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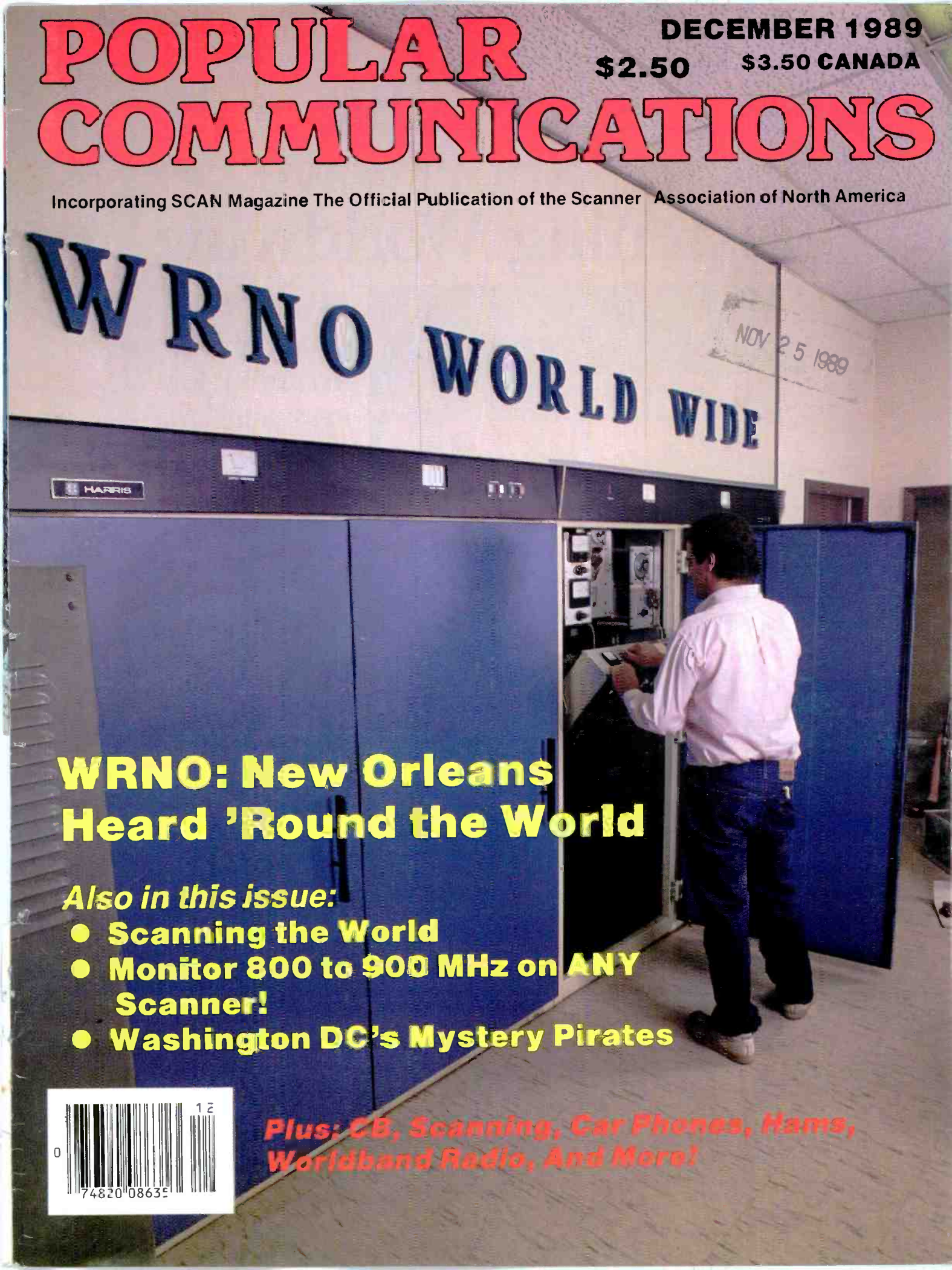

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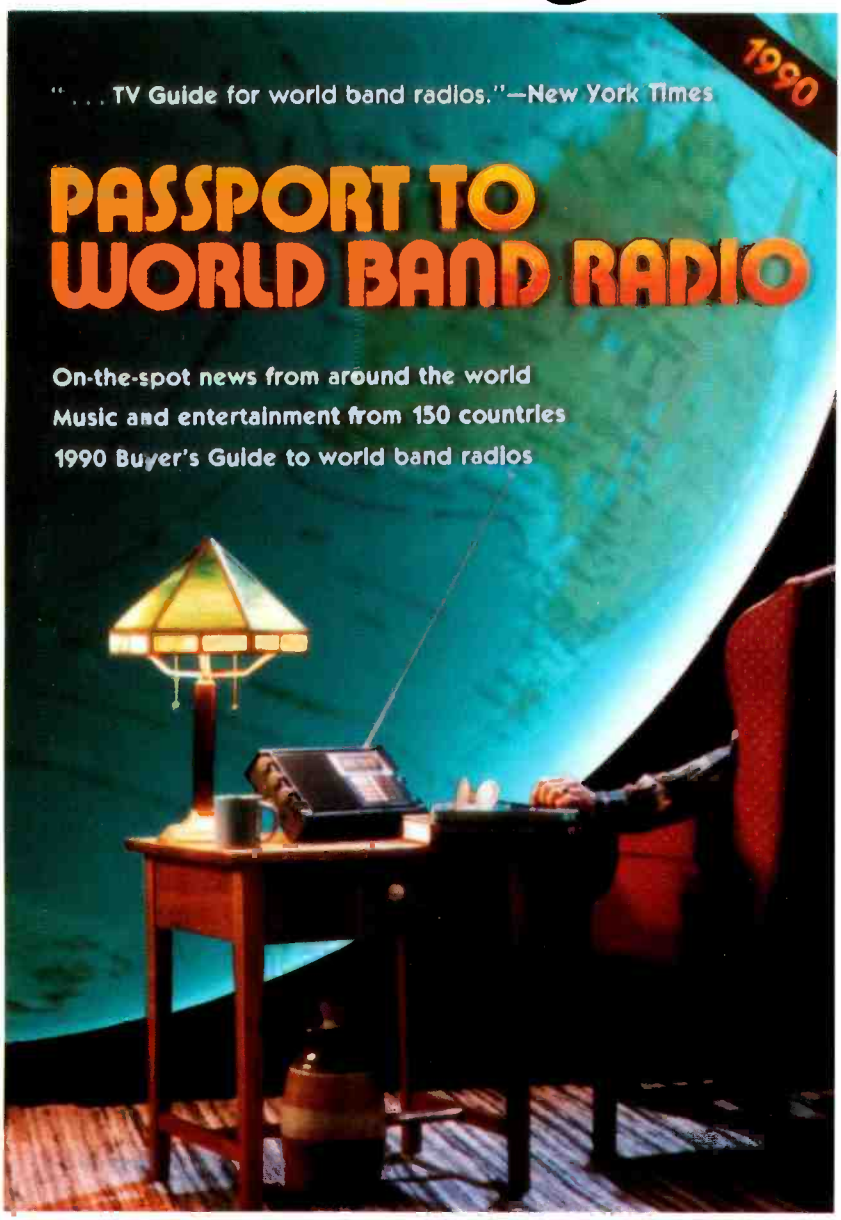

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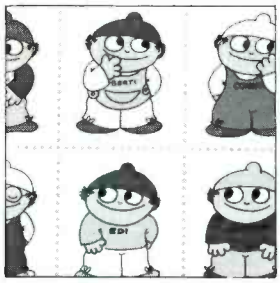

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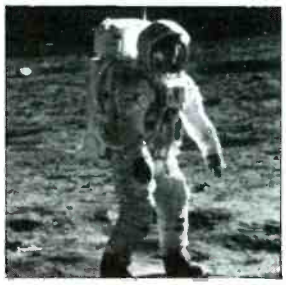

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FEATURES

This month's cover: *Neal Ardman, Chief Engineer at WRNO, New Orleans, looks over WRNO's shortwave transmitter. Photo by Larry Mulvehill.*

DEPARTMENTS

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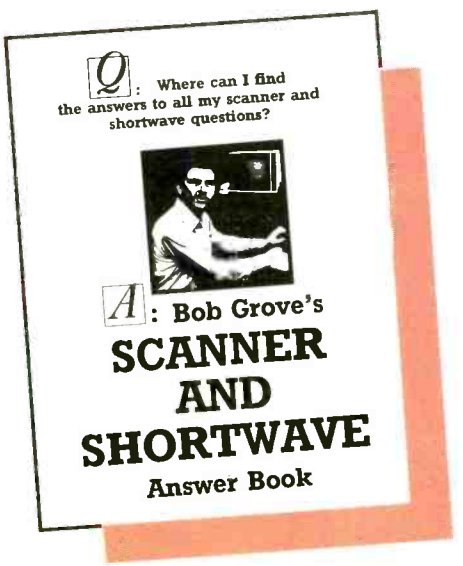

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BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

Friends Of Radio?

Pogo used to say, "We have met the enemy and he is us." The little weasel was right.

In *Beaming In* last month, I told you that the communications hobby is getting too complacent (read that "fat and lazy") in its maturity. While my words weren't meant to incite hobbyists into becoming a shouting mob, I do hope that they served to get the adrenalin pumping at least a little.

Did the passage into law of the Electronic Communications Privacy Act bother you? Did you notice that there are now laws in place restricting or limiting your ability to enjoy TV satellite and MDS signals? Were you stirred to any response at all when 40% of the frequency space in the 220 MHz ham band was peeled off and awarded to a package delivery service for their private use? Let's see if the fact that the wolves are still at our doors will finally get the message through to you that they aren't going to leave quietly.

Next comes another brainstorm. This time the idea is for the FCC to reallocate the 6 meter ham band (50 to 54 MHz) so that it can be turned into a new FM broadcasting band established especially so that AM daytime broadcasters can open up FM outlets there. This concept was proposed recently by Lawrence J. Tighe, Jr., owner of New Jersey AM daytime station WRNJ (1000 kHz, 2.5 kW). Although few things manage to really surprise me any longer, I will admit I was taken aback when I checked and found out that Tighe was a licensed ham, K2JIA! Pogo said it all years ago!

Mind you, this idea isn't yet boiling on the front burner, but it is indicative of the fact that the bastions still need to be manned. Tighe's proposal has been given coverage within the broadcasting trade press, however. There aren't any guarantees that it will quietly go away, or that other new and even more greedy concepts will be rolling down the pike in view of the feeble response from hobbyists about the other outrages that have been heeped upon us in recent years.

In the case of the Tighe proposal, the FCC doesn't appear to have been especially impressed. The FCC's Office of Engineering and Technology turned down the idea a couple of times. Some broadcasting industry people have categorized the idea as being "too radical," and questioned the wisdom of establishing a broadcasting band for which there aren't any receivers.

The National Association of Broadcasters (NAB) and many existing FM broadcasters are dead set against the idea, specifically mentioning an opposition to taking frequency space away from another radio service in order to establish this second FM broadcasting band.

One chap, who owns three AM outlets, spoke out against the idea because it offered nothing more than additional frequency space. He felt that the only way such a band would have any appeal to the public and to equipment manufacturers would be if it held the promise of some type of technological enhancement (such as all-digital) over the 88 to 108 MHz FM band.

Paul Leonard, of American Radio Brokerage, Inc., said he was in agreement with those who couldn't justify attempting to take frequencies away from another radio service, feeling that one radio service's salvation shouldn't be at the expense of another service. A wise observation, we'd say.

Stand-alone AM stations (that is, those without any affiliated FM outlet) that operate only during daylight hours are a minority when it comes to the radio broadcasting industry as a whole. While the industry is prospering, stand-alone AM daytimers are not doing well. In fact, they're in trouble. In the past 17 years, AM radio has lost much of its audience. In 1972, 75% of the radio audience was tuned to AM. Now it's only 26%, with the stand-alone daytimers hurting rather badly because they don't have FM outlets of their own to generate income from the big FM audience, or when their AM facilities are off the air for the night.

This is a dilemma, and several different proposals have been set forth in order to pump some new life and enthusiasm into this sagging area of broadcasting. When you consider that these feisty little local stations are the color and charm of radio, the nitty-gritty, and the grassroots from which American broadcasting was born, you can't help but hope that ways are found for them to prosper again as they did in days past.

All of us would like to see these stations thriving to the point where their owners are rolling in revenue. But certainly Mr. Tighe's idea is a dreadful approach. To think that it came within the ranks of ham radio is really the last straw. Is *nothing* sacred, Mr. Tighe?

Whether or not this idea ever gets any further than the talking stage remains to be seen, however, despite those who don't like it, in all fairness to Tighe, his proposal has found favor with the owners of many AM daytime stations. It could well be that it will be the next ogre coming our way from around the bend. Or, it might never be heard of again.

My suggestion is for all of us to keep an eye on the situation for possible hostile developments. It would be a good start to go on record by letting Mr. Tighe know your thoughts on his proposal. Why not send him

(Continued on page 68)

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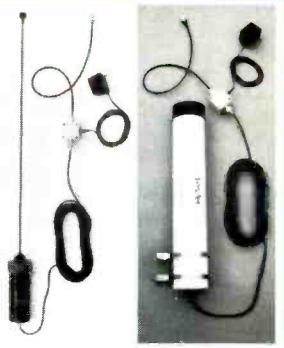

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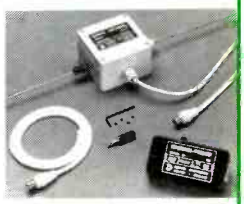

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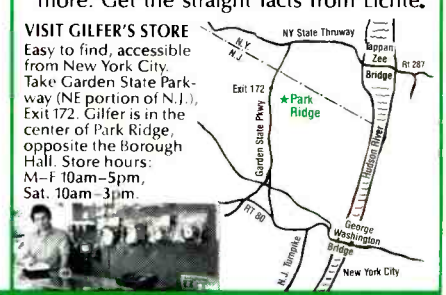

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MAILBAG LETTERS TO THE EDITOR

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

Another No-Code Opinion

I would like to respond to NY0E (Mailbag, July issue), and, at the same time, present my own views on no-code.

Mr. Bills, and people like him, are the reason that the amateur radio hobby is stagnating. He does not speak for all hams, I care very much what non-hams think. Non-hams are the only way to revive our dying hobby, which seems fairly obvious to me.

Mr. Bills worked his way up to Extra Class the hard way, the only way, and he feels others should do it as he has. Now that he has achieved the highest class license available, he might well spend his time clogging up repeaters and rag-chewing on HF. There is absolutely nothing wrong with this. It is the right of hams worldwide. But it is also non-productive.

One of the things hams are expected to do is raise the state of the art. To do this, we need to get the young geniuses into the hobby, to experiment with digital technologies and SHF communications. Soon the SHF bands will become more useful to businesses, and if we aren't using them, we will lose them. Have you been on 220 or 902 MHz lately, Mr. Bills?

No one has ever claimed that no-coders would be allowed HF privileges. And the proposals that I have seen allowed only digital privileges on 2 meters.

To summarize, the ham hobby is not doing fine the way it is. We need to lower the average age, and get the younger generation to explore new fields. And everybody should have a say, not just illiterate old men.

I am ashamed to be called a ham, if men like Mr. Bills are what we will all eventually become. Some of us welcome new blood, and my thanks to Popular Communications Magazine for helping us to revive our hobby.

Paul Wood, N4VDY,
Virginia Beach, VA

Slacker Than Slicker

First you lose a girlfriend to a hotshot CW operator, then you sit on your boat and cogitate. Sounds like a rough trade, pal. Enjoyed the August pirate feature, also Sannikov's piece on Soviet DX'ers. Things like that bring the "people" side back to the hobby. Keep on Keep'in on, and Slack off in the name of Dobbs.

Nils R. Bull Young, WB8IJN,
Medway, OH

It Works!

Permit me to express my delight with the frequency expansion technique for the Realistic PRO-2021 scanner shown in the September issue *Mailbag*. I can indeed verify that it works and is very easy as well. I'm a 30 year old rock musician and an avid SWL and scanner monitor. In addition to the PRO-2021 scanner, I use a Sony ICF-2003. My scanner antenna is a 3-ft. mobile whip mounted on the fire escape. I enjoy your magazine.

Sean McDonough,
New York, NY

Several readers report no luck with this same modification, so we assume that there must be more than one version of this scanner—Editor.

Likes Our Review

Thank you for the review of our book, *The Auto Radio: A Romantic Genealogy*, which appeared in the July issue of POP'COMM. Your reviewer certainly captured the feeling that I had in mind when I embarked upon the task of writing the book. I wanted to document that period of our past and try to get across the exhiliration experienced by many who lived it. I shall cherish this review because it summed it up better than I could myself. I would therefore like to quote from this review in the future. I enjoy the features in POP'COMM, especially Alice Brannigan's writing's for your publication.

Donald W. Matteson,
Thornridge Publishing,
Jackson, MI

Can Anybody Help?

I have a Lafayette 4-band receiver (model number not known) that needs a repair. It was first purchased back in 1962. I don't now if this is enough information to go, but if any reader can furnish me with a schematic and service manual for this receiver, I'll be very grateful. I'm willing to pay a reasonable fee for this material.

Daryl Young, Jr.,
Rt. 5, Box 598,
Natchez, MS 39120

Clearing The Air

Ran across POP'COMM in September of '88 and haven't missed an issue since. I have been following the continuing comments on the idea of no-code ham ticket and can't resist adding my own thoughts. I am 22 years old and have been interested in radio for more than 14 years. The reason I don't have a ham license isn't because of the radio theory. The problem is I can't afford adequate equipment to study or practice CW. Code isn't the same on a cassette tape as listening to an actual broadcast where you sink or swim and can't rewind the message to hear it over again. I'd like to be a ham, but I can't agree that issuing licenses to those who can't demonstrate a knowledge of is the way to go. While most hams can only speak in one language, international code is probably the only true and clear link between nations during times of international or local disasters. If voice communications are so great, then explain why ships and government agencies use CW for long distance communications. This is why I support code as a requirement for obtaining a ham ticket.

Edward Carroll,
Registered Monitor KIN9ET,
Indianapolis, IN

It should be noted, by the way, that while ships and government agencies do use CW, they also use voice as well as various forms of teleprinting such as RTTY. Furthermore, satellite technology has displaced much of the long range CW operations with voice circuits. Notwithstanding these factors, our suggestion was never to kill the CW requirement for operating on the international HF bands, only for a license that would permit operation in the VHF spectrum—Editor.

Hedy's Heady Invention

Alice Brannigan's reference to Hedy Lamarr's WWII "secret communication system" (*Popular Communications*, March, 1989, pages 14 and 15) is especially intriguing to me because of its unusual accuracy, among magazine descriptions of Ms. Lamarr's spread-spectrum radio invention. My professional career includes secret spread-spectrum inventions. Ms. Lamarr has given me a copy of her entire patent file on her invention, plus an interview. As a result of these and other inputs, I think I am in a good position to appreciate the merits of her (and Anthiel's, as Alice was careful to point out) remarkable contribution to secure communications. Congress should acknowledge it with a medal. Ms. Lamarr phoned me last week to advise that her biography is to be put out soon by Simon and Schuster and she wants her invention to be portrayed as well. We would appreciate any additional information and reference sources.

Robert Price, Sc. D.,
Research Division,
Raytheon Company,
Lexington, MA

This inquiry has been passed along to our star archivist for her reply— Editor.

SCANNING TODAY

OFFICIAL NEWS COLUMN OF THE SCANNER ASSOCIATION OF NORTH AMERICA

BY CHUCK GYSI, N2DUP

Welcome to a familiar byline on a familiar column here in POP'COMM, incorporating SCAN Magazine. As many of you well know, I have been editing the Scanning VHF/UHF column here in POP'COMM almost since the magazine was started. However, because of the unfortunate death of SCAN Managing Director Bob Hanson, W9AIF, a friend of scanner hobbyists nationwide, I have been asked by the officials of SCAN to serve as editor of this column in POP'COMM. I've been a member of SCAN myself and have worked with Bob in the past, including testifying with him at a court case in Philadelphia that effectively dispensed of that city's law against the sale and possession of scanners. Bob helped me in the past on scanner-related matters. I've bumped into him in places such as the mammoth Dayton HamVention in Ohio each year. It's already been said here, but I'll say it again: Bob Hanson will be sorely missed by the scanner world. His time and devotion to helping others in the hobby was unmatched. We've lost a friend, but SCAN must carry on in aiding scanner hobbyists everywhere. With that, the SCAN column here continues once again. Now, we need all SCAN members to support the organization by keeping in touch with SCAN headquarters. With that, we move on to this month's SCAN news.

New Scanner Band

A new band of frequencies is in the process of being opened up for public-safety radio users across the United States. The new band consists of repeater output and simplex channels in the 866-869 MHz band and repeater inputs in the 821-824 MHz band. Regional planning committees were formed on a local level all across the United States in an effort to see how the band could be best used in each metropolitan area or group of states. For instance, one committee is planning frequency usage for the New York City areas of New York state, northern New Jersey and nearby areas of Connecticut. These planning committees draw up plans on how the new channels will be allocated to agencies that wish to move to this new band and submit their plans to the Federal Communications Commission for approval. After the FCC accepts a committee's plan, public safety agencies are welcome to apply for licenses on this new band.

There is a total of five frequencies that have been set aside nationwide for mutual aid use. Agencies are allowed to apply for these channel to coordinate services among jurisdictions.

The first public safety agency to apply for frequencies in the new band is the Irvington Police Department in New Jersey. Irvington has applied for use of 866.125 and 868.6875, as well as the five common mutual aid channels. The Irvington system will operate as a two-channel non-trunked system. However, one of the catches with the new 800 MHz frequencies is that any agency that applies for licenses for the new band must surrender any licenses it holds for frequencies below 800 MHz. Thus, Irvington has agreed to discontinue operations on its 45 MHz system once the new 800 MHz system is implemented.

In this new band, a total of 240 paired (repeater input and output) channels were created. However, normally only 120 paired channels would have been created because usually 25-kHz spacing is used on frequencies on UHF and above. However, the FCC decided to allocate frequencies in this new band with only 12.5-kHz spacing. Thus, for instance, while Irvington has applied for 866.125, another town several miles away could apply for an adjacent frequency of 866.1375 or 866.1125. Keep an ear on these frequencies and let us know what you are hearing as new stations start operating here!

News Photographer Helps Nab Suspect

Kent Sievers, who works as chief photographer of the Scottsdale Progress in Arizona, helped police collar a sexual assault suspect while listening to his scanner earlier this year. Sievers heard a call on the scanner in his car and drove to the area to see if he could photograph the pursuit by police.

However, as he approached the area, he saw a man fitting the suspect's description running toward him—with police hot on the man's tail. The photographer got out of his car and blocked the suspect's path, pushing him toward the ground. Police officers arrested the suspect and charged him with robbery, kidnapping and sexual abuse.

In a column in the newspaper, it was mentioned that Sievers was faced with a classic journalist's dilemma: Shoot the photo or help the police. However, Sievers said in the newspaper that he really didn't have a choice because he had his camera set up to take the photo from a distance and the lens would not have captured the action up close as he became. Sievers was quoted as saying that even if he had the right lens on his camera, he could have shot maybe a dozen photos before stopping the suspect.

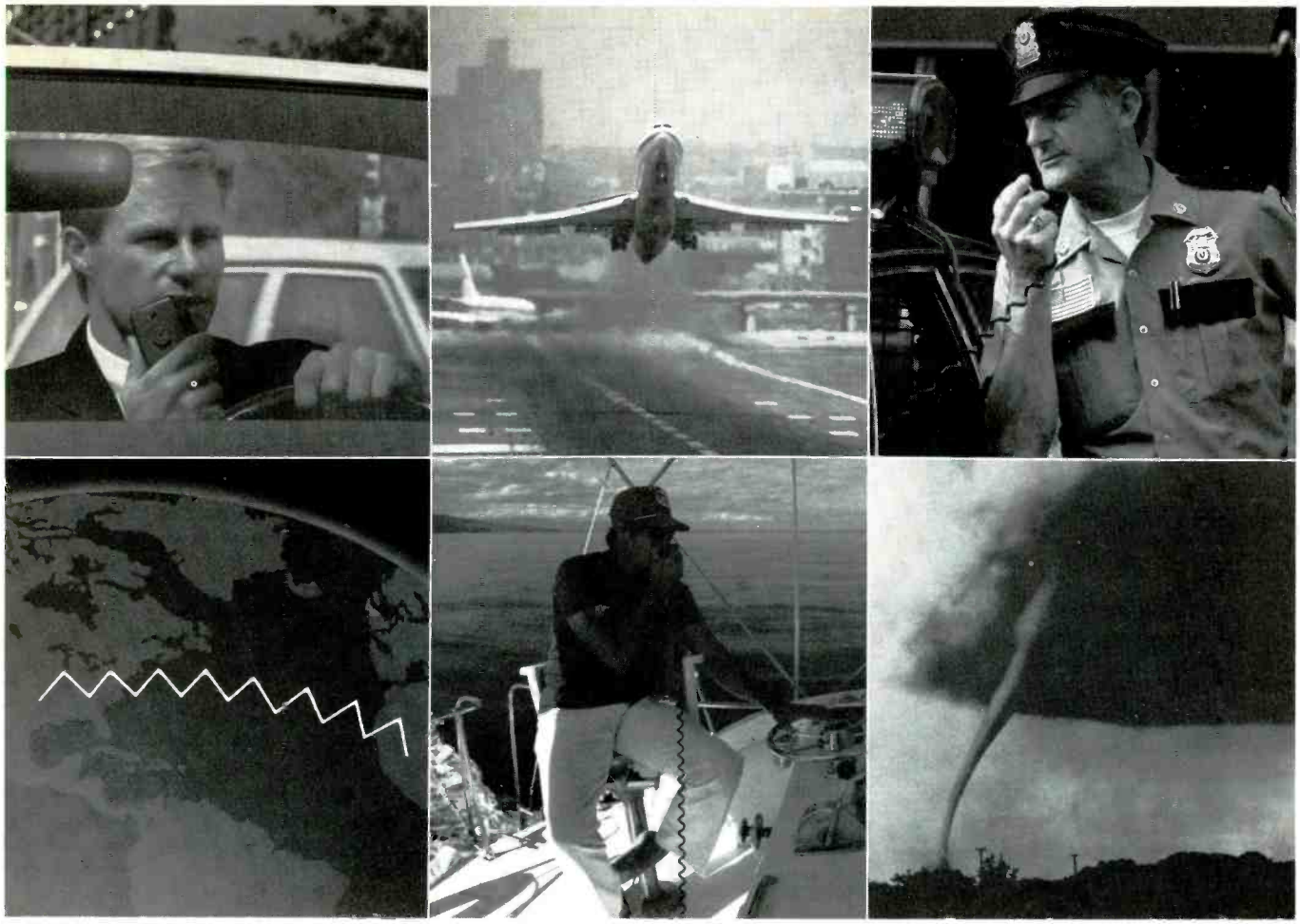
Dial 911 On Cellular

Officials in the northern suburbs of New York City in Westchester County, N.Y., are asking motorists with cellular phones to dial 911 when they see an accident. Officials say that precious minutes can be lost in reporting an accident if injuries are involved. In the Westchester County area, apparently cellular users are automatically connected with the New York State Police barracks in Hawthorne when they dial 911. In the meantime, officials have erected signs urging cellular-phone owners to dial 911 for police assistance.

SCAN Legal Department

It's not too late for SCAN members in New Jersey to write to state legislators regarding bills that would legalize the mobile use of scanners. The current law allows only police officers, firefighters and rescue squad members to use scanners in their own cars. In addition, there is a provision for police chiefs to issue permits to others to use mobile scanners, however, most chiefs are reluctant to do so. New Jersey Assembly Bill No. 4557 and Senate Bill No. 3593 would repeal the current law and make it a criminal offense for anyone to use a scanner in the commission of a crime. The current law makes no provision for amateur radio operators whose 2-meter radios happen to tune the 150-174 MHz scanner band, nor does it exempt news reporters and photographers. And most importantly, there is no provision for radio hobbyists who like to listen to scanners in their cars. The two bills introduced would make it legal for anyone to use a mobile scanner, except, of course, a crook. Send a post card or letter today to your own legislator advising them to vote "yes" on these bills when they come on the floor before the end of this year. In addition, send a letter to the chairmen of each of the committees where the bills reside: The Honorable Newton E.

(Continued on page 74)



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The WRNO building in Metairie, Louisiana.

WRNO Worldwide

First Of A New Generation

BY GERRY DEXTER

In 1980. The United States of America Shortwave radio broadcasting was an industry that barely existed. The entire club included only the Voice of America, Family Radio's WYFR in Florida, KGEI in San Francisco and World International Broadcasters' WINB, Red Lion, Pennsylvania (plus KTWR in the US Territory of Guam). Except for KTWR, things had been static for going on 20 years.

It might have gone on like that for another 20 years except for Joseph M. Costello III. By 1980, he was already planning to become the first new commercial shortwave broadcaster in the continental US in years. His success—not only in getting WRNO Worldwide licensed and on the air, but in making it a paying proposition—was instrumental in creating a second beginning for shortwave broadcasting in the United States. It is probably not out of line to say that Costello brought this about almost single-handedly.

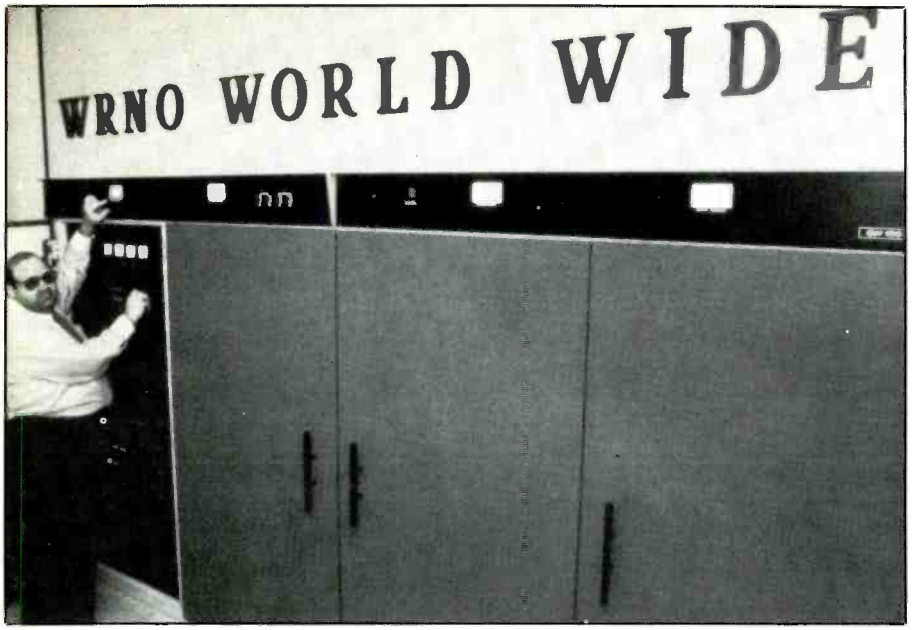
Costello had blazed a new trail or two before. When he put WRNO-FM on the air in New Orleans, FM was light years away from the money factory it is for most stations today. FM circulation was still a low percentage of the total number of radio receivers in use. So not only did the idea of listening to and advertising on WRNO-FM have to be sold to the public not tuned to the medium, the medium itself had to be sold. Eventually, Costello turned WRNO-FM into one of the top rated stations in the New Orleans market.

Joe Costello was into shortwave listening at the age of 12, and had a ham radio license (now WA5HSI) at age 16. He majored in radio/TV production at Loyola University and later in management at Harvard Business School.

One of his first jobs was at WTIX in New Orleans and he often taped the programs of Radio Moscow for airing on the station.

