. You can end-feed the sloper at its low end in two ways. In example A, a system of radials is used with transmission line connected between the wire end and the radials. Radials can be cut for 40M, or, if you wish to emphasis 80 me-

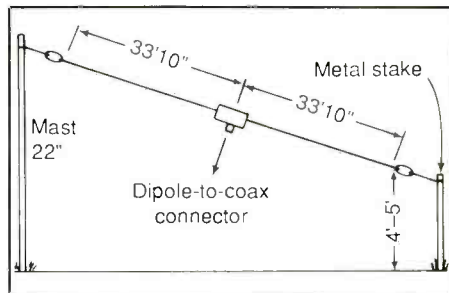


Fig. 1: 3/2 on 15 meters.

ters, cut them to this band. Typical radial lengths for the various ham and SWB bands is given in the table.

An alternative to the use of radials is the space saving single-wire counterpoise. Note that it runs along the ground beneath the antenna wire. In our case, it consisted of a single piece of insulated wire laid on the ground and extended between the post end and the mast end of the sloper as in Fig. 2B. It was made somewhat longer and extended just a few feet beyond the mast. The coun-

Band	20	24	75	160
Radial length	16'10"	33'4"	63'2"	130'

Table 1. Radial lengths.

terpoise acted as a rather effective ground.

The arrangement worked out well, and it was possible to tune up on all bands between 10 and 80 meters. Actually, antenna loading was also possible on 160M. Although it was not an efficient installation for this band, you could make good contacts. It did its best job on 10, 20, 30, 40 and 80 meters, tapering off on 15, up on 12 and down on 10. Again, as for the previous antenna, it showed directivity over a broad pattern in the direction of the wire's slope.

As a shortwave broadcast receiving antenna, it did well on bands 19 through 75 meters. A tuner helped a bit on a number of bands, but it was really not worth the extra trouble. I had the wire sloped toward Europe and in general, it did a nice job, particularly in that direction.

Single-Wire Feed of Quarter Wave Sloper

In this test, the 80M quarterwave sloper was single-wire fed with about a 40 inch length of insulated wire that was connected to the low end of the antenna wire and on to the single-wire input of the tuner, Fig. 3. Results were excellent on 40 and 80 meters.

The first contact with the antenna on 80 meters, about mid-evening, was with HANAE on April 17th. Results were acceptable on 160M and 20M, with results tailing off on 15, 12 and 10 meters. Again, direc-

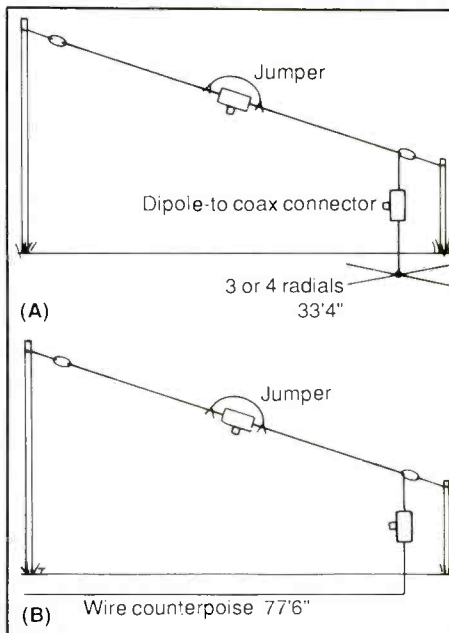


Fig. 2: 75 1/4 operation with sloper. Fed at low end radials (A) or wire counterpoise (B).

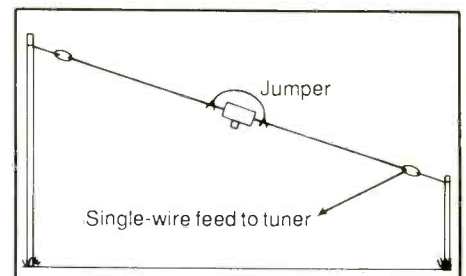


Fig. 3: Single-wire feed of utility antenna.