He was an instructor at a local broadcasting school. When the school was put up for sale—it didn't take Costello long to realize that half a radio station already existed at the school—with studio equipment and so on. All he would need is a transmitter, antenna and a license and he'd have his own station. So he bought the school and soon had WRNO-FM on the air. Other stations were added, and today Costello's Gulf Coast Broadcasters Limited owns KXOR-FM in Thibodaux, KHLA-FM in Gretna, KKAY in White Castle and KSMI in Donaldsville, all are in Louisiana.

Some years ago, Costello bought an old theatre so he'd have a place to show WRNO sponsored movies on weekends. The theatre was soon carrying regular run features



Owner Costello and the Harris SW-100 kW WRNO transmitter.

during the week. This operation, too, has bloomed. The company now own five theatres (17 screens) in the New Orleans area and distributes motion pictures as well.

In 1980, getting a license to put a commercial shortwave station on the air was no mean trick. The FCC had placed a freeze on new shortwave licenses in 1963, which lasted until 1973. Even though the religious broadcaster, Trans World Radio, was able to get a license for a shortwave station in Guam, the WRNO application was something else again.

Costello found that the FCC, though its rules prohibited against broadcasting to a domestic US audience on shortwave, had no rule against a US-based commercial shortwave station. Adding more clout to the argument in WRNO's favor was that the United States Information and Educational Exchange Act of 1948, which prohibits government stations from having a monopoly on the use of shortwave for international broadcasting. The FCC did not like the idea of giving WRNO a shortwave license, because it feared setting a precedent and was afraid there might eventually be cases where private broadcasters would take viewpoints in direct opposition to that of the US Government.

Nonetheless, the FCC had little choice but to signal the go ahead—which it did on November 18, 1981. WRNO wasted no time. The shortwave station was on the air on February 13, 1982, thus becoming the first new commercial US shortwave broadcaster to go on the air since World War II! Incidentally, WRNO's was not the only shortwave application granted that day. The Billy Graham Organization also received approval to construct a shortwave station, but the effort never bore fruit.

It cost WRNO about $750,000 to get on the air, much less than is usually the case, thanks to the fact that studios and offices already existed. The station's annual operating costs run to around $150,000.

WRNO shortwave and all other Gulf Coast operations are headquartered in Metairie, Louisiana (at 4539 I-10 Service Road —in fact you can see the WRNO building as you pass the I-10 Clearview exit). In addition to executive offices, the building houses WRNO-FM, WRNO-Worldwide and contains seven studios plus a 100 seat auditorium/studio.

A microwave studio-to-transmitter link feeds programming to the transmitter site near Estele, Louisiana, some 12 air miles away. A 30 by 30 foot transmitter building houses a Harris Model SW-100, 100 kW transmitter. A TCI log periodic antenna with 14 db of gain creates an effective radiated power of 3.2 million watts. The antenna is beamed at plus 20 degrees north (aimed at Detroit) and has a 68 degree beam width. Between the wide beam and signal spill off the back of the sides of the antenna, WRNO is received by countries in all corners of the world. Primary coverage areas, though, are, North and South America, the Caribbean and Australia/New Zealand. WRNO's Chief Engineer is Joe Pollet, who holds amateur radio call WA5VCF. Transmitter engineers are Jack Bruce, WA5UUD and Tom Courtney, WB5FQR.

WRNO states its purpose as being a commercial and independent voice of contemporary America and to present New Orleans and Louisiana to the world.

Early on, much of the programming was a simulcast of WRNO-FM, but there is considerably less of that now. Commercial religion takes up a significant portion of the weekend schedule. The revenue from these 15 and 30 minute time blocks amount to more than half of the station's income.

WRNO shortwave carries programs from

Current WRNO Worldwide Schedule

0000 - 0300 7355 kHz
0300 - 0600 6185
1500 - 1700 11965
1700 - 2100 15420
2100 - 0000 13720

Times, frequencies and individual programs are subject to change at any time. WRNO announces its schedule numerous times each day - listen for updates, or you can call the transmitter building (504) 348-0444 during on/air hours to get current frequencies.

the ABC, CBS and NBC radio networks, including such shows as Howard Cosell's "Speaking of Sports," "Linda Cohn Sports," and "Direction Sports" on weekdays. The station airs play by play coverage of New Orleans Saints pro-football, Louisiana State University football and basketball and University of Florida football. Racing's Triple Crown, the Sugar Bowl and Super Bowl are also aired each year.

Regular WRNO programs include:

LA VOIX de la LOUISIANE—Features Cajun music with Pete Bergeron, interviews from French southwest Louisiana. Scheduled at 0000 Saturdays, 1930 Tuesdays, 0430 Wednesdays.

ROCK OVER LONDON—Host Graham Dean airs this rock show Fridays at 1930, Saturdays at 0300, Wednesdays at 0500, Tuesdays at 1900.

THE JAZZ SHOW—Classic and contemporary jazz with host David Sanborn on Tuesdays at 2200, Fridays at 0400.

JAZZ 30—Matthew Bell with music and interviews Tuesdays at 1930, Sundays at 0130.

CRUISIN' AMERICA—Oldies with Cousin Brucie at 2300 Mondays, 2200 Sundays.

LEGENDS OF ROCK—The musical history of a different act each week. Hosted by Ray White on Saturdays at 0500, Wednesdays at 0300 and Thursdays at 1900.

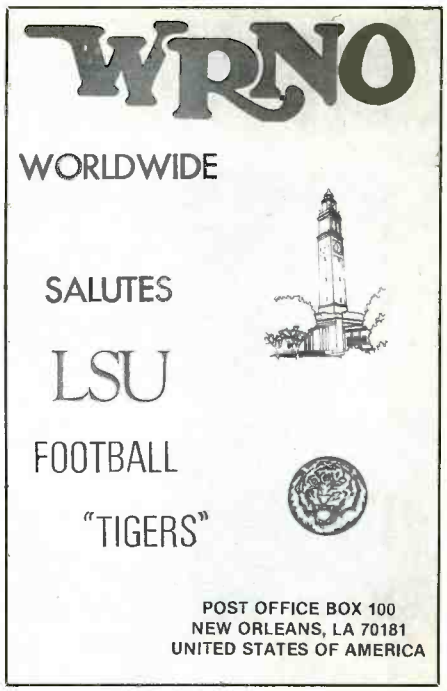
WRNO HALL OF FAME—Oldies, including rhythm and blues by New Orleans artists. Airs weekdays at 1800, Mondays at 0200.

ROCKLINE—Bob Coburn hosts a toll-free listener call-in and a guest of the week. Tuesdays at 0430.

ROCK 'N ROLL NEVER FORGETS—The week in rock history. Tuesdays at 2000, Thursdays at 0400 and Fridays at 0200.

LISTEN CLOSELY—Features on a wide range of topics from national festivals to regional wars. Fridays at 1900 and Wednesdays at 0100.

REPORT FROM FRANCE AND GERMANY TODAY—European news. Airs at 0410 on Tuesdays on alternate weeks.



Some WRNO QSL cards salute sports teams which the station covers.

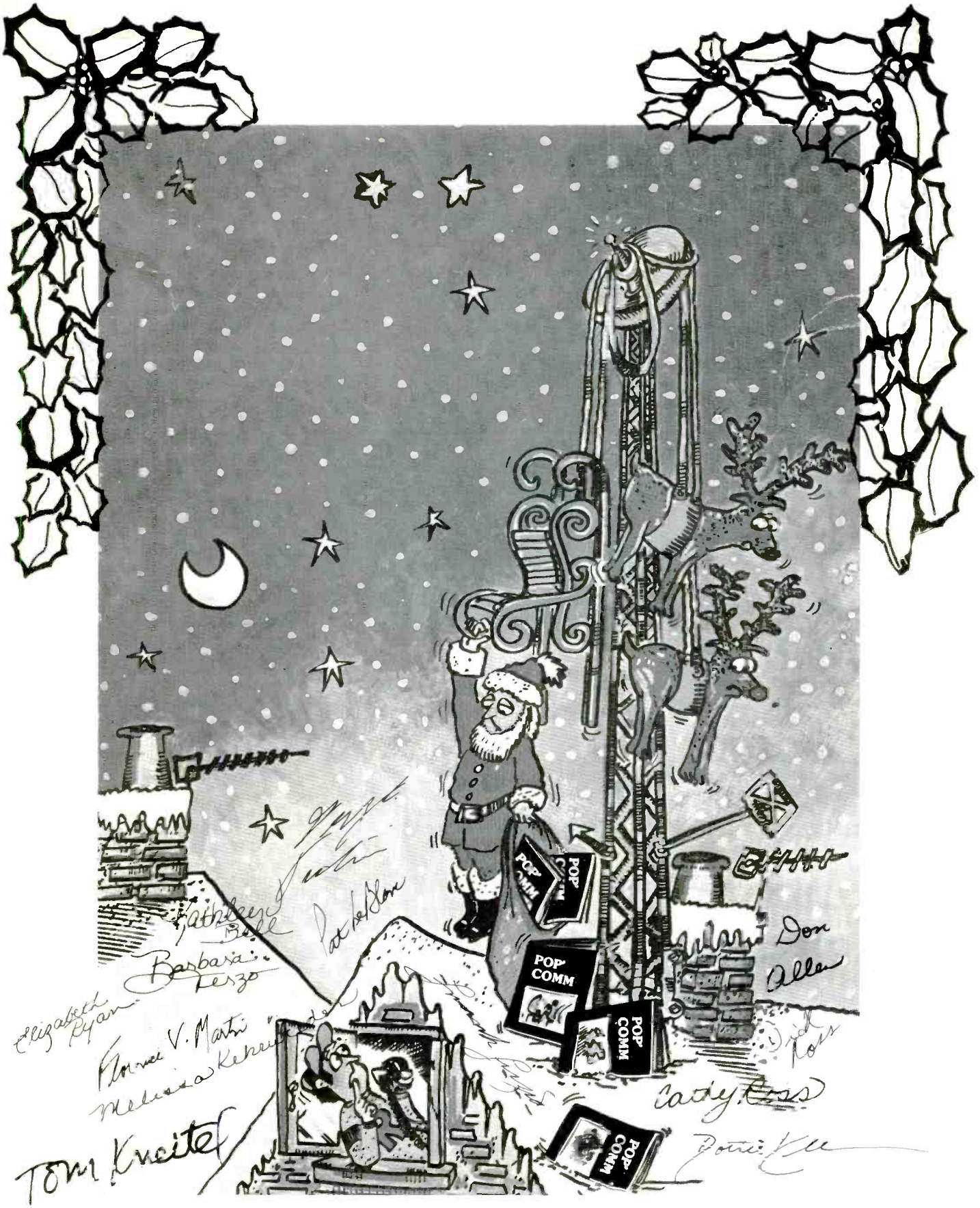
BRITISH WAX MUSEUM—Paul Saxton hosts Tuesdays at 0400, Wednesdays at 0100.

One measure of WRNO's worldwide popularity—and indeed, the growing popularity of shortwave listening in the US is that, around 1986, the station began to show up in some of the Arbitron ratings in cities where WRNO "didn't exist." It took awhile for Arbitron people to figure out what was going on!

WRNO gets between 500 and 1500 letters a month, about 60% of them from the United States. Reports have come in from every US state and Canadian Province and dozens of foreign countries. The station replies to correct reports with a QSL card, but asks for return postage in the form of either IRC's, or mint stamps. Reports should be sent to WRNO Worldwide, P.O. Box 100, New Orleans, Louisiana 70181. There's a direct line to the studio—1-800-222-0221.

One might argue the merits of shortwave broadcasting in and from the United States, but not the fact that that the coming of WRNO to shortwave set off a chain reaction—a parade with Cosell, with WRNO as Grand Marshals. More than a dozen others have come on the air since WRNO; and there are more on the way. Not all of them have been a success and the jury's still out on a few, but that's not really the point. WRNO's achievement and the publicity that it generated got others to take the step into shortwave.

Pioneers are not much in evidence in this day and age but, without question, Joseph M. Costello III and WRNO Worldwide fill the bill. PC



Happy Holidays from the Staff of Popular Communications

Scanning The World

Low Band Skip Delivers The World Into Your Scanner

BY CHUCK ROBERTSON

Last winter, Russian, German, and French language communcations were coming through on the scanner almost as often as Spanish from Latin America. Every morning from 0100 to 0600 UTC, from my location in Illinois, I could count on band openings in Europe with distances of over 9,000 miles. Days when these stations didn't come through were a rare exception.

Skip stations from Canada, Latin America and the Caribbean peaked around 0300 UTC. By mid-afternoon, stations in the Pacific were filling my scanners with sounds of the Orient. Wherever *you* live, this winter will be bringing you scanner skip in the 30 to 80 MHz band.

Glasnost via The Low Band

As noted by a Soviet DX'er in a recent issue of POP'COMM, the local citizens don't monitor he VHF "action bands." Although he didn't go into details, it's because those frequencies are considered "closed." Anybody caught randomly tuning above 30 MHz could find themselves aboard the next train to Siberia for the snow shoveling auditions. But there's nothing to stop *you* from picking up Russian comms on these frequencies.

The band from 32 to 47 MHz is used by government ministries. Between 36 and 47 MHz there are ambulances, taxis, construction pojects and other inustrial users. Soviet TV broadcast channels fill the 48 to 66 MHz portion of the spectrum. Base and mobile stations are permitted in the 47 to 48.50 MHz, and 56.50 to 58 MHz bands, but only on a secondary non-interference basis. Soviet FM'casters use the 66 to 74 MHz, and 76 to 87.50 MHz bands, with ground-based aero navigation transmitters on 75 MHz (74.60 to 75.40 MHz guard band).

Soviet military comms are in WBFM mode and take place throughout the bands. From 20 to 48.65 MHz there are Regimental level comms. Platoon and Company level traffic is concentrated between 48.50 and 51.50 MHz. Division level personnel and vehicle-mounted repeaters operate between 60 and 70 MHz. These bands are carefully structured for security within the military so that commanders can't be monitored by lower echelon personnel. In Table I there are listed Soviet military frequencies logged last winter.

Much Soviet military traffic is taken up with lengthy counts, presumably for tuning and adjustment of equipment. Imagine my surprise when a Soviet soldier monitored on 31.4375 MHz abruptly switched from Russian into rather good English to continue his counting!

The Soviet military R-126 transceiver operates between 48.50 and 51.50 MHz for Platoon and Company level comms. It has three transmit channels and a tunable receiver.

It should be noted that practically every Soviet mil communication I monitored eventually ended up using time-domain (TD) scrambling. It seems that the Soviets put a premium on voice protection and are aware that there signals are skipping outside of their borders where they can be monitored by others. The type of TD used incorporates speech inversion, which gives the whole communication an even higher level of security than plain TD. The preamble tones that key the receivers to the scrambling sequence are often used as alerting tones when operating in clear-voice mode.

Well, who else besides you and I do you think is listening in on these stations, now that POP'COMM has let the frequencies out for the very first time? If you've got a good outside antenna on your scanner, next thing you know *The Russians Are Coming!*

Table I - Soviet Military

30.475	33.30	34.65*	39.525*
31.4375	33.375*	36.00	40.55
31.65	33.3875	36.05	41.00
31.80	33.40	36.125*	41.05
31.95	33.45	36.175*	41.225
32.025	33.4825	36.225	41.325*
32.06*	33.575	36.335	41.40
32.25	33.5875	36.40	41.46
32.375	33.75	36.50	41.75
32.65	33.925	36.60	41.80
32.75	34.025	36.65	41.90*
32.80	34.075	37.175	42.125
32.86	34.275	37.225*	42.225
33.12*	34.30*	37.70	42.35*
33.175	34.325	38.30	42.45*
33.225	34.35	38.35	42.75*
			42.90

Table I. Soviet military channels in clear-voice and with scrambling. Those frequencies shown with asterisks indicate government ministries and industrial projects. Soviet radios seem to be set up for 12.5 kHz channel spacing although any frequency can be used.

West Germany

German skip stations start rolling in here around 0230 UTC and hang in to 0500 UTC. The most active comms are from the highway maintenance and motor assistance repeaters operating with 20 kHz channel spacing between 34.76 to 35.00 MHz. The repeater inputs are around 70 MHz.

The most active repeater outputs logged are:

34.76	34.84	34.92
34.78	34.86	34.94
34.80	34.88	34.96
34.82	34.90	34.98

The 37.80 to 38 MHz band (25 kHz channel spacing) is allocated for motorbike instruction schools. These are the frequencies: 37.80, 37.825, 7.85, 37.875, 37.90, 37.925, 37.95, 37.975, and 38.00 MHz.

Military units in the FRG make much use of the low band in WBFM mode. In fact, the radios used by most European military forces operate in 25 and 100 kHz increments between 68 and 87.50 MHz.

United Kingdom

No shortage of military operation anywhere between 29.70 and 87.50 MHz in the UK. NBFM or AM with 12.5 kHz channel spacing is generally being encountered.

There's a full-duplex telephone circuit on 30.695 MHz. Hospital digital pagers are on 31.725, 31.75, and 31.775 MHz, AM mode. Emergency alarm devices for the elderly and infirm are on 34.925, 34.95, and 34.975 MHz, AM mode.

American military comms coming from

Table II - United Kingdom

30.025 to 31.70 MHz band US military
30.025 MHz USAF Fairford
30.50 MHz American Embassy, Landon (FM)
30.55 MHz USAF Fairford
30.695 MHz mobile phone
30.9875 MHz USAF Fairford, Security
31.00 MHz USAF Fairford, Security
31.25 MHz USAF Gloucester
31.1825 MHz USAF Fairford
31.30 MHz USAF Fairford, Medical
31.725 MHz Hospital pagers (paired 161.00 MHz)
31.75 MHz Haspital pagers (paired 161.025 MHz)
31.775 MHz Hospital pagers (Paired 161.05 MHz)
31.80 to 34.90 MHz band USAF
32.20 MHz USAF Security, many bases
32.30 MHz USAF Fairford
32.5125 MHz USAF Fairford
32.60 MHz USAF Fairford
32.80 MHz USAF Fairford
33.25 MHz USAF Birdscare/Lakenheath/Mildenhall
33.50 MHz USAF Birdscare/Lakenheath/Mildenhall
34.025 MHz USAF Fairford
34.10 MHz USAF Medic services
34.15 MHz USAF Mildenhall/Lakenheath, crash
34.90 MHz USAF Mildenhall/Lakenheath
34.925 to 34.975 MHz Emerg. alarms for elderly (2w)
35.005 to 35.205 MHz band Radio Control (1.5w)
35.25 to 37.75 MHz Mil tactical (50 kHz spacing)
38.30 to 40.00 MHz Mil tactical (50 kHz spacing)
38.75 MHz Royal Signals Tatoo Display (FM)
39.90 MHz USAF Fairford
40.20 to 41.00 MHz band Radio control of models
41.00 to 46.60 MHz Mil tactical (50 kHz spacing)
45.30 MHz British Army, Stanford
45.425 MHz British Army, Stanford
46.00 MHz Royal Signals Cardiff Tatoo Display
47.00 to 47.44 MHz Mil tactical (50 kHz spacing)
47.45625 to 47.54375 MHz Cordless phone handsets 12.5 kHz channel spacing
47.55 to 49.00 MHz Mil tactical (50 kHz spacing)
49.00 to 50.00 MHz Autofon
49.90 to 50 MHz Mil tactical
56.625 MHz Royal Signals Cardiff Display
61.00 MHz Wireless microphones
68.00 MHz Mil, S. West Engineers (AM)
68.05 MHz Mil, Chelthom, Transport Service (AM)
68.10 MHz Mil, S. West Engineers (AM)
68.6875 MHz Mil, Cheltham, Transport Service (AM)
68.7875 MHz Mil, Cheltham, Transport Service (AM)
68.9875 MHz Mould, South Wales (FM)
69.30 MHz Sea Cadets (notional frequency)
69.575 to 69.80 MHz Mobile Service (pair 84 MHz) 25 kHz spacing (FM)
68.8225 to 69.9625 MHz BBC-TV Auxiliary Broadcast 12.5 kHz spacing, paired 74.70-75.2625 MHz
70.025 to 70.50 MHz Amateur (Beacons/CW/SSB/FM)
70.025 to 70.075 MHz Amatuer (CW beacons)
70.20 MHz Amateur SSB calling frequency
70.45 MHz Amateur FM calling frequency
70.50 to 71.50 MHz Police/Fire Ambulance 12.5 kHz steps, mobiles in 80 MHz band
70.825 MHz Devon Fire Department
70.90 MHz Ipswitch Fire Department
71.5125 to 72.7875 MHz Private Mobile Radio 12.5 kHz spacing, bases in 85 MHz band
71.9875 to 72.0875 MHz Automotive service, 12.5 kHz spacing, bases in 85 MHz band
72.80 to 76.70 MHz Land Mobile, Private & Gov't.
73.10 MHz Mil Police, Aldershot (FM low power)
73.475 MHz Mil Police, Molesworth & Greenham
73.70 to 73.925 MHz RAF 61st Sig Sqdn bases, 25 kHz spacing, mobiles 84.125-84.35 MHz
74.025 MHz MOULD, Midland/Linc/Manchester
73.0375 MHz MOULD, Shropshire
74.05 MHz MOULD, Midlands
74.0625 MHZ MOULD, Midlands/Manchester
74.075 MHz MOULD, South Wales
74.0875 MHz MOULD Midlands/Manchester/S. Wales
74.10 MHz RAF Police Honnington (mobiles 79.20)
74.1125 MHz MOULD Midlands/S. Wales CH-1
74.125 MHz MOULD Brecons/Shropshire/Midlands
74.1375 MHZ MOULD South Wales
74.15 MHz MOULD Midlands/Shropshire
74.1625 MHz MOULD Manchester/Midlands
74.2125 MHz MOULD, South Wales
74.225 MHz MOULD, Lincs/Midlands
74.2375 MHz MOULD, MOULD, Shropshire/Lincs
74.25 MHZ RAF Police Bentwaters
74.2625 MHz MOULD, South Wales
74.3125 MHz MOULD, Shropshire/S. Wales
74.3375 MHz MOULD, Manchester
74.35 MHz MOULD, Brecons/Wales
74.375 MHz MOULD, Brecans/S. Wales
74.3875 MHz MOULD, South Wales
74.40 MHz MOULD, Brecons/Wales
74.4125 MHz MOULD, Becons/Shropshire/S. Wales
74.4375 MHz MOULD, Midlands
74.45 MHz MOULD, Brecons/Wales
74.4625 MHz MOULD, Brecons
74.5125 MHz MOULD, Brecons/Midlands
74.525 MHz MOULD, Brecons
74.5375 MHz MOULD, Midlands/Brecons/Lincs
74.55 MHz Basil Control Police
74.5625 MHz MOULD, Blorenge Site, S. Wales
74.575 MHz Brecons/Shropshire/Manchester
74.5875 MHz MOULD, South Wales
74.60 MHz MOULD, Midlands
74.6125 MHz Blorenge Site/Midlands
74.625 MHz MOULD, Brecons
74.65 MHz MOULD, Midlands/Brecons/Shropshire
74.6625 MHz MOULD, Wales
74.675 MHz MOULD, South Wales
74.70 MHz MOULD, Brecons/Wales
74.725 MHz MOULD, Monchester/Shropshire
74.50 MHz MOULD, Manchester/Shropshire
74.7625 MHz MOULD, South Wales
74.7875 MHz MOULD, South Wales
75.25 to 76.70 MHz band USAF (25 kHz spacing FM)
75.25 MHZ USAF Midlands
75.30 MHz USAF East Anglia
75.325 MHz USAF Midlands/Lakenhth/Mildenhall
75.3375 MHz USAF Bentwaters
75.35 MHz USAF Security Midlands/E. Anglia
75.40 MHz USAF Security East Anglia
75.425 MHz USAF Ground, Upper Heyford
74.45 MHz USAF Upr. Heyford/Lakenheath/Mildnh
75.50 MHz USAF Security Upper Heyford
75.525 MHz USAF Security Woodbridge
75.55 MHz USAF Security Alconbury/Upr. Heyford
75.575 MHz USAF Ground Bentw./Lakenh./Mildhall
75.5875 MHz USAF Security Upper Heyford
75.675 MHz USAF Security Lakenheath/Mildenhall
75.80 MHz USAF Security Upper Heyford
75.825 MHz USAF Security Investigators
76.0125 MHz MOULD, Midlands/South Wales
76.05 MHz USAF Lakenheath/Midlands
76.0625 MHz Mil. Ops, South Wales
76.1125 MHz MOULD, South Wales
76.125 MHz MOULD, Midlands/South Wales
76.225 MHz USAF common, most bases
76.325 MHz USAF Maint., Upper Heyford
76.3625 MHz Mil. Ops, Brecons
76.40 MHz USAF Security Midlands
76.45 MHz USAF Security Fairford
76.525 MHz USAF Security Lakenheath
76.55 MHz USAF Security Upper Heyford Alconbury & Greenham Common
76.625 MHz USAF Greenham Common
76.65 MHz USAF Upper Heyford & Alconbury
76.675 MHz USAF Security Midlands/Lakenheath
76.70 to 76.95 MHz Customs/Excise (12.5 kHz steps)
76.7125 MHz Customs, Manchester (AM)
76.725 MHz Customs, Manchester (AM)
76.775 MHz Falmouth link, Coast Guard
76.80 MHz USAF Bentwaters
76.825 MHz Phone links, Southwestern UK
76.85 MHz Falmouth link, Coast Guard
76.90 MHz USAF bases, gate security
76.925 MHz USAF bases, gate security
76.9375 MHz Customs, Manchester (AM)
76.95 MHz Customs, Manchester (AM)
76:9625 to 77.50 MHz Personal Mobile Radio mobiles, 12.5 kHz separation, mobiles to bases in 86.8625 to 87.50 MHz band
77.525 to 77.9875 MHz Land Mobile (12.5 kHz)
77.575 MHz Ipswitch repeater (AM)
77.8125 MHz Repeater (AM)
78.00 to 78.30 MHz Land Mobile (12.5 kHz)
78.00 MHz Mil. Ops., South Wales
78.10 MHz Air Training Corps (AM)
78.19 to 78.2525 MHz BBC-TV mobile comms
78.3125 to 79.0875 MHZ USAF Police FM (12.5 kHz)
78.35 MHz USAF Police/Fire ops
78.50 MHz USAF Police Woodbridge/Bentwaters
78.525 MHz USAF Police Woodbridge/Bentwaters
78.55 MHz USAF Fire Midlands
78.5875 MHz USAF Base PD Woodbridge
78.625 MHz USAF Police Bentwaters
78.725 MHz USAF PD Woodbridge/Bentwaters
78.80 MHz USAF Ground Bentwaters
79.05 MHz RAF Honington
79.075 MHz Air Training Corps, Cosford
79.10 to 79.9875 MHz MOULD Mil Ops (12.5 kHz spacing), simplex/duplex (paired 74 MHz) FM
79.10 MHz RAF PD Ch. 1 Wattisham/Honington
79.125 MHz RAF Ground Svc St. Athan/Notts/Darby
79.15 MHz RAF PD Ch. 2 National
79.20 MHz RAF PD Ch. 3 Nat/Wattisham/St Athan
79.20 MHz RAF Refuel/Fire Honington/St Athan
79.2125 MHz MOULD, Manchester/S. Wales/E. Anglia
79.25 MHz RAF Crash/Fire Honington
RAF PD Ch. 4 National
79.275 MHz RAF Gnd Svcs, St Athan
79.30 MHz RAF PD Ch. 5 National/Wittering
79.325 MHz RAF Gnd Svcs, Cosford/Honington
79.35 MHz RAF PD Ch. 6 National (Zero Control)
79.375 MHz RAF PD Honington
79.40 MHz RAF PD Ch. 7 National/Wattisham
79.4125 MHz MOULD, South Wales
79.45 MHz RAF PD Ch. 8 Cosford (Charlie Cntrl)
79.475 MHZ RAF PD (Zero Control)
79.4875 MHz Southend Isl. repeater control
79.50 MHz RAF PD Ch. 9 National/Honington
79.55 MHz RAF PD Ch. 10 Wattshm. (Bazel Cntrl)
79.575 MHz Wattisham PD (Silicon Control)
79.60 MHz RAF PD Ch. 11 National
79.65 MHz RAF PD Ch. 12 National
79.7125 to 79.9875 MHz RAF Gnd Svcs & Mil Ops 12.5 kHz channel spacing, FM
79.7125 MHz MOULD, South Wales (duplex 74 MHz)
79.775 MHz RAF Fire Binbrook

Table II. It's been practically impossible to get frequency listings for the U.K., so this directory is a first. Better save it for future reference.

bases in the UK are numerous, and in NBFM at 12.5 kHz steps. USAF base ops at Fairford are heard on 30.025 MHz. Listen for things like "Control to 1347—go to Transit Alert Facility . . . they're ready for pickup." Convoy escorts are logged on 32.60, with warehouse ops on 32.5125 MHz. Work on aircraft and water delivery is monitored on 32.80 MHz with ID's like Control, Area 2, Hotel 5. Frequency 34.025 MHz is quite active with base/mobile comms. Listen for Tanker 3, Mobile 6, Water Truck 50, and Control. Security ops have been logged on 30.9875, 31.00, and 31.1825 MHz. These ops are low keyed compared to domestic military comms. The affirmation "10-4" is used instead of the usual "Roger."

UK frequencies are virtually unknown to North Anerican monitors, although the fact that everything is in English makes these stations of extreme interest. POP'COMM breaks the ice with a UK low-band scanner listing, offering this information in Table II for handy reference as the loggings roll in.

I Love Paris In The Winter

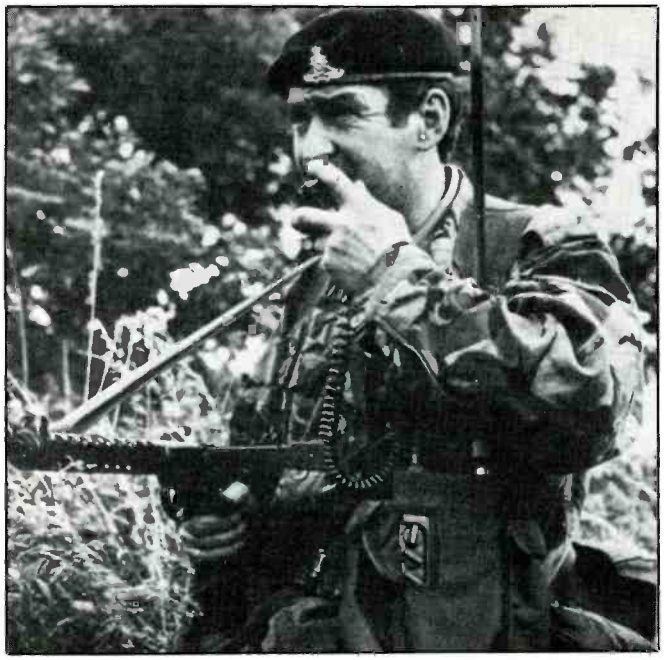
The basic bandplan for France goes something like this:

29.70 - 48.00 MHz Military
30.00 - 37.00 MHz Police
32.00 - 35.00 MHz Railroads
37.00 - 47.00 MHz ?
72.00 - 72.50 MHz Hydro Power Utilities
75.00 - 82.00 MHz Taxicabs

Table III - French Repeaters

30.5075	35.025	35.75	36.0175
31.65*	35.0375	35.775	36.0375
31.175	35.05	35.80	36.05
31.25	35.0625	35.8125	36.0625
31.90	35.075	35.8175	36.075
32.10	35.10	35.825	36.10
32.95*	35.125	35.8375	36.125
33.7875	35.15	35.85	36.15
33.8325	35.1625	35.8625	36.1875
34.6075	35.175	35.875	36.50
34.9075	35.20	35.90	36.8125
34.9125	35.275	35.925	37.00
34.95	35.30	35.95	37.4625
34.975	35.50	35.975	40.30
35.00	35.525	35.9875	41.425
35.0125	35.625	36.00	42.00
35.0175	35.70	36.0125	42.10

Table III. French repeaters. Asterisks indicate simplex ops, WBFM. A full-duplex radio-phone system is on 30.5075. the spacing used is 12.5 kHz.



Britain's PTR349 military transceivers cover 37 to 50 MHz (Model A), and 47 to 57 MHz (Model B) in 25 kHz steps, FM.

The French military TRC559 military manpack transceiver operates with NBFM with channels spaced 25 kHz apart between 30 to 80 MHz.

In early '86, the 41 to 47 MHz band was opened up for two-way base/mobiles when French TV Channel 2 was relocated. Perhaps some of our readers in France can fill in the gaps and missing details. See Table III for active French comms I logged last winter.

There are loads of repeaters between 34.90 and 36.20 MHz. They use a unique tone-burst access format that sounds like pushing the buttons on a tone pad when making a phone call. This is the CCIR selective system (widely used in Europe). It consists of 5 to 7 ms. tones sent in sequence, and is used exclusively on the low-band. When you hear these tones, you can be assured that the French language comms you're copying are coming all the way from La Belle France, and not from any of the other places where French is spoken.

French language stations having a peculiar wavering tone-burst have shown up on several frequencies with 50 kHz channel spacing. These include: 30.15, 31.70, 31.95, 32.05, 32.15, 32.20, 32.25, 32.40, 32.80, and 25.90 MHz. Inasmuch as these fast-paced, professional comms come in along with South American skip, their origin may be France's ultra modern space exploration facility at Kourou, French Guiana.

South Korean Riot Police

Radical students and worker rallies are just about a daily event in South Korea. Riot police are always on the scene of the protests, waiting to swing into action at the

Table IV - More International Best Bets

30.10: Non-voice poger, probable European.
30.60, 30.75, 39.70: W. German heliports, WBFM.
30.86: Italian, NBFM.
31.80: W. German airfields, nationwide, WBFM.
31.95: US mil in Europe, taxi svc, NBFM.
32.05 & 33.075: Israeli stations in Hebrew & Yiddish; check from 42 to 46 MHz for Israeli private radio-telephones. Mil ops fill most of low band in Israel.
32.20 & 32.40: Arabic radio-telephones, full duplex NBFM. On 32.20 there's a US mil op overseas in NBFM with ID "Equipment Control."
32.25 & 33.85: US mil ops overseas, NBFM.
32.40 & 37.60: Screeching sound, usually when European skip is working.
32.60, 32.70, 34.75: Norwegian Mil, WBFM mode with ID "Alpha."
33.20, 33.70, 37.40, 37.60, 40.20, 40.80: US airfield ops in W. Germany, WBFM.
33.40: Slovic, NBFM.
34.40: Arabic, NBFM.
34.38: Repeater output, German, NBFM.
37.00: Security? English & Dutch; "National Bonk;" radios have unique 5-tone burst access, NBFM.
37.30: US mil air/ground weather ops in South Korea. Bases here include A-511 at Pyongtaek; H-208 in Yongsan; & H-220 in Tong du Chon, WBFM.
37.80: Irish mil ops, some English. ID's as "Security," "Lima 1," "Limo 2," WBFM. The 30 to 48 MHz band is used by the mil in Northern Ireland, with 35 to 48 MHz mostly for long ronge helo/aircraft control chonnels.
37.80: German, maybe motorcycle training, NBFM
42.20: Repeater output, German, NBFM.
42.40: W. German tower ops, WBFM.

Table IV. An assortment of odds and ends you'll want to watch for during band openings this winter.

The author's AS-756/TRC military surplus antenna is a dual three element yagi that will operate between 30 and 100 MHz.

slightest provocation. High-energy riot police comms are being heard on 34.50 MHz. Also check out other 34 MHz channels in 25 kHz steps for additional military comms. South Korea comes in best during the late afternoon hours.

Hawaii

Although one of the 50 United States, it's still a thrill for mainland monitors to log signals from Hawaii via the scanner bands. Here are some that have been logged:

30.76 MHz WRT815, Zion Securities, Laie.

43.10 MHz KAU249, Castle and Cook Sugar Refinery, Wahiawa.

44.36 MHz KXA503, J.R. Express, Honolulu.

46.10, 46.36, 46.56 MHz Many fire departments.

47.50 MHz Oahu Civil Defense, many bases.

48.54 MHz Hawaii Electric Light and Power Co., many bases.

Guam

Guam is a U.S. Possession in the Pacific. Try for these:

30.96 MHz KJF648, Aviation Services, Ltd., Barrigade.

33.16 MHz KWY384, Guam Cable TV, Agana (repeater input is 30.92.)

35.06 MHz KLD231, Carlos Construction, Agana.

35.14 MHz WRN991, Hanyang International Hotel, Tamuning.

Skip conditions, now and for the next few years of the present Solar Cycle, are better than they've ever been. They won't be this good again for many decades, so take advantage of what they have to offer. PC

Radio's Early Days

Radio and Communications, as They Were in Days Long Past

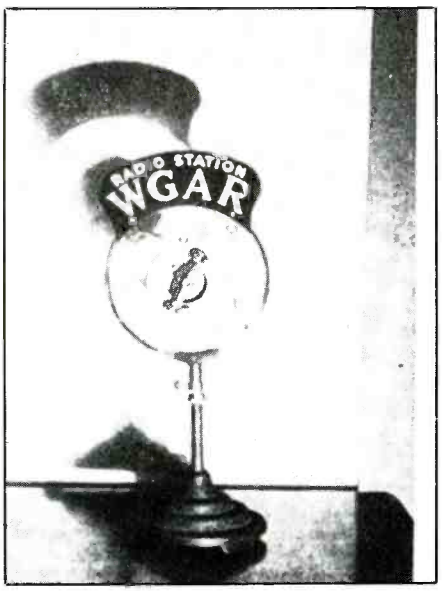
BY ALICE BRANNIGAN

Many of the 1920's earliest broadcasters had run out of steam and money by the end of that memorable decade. The majority of today's most formidable broadcasters are those who managed to survive those hectic years and continued to grow. Interestingly, one well known and very prominent contemporary broadcaster managed to miss the 1920's entirely, getting started in December of 1930.

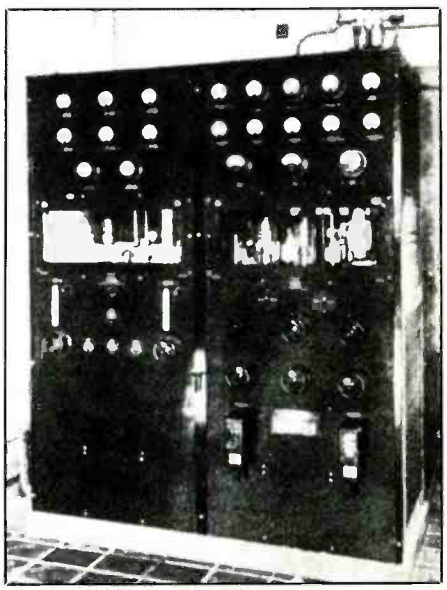
That was when George A. Richards plugged in his 500 watt transmitter on 1450 kHz from facilities at 140 East Market Street in Akron, Ohio. Richards' station was an immediate success. It was known as WGAR; the callsign was based upon his initials. In only a year, WGAR moved to new digs on the fourteenth floor in the Statler Hotel in Cleveland, and it was running 1 kW (500 watts at night). In the early 1940's, the FCC moved WGAR to 1220 kHz, but permitted the station to operate with 5 kW from its transmitting site at the intersection of Broadview and Atkins Roads in Brecksville, Ohio.

By that time, WGAR had become famous as *Cleveland's Friendly Station*. Continuing to prosper, on July 4th, 1947, WGAR turned on its new 50 kW equipment from its transmitting site in Broadview Heights, Ohio. In 1954, the station was purchased by its present owners, Nationwide Communications, Inc., which operates the station with a country music format from 9446 Broadview Road in Cleveland. WGAR is closely identified with Cleveland, chances are that there aren't too many people who realize that the station isn't native born, but moved to Cleveland as a youngster.

A QSL letter from WGAR dated a year and a half after it went on the air showed that it had moved from Akron to Cleveland. DX'er Joe Hueter, of Philadelphia, PA received it from them. In December of 1947, they sent Tom Kneitel a bright red/white QSL card with the old 5 kW power crossed out and the new 50 kW power typed in.



An early carbon-type mike used in the old days at WGAR.



The WGAR transmitter, back when the station ran 500 watts.

The Exotic Orient

We located, via an old but undated postcard, a view described as "Signal station, Kowloon, Hongkong." Based upon the apparent age of this card, which is pre-1920, we'd have to say that the conglomeration of antenna wires and buildings atop the hill in the photo represents early wireless station BXY. In a 1919 listing we have, this "spark" station was shown running a press schedule daily at 2145 (UTC) on 60 and 150 kHz. That would have been one to hear, eh?

Another real old-timer is displayed on a picture postcard furnished by Milt Kornblum, Rehoboth Beach, DE who wants to know if we can identify the station shown. The card shows a single tower about 150 ft. tall standing next to a small brick building. The card identifies this as "Wireless Tower, The Penna State College, State College, PA." Although the card isn't dated, it's obviously quite old.

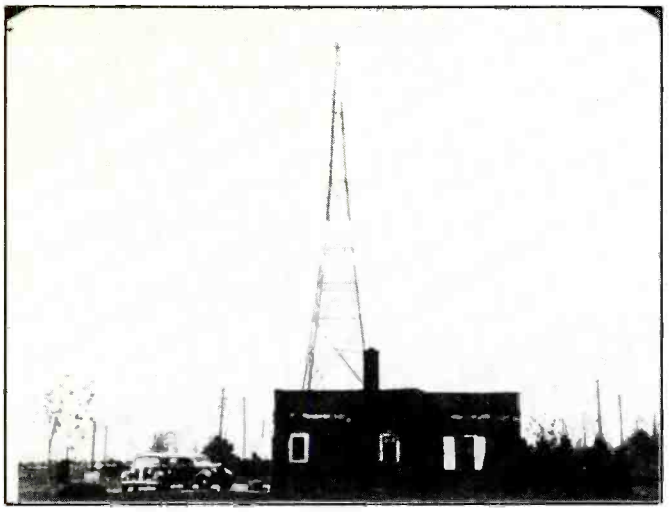
Well, we did find this station shown in 1924 as Experimental 8XE, and in 1928 as W8XE with 500 watts on "variable" frequencies. By 1930, the station was authorized for operation on 1604, 2398, 3256, 4795, 6425, 8659, 12850 and 17300 kHz as W8XE, but it could also operate on ham frequencies as W8YA. It appears that 1930 was W8XE's last hurrah. It was operated by the School of Electrical Engineering.

Another Question

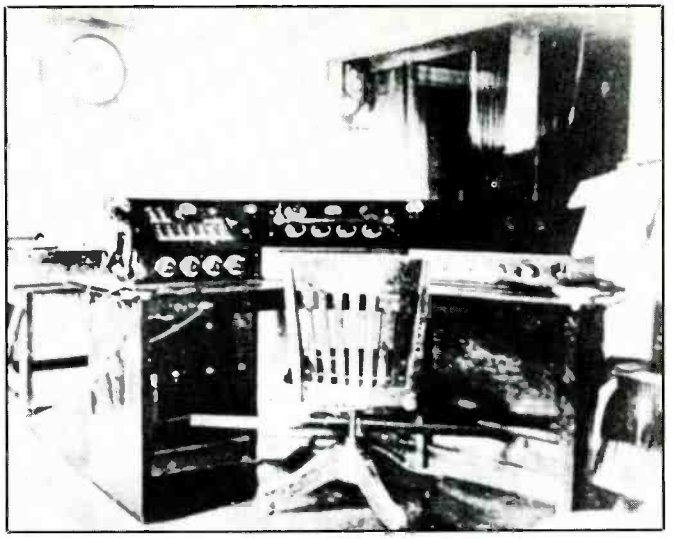
John Schmid, of Line Lexington, PA visited the Johnstown (PA) Flood Museum, which is a storehouse for the community's heirlooms, including assorted items that washed through town during the flood disasters of 1889, 1936, and other years. According to *Centennial Reports*, the newsletter of the Johnstown Flood Centennial Project, quite a few of these rescued artifacts require additional information, like the bass drum with the painted-on legend *Young American Drum Corps*, or an old hospital ledger, or the radio transmitter bearing the identification WJAC. John passed it along to us in the hopes that we might be able to figure out where the WJAC transmitter started out before kismet and flood waters brought it to Johnstown.

It didn't have to float very far, since WJAC was the station owned by the Johnstown Automobile Co., of 101 Main Street, right in town. The station went on in April of 1925 under the callsign WHBP with 500 watts (250 watts night) on 1310. By 1930, the callsign had been changed to WJAC, and the power was reduced to 100 watts. The early 1940's saw WJAC shift to 1400 kHz with 250 watts from its location in the Tribune Building.

WJAC presently operates on 850 kHz with 10 kW running an oldies format. The present owners, Winston Radio, Inc., took



A view of the WGAR transmitter in the early 1930's when it was located at 1000 Harvard Avenue.



Master control at WGAR in 1931.

over in 1987 and operate the station from 109 Plaza Drive. The transmitter in the museum must be a 100-watter that got away during the flood of March 18, 1936.

Ed Wynn Recalled

In the August issue, there was a feature story about comedian Ed Wynn's ill-fated Associated Broadcasting System attempt at establishing a "third network" in competition to CBS and NBC (Red/Blue) during the 1930's. That made Henry M. Beisel, of Sun City, CA recall that he lived in New Jersey during the ABS fiasco and he heard the network's inaugural broadcast over New York City's WBNX. He added a postscript to the information in the story that Floyd Gibbons (of eye-patch fame) purchased the assets of Wynn's defunct ABS as a friendly gesture to Wynn for $50,000.

But Henry also remembers several attempts by others to start up a "Third Network" during that era. George McClelland,

W G A R

THE W G A R BROADCASTING COMPANY

STATLER HOTEL
CLEVELAND

April 8, 1932

Dear Listener:

This is to acknowledge receipt of your recent communication and to advise you that you have identified one of the programs of WGAR.

This station operates permanently from 6:00 AM to 1:00 AM continuously, on a frequency of 1450 kilocycles.

We are pleased to have been advised of your reception and trust that you will tune us in often.

We do not have Ekko stamps and can only acknowledge your letter in this way. If you have any other specific questions, please address them to me personally and I shall be glad to reply with a more personal letter than this can be, since we are having to address the thousands of listeners who heard us with a form letter.

Yours very truly,

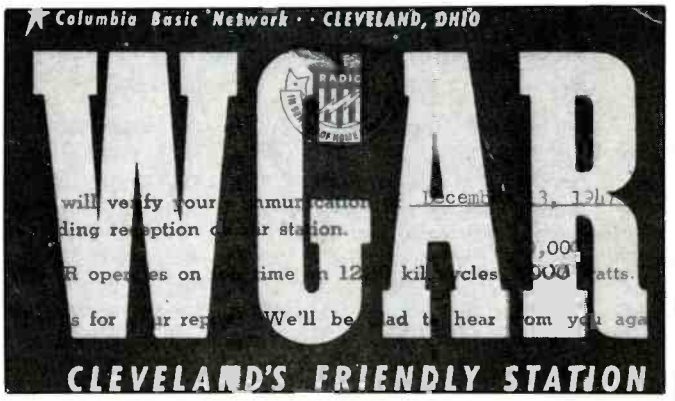
THE WGAR BROADCASTING COMPANY

John F. Patt

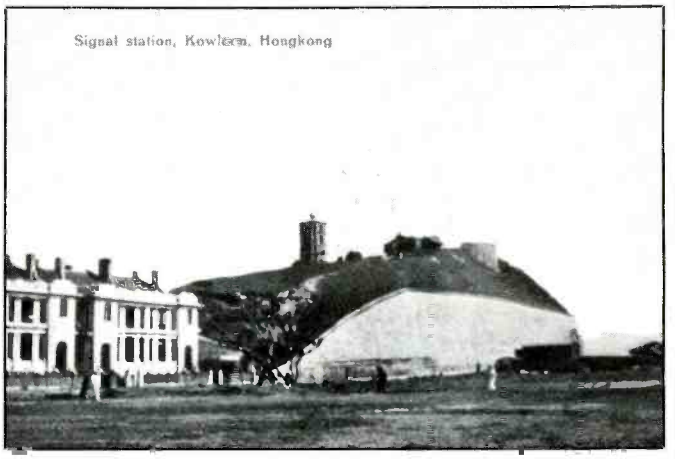
John F. Patt
General Manager

JFP:MC

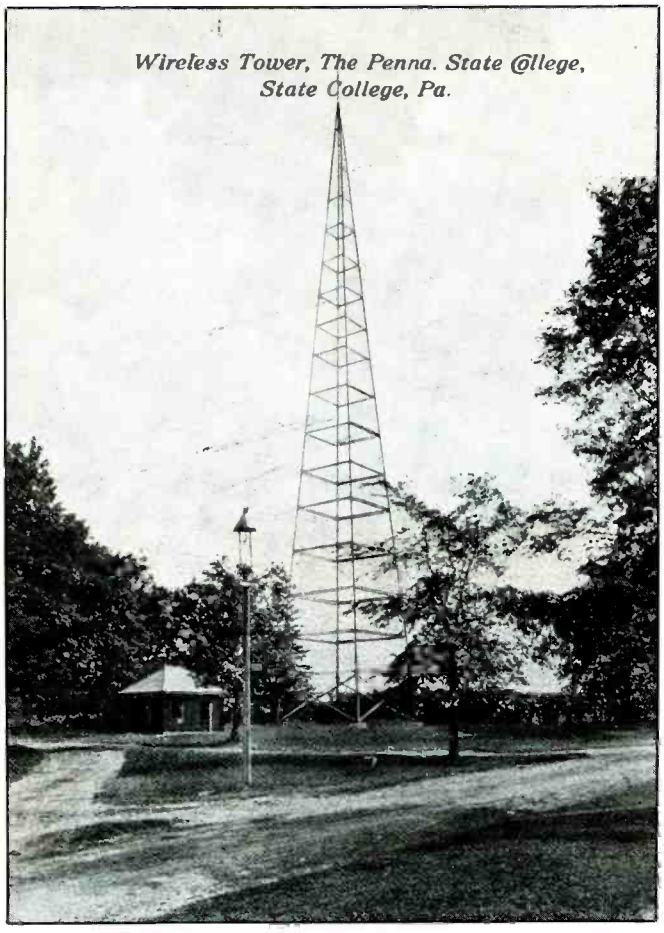
A 1932 QSL letter from WGAR was received by Joe Hueter.



By 1947, WGAR was sending out these attractive QSL's. (Courtesy Tom Kneitel.)

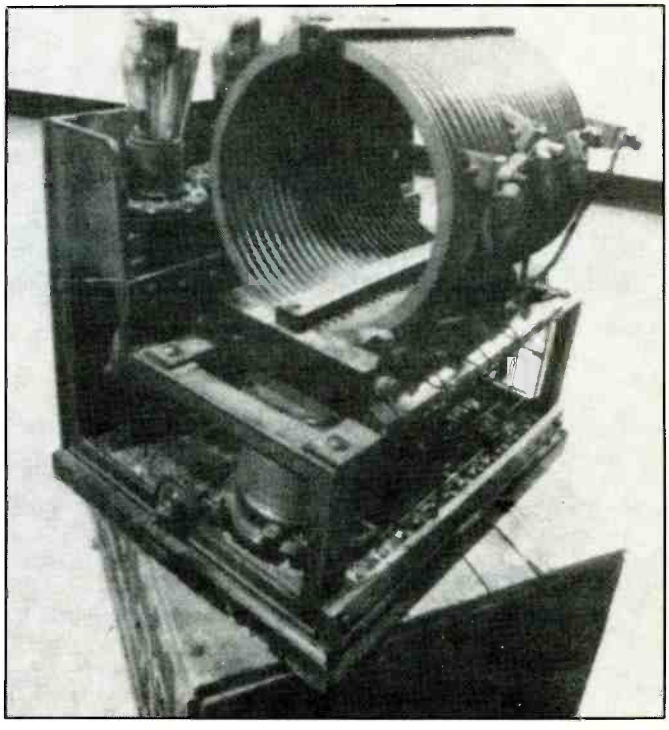


Station BXY, up on the hill in old Hong Kong.



◀ *Experimental station 8XE/W8XE was here until 1930.*

WJAC's 100-watt broadcast transmitter got caught in the ◀ *Johnstown flood of 1936 and ended up in a museum!*



an ex-V.P. from NBC tried to start one, but when he couldn't get support for the project, he committed suicide by shooting himself. There was also another ABS (American Broadcasting System) with New York City's WMCA and other stations. It had at least one commercial program, *The Lady Esther Serenade*, with Wayne King ("The Waltz King") and his orchestra. This ABS also failed, as did the General Broadcasting System (GBS) with New York's WGBS (now WINS) and other stations.

GBS had a few commercial programs, one of which was *The Crosley Hour* from Cincinnati's WLW. Somewhat later, there was a Progressive Broadcasting System (PBS) from Long Beach, CA that had WNJR in Newark, NJ as its local outlet in the New York City market. It failed for lack of sponsor interest.

The exception to the failures was the Mutual Broadcasting System (MBS), which had many ups and downs over the years, but still survives as virtually the only one of the remaining early challengers to the NBC and CBS radio networks.

Rare Canadian QSL

You don't get to see very many un-issued old-time QSL cards, so when one came our way from a 50 watt station in British Columbia, it brought a twinkle to the entire day. The card, which was included with a group of assorted QSL's sent to us by Scotty Adam of Burnaby, BC represents cards and letters collected by his late father a number of years ago.

There wasn't any explanation given as to why the card from CKMO in Vancouver, BC had never been issued, but we thought it would be interesting to try and trace the evolution of CKMO. What we found out was more of a convolution than an evolution!

Looks as though the station commenced broadcasting on April 10, 1922 under the callsign CJCE on 750 kHz. That start-up date makes it a true pioneer. It was operated by a company that did business under the names of the Sprott-Shaw Schools of Commerce, Radio, and Wireless Telegraphy, and also Radio Specialties, Ltd., both of 153 Pender St. West., in Vancouver. Ran 5 watts.

In 1927, however, the station was running 40 watts on 730 kHz, and had changed its callsign to CFCQ. The station was then located at 791 Dunsmuir Ave., Vancouver.

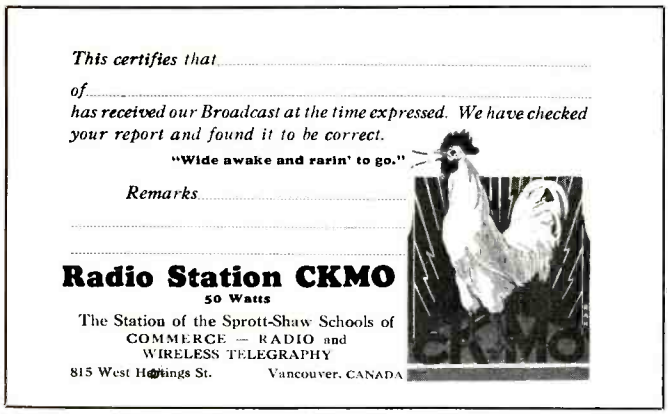
Still in a state of flux, the station soon upped its power to 50 watts as it moved into the Bekins Building, 815 West Hastings St., Vancouver. That's when it became known as CKMO. Within a short period of time, CKMO began operating on 1410 kHz with 100 watts. By the late 1940's, it was still CKMO on 1410, but it was running 1 kW. The studios had been moved to 812 Robson St., with the transmitter located on Lulu Island.

If you're familiar with Vancouver radio, you may have realized that these days when you're talking about 1410 kHz, you're talking about 50 kW station CFUN. Yes, that's what CKMO changed into several decades ago. In early 1973, the present owners (CHUM) took over the station, which now runs an adult contemporary music format. It's come a long way from 5 watt CJCE!

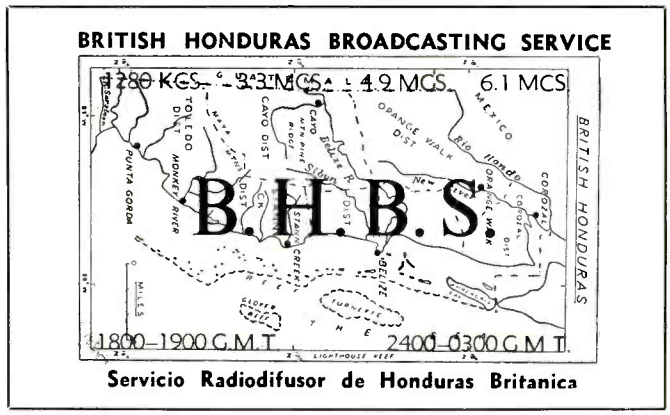
The QSL card is probably from the early 1930's. It shows a rooster announcing the slogan, "Wide awake and rarin' to go."

Evading The Fantom Fleet

In past December issues I've devoted some coverage to WWII communications in the Pacific. This year, for a slight change of pace, let's look at Japanese Naval communications during the First World War (1914-1918). Those were the days when some of the first clever traces of electronic warfare were implemented. Like when the Germans had one of their naval coastal stations sending out messages using the callsign of the Kaiser's flagship. Supposedly, the vessel was in port. That's what the British were cleverly led to believe, at least until the British fleet spotted the Kaiser's flagship and accompanying squadrons far out at sea. Sounds corny now, but 75 years ago it was a doozie! On the other hand, in 1914, the Ja-



This early-1930's QSL from Vancouver's 50-watt CKMO was never issued!



Does anybody remember BHBS from the days before Belize became an independent nation? (Courtesy C. Lacoste, CA.)

panese drove German sea power out of the Pacific by means of a phantom electronic fleet.

When WWI broke out, the Japanese delayed their entrance into the hostilities. When they entered the war, they sided against Germany. At that time, there was an announcement sent out over the Nagasaki wireless station that her warships had been dispatched to take over the German islands in the Pacific. Since that was exactly where Admiral von Spee's German fleet was steaming, it seemed a rather inexcusable disclosure of military intentions on the part of a nation known for its secrecy. The Nagasaki news item alerted the German ships and thereafter, though with no undue haste, they slipped along towards Cape Horn from the Atlantic into the Pacific.

Strategically posted before hostilities began, Japanese warships cautiously fanned through the Pacific islands figuratively sweeping the Germans towards the southwest with a wireless broom. They helped von Spee go precisely where he wanted to go himself. During the first night of the war between Japan and Germany, Japanese troops landed in Palau and set signal fires blazing. At the time, a German gunboat and and a merchantman were at anchor in this island group. The latter, seeing the tell-tale flames, wirelessed the gunboat which immediately scampered off. Though the Japanese must have detected this nearby signal, they made no attempt to chase either ship.

Soon afterwards two big German cruisers, steaming northwards to the Marshall Islands, intercepted strong signals from seven Japanese warships, which disclosed their positions along the Caroline Islands. The Germans promptly about-faced and made for Rabaul to the south. Five weeks later one of these vessels made another dash to the north for Yap, but only to intercept messages from a dozen Japanese warships. Short of coal, the ship reached Guam and was interned.

These frequent Japanese signals had not been primarily directed at German cruisers, gunboats and merchantmen. They were intended for von Spee's big cruisers. On September 1st, while steaming on a westerly course, the German flagship ran into a veritable storm of Japanese wireless signals originating in the region of Hawaii, presumably from a large fleet. One of the messages was not even coded. It informed the Japanese consul in Honolulu that the sender of the message, openly designated as the Japanese battle cruiser *Kongo*, was bound for Hawaii. In later years, the first officer of one the two German armored cruisers expressed his thankfulness for this inadvertent Japanese security breach. Oddly enough, there isn't any evidence that the *Kongo* was in that area of the ocean, except for the fact that its wireless signals were strong and in contact with numerous other naval vessels.

When the German ship reached Honolulu six weeks later (without seeing a trace of Japanese ships), the proximity of the *Kongo* was a matter of rumor and conjecture. The *Kongo* was reportedly a fearsome vessel, and maybe von Spee considered himself fortunate at having been clever enough to evade its guns. At any rate, after sailing around the Pacific, von Spee continued to monitor the Japanese naval comms in order to help navigate out of the Pacific without a direct Japanese naval confrontation.

When signals from a dozen or more major Japanese warships were intercepted, were there actually that many, or were only two or three using the callsigns of a larger number? Were all of these signals coming from destroyers and light cruisers using high powered equipment and borrowed callsigns?

How many actual Japanese warships caused von Spee to leave the Pacific? How many were larege and new - how many were too old, or too small, to risk an encounter with his ships, the *Gneisenau* and *Scharnhorst*? How many, with their extraordinarily high masts, were able to see the German ships, but remained unseen? These questions have never been fully answered.

Based upon the information his monitors had gleaned from the Japanese comms, von Spee was able to successfully cross the Pacific in both directions without having encountered the Japanese. In later years there was reason to believe that every transmission von Spee's monitors had picked up was carefully calculated to cause him to complete his mission and then get out of the Pacific without firing at any Japanese naval units.

At the time Japan entered the war, it apparently felt that its naval forces were not of sufficient size and strength to do battle with von Spee's two large warships. Yet, the Japanese knew that von Spee would someday have to show up in the Pacific to check out the German islands there. The Japanese then encouraged von Spee to show up at a time and under the conditions that was best for their own purposes. He made his visit, and left according to the way the Japanese had planned. It was one of the first instances of applied EW! Perhaps crude by today's standards, but in those days these dirty tricks were all new and exceedingly innovative.

Central American Station

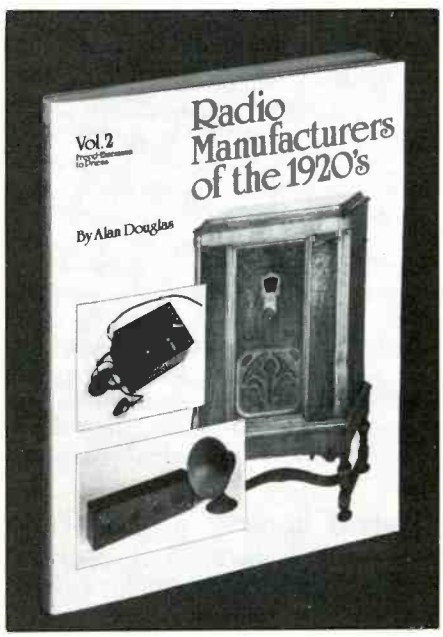
Say, does anybody remember BHBS, the British Honduras Broadcasting Service? That station was a popular visitor in SWL shacks throughout the 1950's, with signals on 1280, 3300, 4900, and 6100 kHz. But times change, and then British Honduras became independent. Now known as Belize, the national broadcasting service there became known as the Belize Broadcasting Network, replacing the old BHBS. BBN presently operates on 830 kHz with 10 kW from Belize City (three 1 kW relays are in other cities), plus 3285 kHz and several FM outlets. Chances are, anybody who was into QSL'ing while BHBS was in business, has one of their QSL's. The one we show here, dated 1956, was sent by C. LaCoste, of Ontario, CA who asks if anybody else remembers his favorite station—BHBS?

That's the end of the column and the end of the year. But we'll be back in January with more assorted memories. Best wishes for a wonderful Holiday Season to all, and special thanks to those who have enthusiastically supported our efforts with QSL's, photos, postcards, station directories, stories, and good thoughts. See you in January! **PC**

BOOKS YOU'LL LIKE!