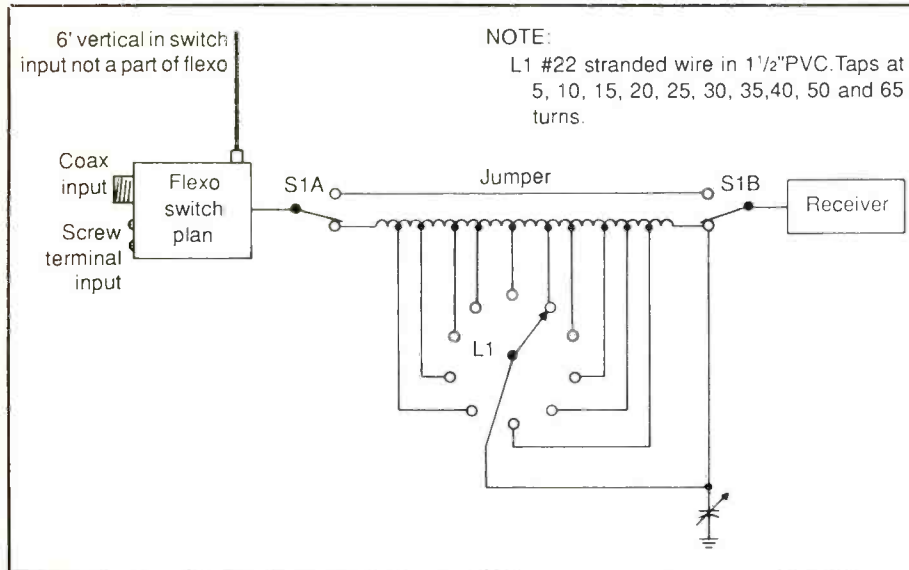


Fig. 4: Ken's flexo and tuner input system.

tivity was noticed in the direction of the wire's slope. However, it should be emphasized that side pick-up was good and the main drop occurred in a direction exactly opposite to the direction of the wire slope.

Antenna was next fed single wire to the tuner and then on to the SWB receiver. results were good to excellent for shortwave listening, with the tuner being a definite help on most bands and of limited help on just three of the bands. Again, it demonstrated the usefulness of a tuner when employed with a single-wire fed antennas.

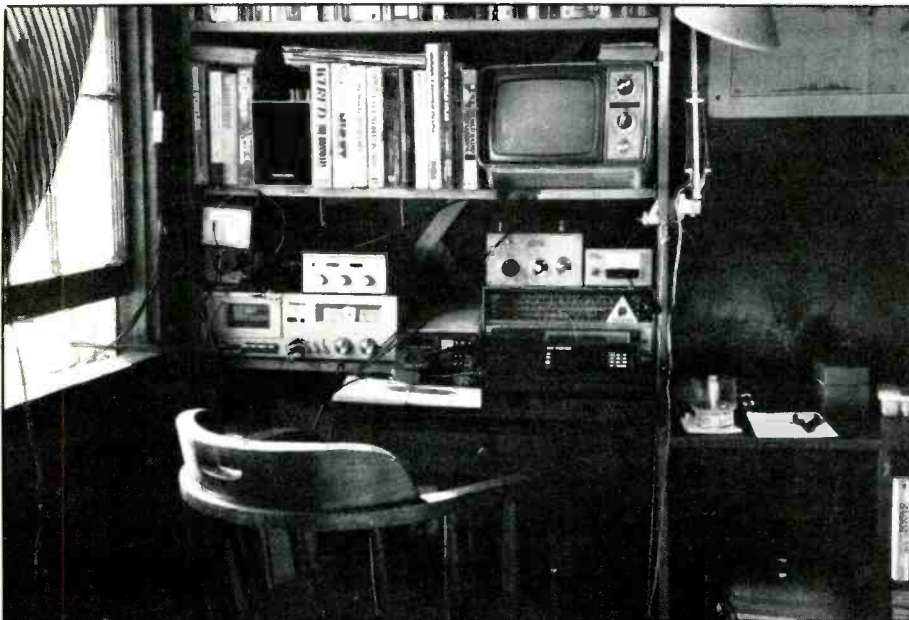
Ken Kuzenski, Jr. of Jackson, Louisiana sent in an interesting letter regarding the use of a tuner in his installation. He says that his tuner does provide significant improvement in signal level on most bands. However, its biggest virtue, according to Ken, is that it

kills image reception and nasty overloading of his portable receiver. He can also bypass the tuner with a switching arrangement when he so desires. The tuner is employed in conjunction with the flexo switch described in number of previous columns. His wiring arrangement permits the flexo switch and follow-up tuner to be used in conjunction with a 55 inch window antenna and a 6 inch vertical whip. Note in Fig. 4 that the tuner is simple L network.