Two Out Of Three

Last year we reported on the first volume of a three-book set entitled *Radio Manufacturers of The 1920's*, by Alan Douglas. That volume covered companies with names alphabetized from the letter "A" to part way through the letter "F." The second book in this informative set has now been issued, and it covers from *Freed-Eisemann* to *Priess*, and spans thirty one more manufacturers in a large-format, fully illustrated, 266-page book.

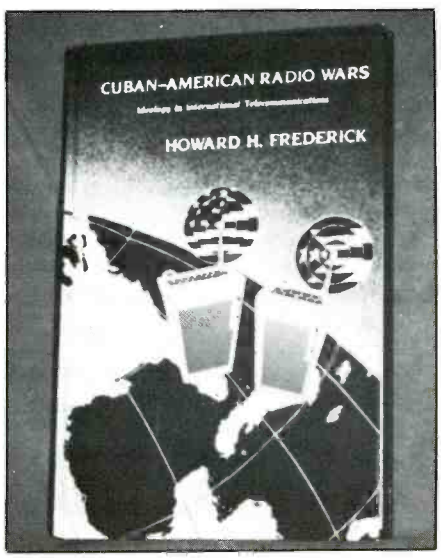


The previously issued volume quickly established this series as a leading authority on the history of radio manufacturing in the United States. This latest installment certainly upholds that tradition with a wealth of detailed information about the companies and their leading personnel, illustrated amply with historic ads, promotional materials, photos of the equipment and manufacturing facilities, etc. The depth of the information is significant. As one example, Bob Freed, who is the son of a co-founder of the *Freed-Eisemann Radio Corporation* once told me some interesting personal facts about his father and the fortunes of the company that bore his name. It was therefore rather impressive to note that author Douglas has researched his subject sufficiently well to have dug up this same information. When you consider that the company went out of business sixty years ago, you have to realize that rooting out such information must have required a lot of searching, if even to track down Joe Freed's heirs.

We don't wish to try to hurry author Douglas in his thorough research, but we certainly do look forward to the next (and final) volume in this trilogy. *Radio Manufacturers of The 1920's, Volume 2* is available at $24.95 in softcover ($39.95 hardcover), plus $3 shipping from The Vestal Press, Ltd., P.O. Box 97, Vestal, NY 13851-0097. Resident of NY State, please add sales tax.

Fiddling With Fidel

Radio wars are always wonderful things to behold, with high powered transmitters, sleazy propaganda stunts, and undercover operations galore. While most radio wars take place on the other side of the world, the one that's been going on for about thirty years between Castro and Uncle Sam is as juicy as any you'd ever want to witness. Of course, it aids in your enjoyment if you know some of the background of what's going on, and can catch all of the delicate nuances on both sides of the battle.



We thought Castro was going to be a pushover at the Bay of Pigs. He wasn't. We thought that Castro would shut up when we beamed *Radio Swan* at him. He didn't. Instead, he got angry and has put up a rather decent radio war of his own for three decades.

All of this, and more, is chronicled in *Cuban-American Radio Wars: Ideology in International Telecommunications*, by Howard H. Frederick. This is a 200-page hardcover book; a scholarly and serious in-depth look at all aspects of this most curious electronic battle of words and broadcasting frequencies. With its hundreds of detailed footnote references, it appears to be a college-level textbook (which is what it probably is). But don't let that scare you off, because it spins a fascinating tale filled with frequencies, callsigns, station names, and incidents that trigger the imagination of any DX fan.

The author has done his homework in researching his material, for when you look in the footnote references you see, along with stuffy federal reports, references to popular monitoring hobby publications, as well as the names of DX'ers such as Tom Kneitel, the late C.M. Stanbury, and others. So this is a wide-ranging work that gets into the workings of *RHC, Radio Marti, Radio Swan, and Radio Lincoln* (Castro's proposed answer to *Radio Marti*). It explains the deliberate and incidental interference problems of the radio war, the ideologies involved, the attitudes and approaches, and who's winning.

"You can't tell the players without a program," is what they say at the game. Howard Frederick's book is the program that tells you about the players in this eerie and intrigue-filled game. Does a good job, too.

Cuban-American Radio Wars is published by the Ablex Publishing Corporation, 355 Chestnut Street, Norwood, NJ 07648. the price is $37.50 per copy.

Hot Topic

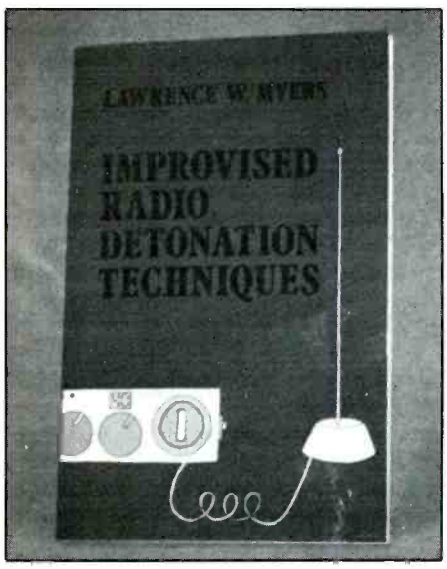
One of the strangest aspects of modern unconventional warfare (UCW) involves the radio-controlled detonation of strategically placed explosives. It's a horror you see almost weekly in the news from the Middle East, Northern Ireland, Central America, and elsewhere. Experts in terrorism agree that, even though it's a sneaky trick, it's definitely the most effective and efficient way to strike anonymously in a UCW situation.

In his book, *Improvised Radio Detonation Techniques*, Lawrence W. Myers points out that, considering the apparent sophistication that traditional military forces require for radio-controlled detonation devices, the simple techniques used in UCW are innovative and amazing.

Those engaged in UCW (guerillas, terrorists, freedom fighters, insurgents, paramilitary groups, or whatever you wish to call them) may have limited funds and virtually no technological savvy. Moreover, often all they have are the most common, everyday household items with which to work in their operations—CB's, cordless phones, wire-

less mikes, AM/FM portables, children's toy walkie-talkies, police scanners, car phones, beepers, etc.

You'd hardly think such things could be put to devious uses. Nevertheless, in this fully illustrated book (which abounds with schematics and tables), UCW authority Meyers reveals complete details of the construction, modification, and deployment of radio-controlled detonation equipment without the use of high-tech components, special tools, or technical skills—just as it's being done in cellars and attics around the world. There are some extremely interesting approaches, techniques, and concepts here that are so downright simple that it gives you lots of insight into the basic (and scary) ingenuity of those engaged in UCW.



Meyers writes with an obvious knowledge of his topic, and we were flattered to find several references to *Popular Communications* in his book. There's no doubt about the fact that this is the most unusual book on electronics we have seen this year. It's the inside story on this newsworthy topic, not just fluff and press reports, but "hard" information on how its actually being done. We found it intriguing from cover to cover.

Improvised Radio Detonation Techniques is available from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. The price is $9.95, plus $1.00 mailing to USA/Canada/APO/FPO addresses. Residents of NY State, please add 75 cents sales tax.

In Addition

We received an attractive 2nd Edition of Kraig D. Pritts' *Complete Scanner Frequency Guide for Syracuse, NY*. This is a staple-bound publication of approximately 45 (one-sided printed) pages that contains more than 800 listings of services in and around Syracuse (including Onondaga and Cayuga Counties). Listings are by service and location, then cross indexed according to frequency. There is also a 10-Code for the Onondaga County fire and ambulance services. General listings cover police, fire, ham repeaters, utilities, highway departments, etc. This book is $6.00 plus $3 postage/handling from Kraig D. Pritts Data Services, 76 West Elizabeth St., Skaneateles, NY 13152.

We received an announcement about the *1990 World Satellite Annual*, by Mark Long. "The book is a stand-alone reference to the future of satellite communications that neatly supplements the second edition of the *World Satellite Almanac* which was released in July of 1987 " said Mr. Long. "This edition of the Annual has been expressly designed to keep satellite professionals abreast of the major technological developments which promise to dramatically affect the commercial satellite industry during the next decade," he added.

In addition to providing chapters on Plan Array Antennas, High Definition Television, Satellite Launch Vehicles, Mobile Satellite Communications Systems and recent FCC domestic satellite decisions, the *1990 World Satellite Annual* also delivers updates on the Intelsat and Intersputnik systems. Detailed descriptions of next generation satellite systems like Eutelsat II, Intelsat VI and VII, Telecom II, Europesat, ACTS, MSAT and AMSC, Anik E, Asiasat, Aussat B, JCSat, Superbird, and all new U.S. domsats recently approved by the FCC are also provided.

Up-to-date reports on existing satellite systems like ASTRA, TDF-1 and Eutelsat I F4 are also contained in the *1990 World Satellite Annual*, along with a comprehensive World Satellite Transponder Loading Report. More than 150 new charts, graphs, and previously unavailable satellite footprints are in this 432-page book.

The *1990 World Satellite Annual* is available for $39.95 plus $7.00 (U.S. and Canada), $20.00 (Europe and Latin America(or $25.00 (The Far East) for shipping and handling. To order your copy, contact MLE INC., P.O. Box 159, Winter Beach, Florida 32971.

Aeronautical Communications Handbook, by Bob Evans, is a Canadian publication that addresses itself to monitoring the 2 to 30 MHz aeronautical communications bands in various modes. This is a combbound book with information arranged by category, then cross indexed according to frequency. The book is $19.95 from Universal Shortwave Radio, 1280 Aida Drive, Reynoldsburg, OH 43068. PC

The Washington, DC Mystery Pirates: A Circus Of The Weird

They Just Don't Get Much More Bizarre Than WBST and Friends!

BY ANDREW YODER

As he tuned through the shortwave bands last Halloween, some DX'er may have thought their radio was possessed. One of the stations was broadcasting choppy audio segments from horror movies interspersed with hysterial laughter. The lucky listener will have heard WBST,the BeaST, a rare and mysterious North American pirate broadcaster.

WBST began its operations on Halloween evening, 1983. Since that date, its devil worshipping/horror spoofs have been heard only occasionally on either Halloween or Friday the 13th. DJ's Johnny Wretch and Mr. Nasty claim to broadcast on "666 kHz with a power of 13 kilowatts as authorized by the DCC, the Devil Children's Commission." They also claim that the station is "owned and operated by the Lucifer Broadcasting Corporation, Salem, Massachusetts, with studios and transmitter located in the Pentangle Towers on Gallows Road."

Many listeners across the country have been shocked, amused, and confused about the broadcast content and origins of WBST. Most pirate radio enthusiasts accepted the broadcasts as a Halloween parody. Others, less familiar with free radio and its satirical programming, were dismayed. Regardless, neither the pirate enthusiasts nor the shortwave broadcast listeners have traced the origins of WBST.

WBST is an oddity, but the station had company in 1983. Several months earlier, on Independence Day, Radio Angeline began its broadcasting career. Unlike WBST, Radio Angeline's first holiday broadcast was heard by few listeners. Little is known of the broadcast, except that parodies and comedy songs were featured. It was not until New Year's Eve of 1983 that the station aired the famous holiday program for which it is still most known. Most of the program was typical for pirate radio: fake commercials and rock music. But near the end of the broadcast, announcer Jo Jo Katew abruptly changed the mood by reading a long poem about first love. The electronic alteration of Jo Jo's voice forced some listeners to think that the broadcast was a type of audio suicide "note" to his lost love, Angeline.

Six years after the original appearances of WBST and Radio Angeline, many shortwave listeners and pirate enthusiasts tell tales of the stations and hope to log them one day. WBST has not operated since 1985 and Radio Angeline is only occasionally heard with the same program first played on New Year's Eve 1983. But the stations are still considered semi-active; either will broadcast when inclined to do so.

Neither station has ever announced a mailing address on the air. However, both are widely publicized as using P.O. Box 40554, Palisades Station, Washington, DC 20016. As shortwave listeners have discovered over the years, unfortunately, these stations will not respond to any correspon-

Fig. 1 WBST is well-known for its Halloween broadcasts spoofing horror movies.

Fig. 2 Radio Angeline's New Year's Eve 1983 program is still heard, usually on unusual frequencies at odd hours.

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

Bearcat® 800XLT-T2

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

Bearcat® 145XL-T

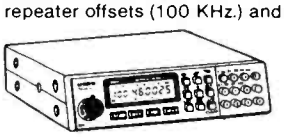
List price $189.95/**CE price $94.95/SPECIAL**
10-Band, 16 Channel • No-crystal scanner Priority control • Weather search • AC/DC
Bands: 29-54, 136-174, 406-512 MHz.
The *Bearcat* 145XL is a 16 channel, programmable scanner covering ten frequency bands. The unit features a built-in delay function that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

President® HR2510-T

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

NEW! President® HR2600-T

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



BC760XLT
800 MHz. mobile scanner
SPECIAL!

★★★ Uniden Cordless Telephones ★★★

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XE550-T *Uniden* Cordless Phone.....$79.95
XE300-T *Uniden* Cordless Phone.....$69.95

★★★ Extended Service Contract ★★★

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

OTHER RADIOS AND ACCESSORIES

BC55XLT-T *Bearcat* 10 channel scanner $114.95
BC70XLT-T *Bearcat* 20 channel scanner.....$159.95
BC175XLT-T *Bearcat* 16 channel scanner $156.95
R2066-T *Regency* 60 channel scanner.....$149.95
R1099-T *Regency* 45 channel scanner.....$109.95
TS2-T *Regency* 75 channel scanner.....$269.95
UC102-T *Regency* VHF 2 ch. 1 Watt transceiver....$114.95
BPS5-T *Regency* 16 amp reg. power supply.....$179.95
BP205-T1 Ni-Cad batt. pack for BC200/BC100XLT....$39.95
B8-T 1.2 V AA Ni-Cad batteries (set of eight).....$17.95
FBE-T Frequency Directory for Eastern U.S.A.....$14.95
FBW-T Frequency Directory for Western U.S.A.....$14.95
RFD1-T Great Lakes Frequency Directory.....$14.95
RFD2-T New England Frequency Directory.....$14.95
RFD3-T Mid Atlantic Frequency Directory.....$14.95
RFD4-T Southeast Frequency Directory.....$14.95
RFD5-T N.W & Northern Plains Frequency Dir.....$14.95
ASD-T Airplane Scanner Directory.....$14.95
SRF-T Survival Radio Frequency Directory.....$14.95
TSG-T "Top Secret" Registry of U.S. Govt. Freq....$14.95
TTC-T Tune in on telephone calls.....$14.95
CBH-T Big CB Handbook/AM/FM/Freeband.....$14.95
TIC-T Techniques for Intercepting Communications....$14.95
RRF-T Railroad frequency directory.....$14.95
EEC-T Embassy & Espionage Communications....$14.95
CIE-T Covert Intelligence, Elect. Eavesdropping....$14.95
MFF-T Midwest Federal Frequency directory.....$14.95
A60-T Magnet mount mobile scanner antenna.....$35.95
A70-T Base station scanner antenna.....$35.95
A1300-T 25 MHz.–1.3 GHz Discone antenna.....$109.95
USAMM-T Mag mount VHF ant. w/ 12' cable.....$39.95
USAK-T ¾" hole mount VHF ant. w/ 17' cable.....$35.95
Add $4.00 shipping for all accessories ordered at the same time. Add $12.00 shipping per radio and $4.00 per antenna.

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To ***get the fastest delivery from CEI*** of any scanner, send or phone your order directly to our Scanner Distribution Center.™ Michigan residents please add 4% sales tax or supply your tax I.D. number. Written purchase orders are accepted from approved government agencies and most well rated firms at a 10% surcharge for net 10 billing. All sales are subject to availability, acceptance and verification. All sales on accessories are final. Prices, terms and specifications are subject to change without notice. All prices are in U.S. dollars. Out of stock items will be placed on backorder automatically unless CEI is instructed differently. A $5.00 additional handling fee will be charged for all orders with a merchandise total under $50.00. Shipments are F.O.B. CEI warehouse in Ann Arbor, Michigan. No COD's. Most items listed have a manufacturer's warranty. Free copies of warranties on these products are available by writing to CEI. Non-certified checks require bank clearance. Not responsible for typographical errors.

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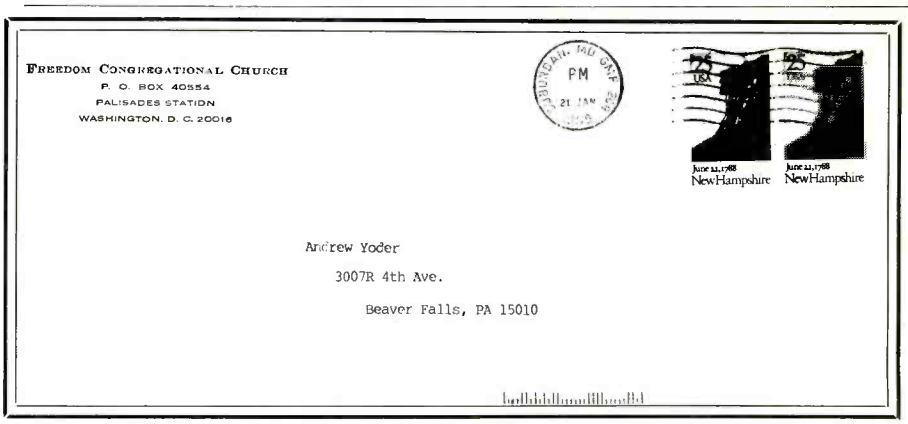


Fig. 3 A deceptive envelope from the "Freedom Congregational Church," fronted by the mysterious Arthur Pym.

dence. Arthur Gordon Pym, a well-known pirate listener, operates the maildrop. He does reply to letters and telephone messages sent to him personally. "None of them (the stations) are very good about responding to letters, despite their good intentions," said Pym. "What can I say, but that they are creative people with a not uncommon strong streak of laziness."

Pym began the maildrop in 1979 for privacy; in 1980, Pirate Radio New England (PRN) asked for and was granted use of the address. PRN was the sole pirate broadcaster using Box 40554 for nearly four years, and unlike WBST and Radio Angeline, was well-known for its frequent above-the-AM-band broadcasts and friendly announcers. Then in 1984, an array of the world's most bizarre pirates began using the maildrop. Following WBST and Radio Angeline were Radio Bag (which featured information on bags) and WWW (from the "Home for Wayward Girls" in "Chastity Belt, West Virginia").

Pym himself is no stranger to hidden identities and the quirks of the trade. Rather than name anyone in the organization that assists in operating the Washington, DC maildrop, Pym acts as its spokesperson. To further confuse the identity of the organization behind the maildrop, it was named "the Freedom Congregational Church" or FCC. Although operating an unlicensed radio station is illegal (punishable by up to a $10,000 fine and a year in prison), forwarding mail for a station is not. Presently, four maildrops (including Pym's DC box) operate in the open. That is, they forward letters to anyone who asks for the service. Perhaps a dozen other maildrops exist across the country, but usually only for private use by one station.

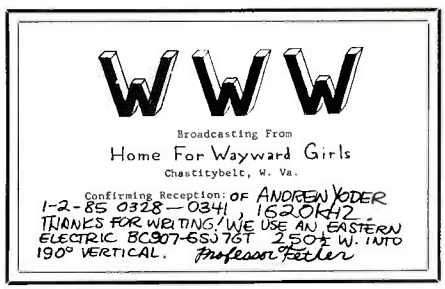


Fig. 4 Claiming to broadcast from the "Home For Wayward Girls in Chastity belt, West Virginia," WWW made several appearances in early 1985. Note the signature by Professor Fether.

Pirate radio is rarely associated with American literature, but a look into 19th Century writers intensifies the extent of Pym's deception. The first novel written by Edgar Allan Poe was "The Narrative of Arthur Gordon Pym." The likeness in names is certainly not coincidental. "The Narrative of Arthur Gordon Pym" is the story of a sailor and his experiences on the ocean. After a shipwreck, the man faces starvation, insanity, dehydration, and cannibalism while stranded in a life boat on the open sea.

It is the manner in which the book was written and publicized, rather than its plot, that makes it applicable to the modern day Arthur Gordon Pym and the Washington, DC mystery pirates. Unlike most novels, Poe wrote and publicized the book as though it was a valid account of an actual event. As a result, many readers believed the story. Obviously, mastery of hoaxes such as this is essential to both today's Arthur Pym and his clients. Actually, the pseudonym "Arthur Gordon Pym" could represent several pirate radio enthusiasts, not just one person.

Edgar Allan Poe's connection to the maildrop digs even further into the stations. When WWW began broadcasting in January 1985, it claimed to operate from the Home for Wayward Girls, and asked listeners for photographs of teenage girls. Otherwise, the station was normal; it played mostly 1970's pop music. Verification cards from the station were signed by Professor Fether. This name was obviously taken from a Poe short story, "The System of Docter Tarr and Professor Fether."

In this story, a man visited a peculiar insame asylum. After having dinner with the staff, he discovered much to his horror that

Table 1

Radio Angeline, Black Box Radio, The Crooked Man, Radio Espirito, Radio Lymph Node International, Radio Ohm, Pirate Radio New England (PRN), U.A. Express, WBNY, WBRI, WBST, WWW.

Table 1: Stations presently using the P.O. Box 40554, Palisades Station, Washington, DC address.

Table 2

1620	Radio Angeline
	PRN
	WWW
3430-3440	Radio Angeline
	The Crooked Man
6225-6262	Radio Angeline
7375-7395	Radio Angeline
	PRN
	U.A. Express
7410-7440	Radio Angeline
	Black Box Radio
	The Crooked Man
	Radio Espirito
	Radio Lymph Node International
	Radio Ohm
	WBRI
	WBST

Table 2: Frequencies for the "mystery pirates."

the real staff had been tarred and feathered in the basement. He was being accommodated by the insane.

Perhaps the operator of the station attempted to draw a parallel between "The System of Docter Tarr and Professor Fether" and WWW. Maybe it was a subtle way of saying that although the station appeared relatively normal on the outside, Professor Fether was actually a sexual pervert hoping to draw innocent teenage girls into his "home." Or perhaps the operator merely enjoyed the story, so he took one of the names as his own.

One of the most unusual pirates, known only as The Crooked Man, has just recently begun using Pym's maildrop. Like WBST and Radio Angeline in its operating procedures, The Crooked Man has made only several broadcasts since beginning in 1985. The station's programming consists of 1960's rock music interspersed with long talks by a man who sounds as if he's psychotic. In past broadcasts, he has rambled about psychoanalyzing God, Jesus owning the American Standard Company, gays writing on bathroom walls, etc. Apparently, The Crooked Man represents the best programming of the Box 40554 stations; some listeners are convinced that the operator really is deranged!

Nearly all of the operators using the DC maildrop broadcast from behind a "cardboard cut-out" style identity, using extremely narrow subject matter. For example, Radio Espirito played only Gregorian chants during its broadcasts in Spring 1984. Radio Lymph Node International advertised itself as "the voice of free reptiles everywhere and asked listeners to help the announcer, The Lizard, to find his lost reptile eggs. Black Box Radio also had an announcer named "The Lizard" who followed the reptile bit with remarks such as "Have you kissed your lizard today?"

The programming from these pirates is creative and highly professional, in spite of the limited subject matter. Therefore, it is likely that some of the stations are operated by the same hobbyist(s). For example, Radio Lymph Node International and Black Box Radio are similar in subject matter. They could be the same station. Shortwave listeners will probably never know if any of the others are connected. Many of the DC mystery stations employ voice-altering accents and equipment to add atmosphere and confuse the identities of the operators. Personnel from Radio Bag, primarily a Christmas 1983 station, spoke only in a falsetto; many listeners could not even identify the sex of the announcer. Jo Jo Katew from Radio Angeline speaks with an English accent; the list goes on and on.

This DX season, one or more of the mystery pirates using the Washington, DC address will probably transmit several programs. Chances are, the broadcasts will occur at strange times and/or on strange frequencies, and thus attract a small audience. That audience will learn almost nothing about the actual personalities of the station operators from the programs; if they write the station, they will probably never receive a response. But those who tune in will hear some of the most professional, rare, and mysterious broadcasts.

And don't forget, both April and July have Fridays on the 13th of the month. PC

POP'COMM Checks Out: The Super Converter II

Turns Any Handheld Scanner Into One That Receives 810 to 912 MHz!

The things that are taking place in the frequency range of 810 to 912 MHz include the best action portions of the new 902 MHz ham band, lots of land mobile communications, and (of course, as you know) cellular phones between 869 and 894 MHz, which (you will recall) you aren't allowed to monitor. Forgetting the off-limits cellular comms, what you are permitted to monitor is a mix of public safety and business communications that easily holds the interest.

Problem for many people is that they don't have scanners able to program in this band. Unless they're interested in buying a new scanner designed for 800 MHz coverage (and sometimes modifying the unit for complete coverage of those frequencies), they haven't been able to monitor frequencies above 512 MHz.

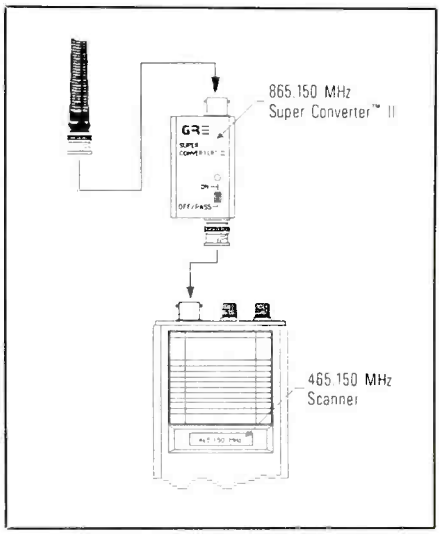
Now comes what we think is a truly innovative scanner add-on, the *Super Converter II* from GRE America, Inc. It permits you to pick up 810 to 912 MHz (no gaps) on any handheld scanner having a BNC-type antenna connector.

There are several significant points to tell you about this device. A: It goes from its box and into operation in a matter of seconds. B: The only control you have to deal with is an *on/off* switch. C: *It works like a charm!*

The *Super Converter II* is a sensitive device that has the capability of detecting transmissions in the 810 to 912 MHz range and shifting them to the range of 410 to 512 MHz, then feeding them into the scanner where they can be monitored. To use the *Super Converter II*, you merely disconnect the whip from the handheld scanner, attach the converter, then connect the whip to the converter. Nothing more, except to turn on the converter. It operates from its own 9 volt battery (or an optional external power supply).

At that point, you just add 400 MHz to whatever frequency your scanner display shows and you know what frequency you're hearing. If your scanner reads 506.500 MHz, you're monitoring 906.500 MHz, the national simplex channel in the ham band. By taking into account the 400 MHz frequency differential, you can then select specific frequencies to monitor, or you can search/scan entire bands or frequency groupings.

We tried the *Super Converter II* with a Cobra SR-15 scanner operating with a 10.5 inch high efficiency rubberized whip. This arrangement worked just fine and had absolutely no problems in producing lots of activity across the entire spectrum covered by the converter. It pulled in stations equally well with the scanner in *manual, scan, and search/scan* modes.



Here's how the unit fits into your scanning system.

Here's another trick we tried. We were having such a ball with this combo that we brought it in the shack to use with the scanner operating from a 117 VAC power supply as a sort-of-base-station. It worked fine, but it wasn't easy propping the set up so that the antenna would remain vertical. We then remembered that we had a telescoping whip attached at a right-angle to a BNC connector. Using that antenna, it was possible to retain the vertical polarization while tipping the scanner and converter over to lie flat on the surface of the desk. The length of the antenna was then adjusted for best results, although we couldn't get performance to equal the 10.5 inch rubberized whip.

The *Super Converter II*, when turned on, displays a small red indicator light. You should get 24-hours of operating use out of a alkaline battery in the unit, although if you intend using it from fixed indoor location for a long period of time, it will probably pay to use it with an external power supply. When you don't wish to receive the 800 MHz frequencies, all you do is switch off the *Super Converter*. The red light goes out, and your scanner returns to its normal operation as the converter is bypassed. You can leave it connected at such times since it doesn't cause any degradation of VHF/UHF scanning activity.

The unit is small and good looking. Inasmuch as most current scanners utilize BNC-type connectors, the *Super Converter II* is certainly a viable way of getting in on all of that excellent 800 MHz scanning action without having to ditch your existing equipment. The MSRP of the *Super Converter II* is $89.95. It is being offered by a number of better communications dealers.

The manufacturer of the *Super Scanner II* is GRE America, Inc., 425 Harbor Blvd., Belmont, CA 94002.

Reviewed by Thurston Wainright, KFL4PN

PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS

Cross-Needle SWR/Wattmeter

MFJ Enterprises, Inc. announces the release of a new peak reading function in the MFJ-815B lighted Cross-Needle SWR/Wattmeter for only $69.95.

The MFJ-815B lets you monitor SWR, forward and reflected power—all at a single glance. You can select from two power ranges for forward and reflected power (2000 watts forward and 500 watts reflected or 200 watts forward and 50 watts reflected). It shows you SWR from 1:1 to 8:1.

The MFJ-815B covers 1.8 to 30 MHz with 10% accuracy. It comes with MFJ's full year No Matter What (trademark) guarantee. That means MFJ will repair or replace your MFJ-815B (at our option) no matter what happens to it for a full year. Meter light requires 12 VDC or 110 VAC with MFJ-1312, $12.95.

For more information contact any MFJ dealer or MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MA 39762, or call (601) 323-5869, or circle 102 on our Readers' Service.

Wide-Band Scanning Receiver

The *RZ-1* wide-band, scanning receiver covers 500 kHz—905 MHz, in AM and narrow or wideband FM. The automatic mode selection function makes listening easy. This new receiver features one hundred memory channels with message and band marker, direct keyboard or VFO frequency entry, and versatile scanning functions, such as memory channels and band scan, with four types of scan stop. The RZ-1 is a 12 volt DC operated, compact unit; with built-in speaker, front mounted phone jacks, switchable AGC squelch for narrow FM, illuminated keys, and a "beeper" to confirm keyboard operation. See your authorized Kenwood Amateur Radio Dealer for more details.

Suggested retail price is $599.95, for further info, contact Kenwood U.S.A., 2201 E. Dominguez St., Long Beach, CA 90810, or circle 104 on our Readers' Service.

New "Fast Code" Test Prep tapes For ARRL Exams

Gordon West announces the availability of new Morse Code test preparation tapes *specifically designed for the new ARRL "Fast Code" CW examinations*. Code characters are generated at 18 wpm and spaced for the 5 wpm ARRL Novice tests, and the 13 wpm ARRL General tests.

"Our new series of popular test preparation tapes are a perfect match to the new ARRL 'Fast Code' CW exams at 18 wpm character speed," comments Gordon West, WB6NOA, well-known instructor and writer.

"Two separate tapes are available—CW test preparation exams for Novice class. *I narrate these tapes with helpful hints* to the applicant on how to prepare for *the new ARRL 'Fast Code' CW tests*, or the more traditional (and more common) Farnsworth-style code tests with a character rate of 14½ wpm for the Novice and General class character speeds," adds West.

West still voices concerns that there are 2 different code examination styles that may cause students to shop around for a more traditional-speed code test. However, the ARRL claims 18 wpm character speed is a better way to learn the code.

The new test preparation tapes now feature examinations at both code rates.

Radio School tapes are now distributed by The Radio Amateur Callbook, Inc., P.O. Box 247, Lake Bluff, Illinois 60044; (312) 234-6600, and are available through most major amateur radio dealers. You can also circle 101 on our Readers' Service for more information.

SCANNING VHF-UHF

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

BY CHUCK GYSI, N2DUP

It's the time of year when most scanner owners in the United States start turning their attention toward road department frequencies—for snow-plowing operations, nontheless. If you are in one of the country's cold regions—make sure your local and state highway crews' frequencies are programmed in and ready to go. More often than not, listening to the plows gives the best indication of the road conditions in your locale. Meanwhile, we'll shakes some snowflakes off the mailbag and proceed with this months edition of Scanning UHF/VHF.

Mike W. Flenz, WB9ANR, of Neenah, WI, writes in with the some frequencies he heard at the Experimental Aircraft Association's annual Fly-in at Oshkosh, WI. More than 15,000 aircraft (yes, that number is correct!) and 750,000 people flock to the air show held each summer. Here's the frequencies of interest that Mike found: 461.150, Zaug's Food Service and Camp stores; 464.375, EAA miscellaneous, Channel 4; 464.500, EAA flight line operations, Channel 2; 464.550, EAA maintenance and official net, Channel 1; 464.950, EAA press net, Channel 3; 118.500 and 126.600, Oshkosh FAA tower; 121.900, aircraft ground control and parking; 154.800, Oshkosh police; 158.730, Winnebago County Sheriffs. Mike said that many business and military frequencies also were in use by attendees and suppliers. An air show can provide exciting monitoring. Make sure you take yours along to the next air show. Or at least be sure to tune at home when one is nearby.

Earl Morris of St. Louis, MO, asks about the future Uniden Bearcat 1000XLT that we mentioned in a recent column. Sorry, Earl, but as of this writing, this radio is still on the drawing board at Uniden. This planned scanner is rumored to be capable of tracking trunked 800 MHz radio communications. It seems like a big undertaking, as we mentioned, so it's quite possible that this radio may be in the planning for quite a while yet. POP'COMM will let its readers know as soon as such a radio is released.

From way down under comes a correspondence from Graham Rogers, VK6RO, of Ferndale, Western Australia. Graham reports hearing signals from all over the world on his ICOM R7000 receiver. Some of his loggings include: radio common carrier and medical paging system on the 35 and 43 MHz bands from the United States; a trucking company on 39.12, possibly in California (doubtful, however, as this frequency is used by police in the States); TV video carriers from New Zealand on: 45.24, 45.25, and 45.26; a repeater using AM in Indonesia on 37.50; TV video carriers from Malaya, Sarawak, Norway and Moscow on 48.24, 48.25, and 48.26; TV video carriers from Chaina and the Soviet Union on 49.745 and 49.75; two-way communications from Lebanon on 34.50; South African police networks, possibly in Pretoria, in Afrikaans and English on: 37.00, 37.50, 38.00, 38.10, 38.20 and 38.40; and Soviet military traffic in upper sideband on 46.166. Who says VHF is only a local thing. It's possible to hear worldwide signals on your radios if the conditions are good. Don't skip over any of those signals while tuning the VHF low band.

This is Registered Monitoring Station KNY2WQ, which belong to Bill Payette of Rochester, NY

John W. Buchignani of Pittsburgh, PA, asks how he can obtain one of the "Registered Monitoring Station" identifications he has seen on QSL cards. The distinctive monitoring ID's are issued by CRB Research, P.O. Box 56, Commack, N.Y. 11725. Write to them for specific information.

Jerry Wellman of Salt Lake City, Utah, says that he recently was in the Boy Scouts office in his city and he noticed that they have a transmitter. He was wondering whether we knew of the frequency, or if there was a nationwide frequency used by the Boy Scouts of America. We checked the FCC files and could not come up with a frequency used by the BSA in Utah. However, it seems that many councils across the country are licensed for systems not only on the business band, but also the special emergency radio service, the marine radio service and the General Mobile Radio Service. A variety of frequencies are licensed on VHF low band, VHF high band as well as UHF. One frequency that seems to be the most popular among BSA councils is 154.515. The only nationwide BSA license seems to be for the marine service on 156.45 and 156.8. Let us know if you the Boy Scouts on any frequencies.

Sean McDonough of New York City purchased an Archer 10db coaxial in-line amplifier from Radio Shack and installed it in-line for his Realistic PRO-2021 scanner. His antennas include the Grove ANT-6 and a Radio Shack mobile. However, Sean claims that when he attaches the amplifier to his scanner, the reception actually becomes worse. I assume that when you say reception becomes worse, that you actually mean you are unable to hear stations you desire to hear and that you already are hearing those stations without the amplifier.

First of all, Sean, you live in "RF City," perhaps the most highly concentrated source of radio signals in the world. New York City is a hotbed of radio activity. No matter where you tune, you will hear radio communications of some sort, in many different languages, to boot. All of these signals are bombarding your receiver. They all

want to be heard. However, scanners are not two-way radios. They are not meant to be selective to hearing just a few select signals. They must be capable of hearing any signal that comes in its path. Because of this, your scanner's front end is letting high-energy signals pass through and you're hearing the resulting "mess." Perhaps you often hear paging signals overlapping with weather broadcasts or local police precinct's channel. When two or more signals mix together in the receiver, the scanner puts out a false signal. I am making the assumption, Sean, that with the amplifier you are helping these spurious signals reach the front end of your scanner.

These "messy" signals are coming through, but you would rather be capable of tuning in some signals farther away. This is the common plight of the urban monitor. Some scanners have attenuation switches on the back of them, and for good reason. In a heavy RF environment, the attenuation can suppress the unwanted signals and allow through only the stronger signals that you may want to hear. It also affects your reception range, but it's the old give-and-take routine. My suggestion to you would be to use just the whip on the back of the scanner and leave off the amplifier. Otherwise, you'll just get frustrated hearing unwanted "junk."

Rodney Sargent, KTX5EM, of Lubbock, TX, reports that the Flight for Life medical helicopter at St. Mary's Plains Hospital in Lubbock operates on 463.725. In addition, St. Mary's Hospital uses 155.22 and Methodist Hospital uses 155.175.

From Beverly, Massachusetts, comes a nice letter from Officer Karl Reed of the Endicott College Campus Police Department. He says that his 11-man force protects about 900 women on its campus and he uses 151.715. And here's one one of the first such offers we've been able to make here through Scanning VHF/UHF: Officer Reed says that he will send out a QSL to anyone who is able to receive the campus police department on their scanner! VHF and UHF stations are notorious for not answering their QSL requests, and here's a station that invites reception reports. So, Massachusetts listeners, here's a chance to snag a rare VHF QSL.

That's about it for this month. In the meantime, we invite your letters on scanning topics. Include any frequency lists, questions, tips or comments on scanning. We are also looking for photos of listeners' shacks and professional dispatch locations. Write to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 North Broadway, Hicksville, NY 11801.

BROADCAST DX'ING

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

BY ROGER STERCKX, KVT1JH

Did you know that Americans spend an average of 3 hours and 21 minutes per day listening to the radio? Last year, the commercial AM/FM broadcasting industry rung up $7.9-billion, which is an 8.2% increase over the previous year. This year's totals will probably add up to $8.5-billion.

There are almost 9,200 commercial AM/FM broadcasters, plus another (approximately) 1,400 in the non-commercial category. Every American household has an average of 5.6 radios, and 95% of the cars on the road also have radios. Some 95% of the Americans over the age of twelve listen to the radio every day. Interesting industry statistics that remind us that TV hasn't quite replaced the interest people have in listening to the radio.

Speaking of TV, the last we heard about the proposed *TV Marti* was that the Cubans were making numerous veiled threats related to their unhappiness should this US Government operated anti-Castro station go into operation. The presumption is that Castro would retaliate with a barrage of high powered broadcast signals that would disrupt AM'casting in the U.S. In the meantime, Castro shifted the Havana TV station from Channel 6 to Channel 13, which is where *TV Marti* was hoping to operate from a transmitter mounted to a tethered balloon some 10,000 ft. above the Florida Keys. That may have zapped immediate plans for *TV Marti*.

FCC regs have been changed to allow some Class A FM stations to substantially increase their power. Class A FM'ers run the lowest power of all FM'casters, so the increase in power levels from 3 kW to 6 kW is a boon to those stations able to take advantage of the change, which is 500 of the nation's 2,000 FM stations. The FCC is selecting those stations that it will allow to run up their power under the changed regs.

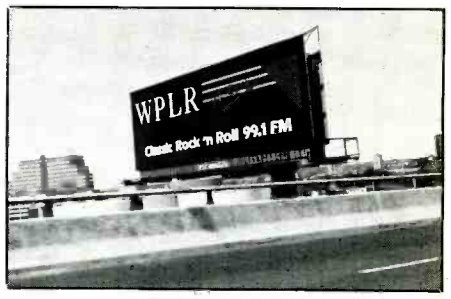
The FCC said that a 3 kW station located in uniform terrain having an antenna mounted at a height of 328 ft. should have satisfactory coverage for fifteen miles. Increasing the power of the same station to 6 kW would add another two miles for a coverage increase of 40%. The FCC selections, which should be determined by the time you read this, are based upon the agency's determination that stations it permits to up their power won't cause any problems to co-channels or adjacent channel stations. In effect, this means that very few stations in the crowded northeastern states will meet the FCC's criteria for non-interference with increased power operation.

W. Wallesen, of LaGrange Park, IL sent this column a newspaper clipping that relates to problems that occurred when an FM station along the Illinois/Indiana border increased its power and also elevated its antenna. That was religious station WYCA-FM on 92.3 MHz, located in Burnham, IN. Back in November of 1986, the station requested and got FCC approval to up its transmitter from 30 kW to 50 kW, and also raise the height of its antenna from 400 ft. to 500 ft.

That created a so-called "blanketing area" of 1.7 miles around the transmitter site. What that meant is that the station's signals could be expected to invade nearby electronic equipment such as VCR's, stereos, telephones and answering machines, audio tape machines, cordless telephones, and all sorts of similar items. Moreover, for a period of a year after the station's increased signal strength, the station would have to accept the responsibility for correcting certain of those cases of interference.

According to Eric Zorn's account of this in the *Chicago Tribune*, one of the first unwanted places the WYCA signal popped up was on a tape recording that was supposed to contain wiretap evidence at a drug trial. The local telephone company noted that they had more than 130 complaints from subscribers about the signals leaking into area telephones. They estimated that properly shielding the phones in a home with filters and other necessities for keeping the

The mobile studio of WVCG (1080 kHz), Coral Gables, FL. The vehicle sports a 50-ft. telescoping tower made by Aluma Tower Company, Inc., Vero Beach, FL. (Courtesy Aluma Tower Company.)



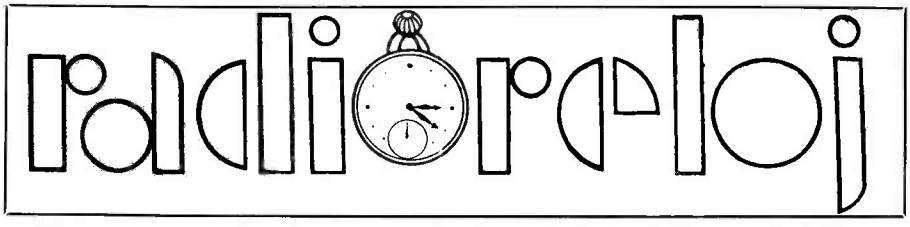
When a bumpersticker isn't available, we'll take just about any reasonable substitute. We even liked the photo of the billboard for New York City WPLR (99.1 MHz) posted along Interstate 95 in CT. (Courtesy Dave Rothstein.)

Permit Granted for New AM Station

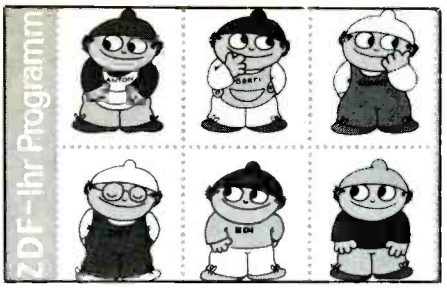
PR	Patillas	610 kHz

Permits Granted for New FM Stations

AL	Dothan	102.5 MHz
CA	Gonzales	104.3 MHz
CA	Greenfield	107.9 MHz
CA	Mariposa	103.9 MHz
CA	Visalia	96.1 MHz
CA	Winton	98.7 MHz
FL	Ft. Walton Beach	96.5 MHz
FL	Holmes Beach	98.7 MHz
FL	Lafayette	99.9 MHz
FL	Solana	105.3 MHz
IA	Cresco	102.3 MHz
IL	Lynnville	107.1 MHz
ME	Dexter	102.1 MHz
MN	Mora	95.3 MHz
MO	Washington	104.5 MHz
MS	Cleveland	107.7 MHz
NC	Louisburg	102.5 MHz
NH	Belmont	93.3 MHz
NM	Grants	97.9 MHz
NM	Hobbs	102.9 MHz
NY	Saranac Lake	90.5 MHz
NY	Watertown	91.7 MHz
TX	Georgetown	107.7 MHz
TX	Killeen	92.3 MHz
TX	San Saba	96.7 MHz
TX	Tyler	104.1 MHz
VA	Alberta	107.7 MHz
WI	Rudolph	99.9 MHz



This decal, in red and white, is sent out by Cuba's Radio Reloj. (Courtesy R.C. Watts.)



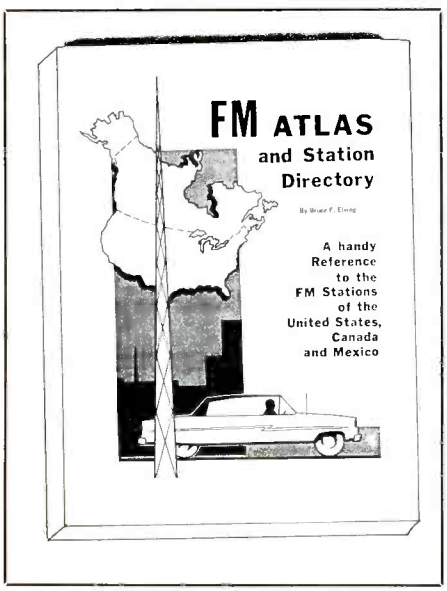
A postcard from ZDF, the West German second TV channel, headquartered in Mainz. ZDF transmitters are located throughout the FRG. (Courtesy David Shogren, U.S. Army in the FRG.)

Applications for AM Facility Changes

KIAM	Nenana, AK	1270 kHz Reduce to 2.2 kW nites
WHER	Houghton Lk., MI	1290 kHz Reduce to 4.9 kW days/4.6 kW nites
WILC	Laurel, MD	900 kHz Increase to 2.45 kW
WMOG	Brunswick, GA	1490 kHz Reduce to 600 watts
WOOO	Royal Palm Bch., FL	1190 kHz Reduce to 890 watts days/Incr to 1 kW nites
WTRI	Brunswick, MD	1520 kHz Change to 1.4 kW
WTTM	Trenton, NJ	920 kHz Incr. to 1.4 kW days

Applications for FM Facility Changes

KKQT	Rexburg, ID	98.3 MHz Move to 98.1 MHz
KTFA	Groves, TX	92.1 MHz Move to 92.5 MHz
KYOC	Yoakum, TX	102.3 MHz Move to 92.5 MHz
WDAL	Linden, AL	107.1 MHz Move to 98.5 MHz
WJAM-FM	Marion, AL	103.9 MHz Move to 97.5 MHz
WKUB	Blackshear, GA	104.9 MHz Move to 105.1 MHz
WNCS	Montpelier, VT	96.7 MHz Move to 104.7 MHz
WRAJ	Anna, IL	92.7 MHz Move to 96.5 MHz
WSCN	Cloquet, NM	100.9 MHz Move to 100.5 MHz



The new 12th Edition of the FM Atlas is bigger than ever.

Granted Permission to Change AM Facilities

KBMR	Bismarck, ND	1130 kHz Move to 710 kHz
KSGB	Ft. Worth, TX	1540 kHz Move to University Park, TX
WGCR	Brevard, NC	720 kHz Move to Pisgah Forest, NC (10 kW)
WRIX	Homeland Park, SC	1020 kHz Incr. to 10 kW day/3 kW nite

Granted Permission to Change FM Facilities

KELE	Aurora, MO	100.1 MHz Move to 100.5 MHz
KISY	Tioga, LA	98.3 MHz Move to 103.5 MHz
KKDY	W. Plains, MO	102.3 MHz Move to 102.5 MHz
KZOC	Osage City, KS	92.7 MHz Move to 92.9 MHz
WJRH	Easton, PA	90.5 MHz Move to 104.9 MHz
WOLD	Marion, VA	102.3 MHz Move to 102.5 MHz
WRVS	Elizabeth City, NC	90.7 MHz Move to 89.9 MHz

signals out would run about $300 *per phone*.

One woman said her VCR played back movies accompanied by gospel music. A similar complaint was registered by a lawyer's office with a dictating machine that suddenly "got religion." A youngster said that the station came through on his *Atari* game.

WYCA responded to the complaints. The local Chicago office of the FCC noted that WYCA's signals weren't getting into the unwanted places because of anything wrong that the station was doing. It was more a case of inadequate filtering being built into the home equipment at the time of its manufacture.

A letter from Malachi A. Resin, Richmond, VA notes that when local station WXGI (950 kHz) changed its callsign to WJDK, there were also some format changes. The station will be playing 1964-1980 era oldies, but fewer of them as it moves into more of a talk-radio format than it had in the past.

Being Heard

John C. Thomas, AB8Z, of Parma, OH reports that he was listening to Detroit's WJR (750 kHz, 50 kW) when he noted a "rogue" Cuban station on the channel that was cutting into WJR's signal with about 15% penetration. He identified by its announcements as *Radio Reloj*, which isn't listed on 750 kHz.

Cuba's *Radio Reloj* was also the subject of a letter sent in by R.C. Watts, Louisville, KY. He logged the station on 590 and 790 kHz with clock ticks around 0200 to 0300 UTC, and mentions that they send a QSL card and also a decal. He even sent us a decal! Cuba's *Radio Taino* noted in English on 1160 kHz from time to time around 0030 UTC. Frequency 1160 kHz is one of Castro's favorites for beaming programs to North America. Finally, R.C. observes what he thinks is Cuba's *Radio Rebelde* on 710 kHz blocking WAQI in the pre-dawn hours of morning and also around midnight.

Martin Swartz, Registered Monitor KMA1GM, of Mansfield, MA logged some good FM and TV DX recently. He listed:

88.7 MHz WSIE Edwardsville, IL 1547 UTC

93.7 MHz KSD St. Louis, MO 1554 UTC

95.1 MHz WDZQ Decatur, IL 1600 UTC

99.7 MHz KKCK Marshall, MN 1610 UTC

96.5 MHz KJJK-FM Fergus Falls, MN 1700 UTC

He also snagged the TV audio of WLBT-TV, Jackson, MS on Channel 3 at 2200 UTC.

From San Marino, CA we heard from Steve Anderson who commented on how AM DX'ing in his area has changed in recent years. He no longer can pick up midwestern and northern stations like KBOI, WHAS, KRVN, WLS, WWL and KEX. These have been replaced by western stations such as KWNK, KUEG, KKMC, KIEV and KDXU. It's made AM DX'ing rather frustrating and he's been spending more time now on FM and SW. He especially enjoys observing the myriad of different program formats that are to be found on FM.

New FM Atlas Edition, 12th Edition

FM Atlas keeps rolling along, and getting larger with each new revised edition. The 10th Edition ran 164 pages, the 11th Edition went up to 176 pages, and the new 12th Edition fills 192 pages! This is because there are plenty of changes evident from cover to cover.

Bruce Elving's *FM Atlas*, long ago earned its rightful niche as the prime reference guide to FM'casters in North America, providing detailed listings according to both station location and frequency. There are more than 6,500 stations listed, including commercial, commercial, educational, religious, plus a special 10-page listing of booster and translator stations. Information provided in the general listings include music formats, stereo and tech data, "non-ID's," as well as stations known to have SCA subcarriers at 57, 67, or 92 kHz. Stations listed are in the U.S., Canada, and Mexico.

There are 92 pages of maps and new map insert folders to aid you in pinpointing FM broadcasters and their general service areas. This new 12th Edition provides informative articles about national translator networks, how FM is growing in comparison to AM, how station owners are buying up FM'casters in the metro suburbs and then hyping the stations as being located in the nearby larger cities, FMX controversies, and more.

There really doesn't appear to be much about what's taking place in North America between 88 and 108 MHz that Bruce Elving doesn't thoroughly cover in this edition of the *FM Atlas*. Whether you're an industry person, an FM DX fan, or mostly a person who enjoys listening to FM for the programming to be found there, this is *the* comprehensive directory to the medium.

Fred Lesnick sent us this attractive CKPR bumpersticker.

The new revised 12th Edition of *The FM Atlas* can be ordered from CRB Research Books, P.O. Box 56, Commack, NY 11725. Price is still only $9.95 per copy plus $2 postage/handling to North American addresses. New York State residents, please add 75 cents sales tax.

Next Time

This column wants your AM, FM, and TV broadcast comments, station photos, bumperstickers, copies of recent QSL's, news clippings, and comments. The response thusfar has been excellent and within the past several issues this column has started receiving a higher average number of pieces of mail than at any point in the past. Best wishes to all for a happy holiday season. PC

Applications for New AM Stations

FL	Miami	1020 kHz
KY	Paris	1440 kHz
WA	Camas	700 kHz

Applications for New FM Stations

AL	Eufalfa	97.9 MHz
AL	Uniontown	107.5 MHz
CA	Ojai	89.5 MHz
CO	Basalt	106.1 MHz
FL	Homosassa Spgs.	91.1 MHz
IA	Belle Plaine	95.7 MHz
IN	Chandler	93.5 MHz
MI	Pentwater	94.1 MHz
MN	Duluth	97.3 MHz
MS	Flora	97.5 MHz
OH	Reading	89.3 MHz
VA	Deltaville	92.3 MHz

THE HAM COLUMN

BY KIRK KLEINSCHMIDT, NT0Z
AMERICAN RADIO RELAY LEAGUE HQ

GETTING STARTED AS A RADIO AMATEUR

If there's one area in amateur radio that almost every ham explores at one time or another, it's got to be the great wallpaper chase. Whether you're stalking an elusive membership in the DX Century Club (DXCC), desperately searching for the Wyoming QSO to finish your Worked All States (WAS) award, or you've just finished an exciting week of competition in the Novice Roundup—you understand the motivation behind operating achievement awards and certificates.

Beyond providing something to do with your growing collection of QSL's, chasing awards can move you to improve your station and your operation skills. A lot of amateur activity is sparked by the desire for one award or another!

You can spend as much or as little time as you want in the chase. You're essentially competing with yourself—you can set your own pace. There are *hundreds* of awards from which to choose, so set your sights and go for it. This month's *Ham Column* will briefly examine a few popular amateur radio awards and, in general, explain how to apply for them.

Worked All States (WAS)

This popular award, sponsored by the ARRL, is given to those stations confirming contact with other stations in each of the 50 states. Endorsements are given for various modes (such as all phone, all RTTY, etc.) bands and power levels, the basic award is fun and challenging for Novices, and can be achieved on the Novice bands. QSL cards must be submitted. Send a SASE to ARRL for complete rules and an application form. league membership is required for US and Canadian applicants.

Worked All Continents (WAC)

WAC is often a beginning DX'ers first DX award. It's given by the International Amateur Radio Union for confirming contact with the six continental areas of the world: Africa, North America, South America, Asia, Europe and Oceania the South-Pacific region, including Australia, New Zealand and Hawaii, that is). Endorsements are available for different bands and modes. This is another award that's workable in the Novice bands. Send a SASE to ARRL for an official application.

The DX Century Club (DXCC)

This sought-after award is the DX'ers benchmark. The DXCC award is given to hams who confirm contact with stations in 100 DXCC countries. Although countries such as France or Germany are DXCC countries, other areas such as Hawaii and Alaska are also considered DXCC countries. There are currently about 320 countries on the list. If you're chasing this certificate send $1 to ARRL for the current countries list and a band-by-band DXCC record book. Band and mode endorsements are available. Before 1-meter SSB could be utilized by Novices, DXCC was pretty difficult, but not impossible, to work in the Novice bands. With all the DX between 28.3 and 28.5 MHz, however, it's easier today—at least until the new solar cycle advances, taking 10-meter propagation with it. Again, league membership is required for US and Canadian applicants.

Masaki Okano, JH4UYB, of Fukuyama, Japan, is shown here with his tidy, but effective station—and a nice bunch of awards and trophies! Just above the window are WAC, WAZ and DXCC awards. Just above Masaki's rigs are a couple of All Asian DX Contest awards and several trophies.

Other Awards

As I mentioned previously, there are hundreds of awards available from amateur magazines, national organizations such as ARRL and the Radio Society of Great Britain (RSGB), other International Amateur Radio Union societies and local radio clubs. You can earn awards for working all 10 call areas in Japan, for working 100 oblasts (similar to US states) in the USSR, or for working 100 or more islands around the world.

Let's also note that *CQ*, the ham radio magazine that is published by the same company the brings you *Popular Communications*, has a formidable array of prestigious and well-known awards. These include *Worked All Zones* (WAZ), the *DX Novice Century Club*, *Worked Novice Zones* (WAZ), *United States of America Countries Award* (USA-CA), the *CQ Prefix Award* (WPX), are some of those available, Different levels of achievement, as well as mode or band specialties are acknowledged for some of these. A complete listing of all the CQ DX awards, as well as the rules for qualifying, is available upon request by sending a long (#10) self-addressed, stamped, return envelope to: DX Awards Committee, *CQ Magazine*, 76 North Broadway, Hicksville, NY 11801.

An excellent compilation of awards can be found in the *ARRL Operating Manual*, available from ARRL. The most complete listing, however, is published by Ted Melinosky, K1BV. The *K1BV Awards Directory* lists detailed information on some 850 awards from around the world. The *Directory* is available from its author at 525 Foster Street, South Windsor, CT 06074.

Applying for Awards

Regardless of the award you're applying for, there are a few considerations to keep in mind. Know the rules and follow them to the letter, make sure your application is accurate and neatly written. Be sure to keep a photocopy for yourself. If the award sponsor furnishes official application forms, use them. This can ward off many potential headaches.

Because many awards require you to submit QSL cards, be sure to take steps to ensure their safe return—unless you wouldn't miss them if they didn't come back! The only safe way to send QSL cards is by first-class registered mail. Include sufficient postage for their return via registered mail. This costs more than regular first-class postage, but it's well worth it.

Don't send QSL cards that have markovers or erasures on them. They're sure to be rejected. Be patient. mail sent overseas often takes its own sweet time. It takes a considerable amount of time to process the awards, as well.

Some awards do not require the submission of QSL cards. To get one of these certificates, you'll often be asked to submit a listing of log entries related to the award you're applying for. You'll also be asked to provide some kind of assurance that the entries are valid. Sometimes, two other amateurs can sign you application and attest to the fact that you log entries are legitimate, or that you have the QSL's for them in your possession. This is called the general certificate rule, or GCR.

If you're interested in pursuing ARRL awards, write me at ARRL, Department PCN, 225 Main Street, Newington, CT 06111. I'll send you rules and applications (a few maps, too) for WAC, WAS and DXCC. While you're at it, why not send along a photo of you and your shack? I have been receiving many interesting photos and letters I'll be using in upcoming issues.

Good luck with your "great wallpaper chase." I'm currently working toward the Five-Band DXCC and the W-100-O (worked 100 oblasts) awards. See you on the air.

RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

If you were doing some RTTY monitoring and saw "OLG OLG OLG RYRYRY . . . ," what station would you have intercepted? PTT, Prague, Czechoslavakia? But what if a few minutes later you saw the same station sending "GEN GEN GEN RYRYRY . . . ," and after a few more minutes, "KRZ KRZ KRZ RYRYRY . . . ?" To further complicate matters, it soon returns to "GEN GEN GEN RYRYRY . . . " What then?

That's what I spotted one day on 16015 kHz, between 1347 and 1410 UTC. These were calls made to various stations being made by MFA, Sofia, Bulgaria. Had one immediately tuned to another frequency after seeing the OLG identifier, and recorded it as being PTT, Prague, he would have been incorrect. Only by staying on this frequency for more than 27 minutes did I know this was MFA, Sofia, transmitting here, when it began sending an encrypted message with the header, "Za Viena." The decoder setting was 425/75N.