His letter does stress the importance of a tuner in SWB application in the reduction of images and overload when a receiver is plagued with these difficulties.

Ken has logged 143 countries, including Kiribati, Pitcairn Island and a handful of Indonesians. Thank you, Ken, for your thorough report.

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Ken Kuzenski's listening post.

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CIRCLE 45 ON READER SERVICE CARD

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Sentenced To One Year Imprisonment For Illegal Overpower Operation Of Citizens Band Transmitter

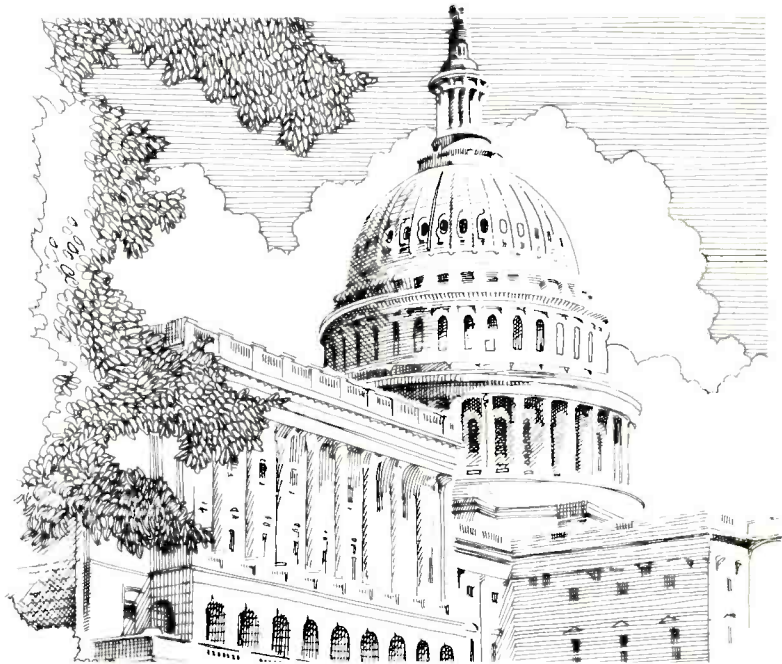
U. S. Magistrate Hugh W. Brenneman, Jr., sentenced Bradford A. Mitchell of Niles, Michigan to one year imprisonment for the overpower operation of a Citizens Band (CB) transmitter. The one year sentence was suspended except for an incarceration period of 90 days. In addition, Mitchell was placed on three years probation with the special condition that he refrain from possession, use, ownership, or operation of radio transmission apparatus (two-way radio transmitters). He also received a fine in the amount of \$1,025, and was ordered to forfeit to the U. S. Government all the CB radio equipment that was seized by the U. S. Marshal executing search warrants in 1986 and 1987. Mitchell must also perform community service as determined by the Probation Officer. The criminal prosecution was directed by local Assistant U.S. Attorney Thomas O. Martin. Investigation of the case was made by the Federal Communications Commission, Allegan, Michigan.

Unauthorized use of overpower CB equipment is a major source of radio and television interference and is in violation of Title 47, USC Sections 301, 307(e)(2) and 501. Criminal prosecutions, as well as administrative penalties, are helping to reduce the use of overpowered CB equipment. Maximum penalties include fines up to \$100,000 and imprisonment for up to one year for each offense.

Commission Amends Rules Governing Aviation Service

The FCC amended its rules governing the aviation services in a sweeping rewrite aimed at reducing congestion on heavily utilized unicom (aeronautical advisory station) frequencies, expanding communications between aircraft and aviation service organizations, and authorizing fleet licensing for the Civil Air Patrol (CAP).

Unicoms provide air-ground communications primarily between general aviation aircraft and airport facilities. Their communications typically include runway conditions, fuel availability, dispatching, wind conditions, weather and similar information. Their communications are more limited at airports with a control tower of FAA flight service station. Unicoms must provide service to aircrafts without discrimination and must furnish impartial information concerning ground services. The unicom is frequently provided by the owner/operator of



the airport. Unicoms are limited to one per field unless the airport has a control tower. The Commission has now relaxed its rules to more than one unicom per airport at airports where the FAA operates a flight service station. There are approximately 300 such airports.