On 10350, "Sierra 17" was spotted trying to send a message to to "Sierra 07" at 2221, VFT 85/45R. Sierra 07 states on USB on 10347.5 that he hadn't received any copy. Sierra 17 replies that his unit's "not printing on the cipher mode . . . Let's try it in sync." Saw them calling each other in the clear using full callsigns of D2S17 and D2S07. Sierra 07 says he still hadn't received anything. Sierra 17 then read to him on USB in the clear encrypted message! It was immediately evident why the message was to have been encrypted, but, because of U.S. secrecy laws, I won't reveal its contents. Both returned to cipher mode at 2228 with no joy. Some RY's were sent in the clear at 2232 but nothing more was seen after that.

```
STATE WARNING POINT (STATE E.O.C.) TO ALL FLORIDA REGIONAL STTIONS
BT
UNCLAS:
5-589, PLEASE RESPOND IN THE ORDER CALLD.
THE VBNMDF FOX KUXHED OVER THE LAZY DOGS BACK.  123456789().
RYRYRYRYRYRYRYJYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYY
RYRYRYRYRYRYRYRYRYRYRYRYRYRSRYRYRHRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
HOW COPZ TEST?
BT

(RODNEY)

NNNNNN

 TT EE  T
KNFZ234  KNFZ234 DE  WNGX404  WNGX404
1105  MAY  30  1989
FROM:  VOLUSIA CO. E.O.C. (DAYTONA BEACH)
  TMF  STATE E.O.C.  ((5-53 WARNING POINP
VBT
GOOD MORNING. SYSTEMS CHECK. THIS IS ONLY A TEST

THE QUICK BROWN FOY JUMPS OVER THE LAZY DOG'S BACK 1234567890
RYRYYRYRYRYRYRYRYRYRYRYRYRHRYRYRYRYRYRYRYRYRTRYRYRYRYRYRYRY
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRSRYRYRYRYRYRYRYRYRYRYRYRYRYRY
THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG'S BACK 1234567890
HOW COPY THIS STATION??? WE COPY YOUR STATION 5 X 9 HERE. THANKS
FOR THA TEST RODNEY. ANDN HAVE A VERY NICE DAY.-NEIL-
BT
KNFZ234  NFYWWER  DE  WNGX404MN
,,,,,,


RYRYRYRYRYRYRYRYRYRYRY
THIS IS KCP 63, NOEF 3, LONGMONT, COLORADA.  WE ARE TESTING WITH KMA 47.
TESTING OF THE PK 232 DATA TRANSFER CAPABILITIES OF THE NARACS HF/SSB
RADIO SYSTEM.  END OF TEST.....


HELLO OUT THERE.  I AM A PRISONER BEING HELD CAPTIVE IN THE PAKRATT
PK-232.  I WAS PUT HERE BY A WICKED COMPUTER PROGRAMMER WHO THOUGHT IT
WOULD BE GREAT FUN TO WATCH ME GET BITTEN BY ALL THE BYTES FLOATING
AROUND IN HERE.  SHE SHOULD BE HERE INSTEAD.  THESE BYTES ARE VICIOUS!!!
WELL, I HAVE FINALLY GOTTEN MY REVENGE ON HER.  WHEN SHE SENDS DATA TO
THE PK-232, I KILL OFF A FEW OF THE BYTES AND MAKE THE MESSAGE LOOK
GARBLED.  THIS HAS BEEN THE ONLY FUN I HAVE HAD WHILE BEING TRAPPED.  OH
WELL, IT COULD BE WORSE.  I COULD BE TRAPPED INSIDE A COMPUTER AND HAVE
TO DEAL WITH THE LARGER COMPANIONS OF THE BYTES...THE WORDS!!!  WELL, IF
YOU CANNOT HELP ME, PLEASE DON'T SEND ANY MORE OF THOSE HORRIBLE BYTES
TOWARD ME.  BUT THE NEXT TIME YOU SEE A GARBLED MESSAGE, REMEMBER ME AND
WHAT I DO TO THE BYTES.  I'LL BE SEEING YOU, AND I AM SURE YOU WILL BE
SEEING THE RESULTS OF MY HANDIWORK.  GOODBYE!  END OF TEST.
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Test transmissions monitored by J.M. of Kentucky: A) KNFZ234, Florida State E.O.C., West Palm Beach, to WNGX404, Volusia County E.O.C., Dayton Beach, FL, and return transmission, both logged on 7934 kHz at 1502, 170/45R; and B) FAA stations KCP63, Longmont, CO, to KMA47, Miami, FL, and vice versa, on 13633 kHz, 1435-1505, 170/300R ASCII mode and 170/150R baudot (KCP63), and 170/150R ASCII and 170/75R (KMA47).

Abbreviations Used In The RTTY Column

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

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

4002: YRR2, Bucharest Meteo, Romania w/coded wx at 0123, 425/50R (Ed.).

4004.5: LRO2, TELAM Buenos Aires, Argentina w/nx in SS at 0132 & 0938, 850/50R (Ed.).

4242.5: Y5M, Rugen R., GDR at 0153 w/tfc list, 170/50N (Tom Kneitel, NY).

5140: RWW73, Moscow Meteo, USSR w/coded wx at 0035, 1000/50R (Kneitel, NY).

6378: EBA, Madrid Navrad, Spain w/ "unclas" msgs in SS & tfc "to all ships copying this bcast." Was 850/75R at 0343 (Ed.).

6416.5: CCS, Santiago Navrad, Chile w/5L msgs to OWPC & BGQW at 0026, 850/100R. Then w/plaintext wx in SS at 0045, EE at 0055. Returned to 5L tfc at 0100. Also w/5L msgs to RCYG & NBEQ, 850/50R at 0518 (Ed.).

7429: TELAM Buenos Aires, Argentina w/nx in SS at 0816, 850/50R (Ed.).

8140: CLN219, PL Havana, Cuba w/nx in SS at 0834, 425/50R (Ed.).

8299: UKXG, Soviet cargo ship **Vereya** unloading at Havana in contact w/URD at 0049, 170/50N (Michael Ricks, PA); UTUO, **TH Kapitan Wasilewskij** w/RYRY to UPB at 0837, 170/50N then telegrams at 0840 for relay to Vladivostok (Ed.).

9044: GHH, Jamestown Meteo, St. Helena w/coded wx at 0235, 425/50N (Harold Manthey, NY).

10215: HZN48, Jeddah Meteo, Saudi Arabia w/coded wx at 0025, 850/100N (Ed.).

10220: CML28, PTT Havana, Cuba w/telegrams to USA at 1756, 425/50R (Dr. Gary Zaid, WI).

10232.8: VOA Greenville, NC w/nx in AA at 0015, FDM 85/75N (Ed.)

10235.7: VOA Greenville, NC w/nx in EE at 0015, FDM 85/75N (Ed.).

10372: Un-ID w/"This is Early Pigeon testing" + RYRY & foxes, 425/50N at 0300 (A. Noni-Mouse).

10518: 5AQ56, JANA Tripoli, Libya w/nx in AA at 1515, 425/50N ("Bunky," IL).

10523.5: HMF45, KCNA Pyongyang, N. Korea w/nx in FF at 1330, 425/50N ("Bunky," IL).

10536: CFH, Canadian Forces Meteo Center, Halifax, NS w/plaintext wx in EE at 1747, 850/75R (Zaid, WI).

10551: Un-ID w/coded wx at 0130, 425/50R ("Bunly," IL). This one's GFL23, Bracknell, Meteo, England-- Ed.

10800: RFLI, French Navrad, Fort de France, Martinique w/controle de voie at 0450, ARQ-E3 850/48 (Zaid, WI).

10972: VOA Tangier, Morocco w/bc sked for VOA SWBC, was 425/75N at 0505 (Ed.).

11060: TZH, ASECNA Bamako, Mali w/RYRY & QJH1, 50N at 0820 (Ed.).

11063.5: STK, Khartoum Aero, Sudan w/RYRY at 0148, 425/50N (Ed.).

11084.3-11086.7: VDD, Canadian Forces, Debert, NS w/foxes, counting & test, but w/o ID on 10 FDM chans, 170/75N&R (Ed.).

11096.4-11097.7: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes on 5 channels at 0247, 170/50N&R (Ed.).

11112.5: ETD3, Addis Ababa Aero, Ethiopia w/RYRY at 0152, 850/50R (Ed.).

11420: FJY5, Base Alfred-Faure R., Crozet Isl., w/telexes in FF to FJY2 on Kerguelen Isl., was 425/75N at 1134 (Ed.).

11443: 9JZ, Lusaka Aero, Zambia w/aero wx at 0249, 425/50R (Ed.).

11450: RDD77, Moscow Meteo, USSR w/coded wx at 0255, 1000/50R (Ed.).

11453: IMB3, Rome Meteo, Italy, w/coded wx at 0215, 850/50N (Zaid, WI).

11501.5: Un-ID ARQ sta w/tfc in SS at 1400 ("Bunky," IL). A popular Mexican Navrad freq-- Ed.

11516.7: Possible Mexican Navrad sta in SS, ARQ at 1341 (Ed.).

11520: RCR77, Khaborovsk Meteo, USSR w/coded wx at 1351, 1000/50N (Ed.).

11536: HMF49, KCNA Pyongyang, N. Korea w/nx in EE at 0846, 50R (Ed.).

11450: RDD77, Moscow Meteo, USSR w/coded wx at 0408, 1000/50R (Kneitel, NY).

11541: 7OC, Khormaksar Aero, S. Yemen w/coded wx at 1336, 425/50R (Ed.).

11570: NBA, USN Balboa, Panama w/lengthy test tape of RY's, SG's, YR's, GS's, all good men, & foxes. Was 850/75R at 1242 (Ed.).

11572: P6Z, MFA Paris, France w/5L tfc w/header of ZCZC rad de RFGW. Was 75R at 0855. RFGW is alternate ID for the MFA. Msgs foll by tfc in FF & a nx item from Diplo press svc. Tfc sent to G7M (un-ID), W5E (Tel Aviv), K4X (Tunis), SRZ944 (Warsaw), & W3S (Islamabad). Sig fad started at 0935 & gonzo 10 min later (Ed.).

11600: CLN327, RCC Havana, Cuba w/telegrams in SS at 1530, 425/50R ("Bunky," IL).

11604: YZJ2, TANJUG Belgrade, Yugoslavia w/RYRY at 0413, 500/50R. Announced //YZJ5 on 13440 (Kneitel, NY).

11638: DDK8, Hamburg Meteo, FRG w/coded wx at 0323, 425/50R (Ed); same sta w/RYRY & coded wx at 0418, 425/50R. Announced //4583 & 7646 (Kneitel, NY).

12063.6: RFLI, French Navrad, Fort de France w/op telling someone else (in FF) that he was using a circuit ID of XXX w/the ZCZC's in lieu of the IAG ID. Was ARQ-E/72 at 0212. At 0305 tells other op to pay attention to the number rotation of the msgs & not the circuit ID's. As if these French mil circuit ID's aren't problem enough, now they're making them up as they go along! (Ed.).

12212.8: YZO7, TANJUG, Belgrade, Yugoslavio w/nx in EE at 0418, 425/50R (Zaid, WI).

12223.5: VOA Tangier, Morocco w/nx in AA, 425/75N at 0121 (Ed); Same sta w/lengthy EE interview feature at 0118 (Kneitel, NY).

12245: HZN, Jeddah Meteo, Saudi Arabia w/RYRY & coded wx at 0539, 850/50N (Zaid, WI).

12263: TTL, ASECNA, N'djamena, Chad w/RYRY at 0533, 170/50R (Zaid, WI).

12300: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes, 850/75R (Hetherington, FL). Time not given.

12519.5: EVPV, Soviet stern trawling factory ship **Zelenets** w/RYRY's to UXN at 0135, 170/50N (Kneitel, NY).

12521: UTWE, Soviet ship **Andrei Portyanko** clg URB2 at 0142, 170/50N (Kneitel, NY).

13366.5: 5YD, Nairobi Aero, Kenya w/coded wx at 0440, 425/50R (Ed.).

13399: DFZG, MFA Belgrade, Yugoslavia w/nx in Serbo-Croat, 425/75N at 1500 (Ed.).

13411.5: N. Korean Embassy, Havana, Cuba w/5F grps & tfc in Korean at 1308, 1000/45N (Williams, CO).

13415.2: PCW1, MFA The Hague, Holland w/ARQ phasing sig & CW ID at 0450 (Ed.).

13440: YZJ5, TANJUG Belgrade, Yugoslavia at 0435 w/nx in EE, 500/50R (Kneitel, NY).

13517.7: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes at 0153, FDM 325/50R (Williams, CO).

13563: 3MA22, CNA Taipei, Taiwan w/RYRY at 1415, 850/50R, then nx in EE at 1422 (Hetherington)

13567.7: MKD, RAF Akrotiri, Cyprus w/RYI's & foxes at 0156, FDM 325/50R (Dallos Williams, CO).

13732: RFLI, French Navrad, Fort de France, Martinique w/tfc at 1544, ARQ-E/72 (Ed.).

13752: HZJ, Jeddah Aero, Saudi Arabia w/coded wx & circuit ID of JVA, 425/50R at 0454 (Zaid, WI).

13780: HMF35, KCNA Pyongyang, N. Korea w/nx in EE at 1111, 50N (Ed.).

13930: Un-ID w/5L grps, 0448-0450 in 500/75N (Williams, CO). I've picked up MFA Bonn here, but using ARQ-E/96-- Ed.

13998: FTN99, Diplo Paris, France w/nx selection FF from the AFP, 50N at 1118 (Ed.).

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THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG'S BACK
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Logged by the RTTY column editor on 18988 kHz, 0257-0300, 425/50R.

14308.5: CLP1, MFA Havana w/5F tfc signed Minrex 202, at 0944, 425/50N (Ed.).

14367: BZP54, XINHUA Beijing, PRC w/nx in EE in 1339, 425/75R (Ed.).

14410: Un-ID s/off w/QSL nil 1/1 QRV QRU QRX AR. Was 425/50N at 0953 (Ed.).

14434.5: MKK, RN London, England w/RYI's & foxes at 0956, 170/50R (Ed.).

14462: Y7A57, MFA Berlin, GDR w/nx in GG at 1516, 425/100R (Ed.).

14507.5: D4B, Sal Aero, Cape Verde w/RY's at 1012, 50N (Ed.).

14547.5: JAL44, Kyodo Tokyo, Japan w/nx in EE at 1032, 850/50R (Ed.).

14567.5: HMF32, KCNA Pyongyang, N. Korea w/nx in EE at 1030, 500/50N (Ed.).

14597.2: SPW, Warsaw R., Poland w/PAP nx in Polish, FEC at 1407 (Ed.).

14600: CAK, Santiago Aero, Chile w/RY's at 0025, 850/50N (Manthey, NY).

14604: BAC24, PTT Beijing, PRC w/RYRY at 1400, 425/50N (Williams, CO).

14681: Un-ID w/crypto tfc to V5G along w/Q-codes. Was 425/75N at 1106. Into CW at 1113 (Ed.).

14698.5: YIX70, INA Baghdad, Iraq w/nx in AA at 1156, 50N (Ed.).

14880: JMG4, Tokyo Meteo, Japan w/coded wx & strong sigs at 1830, 850/50R (Hetherington, FL).

15667: FDY, FAF Orleans, France w/le bricks & RYRY at 1238, 425/50 (Ed.).

15670: HGM36, MTI Budapest, Hungary w/RYRY & Aqi ui lo ogencia telegrafico Hungary (MTI) V Budapest, RTT transmision para america central en 15.670 kc/s. Was 425/50N at 1611. Sent nx in SS at 1615 (Ed.).

15752.7: CNM66, MAP Rabat, Morocco w/nx in FF at 1102, 425/50R (Ed.).

15832: YBU, GDR Embassy in Havana w/RYRY + YBU YBU YBU 10/3070 at 1300, 550/75N. Into 5L tfc at 1302, ends w/QRU SK at 1333 (Ed.).

15845: SUA289, MENA Cairo, Egypt w/nx in AA at 2117, 50R (Ed.).

15856.7: MFA Bonn, FRG w/crypto to Havana at 1515, ARQ-E/96 (Ed.).

15911: Y7A61, MFA Berlin, GDR w/RYRY at 1439, 425/100R (Ed.).

15934: PWZ33, Rio de Janeiro Navrad, Brazil w/"rotina" tfc w/many rpts to 5KM. Was 850/75N at 0000 (Ed.).

15935: SUA291, MENA Cairo, Egypt w/nx in FF at 1359, 300/50R (Williams, CO).

15968: CLP1, MFA Havana w/tfc to Angola at 1515, 500/50N (Hetherington, FL).

15987.5: ADN Berlin, GDR w/nx in SS at 1445, 170/50R. Had to use narrow band filter because of strong QRM from USA RTTY on 15988 (Ed.).

15992: 4UZ, UN Geneva, Switzerland w/tfc to UNIFIL HQ in Nicosia, Cyprus, 425/75R at 1313 (Ricks, PA).

15994: 4UZ (as above) w/QRA & RYRY at 1906, 425/75R (Ricks, PA).

16012: Un-ID w/tfc that ended "OM tks pse ZAL 18242," 500/50N at 2123. Then at 2131 w/"PSE XORT 4 ZAL 18246." Tuning to 18246 at 2133 saw RY's & few wds in SS. Back on 16012m saw PSE 75. Then nothing on either freq (Ed.).

16041//16045: RPTIH, Portuguese Navrad, Panta Delgada, Azores w/RYRY & foxes to RPFN at 2126, 850/50N & R (Williams, CO).

16117: 6YK317, PANA Dakar, Senegal w/nx in FF at 1901, 425/50R (Zaid, WI).

16128: CLP1, MFA Havana w/crypto at 1438, 425/75. Couldn't get an ID til went into CW at 1441 sent CLP2 (Embacuba Panama) de CLP1 (Ed.).

16129: May be a N. Korean embassy w/RYRY (no ID) at 1252, 1000/50N. Then w/5F msgs w/numbered headers. Receiving sta might have been having reception problems because this stat interrupted msgs for RYRY. At one point, hand typed "bo noilaneunga" (Korean??), more wds then back to 5F tfc, starting again at the top. Into CW at 1305 (Ed.).

16140: CUW, USAF Lajes AB, Azores w/faxes, 10-count. Was FDM 75N on channels #2, 4, 12, 13, & 14 at 0200 (Zaid, WI). Good catch! Don't see this station on RTTY often-- Ed.

16212: Un-ID w/5L & 5F tfc at 1039, 500/75N (Ed.).

16224: 3MA35, CNA Taipei, Taiwan w/nx in EE, 850/50N at 1508 (Ed.).

16225: ADN Berlin, GDR w/nx in EE at 1508, 425/50N (Ed.).

16243: Y7A64, MFA Berlin, GDR w/RYRY at 1455, 350/50N (Ed.).

16291: RFFX, French mil., Versailles, France w/contro;le de voie, RY & le brick & long count. Was ARQ-E/72 at 0200 (Ed.).

16300: DFZG w/QTC + RY's at 1435, then nx in Serbo-Croat "for all," 425/75N (Ed.).

16343: YZI4, TANJUG Belgrade, Yugoslavia w/nx in FF, 75R at 1414 (Ed.).

16414: Tune in just in time to catch un-ID s/off w/QRX NEXT...AR. Was 170/50 at 1155 (Ed.).

16995: 98DDX of the Spanish Navy w/telex in EE & encryption, 850/75R at 0008 (Williams, CO).

17432: Y2V37, ADN Berlin, GDR w/nx in EE, 425/50N at 1218 (Ed.).

17448: SNN299, MFA Warsaw, Poland w/nx in Polish at 0453, 375/75N. Then 5F grps to Bangkok at 0502, fall by 5F grps to Tokyp (Williams, CO).

17472: RPFN, Lisbon Navrad, Portugal w/RYRY & foxes at 1512, 850/75R (Ed.).

17521: HSW61, Bangkok Meteo, Thailand w/coded wx at 1335, 850/50N (Ed.).

18015: VOA nx in EE at 1835, 425/75N. Don't know if this was Greenville, Morocco, or Philippines (Hetherington, FL).

18035: JAT28, Kyodo Tokyo, Jaaan w/nx in EE at 0532, 850/50R. Is this a new Kyodo freq? (Williams, CO). No, been around a while-- Ed.

18040.5: TCY4 AA Ankara, Turkey w/nx in Turkish, 850/50R at 1224 (Ed.).

18060: CLP1, MFA Havana winding up Prensaminrex bc at 2345, 480/50N (Hetherington).

18125: RND70, TASS Moscow, USSR w/nx in EE at 0502, 425/50R (Williams, CO).

18156: Un-ID w/crypto after DDDDD, 500/75N at 0440. Intro was ZA PEKIN foll by msg # + grp count (Williams, CO). The DDDDD header before crypto often used by MFA Sofia-- Ed.

18230: GFL25, Bracknell Meteo, England w/synoptic wx at 1430, 425/50R ("Bunky," IL).

18240: CLP1, MFA Havana w/circulars in SS at 2150, 500/50N (Williams, CO).

18264: XVN48, VNA Hanoi, Vietnam w/nx in FF at 0524, 500/50 (Williams, CO).

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

18362: VOA Munich, FRG w/RYRY to Greenville at 1420, FDM 85/75N (Manthey, NY).

18542.5: WFK48, USIA New York, NY w/American Republic File nx in EE at 2200, 425/75N. Was //14638, 18215, 18342.5 ("Bunky," IL).

18667: OMZ24, Mongolian Embassy, Prague, Czechoslovakia w/RYRY to JTF23, MFA Ulan Bator at 0508, 375/50R. Still into RY's at 0517, but sigs had degraded to useless. A pity, would liked to have had a sample of their tfc (Williams, CO). So would we! Sigh-- Ed.

18670: FTS67H1, AFP Paris, France w/nx in FF at 1430, 425/50N ("Bunky," IL).

18671: FTS67H3, AFB nx in EE at 1430, 425/50N ("Bunky," IL).

18698: DFS70L3, DPA Hamburg, FRG w/nx in EE at 1513, 1200/50N (Ed.).

18700: Y2V44, ADN Berlin, GDR w/nx in EE at 1513, 425/50N (Williams, CO).

18860: ZAT, ATA Tirana, Albania w/RYRY at 1459, then nx in EE at 1500, 1200/50N (Ed.).

18907.7: GXQ, British Army, London, England w/RYI's & foxes at 1407, FDM 325/50R (Williams)

19012: OST, Oostende R., Belgium w/ARQ telexes //FEC on 19013.5 (Ed.).

19105: TASS Moscow, USSR w/nx in FF at 1145, 425/50R (Ed.).

19117.5: MFA Jajarta, Indonesia w/telexes to Lagos at 1412 in ARQ (Ed.).

19130: XJE57, INTERPOL Ottawa, ON w/police bulletins to New Delhi & Manila in ARQ at 0339 (Ed.).

19200: 9BC32, IRNA Teheran, Iran w/nx in EE at 1201, 425/50R (Hetherington, FL).

19209.5: TASS Moscow, USSR w/nx AA at 1435, 425/50R (Ed.).

19225: FDY, FAF Orleans, France w/RYRY & le nricks at 1509, 425/50R (Williams, CO).

19250-19252: MKK, RAF London, England w/fox & 10-count on several channels, FDM 170/50 (Hetherington, FL). No time given--Ed.

19227: DFZG, MFA Belgrade, Yugoslavia w/crypto after XYXYXY, then nx in Serbo-Croat. Was 425/75N at 1439 (Ed.). DFZG w/nx in SC at 1503, 425/75N (Williams, CO).

19400: VVD69, New Delhi Meteo, India w/coded wx at 1245, 160/50 (Hetherington, FL).

19443: Y7A77, MFA Berlin, GDR w/RYRY at 1700, 425/50R (Zaid, WI).

19458: Un-ID w/groups of #'s in coded msg, 425/75N at 1520 ("Bunky," IL)

19680: GYA, RN London, w/02A 03B...marker at 0455, 850/75R (Williams, CO).

19748: 6VU79, Dakar Meteo, Senegal w/CQ's & RYRY at 0350, 425/50N (Sundstrom, NJ).

19936: Un-ID w/crypto after DDDDD, 425/75N at 1510 ("Bunky," IL). It's MFA Sofia-- Ed.

20125: VOA Greenville w/msgs to VOA Kavala, Greece at 1315, FDM 85/75 (Hetherington, FL).

20204: YZJ, TANJUG Belgrade, Yugoslavia w/nx in EE at 1300, 425/50R ("Bunky," IL).

20327: 6VK221, PANA Dakar, Senegal w/nx in EE + 1 FF item. Was 425/50R at 1520 ("Bunky," IL).

21876: KNY23, Czech Embassy, Washington, DC w/5F tfc to Prague, 75N at 1424 (Ed.).

23405: SOK244, PAP Warsaw, Poland w/nx in Polish, FEC at 1415 ("Bunky," IL).

26420: RFV1, French mil., St. Denis, Reunion w/tfc to Paris at 1530, TDM 835/96A (Hetherington)

Man Saves Elderly Woman From Burning Building

SCAN PUBLIC SERVICE AWARD

On Wednesday, May 17, 1989 a spectacular blaze with thirty foot flames gutted a 100 year old hotel in Ukiah, California. The hotel, a landmark in the area, was a place where homeless reside. That morning Jim Wattenburger, a local councilman and firefighting captain for the state Department of Forestry, was on his way to a department store opening ceremony at about 9 a.m. That's when he noticed people fleeing from the hotel. Wattenburger then drove to the scene and heard people screaming about others being trapped. He proceeded into the building dressed in a suit and tie with no protective gear, according to *The Press Democrat*. He came upon one man at the fire's starting point and took him out of the hotel. Wattenburger re-entered and led about a dozen people to a pair of fire escapes at the south end of the building.

He searched more of the smoke filled rooms and found an eighty-eight year old invalid whom he carried on his back down the stairs. The stairwell's badly burned ceiling started to collapse and hit Wattenburger and the invalid twice while racing to safety.

As he opened the outside door he heard a "woosh" and the fire then engulfed the entire second floor. Luckily, neither of the men were injured during their escape.

After Wattenburger was finished rescuing everyone he could find, he ran to his truck, grabbed his protective gear, which he always keeps in the back of his vehicle in case of an emergency, and started to fight the blaze with the more than 100 other firefighters on the scene.

When interviewed after the fire was put out Wattenburger was quoted as saying, he was as "scared as the rest of them."

For Jim Wattenburger's quick thinking and unselfishness he will receive the SCAN Public Service Award, which consists of a commendation plaque and a cash award. Also B. Burke of Rohnert Park, California will receive a plaque for his nomination of Jim Wattenburger. Congratulations to a courageous firefighter and conscientious citizen.

SCAN PHOTO CONTEST WINNERS

Best Equipped

When Jim Robson listens to radio transmissions on his scanners he is in complete seclusion, since his station is located in an old fallout shelter in the basement of his home.

Robson uses a Datong FL-3 filter with his Yaesu FRG-8800 receiver. In the well kept shack there is also a M-7000 terminal used in conjunction with a Radio Shack 9" monitor, and a Sekoshia 180-IA printer. When Robson isn't in his shelter his Lasonic radio along with a Nitelogger record all of the messages he might have missed. To get that extra range out of his equipment Robson uses a 70 foot longwire antenna.

Best Appearing

Scott Swank enjoys to combine his live for scanning with computing on his Atari 130 XE, with dual disk drive, and letter quality printer.

Swank's shiny shack includes two Panasonics, a RF-9 shortwave receiver and a RF-2200 receiver. He also has three Bearcats, a pair of 210 XL's and one 210. In conjunction with his equipment he uses a 50

(Continued on page 74)

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

There's no denying that cellular phones have become the consumer telecommunications sensation of the late 1980's and are expected to continue their phenomenal popularity without decline. It makes you tend to forget that there have been mobile telephones for about 45 years now, which is roughly 40 years more that there have been cellular phones. While 800 MHz cellular service is being showered with national publicity and promotions, it's really no more than an adjunct to the 150 MHz and 450 MHz band mobile phone services that had previously existed. Fact is, they still exist. No only that, non-cellular car phones may be preferable (or even necessary) for some people who would like to have the convenience of mobile phone service.

The VHF and UHF non-cellular mobile phone networks have been built up over decades, thus (unlike cellular service, which is available only in the certain urban and suburban areas), there is coverage in most areas of the U.S. and Canada, including small towns, plus rural and isolated areas. My book, *Tune In On Telephone Calls*, provides a rather complete listing of the thousands of base stations (and all of their frequencies) providing such services. So, even if you live in or are traveling in an area that has no cellular service, one of these car phones will be able to let you send and receive calls.

In addition to more places you can use a non-cellular car phone, you'll find that they run more power, and operate over longer distances that cellulars. Your low priced monthly charge is paid direct to your telephone company, and includes nationwide service at no additional monthly base charge; air time and additional charges may be added to calls. Your phone is issued its own number which is programmed into the unit when you open an account for the unit; that number is automatically recognized nationwide. You have the ability to travel from place to place, state to state, using your phone without having to register, sign up, check in, or worry about reciprocal agreements with you "home" company when you arrive at almost any new area.

There are 832 channel pairs set aside for cellular phone service. Non-cellular services have only a fraction of this number of channel pairs available for their use, so that's one disadvantage when matching the two types of service against one another in areas where both are available. Another disadvantage is that non-cellular car phone service isn't being pushed any longer, so dealers seldom carry or even seem to know about equipment for it in areas where cellular is operative. Even the phone companies themselves aren't especially interested in telling you about non-cellular service any longer.

The GCS Mark II is a VHF or UHF portable telephone made for non-cellular services. You may be surprised to learn that such sets could be better suited to your needs than cellular!

Still, it's been very popular with truckers, the oil industry, and also with many people who want mobile phone service while traveling in areas there cellular service doesn't exist. Boaters like this service, too.

I located a company has been making a handheld portable telephone for non-cellular use (available in VHF or UHF versions) and they tell me that they can hardly keep up with the demand. That would be GCS Electronics, Inc. Their Mark II unit weighs 23 oz., puts our 5 watts (VHF version), has internal long-life batteries, and direct push-button dialing to call any telephone in the world. It has a lost-number redial, it rings for incoming calls, and you can turn up the receiver volume to the point where incoming calls are loud enough to be heard by a room full of people. It is available in ivory or black. This unit is FCC approved and sells for just under $3900.

The Mark II is supplied with a short whip antenna terminating in a BNC connector. That means that you could disconnect the portable antenna and use the set with a regular external VHF or UHF mobile antenna for extended range at times when the Mark II isn't being used as a portable. With an adapter (UG-273/U, listed in the Radio Shack catalog as #278-121), you could probably run the Mark II VHF version from a standard VHF-FM marine antenna—although I haven't personally tried this trick, and it wasn't mentioned any GCS literature I saw. Would give you pretty good range from your boat.

GCS advises that they custom build and computer program every Mark II to match the individual needs of each user. As such, this isn't an "off the shelf" item. It's an interesting piece of equipment, and GCS is racking up big sales as one of the few precision equipment suppliers in a car phone market where other manufacturers are all fighting it out for a small piece of the overcrowded cellular business. Smart, I'd say.

For more information on the Mark II, contact GCS Electronics, Inc., 18200 Von Kamen Avenue, Suite 700, Irvine, CA 92715. Be sure to mention that you read about them in *Popular Communications*. Or, you can circle 106 on our Readers' Service.

Cellular has its advantages, but it's definitely not the only mobile telephone service available. For those that cellular doesn't suit, or where it isn't available, this is worth considering.

Getting Back To Cellulars

Amidst a dozen jokes about people wanting to get cellular pay telephones, I received a notice from a company called Cellular Pay Phone, Inc, of Chicago, IL. They advised that they won the first round in a battle with a GTE subsidiary over the ownership of the technology that CPPI claims it took three years to develop. Next time someone makes a joke about a cellular pay phone, keep in mind that it's in court and it's no laughing matter.

Sky Hooks

A note from Cellular One's Pennsylvania Regional Headquarters in Harrisburg suggests that I remind readers that, despite millions of dollars spent each year developing high-tech cellular phone networks, the system's entire success rest largely upon the type and placement of the antenna on the equipment being used by a customer attempting to use the system.

Panasonic just introduced the 500 Series cellular phone

"Antennas are the only bridge between the customer's mobile phone and the multi-million cellular system," said Jim Alford, Pennsylvania Regional Service Manager for Vanguard Cellular Systems, the nation's sixth largest cellular network.

"A poor antenna will always give you bad service," he said. "But a high quality antenna properly installed can man less interference and extended calling range."

The phones themselves differ only in the choice of calling and convenience features," he said. "A cellular signal isn't especially strong to begin with, so even the slightest antenna alignment or installation problem will affect reception," he said.

Alford said that for beast results, the antenna should be placed as high on the car as possible with a good electrical ground plane.

"Roof-mount antennas are ideal because they provide no obstructions and allow the signal to be received from all directions," he said.

While they offer the best possible reception, roof-mount antennas have a drawback; for the installation, a hole must be drilled in the roof of the vehicle.

"Customers can become squeamish about drilling holes in their prized possessions," he said. "There must be a level of trust between the installer and the customer.

For those who can't bear to see a hole drilled in their vehicles, glass-mount antennas offer the most popular, but less effective alternative. These antennas are usually attached to the rear window and the cellular signal is transmitted through the glass to a receiver mounted inside the vehicle.

"The combination of transmitting the signal through the glass and the obstruction caused by the rood of the vehicle can crate reduction in reception over roof-mount antennas," he said.

That decrease in reception could mean a difference of up to five miles of calling range near the edge of a cell or increases in interference in the center of the calling area.

"Mountainous topography works against you," he said. "Since the antenna isn't installed at the highest possible point on the vehicle, the valleys, hills and mountains can have a substantial effect on reception."

With the boom in cellular phones, Alford cautioned customers to check into a company's installation policies before purchasing a phone.

"As the price of cellular phones continues to fall, more and more sales outlets are springing up," he said. "The installation of the phone is as important as the equipment itself."

Panasonic Introduces Cellular Phones

Two new compact cellular hones, entitled the 500 Series, that feature a car mount and transportable configuration, have been introduced by the Telecommunications Division of the Panasonic Communications & Systems Company (PCSC).

The 500 Series will be sold in two configurations. In a car mount package, model CM500, the main unit plus the car mount kit. And in a transportable package, model TP500, the main kit plus the transportable kit.

The CM500 features a call in-progress function that allows for continuous use even after the vehicle's ignition has been turned off. Another of the CM500's convenience features is a car installation bracket that accommodates both the transceiver and the transportable case, together. The car phone also has hands free operation, and five-level volume control from handset and speakerphone. An optional feature is horn alert in hands free car mount use.

The TP500 features a 3 watt/0.6 watt selection function that assures economical battery saving. In a strong transmission area, a user can switch from 3 watts to 0.6 watts to save battery consumption, which results in longer talk time. The TP500's built-in battery trickle charger is very useful for transportability because it allows charging without a separate charger. The phone's stay alive function maintains connection while changing the battery within five seconds, and it has a visible and audible low battery warning.

Both phones in the 500 Series have a dual selectable telephone number feature that permits two phone number capability for subscriber versatility. The dual selectable function allows a user to subscriber to two cellular phone systems. For example, one for where a person frequently travels and another for home use. The phones' scratch pad dialing function enables a user to input a number while still speaking, and a dropped call warning tone feature allows a tone to be sent for five seconds to warn a user his call has been terminated.

Standard features on both phones include a 40 number numeric memory, five programmable pause dialing memories, last number memory, memory scroll for quick search of stored numbers, and signal strength indicator. The phones also include two level electronic lock, dialed digits restriction to prevent long distance calls, a roam inhibit of calls to prevent unauthorized use, auto lock, which automatically locks the phone each time it's shut off.

Dimensions of TP500 are $8\frac{7}{16}$" × 6" × $1\frac{7}{8}$"; weight, 4.2 lbs. (1.9 kg.) including 1 Ah battery; and temperature range, −22 F to +140 F (−30 C to +60C).

Dimensions of the CM500 are $8\frac{7}{16}$" × $5\frac{3}{4}$" × $\frac{3}{4}$" × 1"; weight: transceiver, 2 lbs (980g.) and headset, 8.5 ozs.; and temperature range, −22 F to +140 F (−30 C to +60 C).

For more information , contact Panasonic Communications, 2 Panasonic Way, Secaucus, NJ 07094, or circle 105 on our Readers' Service.

This column wants your questions and thoughts relating to mobile phones, also news clippings, information from cellular service suppliers, as well as equipment information from manufacturers. **PC**

BETTER SIGNALS

ANTENNAS AND SIGNAL IMPROVING ACCESSORIES

BY ED NOLL, W3FQJ

Scanner and SWL Indoor Antenna

The Grove ANT-6 indoor antenna, Fig. 1, is unique because of its adaptability and wide-band capability with the addition of appropriate accessories such as a tuner and/or pre-amplifier. For scanner operation it can be used alone. It will replace the usual plug-in whip of the scanner and can be mounted higher, or as far as 20 ′ away from the scanner, with the included coaxial cable. you can pick a spot near a window to obtain improved scanner or SWL reception.

It is easy to suspend it from a curtain rod, so it hangs in front of a window, Fig. 2. Note how it is looped to a plastic curtain rider, Fig. 3, on the window-side rail of a double curtain rod. The window drapes are attached to the inner rail. You can slide the rider to the center of the window area or to the end of the rail to hide the antenna behind the drapes.

You may want to support the antenna on a higher floor or attic. It is supplied with a 20 ′ length of cable, but you can attach an additional length of line with an appropriate adapter. normally there is a F-connector at the end of the cable and for a little extra, some other connector types can be attached. I chose a PL-259 which matches a SO-239 connector, the most common type with table-top models. A FL-258 coupler permits you to extend the transmission line with ease. There is such a coupler available for F-connectors, too.

For additional gain, Grove has an untuned wideband amplifier which can be attached between the scanner end of the cable and the scanner antenna input. It helps in the build-up and coping of those weaker indoor signals. The amplifier gain can be adjusted as needed on up to 30 db. Depending upon the receiver, too high a gain setting can cause distortion and intermodulation interference components. Hence, the gain adjustment is very useful for the ANT-6 and other antennas.

SWL Operation and Results

The antenna and its 20 ′ length cable with no tuner or amplifier attached delivers usable signals on the high-frequency shortwave bands. Again, it shows how well the signals on the high-frequency end of the SWB spectrum, like the 13, 16, and 19 meter bands, do penetrate indoors. In my indoor situation the signal levels fall off sharply when propagation is poor, or during those portions of the day when signals are low in level.

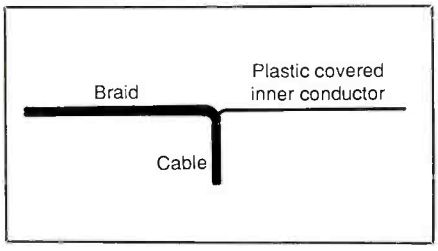


Fig. 1. Grove indoor scanner and SWB vertical.

I did find I could improve SWL results by adding a gimmick, Fig. 4, that single-wire feeds the coaxial line to the antenna input terminal. In the gimmick, I soldered the inner conductor of a short section of coaxial line to its braid inside of the banana plug. The banana plug can be inserted into the center conductor of the receiver's SO-239 connector. The other end of the gimmick connects to the PL-259 plug of the antenna cable using a PL-258 coupler. As a result, the braid is not grounded and acts as a single-wire antenna. Stretch out the coaxial line as straight as is possible to reach the antenna. Otherwise zig-zag it if antenna and receiver are too near to each other. The coax line and the antenna proper serve as the antenna for SWB operation. *Don't forget to detach the gimmick for scanner operation!*

Results were better than acceptable for bands 13 through 41 meters with the gimmick and 20 ′ length of cable supplied with the antenna. Even on the lower-frequency shortwave bands the nighttime old reliable signals were there in an acceptable form. MW signals here in the cage were less than acceptable especially for those on the low-frequency half of the band.

Adding a Wideband Amplifier

The addition of the 13 db gain of an Electron Processing, Inc. RFA-20 untuned amplifier, Fig. 5, to the chain made a real live antenna system out of the assembly of components. There was fine performance over the medium wave band and on all of the SWB bands.

The untuned amplifier has a bandwidth of 0.5 to 200 MHz. Hence, with the gimmick removed and PL-259 plug connected to the input of the RFA-20, you also have scanner signal amplification up to 200 MHz, which includes the VHF-HI land-mobile, aviation, marine and 2M ham bands. It's a good deal with so little equipment that occupies so little space.

The antenna can be stretched out horizontally for SWB use only. Just 5 ′6 ″ long, it can fit beneath a sofa, bed of other appropriate furniture and, if positioned well to the

Fig. 2. Inside the window mount of Grove ANT-6.

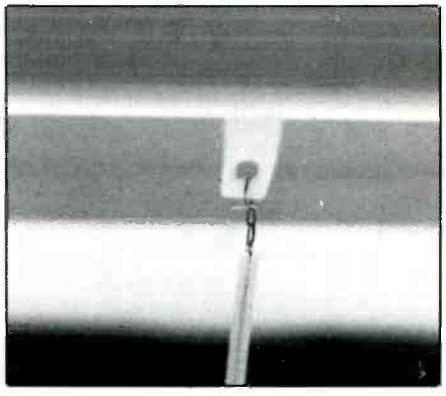


Fig. 3. Top of antenna fastened to curtain rail rider.

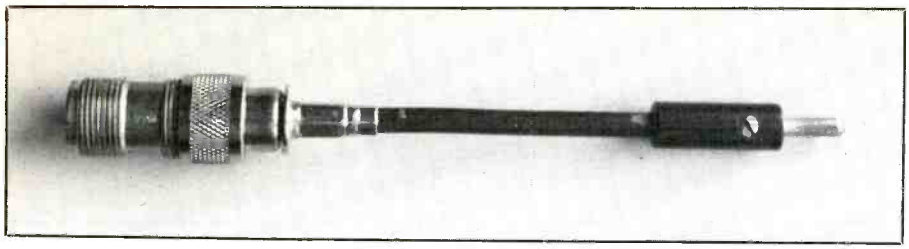


Fig. 4. "Gimmick" used to change antenna cable over to longwire for SWB reception only.

Fig. 5. Untuned amplifier mounted near receiver.

rear, cannot be seen. The 20′ coaxial line can be run along the baseboard the short distance to the receiver set-up. The idea does well for a quick antenna, or one to be used as a comparison when checking out other indoor antennas. At the same time, it is out of the way of the other antennas.

A Note for T2FD Fans

Randall Reese, residing over in Bangkok, Thailand, where components are not always readily available, sent along this information.

"I built the T2FD antenna as shown in 1989 World Radio and TV Handbook, pages 566-567. I did not have 10:1 balun and could not purchase one so I used regular insulated 2-wire TV line. The end-to-end length of the antenna was 14.92 meters (46′6″) and the width 0.44 meters (1′5.25″). I used a 470-ohm resistor for termination. I understand the lead wire is not the best, but sometimes you have to do the best you can. My old antenna was a 75′ inverted L with a single-wire lead-in. I use a FRG-8800 receiver for SWL, RTTY. I found that even with the changes I made to the T2FD, because of the lack of correct parts, that on the average the FRG-880 signal meter increased 1 to 1.5 S-points in signal strength from 5000 to 22,000 MHz. For example, a 75 foot inverted L would rad, say, 3 on the meter and you could hook up the T2FD and see 4 or 4.5. I did not notice any extra background noise with the T2FD and signal fading seemed to be less. I spent a total of three hours to make the install the T2FD. Hope you find this information of some use."

We certainly do, Randall, and so will the T2RF users in the *Popular Communications* readership. Other readers may like to try the idea. Thank you. It was nice to hear from you. PC

CB SCENE

27 MHz COMMUNICATIONS ACTIVITIES

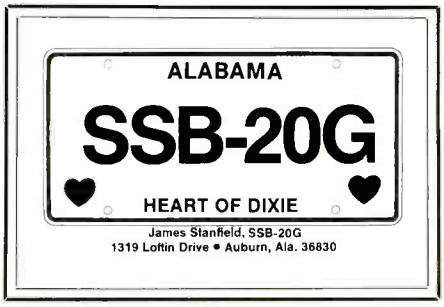
BY BILL SANDERS, SSB-295

One-hand mobile operation is a convenience that some rigs offer. That means that at least some of the control functions are mounted right on the microphone so you can use them while you're talking. The Midland 77-149 is an AM mobile rig that has dual-speed up/down channel selection buttons right on the mike.

On the rig's front panel, there's a sliding scale electronic bar graph S/RF meter, memory access buttons for Channels 9 and 19, separate LED modulation and transmit indicators, ANL switch, and an RF gain control.

The MSRP of the Midland 77-1498 is $139.95. For more information contact Midland International, Consumer Products Division, 1690 N. Topping, Kansas City, MO, or circle 107 on our Readers' Service.

The Midland Model 77-149 offers channel selection buttons on the mike.



The QSL from SSB-20G is made up in the colors and design of an Alabama license plate.

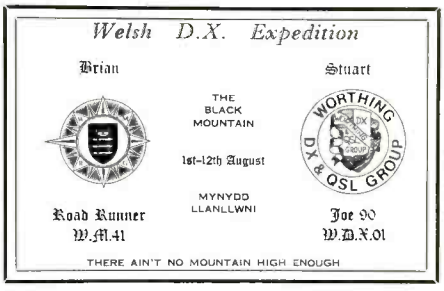
Help Wanted

A reader is trying to locate the manufacturer of Clarion CB rigs. If anybody has an address for this one, please advise John Q. Avildgen, whose FAX number is (213) 859-0825, telephone (213) 859-0825. John didn't furnish us with a mail address; sorry.

In our May issue, we mentioned a G.E. *Search 40* CB rig that intrigued one of our readers to a point where he attempted to purchase one in Canada. He couldn't find any source form this set, and would like to buy one by mail order or from a Canadian or American dealer or distributor. If anybody knows a mail order supplier for the G.E. *Search 40*, please contact Dr. David Kelner, Suite 236, Circle Square Plaza, 11808 St. Albert Trail, Edmonton, AB T5L 4G4. We would mention here that, despite being a major manufacturer, some of GE's various specialty products seem to be little known by their consumer product dealers.

The Kingfisher (Northwestern PA 469) reports that 0830 UTC he picked up a station identifying as *Whiskey Whiskey 2*, and announcing a location as Moscow, USSR. This was on the lower sideband of Channel 33. He's trying to find out if this station was for real, or merely a stateside prankster. If it was authentic, does anybody have an address? Contact Tony Doriguzzi, P. O. Box 398, Lewis Run, PA 16738. We tend to think that Tony overheard someone having fun, don't you?

"What became of the *CB Operators of America* club?" asks Ron Bruckman; 2814 Willow View Ct., Hampstead, MD 21074. Ron writes that a while back, he received information from the club that their Technical Advisor was accused of having "devised a scheme to rip at least one of our members off for over $275." Since then, he has received no mail at all from the club. This group is completely unknown to us here, Ron, so we can't give you any information on its current status. Perhaps one of our readers can give Ron additional information.



A rare QSL card from a CB DX'pedition in Wales.

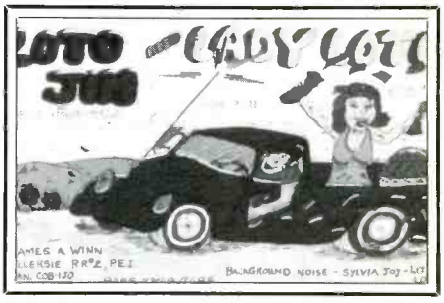
QSL's Department

The column received a dazzling and attractive QSL from James "Stan" Stanfield, SSB Network member SSB-20G (also ham N4VHF). The red/white/blue QSL is designed to look like a car license plate from Alabama, Stan's home state. A real standout on the shack wall of our QTH!

Our QSL from overseas this month is a rare one, being a special card sent out in connection with a yearly CB DX'pedition (started in 1986) to remote areas of Wales. Known as the *Welsh DX Expedition*, several British operators pack up lots of equipment and spend almost two weeks at the 900 ft. level of Llanllwni Mountain (1260 ft.), fourteen miles north of Carmarthen, Dyfed, also at a few other Welsh high points.

Contacts in many areas were made, and we appreciate getting a look at this interesting CB QSL, courtesy of our friend Nick, SSB Network member SSB-12D, of Rhodes, Greece.

Loto Jim and XYL, *Lady Loto*, have a very nice personalized QSL card. You may know these folks as Jim and Etta Winn, R.R. 2, Ellerslie, PEI C0B 1J0, Canada, also known as Papa Bear 27 and 35, plus SSB Network SSB-166B. Theirs is one of those excellent cards made up by *Runnin Bare QSL Cards*, 737 N. Adams, McMinnville, OR 97128. Many have written in asking how to contact this particular custom QSL printer, so make note of the address for future reference.



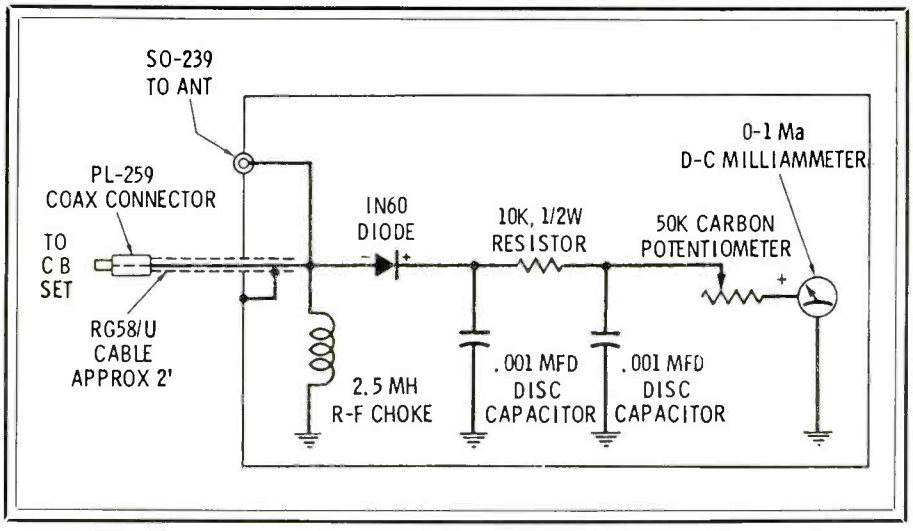
Jim and Etta Winn send out this cheery card from the Canadian Maritimes.

Public Service

In Cape Cod, MA when the local REACT Team lost its charter due to lack of community interest, several local operators got together and formed the independent Cape Community Radio Club in order to monitor Channel 9. The group has helped many motorists during the year the club has been operational. Inasmuch as Cape Cod is a major tourist and resort area, there are always lost motorists, or those with other problems, seeking their help. By the way, one of the group's most active monitors has been Myrtle Morin, who is 85 and uses the handle *Off Broadway*. Myrtle hails from Yarmouth.

We have previously run photos of REACT's station in Louisville, KY and now here's the QSL the station sent to Ron, in Ontario.

That spectacular REACT *Station One* in Louisville, KY sent a QSL to Ron, of REACT (Canada), Inc., 32 The Queensway North, Keswick, ON L4P 1E3. Ron has shared it with all of us.



A simple R-F meter circuit.

R-F Meter

A handy accessory for transceivers not equipped with an output indicator is a meter which indicates the presence of radio-frequency energy in the line running to the antenna. It is valuable for several functions. Each time a mike button is pressed, the meter pin reveals whether power is in the line. Thus it warns of low output when a fault develops in the transceiver. It is also a convenient tuning aid. Adjustments in the transceiver output stage can be tuned for the highest reading on the meter.

The circuit illustrated can be constructed within a small metal box. It samples a negligible portion of the signal and converts it to a form which can be indicated by the meter. In building this circuit, follow the component values shown and keep all leads as short as possible, especially the one which runs from the incoming cable (from the CB set) and the SO-239 connector to the antenna.

A recommended parts layout is to mount meter and carbon potentiometer on the front face of the metal box. The cable from the CB transceiver may enter from the left, and the SO-239 output connector on the right. Small components within the case are mounted on insulated terminal strips.

The potentiometer serves as a sensitivity control and prevents the meter pin from reading off-scale. It is adjusted by turning off the transmitter and turning the potentiometer until the pin reads about halfway up the scale. Each subsequent time the transmitter is operated, the pin should come to rest at about that point to indicate that everything is operating correctly. As you speak into the microphone, the pin may flicker slightly under the effects of the modulation.

Cable Check

A common cause of intermittent operation in a CB transceiver is a broken wire hidden inside a mike or antenna cable. The break frequently occurs near the connector. To locate the problem, operate the transceiver, and grasp the cable near where it enters the connector. Bend it gently in each direction. If normal operation is restored, you've located the break. This can also be done all along the length of a mike cable, which is usually subjected to much flexing and breakage after a period of time.

A similar problem occurs inside the connector where the wire may lose proper contact. While operating the transceiver, gently pull and push the cable where it enters the connector in an effort to check for normal operation.

This column seeks your CB comments, opinions, questions, news items, coffee break info, QSL's, station photos, etc. **PC**

Please send all reader inquiries directly.

CLANDESTINE COMMUNIQUÉ

WHAT'S NEW WITH THE CLANDESTINES

BY GERRY L. DEXTER

Clandestine radio stations are usually pictured as installations employing something considerably less than state-of-the-art broadcast equipment, run by a handful of rebels still learning basic broadcasting techniques and with all of this taking place at some guerrilla base hidden away deep in the jungle, or in a mountain cave. Actually, some clandestine broadcasters come pretty close to fitting this picture.

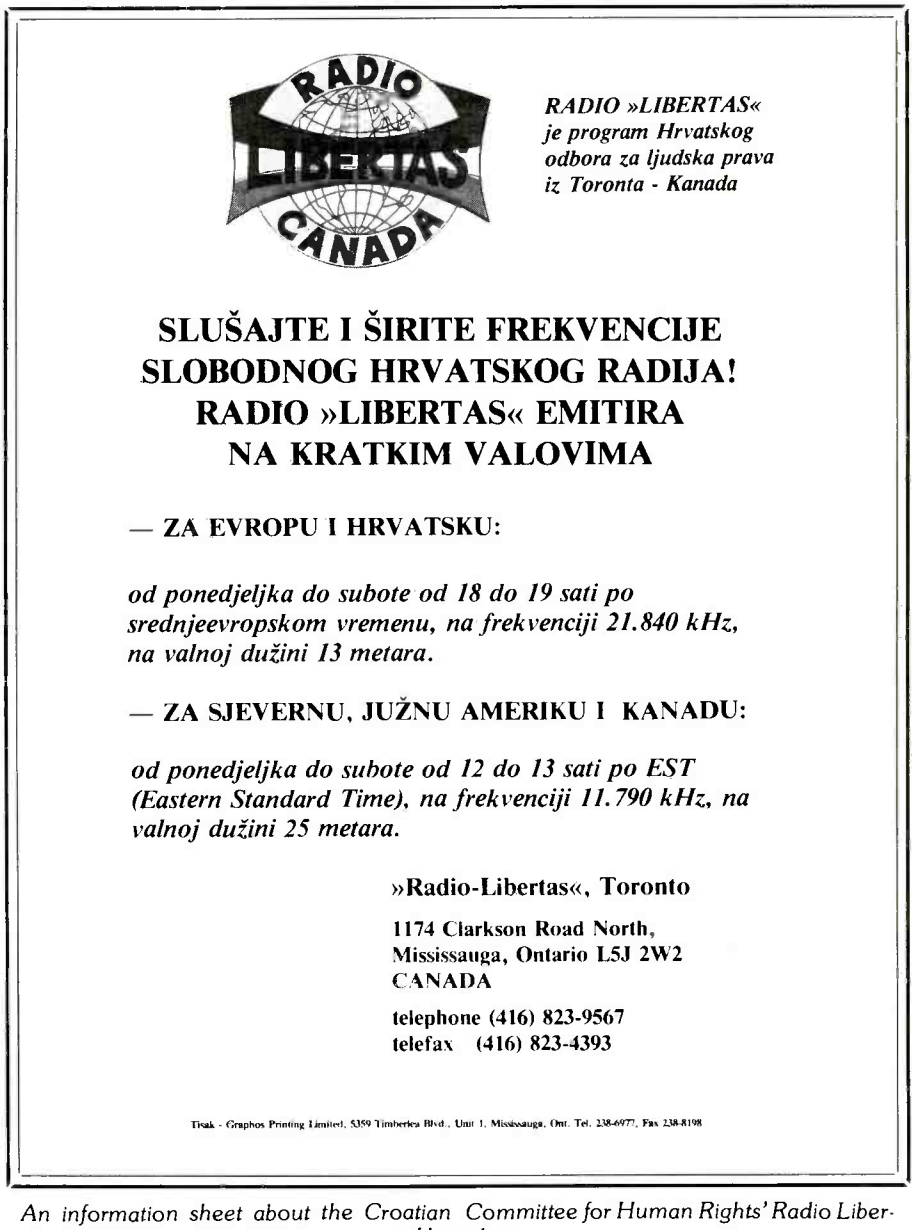
But admission into the clandestine broadcasting game can be gained without having to rough it out in the sticks, or use equipment that requires liberal use of rubber bands and paper clips in order to function. Any political group that wishes can join the clandestine ranks with little more than a microphone, a tape recorder and enough funds to pay for airtime on some other station.

A case in point is *Radio Libertas*, a daily program directed to Yugoslavia. The program is produced by the Croatian Committee for Human Rights, which seeks a "free, democratic and neutral state of Croatia." Croatia is one of the six republics which comprise Yugoslavia. The Radio Libertas program is aired daily on shortwave over WHRI, currently at 1700 on 11790 and 21840 and on Sundays at 2300 on 9770, though these times may have moved to 1600 and 2200 by the time you read this. Although the program is in Croatian, the "Radio Libertas" identification announcement can be easily picked out. The Committee began the program in September, 1988 and notes that, although response was good in the beginning, reception in Europe isn't as good now as it was at first. The Committee has offices in both the US (Saddle River, NJ) and in Canada, where the program is produced. Verification letters have been received from the Committee's office near Toronto and QSL cards are being planned for the future. Reports can be sent to the Croatian Committee for Human Rights, 1174 Clarkson Road North, Mississauga, Ontario L5J 2W2. The broadcast is also aired on Toronto mediumwave station CHWO. The Committee also maintains offices in Hamilton, London, Kitchener and Windsor, all in Ontario, Canada.

Chilean police closed down a clandestine radio station a couple of months ago. The station, calling itself *Nuevo Onda* and broadcasting on 94.7 FM from the Talagante area was said to have been operating for a year and was accused of broadcasting political slogans against the government of General Pinochet. It was operated by a single individual using home-made equipment.

The Voice of Oromo Liberation, which broadcasts in support of independence from Ethiopia for the Oromo is reported to be on the air from 0330-0400 and 1530-1600 each day, on a 31 meter band frequency. Unfortunately, the information is no more specific than that and, as far as we know, the station has not been heard in North America.

It may be, however, that the 31 meter band frequency referred to is 10015, a frequency used by the *Voice of the Broad Masses of Ethiopia*, operated by the Eritrean People's Liberation Front. which seeks independence for the Ethiopian province of Eritrea. Unless the situation has changed re-


RADIO LIBERTAS CANADA

RADIO »LIBERTAS«
je program Hrvatskog
odbora za ljudska prava
iz Toronta - Kanada

SLUŠAJTE I ŠIRITE FREKVENCIJE SLOBODNOG HRVATSKOG RADIJA!
RADIO »LIBERTAS« EMITIRA NA KRATKIM VALOVIMA

— ZA EVROPU I HRVATSKU:

od ponedjeljka do subote od 18 do 19 sati po srednjeevropskom vremenu, na frekvenciji 21.840 kHz, na valnoj dužini 13 metara.

— ZA SJEVERNU, JUŽNU AMERIKU I KANADU:

od ponedjeljka do subote od 12 do 13 sati po EST (Eastern Standard Time), na frekvenciji 11.790 kHz, na valnoj dužini 25 metara.

»Radio-Libertas«, Toronto

1174 Clarkson Road North,
Mississauga, Ontario L5J 2W2
CANADA

telephone (416) 823-9567
telefax (416) 823-4393

Tisak - Graphos Printing Limited, 5359 Timberlea Blvd., Unit 1, Mississauga, Ont. Tel. 238-6977, Fax 238-8198

An information sheet about the Croatian Committee for Human Rights' Radio Libertad broadcast.

cently, the Oromo program is carried over the EPLF station. The "Masses" station—which actually identifies itself as the "Voice of the Eritrean Masses" is scheduled for operation between 0530-0630, 1000-1100 and 1400-1500 on 3712, 3940, 7020, 7487, 10015 and 14305. This station has been heard in North America, but only once or twice and those reports were a few years ago. Still, checks of the highest two frequencies may be worth a try during the 0530 and 1400 transmissions.

Another "success address" from which some DX'ers have received QSL's for *Radio Venceremos* is the El Salvador Media Project, 355 West 38th St., 5th Floor, New York, NY 10018. Radio Venceremos has been noted recently at around 0030 on 6653 and at 0200 on 6638. Also at 1230 on 6828 and floating between 6610 and 6610. Sister station *Radio Farabundo Marti* is still being reported at around 1200 on a frequency varying between 6690 and 6715. All programming is in Spanish and all frequency quotes should be considered as variable.

That Costa Rican curiosity *Radio Impacto* continues to roll right along. In between all the rock/pop recordings, there continues to be quite a bit of anti-Castro, anti-Sandinista and anti-Noriega programming. Although this station is a legitimate broadcaster, licensed by the Costa Rican government, most clandestine watchers strongly suspect there are connections to certain agencies headquartered in the Washington, DC area. Radio Impacto has been bouncing around quite a bit, as far as frequency usage is concerned. In addition to the long-time habit of jumping from nominal 6150 to 6160 for a few days at a time, the 60 meter 5030 frequency is sometimes replaced with 5044 for a day or two—sometimes for just a matter of hours. Some readers fluent in Spanish might find an interesting project in monitoring this station extensively enough to come up with a week's programming schedule!