Congestion on unicom frequencies near large urban areas continues to be a problem. The FAA and the Commission receive frequent complaints. Most unicoms operate on the 100 kHz spaced channels, thus limiting themselves to three frequencies. In 1990, the international rules will go into effect forcing all aircraft stations to be equipped with 25 kHz spaced unicom by assigning them to new unicom stations beginning now, and to some existing stations after 1990, seeking the greatest possible geographical separation between stations using the same frequency.

The Commission also pooled the two unicom frequencies that were dedicated to heliports and the five dedicated to fixed wing aircraft. The combining of these seven frequencies will give both groups greater flexibility when applying for a unicom license. It will also help relieve frequency congestion in large urban areas where there are several airports.

The Commission also expanded the scope of communications permitted between aircraft and aviation service organizations. The new aviation support category now authorizes two frequencies that were previously only available for communications between stationary aircraft on the

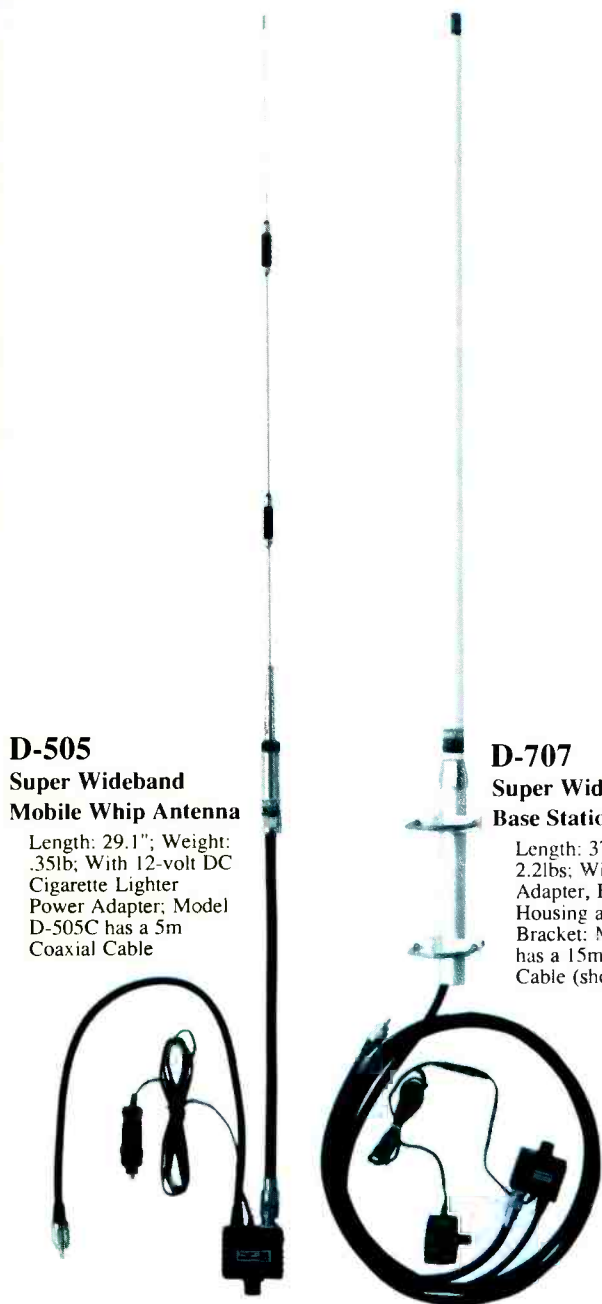
ramp and service vehicles. Now these frequencies may be used by aircraft in the air as well as on the ground when inquiring about available service. This deregulation of the support rules will also contribute to reducing congestion on the unicom frequencies, the Commission said.

The Commission simplified and clarified its rules governing the use of Civil Air Patrol stations for training operational and emergency activities of the Civil Air Patrol. Currently, over 24,000 transmitters are licensed to individual units of the Civil Air Patrol. In amending those rules, the Commission said it would grant a fleet license to each regional Wing of the Civil Air Patrol instead of issuing individual station licenses. This will reduce the number of licensees to approximately 60. Not only will this reduce paperwork for both the Civil Air Patrol and the Commission, but it will also increase the flexibility of Civil Air Patrol units in responding to their changing communication requirements.

In keeping with its ongoing review of all the Private Radio rules, the Commission in its rewrite also removed unnecessary language and rules, eliminated redundant sections, and reorganized many of its rules into tables. For quick reference, one of these tables has a list of all aviation frequencies with a remarks column and easy reference to the specific rule. These changes resulted in a 30 percent reduction in the length of this rule part. The Commission stated that these changes would significantly improve the aviation rules and make them easier to use.

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SCANNER SCENE

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

If you have a good understanding of how two-way radio systems operate, it can enhance your listening to various communications on VHF and UHF. If you wonder why you can hear your town's patrol cars at some times but not others, we'll attempt to explain why this month.

There are simple and complex types of radio systems that you will encounter while searching the bands. There systems can be found in the entire range of spectrum, whether it's a farm, a police department, a paving contractor or a top-secret federal agency.

The basic form of communications found on VHF and UHF frequencies is called simplex. Simplex communications involve handheld, mobile and base transmitters all operating on the same frequency. You normally won't encounter the term simplex on the air, except maybe by amateur radio operators operating on VHF and UHF bands. You'll often encounter simplex communications on the VHF low and high bands by public safety agencies and businesses. The only time you'll find simplex communications on UHF is in short-range applications, because UHF signals have a tendency to be line of sight (in other words, if you can see a given point, you can talk to it).

A variation of the simplex system is a two-frequency simplex system, also known as semi-duplex. In a semi-duplex system, the mobile and handheld radios will transmit on one frequency and the base station will transmit on another. Unlike a repeater operation (we'll discuss this later on), mobiles in a semi-duplex system are unable to communicate with each other because they each are monitoring the base station's transmit channel.

There are two basic types of repeaters. One is called a base repeater. In this system, the dispatcher is connected to the repeater by wire or telephone lines. Often the base repeater is located at the same location as the dispatcher. In some base repeater systems, the dispatcher has the capability of turning off the repeater, which reverts the system to a semi-duplex system. The dispatcher may turn off the repeater when the mobile unit has sensitive information to be passed to the dispatcher, but doesn't want everyone listening to the repeater input channel and are within range of the mobile or handheld unit, you can hear the message being passed.

The other type of repeater system is called a mobile relay. In this system, the repeater is placed on a mountain top or on a high tower. Not only do the mobile and handheld units transmit on the repeater input channel, but the dispatcher also trans-

mits on the input frequency. In this instance, a base station is installed at the dispatcher's location with the transmitter on the repeater site. The dispatcher in this situation does not have control over turning the repeater on and off and operates just like a mobile unit in that it transmits on the input frequency.

With as diverse as radio systems are these days, you may find several types of radio systems in use by one agency. For instance, while a police department may use a repeater for dispatching purposes so cars can hear each other, a simplex channel may be used for car-to-car communications. In addition, don't forget there are even more complex systems in use on 800-MHz frequencies such as trunking, which was discussed in a recent Scanner Scene.

In a repeater system, a satellite receiver system might be employed to enhance the repeater's coverage area. The term satellite here, however, has nothing to do with orbiting spacecraft. In a satellite receiver system, several receivers on the repeater's input frequency are placed at strategic locations. The audio heard at each satellite location then is fed to the repeater's location either by telephone lines or microwave radio circuits. At the repeater, a voter, or voting system analyzes the audio on each satellite receiver and by quickly flipping through each signal (much like a scanner), it can detect which has the strongest signal and relays that satellite receiver's audio through the repeater instantaneously.

Likewise, it is impossible for a mobile unit to know what another mobile is saying because it can monitor only the base transmitter. You'll encounter some semi-duplex systems used by county and state police departments on VHF low and high bands as well as taxis on VHF high and UHF and tow trucks on UHF. (I guess the logic here is if the cab drivers can't hear each other, they won't tie up the channel with idle chitchat.)



Here is the compact, yet neat, listening post of Gary Webbenhurst of Sacramento, Calif. He uses a Regency MX3000, Bearcat 100, Radio Shack Pro-2004 and several two-way radios for volunteer work with the Red Cross.

A third type of communications system is called full duplex. In this system, the mobile or handheld units transmit on the frequency and the base transmitter on another, however, the base transmitter repeats or relays communications from the handheld or mobile transmitter. A good example of full duplex systems is mobile telephone service. It enables the mobile unit to hear both sides of the communication at the same time without having to push a microphone button each time something is said. You'll find these full duplex communications in use on the 152-MHz mobile telephone and cellular mobile telephone bands.

You also may encounter some full duplex operations by hams in the 144 and 440 MHz bands. One ham will transmit on one frequency—sometimes even another band—allowing both to carry on a full conversation with the ability to interrupt each other without letting up on the microphone button. Each of the hams in a situation like this, however, would have to be using two radios—one to transmit with and the other to receive the other ham.



The Life Flight helicopter at the University of California Davis Medical Center averages 60 flights a week. The frequency 155.340 is used for in-flight operations, while the crew has the capability to talk to any police or fire department. Photo by Gary Webbenhurst



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Earlier, we mentioned the use of repeaters. Repeaters employ a semi-duplex form of communication in that the mobile and handheld radios transmit on one frequency, often referred to as the input frequency, and the repeater station retransmits their signals onto another frequency, called the output frequency. Repeaters usually are placed on towers at high locations and allow mobiles to communicate with each other even if they are not within range for each other to communicate on a simplex basis. Repeaters are popular on VHF for public safety agencies and almost all UHF and 800 MHz users. A repeater would allow a mobile on one side of town to communicate with a handheld radio clear across town. It also allows communication with a dispatcher or office staffer.

If a mobile unit is moving and all of a sudden is received better by another satellite receiver, the voter quickly determines this and switches to the new satellite receiver. If you are listening to a system that employs satellite receivers (a lot of hams use this for 144-MHz repeaters, with the audio from the satellite receivers relayed to the repeater via 420 or 440 MHz transmitters), you may hear a mobile unit start to sound scratchy, but all of a sudden come in crystal clear. That means the voting system just determined that the satellite receiver that the mobile was on no longer was a usable signal and quickly switched it to a clearer receiver.

One other use of repeaters is in a mobile application. Usually called a mobile repeater, the system is set up so a mobile radio user can step away from the vehicle, but still have the capability to talk with the dispatcher. Often times, handheld radios don't have enough power to transmit to the dispatcher. In this instance, special equipment is installed in the vehicle. When the vehicle operator steps out of the vehicle, a switch is pushed and the mobile radio becomes a mobile repeater. The mobile radio monitors a dedicated frequency for a handheld radio and retransmits everything it hears on that frequency back to the base station from mobile radio. The handheld radio, on the other hand, monitors the base station's frequency, however, transmits to the mobile radio

on the dedicated frequency to be retransmitted to the base dispatcher. This gives the mobile operator a handheld radio that now is equivalent to the power of the mobile radio. This allows a police officer or a radio news reporter to step from his or her vehicle, but still have the capability of having a strong signal sent back to the base station.

Do you have a question? We like to hear from our readers at POP'COMM. Send your questions, comments, frequency lists and photographs to: Chuck Gysi, N2DUP, c/o Scanner Scene, Popular Communications, 76 North Broadway, Hicksville, NY 11801.

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Beaming In (from page 4)

turned up numerous times in in virtually every communications magazine and club newsletter. But, when the ECPA became rubber stamped into law, it seemed to phase out Rep. Kastenmeier's name from our awareness.

Just as the ECPA came into being and promptly headed into obscurity, so did the name of its intrepid champion. As I sit by the hearth on these chilly autumn evenings, two long years after the ECPA incident, it occurs to me that this is a legislator who certainly deserves a better fate. In a world of hack politicians, most of whom couldn't figure out how to hammer nails into a snow bank, this is obviously a *very* special man.

You may have suspected that I won't let forget the guiding light of the ECPA. I suppose that you're wondering which of our nation's many challenges Kastenmeier is now locking horns with; drugs, poverty, the homeless, the national debt, veterans rights, AIDS, pollution, education, toxic waste, the plight of the farmers, the balance of trade, unemployment, world tensions, or whatever. Any of these problems could easily occupy the entire Washington career of a diligent lawmaker.

These days, Rep. Kastenmeier is deeply involved in pushing for the passage of the latest bill (H.R. 4897) he introduced. This bill would establish the requirement for labels to be affixed to colorized motion pictures so that all would know that the original film had been altered. The labels would also list any objections to the colorization that had been made by anybody who was directly tied to the film's creation.

At this time of Thanksgiving, when families are living in packing crates and eating from the dumpsters in back of McDonalds, we can all rest easy knowing that there are special members of Congress dealing with

the most vital and pressing issues of the day, people like Rep. Kastenmeier. Now that his ECPA has successfully ended federal agency electronic snooping, he's well on the way to making it safe for all of us to watch Jimmy Stewart movies without being deceived. Also, we'll know that Jimmy Stewart, himself, doesn't care for colorization. Not even a little.

Nay, hardly a Tiny Tim, nor a Gary Coleman, forgotten by a callous public that all to soon drops its past heroes, Rep. Kastenmeier should never meet such an ignominious fate. His good works shall surely endure. Even as you watch *It's A Wonderful Life* for the fifty times it will run on TV during the next two months, you'll thank Rep. Kastenmeier for giving you peace of mind.

Perhaps, by getting a handle on the depth of the legislation in which Rep. Kastenmeier specializes, we can get a better understanding of the importance of the Electronic Communications Privacy Act. We can also wonder what this truly amazing man will do next to improve the plight of the nation he serves.

Another Politico Gets Into The Act

The latest Washington expert to meddle with the airwaves is Senator Ernest Hollings (Dem., SC). His idea is to spend seven and a half million dollars to get his harebrained scheme off the ground, and I do mean *off the ground* in a very literal sense.

I don't know what the problem is, or why they couldn't try and occupy Hollings with some kind of colorizing law, or maybe something along the lines of legislating the size of buttonholes. For whatever reason, they did the worst possible thing that can be done with some of these politicians—left him alone just long enough to think up something to keep himself busy. What he

thought up was a government-owned TV station sending out omni-directional signals from a tethered balloon floating 10,000 feet aloft at Cudjoe Key, FL. This is to be called *TV Marti*, an anti-Castro propaganda broadcaster. It's the 1990's version of *Radio Marti*.

There are, of course, many real concerns from broadcasters regarding the impact and fallout from such a station. The question is, how much interference will *TV Marti* cause to other broadcasters in the United States and other nations. Then there's the question of whether the money going into and the signal coming out from *TV Marti* will have any practical value, whatever that may be. Is it expected to cause Fidel to quit? Does it hope to incite the people of Cuba to revolt against Castro? Does it strive to provide better soap operas to Cuban audiences than they can get over their own TV stations?

Mostly, the question is how Castro is going to react to Washington's imposition of its own TV entry into the Cuban TV market. Early indications are that Fidel isn't going to think too much of the idea. Two days after a Senate committee approved money for a project, Cuban stations on 1040 kHz and 1160 kHz decided to remain on the air a little later than their usual sign-off time. They did this for four consecutive nights. The signals (more than 200 kW) simply rode right over the signals of a number of broadcasters, such as Florida stations WYFX (Boynton Beach) and WHBO (Tampa). In fact, the Cuban signals could be well received in Washington, but they probably didn't get the message that Fidel was sending.

Like the gents in Washington, I don't have any overwhelming love for Castro. However, just because I don't care for what he's done to Cuba, it doesn't mean I think he's an imbecile who is going to sit there scratching his coffee beans and sugar cane plants while *TV Marti* blankets his island with propaganda against him.

In fact, several times in the past, Castro has demonstrated his annoyance at American propaganda broadcasting efforts. He simply cranks up the juice and blasts a lot of stations right off the air. Wouldn't it be great if Castro didn't own a lot of 500 kW broadcast transmitters and have the inclination to try and do to us what we're doing to him?

Maybe we can just send down a carton of videotapes every week and buy time on Cuban TV. Maybe we could send Sen. Hollings to Berlitz so that he could learn Spanish, and then book him on *Good Morning, Havana*, and some late night talk shows to do some propaganda.

What about taping Sen. Hollings to a tethered balloon 10,000 feet above Cudjoe Key so that he can't come up with any more brainstorm like this dumb idea?

Inasmuch as November is when we elect so many of these Washington officials, I thought it would be a nice reminder for all our readers out there to vote for the man, or women, who "you" think would best serve the U.S.

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Pirates Den (from page 45)

seems very close to that of Mr. Nichini. I take that to simply be a coincidence.

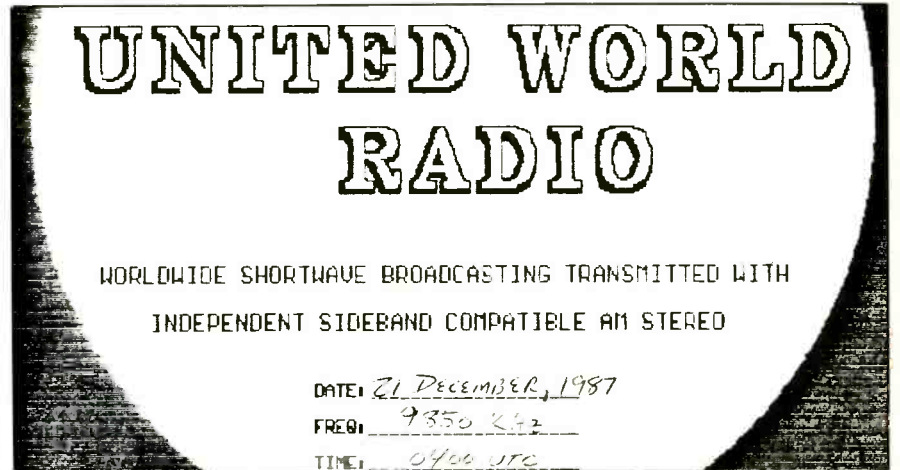
Tim Tromp in Muskegan, Michigan found the **Voice of Tomorrow** at 2343 with clear signals on 7410 and political commentaries.

Tim also heard an unidentified station "calling all pirates" and asking "is this frequency in use" at 0131 on 7415 in June. Tim says he heard them three times, but nothing further on the frequency for the rest of the evening. 7410 to 7420 seems to be

the prime place for searching for pirate activity these days, so if you're searching for them, this is the place to hang out on weekend evenings.

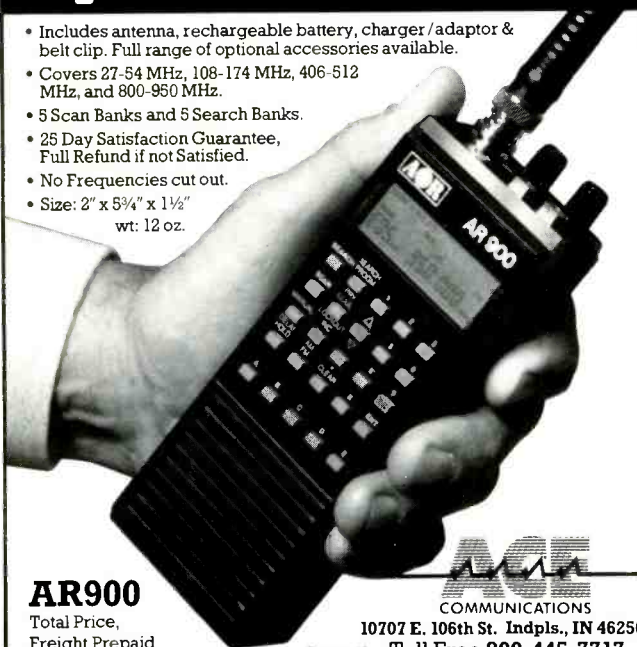
There were some other good logs and other information this month and I appreciate getting this good stuff from you. I welcome participation from all pirate chasers and pirate station operators. I need your recent loggings, QSL data, station schedules and background information, tech data and future plans from broadcasters, photos of pirate installations and copies of pirate QSL's. All are very much appreciated. Please try and check in as often as you can.

This QSL for United World Radio was received by David Borenstein of Centereach, NY.



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Scanning Today (from page 9)

well with subaudible tones, squelch circuits, slightly off-frequency transmitters and receivers, and makes it easy for repeaters function.

On the other hand, Single Sideband Suppressed Carrier (or SSB as it's usually called) is many times as spectrum efficient and offers proven increase range capabilities. Unfortunately, it requires higher stability (i.e. more expensive) equipment and also requires some degree of operator skill which usually doesn't exist with delivery truck drivers and other Land Mobile users. Also, it does not have the "hi-fi" sound of FM, "capture effect" (which makes only the strongest FM signal heard), doesn't work with subaudible control codes, etc.

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