A Voz do Galo Negro, the station of Jonas Savimbi's National Union for the Total Independence of Angola (UNITA) has been heard in North America recently. Try 9700 from 0500 sign on. Programs are in Portuguese only. The transmitter, for this frequency at least, is said to be at Jamba in UNITA-controlled Southern Angola.

Your informational input to the column is wanted. Information about the broadcast schedules of clandestine stations, material about the groups which operate such stations, addresses—or even clues—for such groups, QSL information, press clippings or other material on clandestine broadcasting in general and, certainly, your loggings and reports of QSL's received from clandestine stations are all most useful. Every little bit helps. Just as with any puzzle, you never know when a tiny piece of information may prove much more important than it first seems to be.

'Til next month—good hunting! PC

SATELLITE VIEW

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

BY DONALD E. DICKERSON

The State of TVRO

The world of TVRO had changed in recent years. The early growth rate of the industry & programming markets have slowed. New commercial satellites have not been launched as there is a glut of transponders awaiting customers. More and more programming is being scrambled, as expected. This leaves you with plenty of sporting events, religious programming and the worst of all, 24 hour shopping channels.

The ranks of TVRO dealers and equipment suppliers has thinned out, too. For a while, one area of growth was the modified descrambler market. For a price, usually quite high, you could buy a descrambler which would work without having to pay the monthly subscription fee. This market has been effectively neutralized by electronic countermeasures introduced by the programmers at the uplink facility.

These measures destroy your descrambler. The FBI, U.S. Marshal Service and U.S. Customs Agents have a so been used to confiscate this equipment from dealers and their sales records are used to track down customers. Since the FCC is largely out of the enforcement field, these other agencies have been pressed into service on behalf of companies who pushed the legislation known as the 1986 Communications Act through Congress. It is this law which gives, for the first time, private companies, through the above named agencies, enforcement power on laws which they wrote, so this path to TVRO is risky at best.

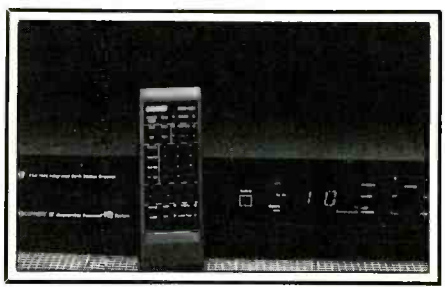
The good news about TVRO is that the used equipment market is plentiful in most parts of the country. This allows the discriminating beginner to get acquainted with the satellites without getting that second mortgage on the house.

With the slowdown in the TVRO industry, local dealers are trying a variety of ways to move their equipment. One plan allows you to purchase a state-of-the-art TVRO station, complete with antenna, descrambler etc., on a monthly payment plan which is lower than the recently deregulated monthly cost of cable TV.

If you try the used market, it would be helpful if you had a friend or an acquaintance familiar with TVRO to assist you selecting your equipment. He can help you select equipment that is compatible, and tell you what to avoid, like that bargain priced 2 foot dish. Of course, if you are interested in receiving audio services only, it may be just what you are looking for. And what audio services can you hear, plenty: news and sports feeds, telephone calls, radio programs and data transmissions.

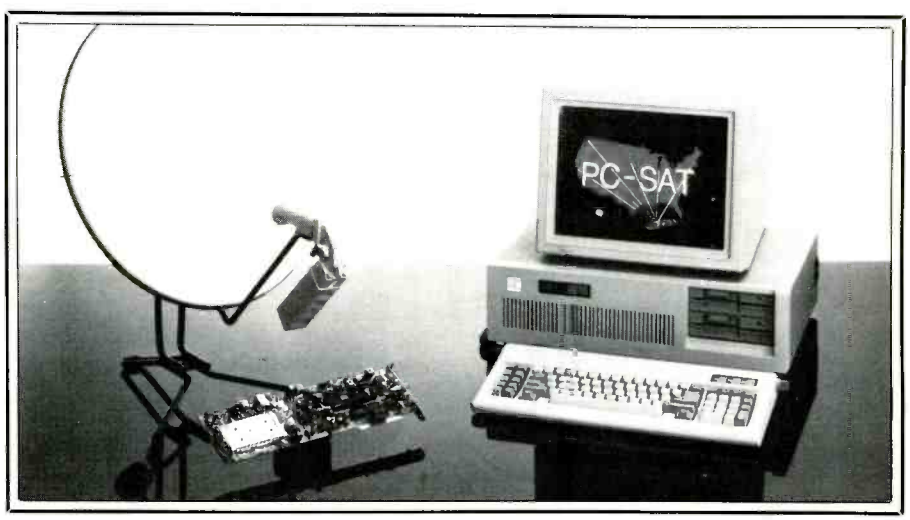
Heil SC-ONE SCPC receiver.

Magnavox MX 2400T portable satellite terminal.



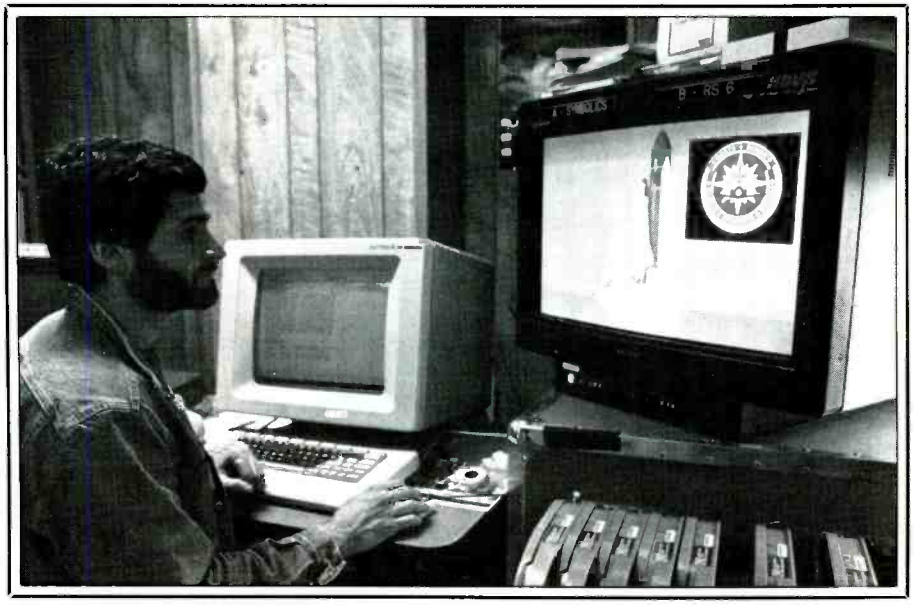
R.L. Drake Company's new ESR 1024 receiver (IRD).

A little background is needed at this point. Most TV satellites transmit in the C-band, 3.7 to 4.2 GHz. Each of the satellites carry 24 transponders or channels. Each channel is approximately 36 MHz wide. Each channel can carry a TV video signal and several audio subcarriers, one of which is the audio for the TV program. The video will occupy the first 5 MHz on the transponder. The audio is usually placed at 6.2 or 6/8 MHz. This leaves room for several additional audio services including SCPC (Single Channel Per Carrier). The audio subcarriers are attached to the video signal. SCPC on the other hand is just that, separate carriers or signals no associated with the TV video. Some satellites carry one SCPC and other data mode transmissions. Most receivers (TVRO) allow you to tune all of the audio subcarrier frequen-

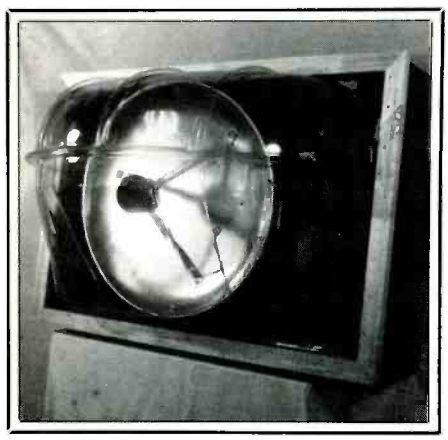


A receiver only data terminal (PC-sat) by ISAS Engineering Inc.

General Instrument's new ANYWHERE UHF (RF) remote.



Steve Jaffe adjust equipment for HDTV experiment.



Erie Electro-Modular Research Ku-band DBS antenna.

cies. These are the signals attached to the TV signal, between 5 and 11 MHz.

To tune SCPC (FM) you need to feed the signal from the block down converter, usually 950 through 1450 MHz, into a programmable scanner or other receiver which will tune this frequency range. Older TVRO receivers may use other frequencies in the down converter, usually 270 to 770 or 400 to 950 MHz. Satellite signals, 3.7 to 4.2 GHz are down converter to any convenient signal which is easier to handle and has lower losses. You may even be able to find a down converter which will convert the original signal into one you can tune with a receiver you already have.

You can also tap into the final IF (intermediate frequency) on the back panel of your receiver. 70 MHz is the center frequency. You will tune from 52 to 88 MHz to hear the SCPC.

Since interest in SCPC has increased dramatically, it should not be surprising that the first professional quality SCPC receiver for consumers has hit the market. Heil Sound of Marission, Illinois has designed a receiver which greatly simplifies SCPC reception and eliminates frequency drift problems experienced with other methods of tuning SCPC. The SC-One has several user friendly features and comes with a special 1.5 GHz high frequency splitter (switch) to insure low losses. It has two ports which pass DC power, if your feedline also provides power to your LNA. The third is decoupled and passes RF only. Note the equipment configuration below. The SC-One can also stand alone when connected directly to your LNA.

SCPC is the most economical method of using satellites for communications. It is the way most of your satellite network music, news and sports programs are broadcast to local radio stations. One way, receive only, voice and data networks for small businesses are common. For example, ISS Engineering, Inc. offers a satellite receiver only add on package for your IBM/style PC. It's called PC-Sat. The package includes a small dish antenna and a single add-on circuit board. Encryption can also be added.

If two-way communications are needed, Magnavox has developed a portable two-way satellite terminal which may be just what you are looking for. The MX 2400 is a transportable L-band system that uses the Inmarsat spacecraft. The terminal has two telephone circuits, a telex, data and FAX capability. As with most satellite, terminals, modems, scramblers. and other special encryption equipment can be added. All the equipment fits into two relatively small metal suitcases. This makes it a valuable system for emergency or operations in remote areas.

SCPC can also be used to transmit slow speed (300 band) data. There is plenty of room for experimenting with data reception on the satellites. You will need computer equipment and terminals, or a dedicated data receiver, like the Info tech M-600. Note the possible equipment configurations below.

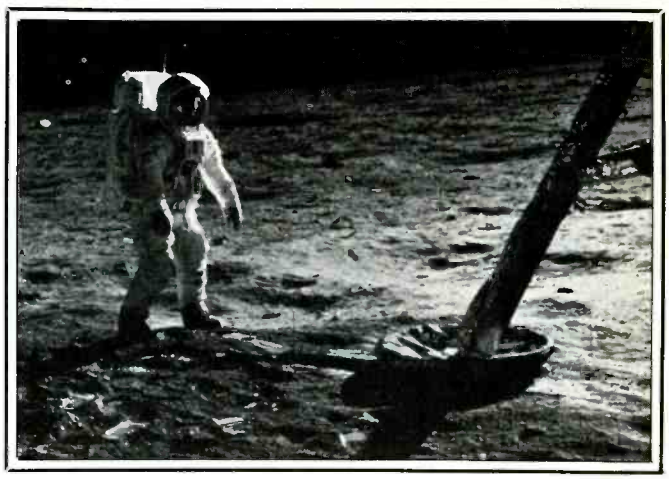
Many businesses are experimenting with satellite networks. For example, some of the fast food restaurants on the west coast are using real-time satellite access to call up your credit card records. That's right, you can buy a burger with plastic.

I should add that there is one additional method of sending data transmissions over the satellites. It's called vertical blanking intervial, VBI. The commercial names for various VBI formats is Teletext. This is the method used to put captions on TV video signals for the deaf. It takes a special terminal or receiver to recover either signal. This vertical blanking interval is part of the TV video signal.

FDM or Frequency Division Multiplexing is the final method of using satellite transponder space we will touch on. FDM is used to carry telephone calls. These signals are multiplexed. and transmitted to the satellite. Tuning these signals requires a SSB HF receiver. The baseband output of your TV satellite receiver is fed into the antenna input of the HF receiver. You will find the FDM signals between 0 and 13 MHz.

Let's review the equipment requirements for TVRO and associated signal reception. You will need an eight foot dish antenna, ten foot or larger if you want to chase the international satellites. Next, a Low Noise Amplifier (LNA) and a block down converter. You can also use an LNB which is a combined LNA and block converter in one unit. The down converter drops the frequency of the incoming satellite signal from between

The HDTV experiment was conducted on STS-29 (Discovery).



1969 Moon Landing.

3.7 to 4.2 GHz to a much lower and easier to handle frequency, usually 900 to 1450 MHz. You will also want an actuator or antenna rotor. Then you select the specialized equipment you want for various voice and data modes.

New TVRO equipment has changed somewhat in recent years. new receivers often have Video Cipher II descramblers built-in. These are called IRD, Integrated Receiver-Descrambler. If you are interested in the scrambled programming and want to pay the rent for the service an IRD is the convenient way to go. If, on the other hand, you are interested in other things, you might want to buy a straight receiver.

The R.L. Drake Company offers and IRD model ESR 1024. You can program up to 30 channels in memory, keep the kids from watching some of your favorite shows with the "parental lock-out" feature. It has large LED display, on screen graphics and infrared remote and full range audio (audio Subcarrier) tuning. The ERS-1024 has 950 to 1450 MHz down conversion.

If you are looking for long distance remote control of your General instrument receiver the new "Anywhere" remote is for you. It allows control of your equipment up to 200 feet away. It uses UHF RF rather than infrared frequencies to accomplish this feat. it will also operate on infrared.

You have no doubt heard of High Definition TV (HDTV). NASA began experimenting with it on the shuttle flight STS-29 (Discovery). NASA joined forces with Sony and Bell Communications Research for the project. HDTV cameras were mounted at the launch site and one the exterior of the orbiter. With recent interest in HDTV, the government has set aside a portion of the 12 GHz band for HDTV transmissions. It's the wave of the future. It could bring back the possibility of direct broadcast satellites.

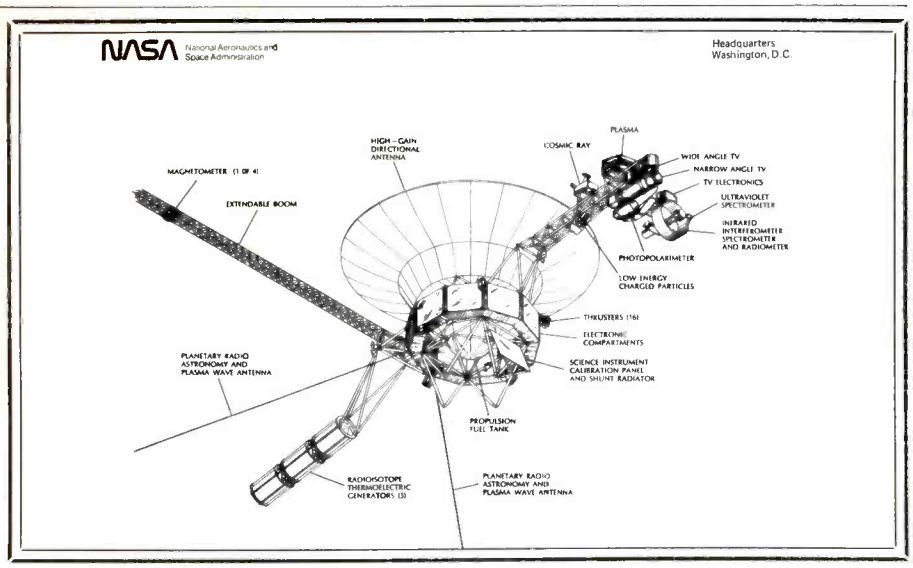
Erie Electro-modular Research hopes there will be 12 GHz satellites in the near future. They have designed a small dish antenna which fits in the roof of your house like a sky-light. It's mounted on a universal swivel mount which allows it to be turned just like a full size dish.

The recent STS-29 shuttle mission saw the deployment of TDRS 4. This brings the 3 satellite system into full operation. The very next mission saw the successful launch of a new class spy satellite. TDRS was a great help in this project.

There are two other events I must mention before year's end. Voyager 2, launched 12 years ago, passed by Neptune. It has already discovered 4 new moons circling the planet. It may also have discovered rings around it as well. At this writing the space-

SCPC Transponders

Satellite	Channel	Service
Satcom F1	21	WPLM
		TranStar VI
		Physicians Radio Network
		Pennsylvania Radio
		TranStar V
		TranStar IV
		TranStar III
		TranStar II
		CNN Radio Network
		TranStar I
Satcom 5	4	Alaskan Forces Network
Spacenet 3	3	AP News
		UPI Radio Network
		Wall Street Journal
		Country Channel
Morelos 1	4	XHBZ Mexico
		XEW FM
		Radio Universidad
		Metero News
		Missouri Radio Network
		Mutual Radio News
		United Nations Radio
Galaxy 2	3	KIRO
		WWWE
		WBAL
		WNN
		WGN
		WJR
		BBC
		KBKA
		WTJM
		KVIX
		KMPC

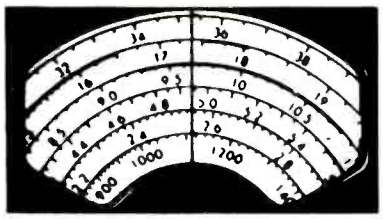


Voyager 2.

craft is still 22 million miles from the planet. It may hold a few more surprises.

We must not forget that this year we celebrated the 20th anniversary of man's landing on the Moon. It was an event that will be hard to equal. It may be like many experiences in life; difficult to re-capture the imagination and excitement the second time around.

I have an Uncle who is 90 years old, he was born at the turn of the century. He drove a horse drawn wagon for Western Union before the war. In WW-I he was in the cavalry. When he first heard we had landed men on the moon, it was simply more that he could bring himself to accept. To this day he still does not believe we have been there. It was just too much change for one lifetime. I always think about my Uncle when I contemplate our landing on the Moon. It helps me keep the event in its proper perspective . . . Incredible!!! PC



COMMUNICATIONS CONFIDENTIAL

BY DON SCHIMMEL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

A note from Victor Balogh, Canada indicates he is currently serving at the Trenton Air Cadet Camp and he hopes to prepare an article with photographs on the Canadian Forces Military Base.

From Thomas, TX we received some more Naval Reserve frequencies (see Table 1) and some Texas State Guard information. According to Thomas, "These are difficult stations to categorize as they are definitely military in nature, but they are not part of the Army or any National Agency. I am told by one of their Radio Officers that Utah and California State militia are also heard here." For this latter data see table 2.

Bob German, SC says he uses a FRG7 and a longwire right now. He just moved to SC to go to work for WSHB and hasn't had time to set up his listening post yet.

A Radio Shack DX-440 with built-in antenna is what John Buchignani, PA uses for his monitoring.

Paul Hirose, CA wrote that he made his loggings with a Sony ICF-2010 utilizing its built-in antenna.

From Taiwan, we heard from Walter Liu who explains he is a beginner in shortwave and enjoys reading POP'COMM. Walter, by now you will have received answers to your questions about the NOAA organization.

And from Simon Mason in England we received another very interesting letter. Here is what it said in part: "Entries in the column by Mr. Fernandez of Maine have fascinated me. In the May 89 issue, he heard a YL/GG on 5284 kHz which started as 3/2F, but evolved into 5F after a while at 0701. Also in the June 89 issue, he logged another YL/GG on 4594 kHz at 0744 which does the same thing. I might be able to explain this activity. These two freqs are part of the 2L GG station's schedule. According to my records at 0700 on 5284 kHz, the station Charlie November broadcasts, and at 0730 on 4594 kHz, Papa Bravo is a regular. These station's formats are all the same; e.g. for CN:

0700-0705	CN x 4, slow electronic tones
0705	158, 158, 33 Gruppen
	430, 430, 78 Gruppen
	(Pause)
	Achtung
	158, 158, 33 Gruppen
	17743
	17743
	etc

I think the 3/2F group is the Identifier/Group count and the 5F groups are the text groups." Thanks Simon for another informative report.

For an update on US Navy activity, we

Fig. 1 - Cone shaped device at top of the pole is pointed toward the Savannah River Plant cooling tower. The antenna mounted half-way up the pole appears to be a VHF whip with 4 radials.

Table 1
US Naval Reserve Callsigns
(5158 kHz, USB mode)

Callsign	Location	Unit
NKE	Olathe, KS	USN REDCOM 18 (Rediness Command)
NKE10	Denver, CO	USN Reserve Center
NKE11	St. Louis, MO	USN Reserve Center
NKE12	Omaha, NE	USN Reserve Center
NKE13	Springfield, MO	USN Reserve Center
NKE14	Witchita, KS	USN Reserve Center
NKE15	Kansas City, KS	USN Reserve Center
NKE16	CP Girardeau, MO	USN Reserve Center
NKE17	Colo Spring, CO	USN Reserve Center
NKE18	Pueblo, CO	USN Reserve Center
NKE19	Hutchinson, KS	USN Reserve Center
NKE20	Lincoln, NE	USN Reserve Center
NKE21	Joplin, MO	USN Reserve Center
NKE22	Cheyenne, WY	USN Reserve Center
NKE23	Topeka, KS	USN Reserve Center
NKE24	St. Joseph, MO	USN Reserve Center
NKW	Diego Garcia	USN/USAF (shared)

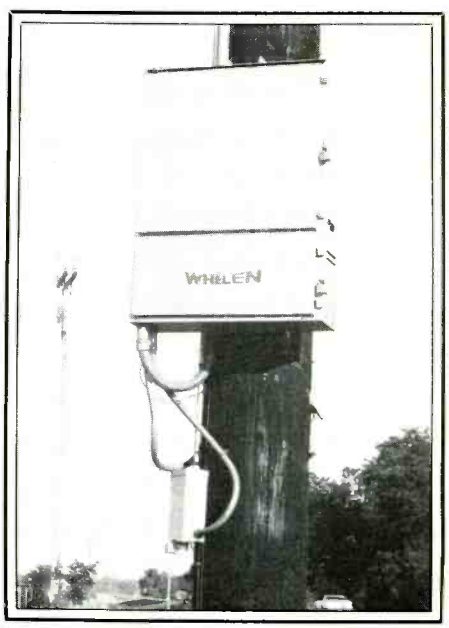
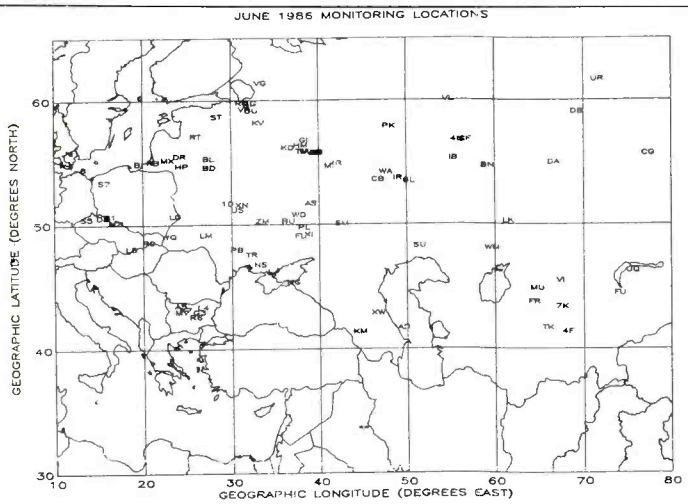
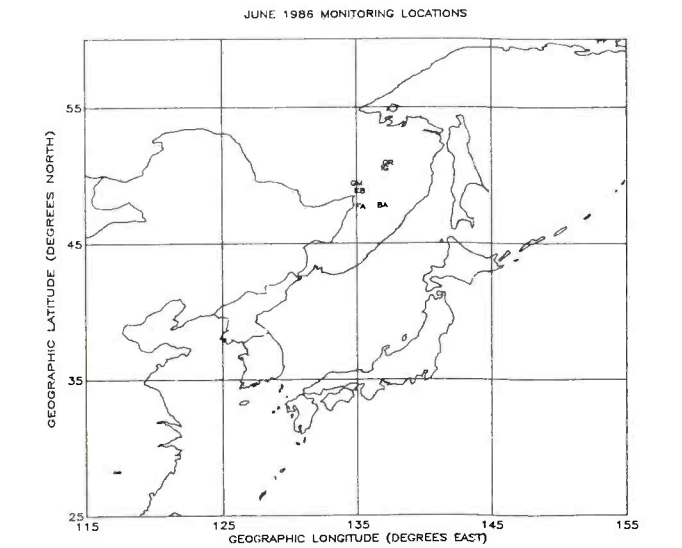


Fig. 2 - This locked connection box is mounted on the lower portion of the pole.

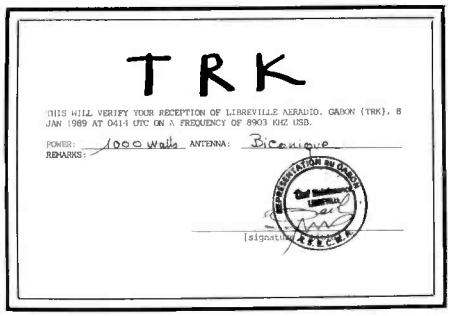


Locations of emitters of harmful interference, indicated by marker, in Eastern Europe and the Western Soviet Union during June 1986.



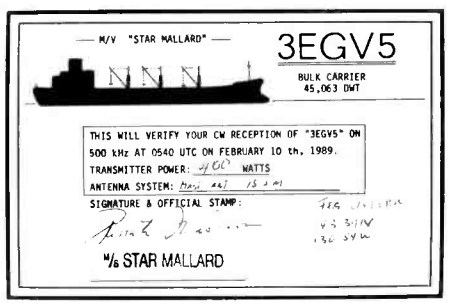
Locations of emitters of harmful interference, indicated by marker, in the Eastern Soviet Union and China during June 1986.

Bob German, SC sent in these location maps of Soviet Jammers which were DF'd in 1986. The diagrams were taken from an unidentified IEEE publication.



Patrick O'Connor, NH shares his PFC for the Libreville Aeradio with POP'COMM readers.

Vincent Reh, NY picked up this voice mirror on AM using ID "International Radiotelephone Service, Havana, Cuba."



Steven McDonald, BC, Canada sent us another verification (PFC) from his collection.

turn to Andy Gordon, CT. A new MARS callsign of NNN0CBS was for temporary use by the USS Tinosa, SSN-606 which was one of the units on the UNITAS deployment to South America. A new MARS callsign is NNN0CCY, assigned to the USS Chancellorsville, CG-62, a "Tico" class Cruiser. Holidays are great times to hear lots of Navy MARS stations. This past Fathers Day, Andy heard 46 different US Naval units. Some stations, like NNN0CBD, aboard the USS Thomas S. Gates had two different MARS stations going at once, on 14383.5 kHz and on 14483.5 kHz, giving each other modulation problems. The USS Stark is up on MARS again. NNN0CYJ hadn't been used since before their missile attack in early 1987.

We have another mystery installation to identify. This one was photographed by David Glorius, FL. His letter said, "Can anyone help me identify what these contraptions are? The photos were taken 4 miles from the cooling tower at Plant Vogtle (Savannah River Plant) near August, Georgia." (See Figs. 1 & 2).

Just before wrapping up the column for this month, another item was received from Andy Gordon, CT. Here is what he had to report: "Obviously, the USAF is not my bag, but I thought this was interesting enough to mention. On 11407 kHz at 1200, I heard AF2 working Andrews AFB with radio checks made from 6 different AF bases, one after the other. First, Andy made radio checks from their location. Then weakly from Elmendorf AFB, Alaska. Next from MacDill AFB. FL; McClellan AFB, CA and then Scott AFB, IL. Finally from Loring AFB, ME. It was the same RM making the radio checks so apparently he can transmit from any of these mentioned AFB's. The RM stated, "I have no problem as long as I can raise you from 6 different locations!"

Andy also commented that frequently, US Naval units, when using tactical identifiers (LFL callsigns) they will abbreviate such calls and just use the last letter; i.e. "Foxtrot this is Yankee."

Before we dig into the loggings, let me wish each of you the very best of "Seasons Greetings" and may the coming year provide great listening for all UTE buffs.

275: Beacon OLV, Olive Branch, MS at 0230. (Haire, MS)

375: Beacon ELM, Elmira, NY at 0508. (Buchignani, PA)

414: Beacon SPQ, Memphis, TN at 0234. (Haire, MS)

500: 3EGV5, M/S Star Mallard, Bulk Carrier bound for Vancouver to load lumber & pulp. QSL Address: M/S Star Mallard, c/o Leif hoegh & Co. A/S, Postboks 2596, Solli, N-0203, Oslo 2, Norway. (McDonald, BC, Canada)

Abbreviations Used For Intercepts

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

2054: VAK, Victoria, BC, Canada CG Radio w/marine infor best in USB mode at 0425-0429. (Sabo, CA)

2670: USCG North Bend, OR w/marine info best at 0609-0610; USCG Monterey, CA w/same at 0335-0336. Both USB mode. (Sabo, CA)

2714: NREH, USS Hawes, FFG-53 (off freq) clg Charleston Tug Control at 1000; NSLW, USS Lang FF-1060 (off freq) asking for rdo check any station at 1000.

2716: NNAC, USS Ortolon, ASR-22 using callsign 2KI clg 8HI, used by Canaveral Control at 0930. Ortolon is a Submarine Rescue ship which has catamarran hull; NJXB, USS Casimir Pulaski, SSBN-633 using classified callsign S7J clg Canaveral Control at 1030; USS Tenessee, SSBN-734 using callsign V6Y wkg G9F, Canaveral Control at 0900; N0PQ, USS Thorn, DD-988 using H0E wkg Canaveral Control using G3S at 0900; NYM, USNS Vega, T-AK-286 using call Inbound Naval Unit clg Charleston Tug Control at 1045. The Vega is a Fleet Ballistic Missile Support Ship which provides supplies to Sub Tenders. She is the former Moore-McCormack Cargo ship, SS Bay, which joined MSC in 1983; NSBJ, USS Ponce, LPD-15 clg Roosevelt Roads Port Control at 0130 but RR Port Control does not guard HF hence no joy; NSE$M, USS Samuel Eliot Morrison, FFG-13 clg Port Everglades Harbour Control at 0950. No joy as Everglades does no guard any HF nets, only VHF "bridge-to-bridge."; NVMZ, USS Aquila, PHM-4 wkg Newport Port Control at 0905, this vessel is a Patrol Combatant Missile Hydrofoil; NCBG, USS Portland, LSD-37 clg Little Creek Port Control at 0930 but no joy; HMCS Fraiser, DDH-223 wkg QHM Halifax at 0955 re Fraser requesting transportatio for injured sailor on crutches; NIDC, USS Valdez, FF-1096 wkg Newport Port Control Secondary at 0040, Valdez was involved in control of oil slick caused by Greek Tanker accident; NLOH, USS Preble, DD-46 clg Newport Port Control at 0945 w/Newport telling preble to QSY to UHF freq 385 MHz. (Gordon, CT)

2842: SLHFB "K" in CW at 1154. (P.H., CA)

3060: YL/SS in AM at 0544 w/5F grps & Finale, Finale at end at 0564. (Fernandez, MA)

3068: Paprika and others in USB at 0305 in what appears to be training net. One stn "Rich Reward" 500 hz high and unable contact rest of net. Net Control (Paprika) made contact and moved him back into net freq. (Fernandez, MA)

3296: USAF Travis Base 14 net in USB mode at 0347, included stns AFA6KG, AFA6IZ and AFB6BW. (Sabo, CA)

3910: YL/EE in AM at 1942 w/5F grps. (Charret, FRG)

4066.1: USS Carl Vinson (NCVV, CVN-70) wkg San Diego CSS-1 at 0324; USS Enterprise (CVN-65) w/patch thru San Diego CSS-1 at 0356; USS Cayuga w/unanswered calls to San Diego at 0421. All were USB mode, w/shore stns answering on 4360.5 kHz. (Sabo, CA)

4069.2: NWRF, USNS Monob, YAG-61 wkg WOM at 0255 w/pp. (Gordon, CT)

4371.5: Tartar, Sabbath, Rettina, & Candlefish, poss Canadian Armed Forces stns hrd here in USB mode from 0700-0730. (Sabo, CA)

4373: Giant Killer coordinating SAR between naval units Z9K, Z7W and P8M and Norfolk Rescue, Unit W6C was SAR Commander and was in touch with CG 1501, A c-130 which was on station. CG H-3 out of Elizabeth City, NJ put divers into the water. Three people and one dog from the Midnight Sun were rescued and placed aboard the Uss Briscoe, DD-977. Rescue took place aoubt 300 miles east of Norfolk, USB at 0319. Monitored CG side of rescue on 5696 kHz. (Willmer, MI)

4547: YL/GG in AM at 2000 w/579 x3 000. At some time YL/RR on 6778 w/555 x3 also in AM and both off at 2010. (Mason, England)

4610: XLB51, Lac Larange, Saskatchewan, Mobile Telephone Service wkg stn "YX" in USB mode at 0442-0455. (Sabo, CA)

4699: Habitat wkg unid stn USB at 1246. Request to "go green" foll by scrambled xmsns. (P.H., CA)

5063.6: Weak unid stn wkg F4Y and R6T between 0710-0727 in USB mode. This is a Central Pacific LORAN Net channel. (Sabo, CA)

5175: YL/FF at 2000 after NNN in CW sign-on w/Group 40 & 5F grps. Ended w/Finis, AM mode. (Mason, England)

5330: YL/EE in RCS (reduced carrier sideband), address 437, group count 154, 3/2F groups at 2300. Also on 7740 kHz. (Willmer, MI)

5413: YL/EE in RCS, address 520, goup count 40 at 0300 w/text of 3/2F grps. Also on 7740 kHz. (Willmer, MI)

5598: German AF 4007 hrd 0230 in USB w/position report to New York Aeradio. (O'Connor, NH)

5692: CG 1469 in USB at 1704 wkg Traverse City Air; USCG Chicago Air wkg CG 1394 at 1103 accepting net guard. (Symington, OH)

5696: CG1601 wkg Honolulu Rescueand Honolulu COMMSTA re search ops in the Hilo area, USB mode at 0537. (Sabo, CA)

6100: YVTO, time stn in Caracas, Venezuela in AM at 0551. (P.H., CA)

6604: New York radio w/wx in SSB at 0545. (Buchignani, PA)

6752: Edmonton Military w/wx in USB at 0800. (Watts, KY)

6756: AF1 Enroute USCG Academy in LSB at 1344 w/signal check for Andrews AFB. (Willmer, MI)

6757: Priestess, Stoneage, WAR46, Railman, and Kiwi Bird hrd in USB mode at 0501. Called this channel W-103. (Sabo, CA)

6761: hawk 88 to Scribe in USB at 0411 and asking for patch to Blue Thunder control. (Balogh, ON, Canada)

6780: YL/Czech in AM at 2006. (Charret, FRG)

6785: YL/SS in AM mode at 0504 w/5F grps. (Balogh, ON, Canada)

6812: Crown to AF1 via Andrews AFB w/pp for Gen. Scowcroft. USB at 1236. Patch conducted with Royal Crown. First time I have heard of Royal Crown?? (Willmer, MI)

6825: YL/SS w/5F grps in Am mode at 0505. This YL sound live (Balogh, ON, Canada)

6902: YL/GG in AM at 1806 w/1-0 count, address 691. (Charret, FRG)

7408: YL/GG in AM at 1906 w/543, 1-0 count. (Charret, FRG)

7457: AGA6TR (Travis AFB, CA) & others. USAF MARS net in USB mode at 2336. (Sabo, CA)

7527: Spruce Goose & Alpha 264 in USB mode at 0531 on US Customs Service "ZB" channel. (Sabo, CA)

7535: NTCH, USS Thomas C. Hart, FF-1092 clg Norfolk SESEF at 1815 for equipments tests—USB, ISB, LSB, AM, CW, and FSK. Also secure voice and them UHF emitters; other units testing emitters w/SESEF were: NKZI, USS Pensacola, LSD-38 at 1715; NCAS, USS Clifton Sprague, FFG-16 at 1650; NHTM, USS Bowen, FF-1079 at 1700; Pre-commissioned unit Normandy, USS Normandy, CG-60 at 2000. Normandy was at sea attempting to work the bugs out of #3 emitter which had failed on last text in April. (Gordon, CT)

7740: YL/RR in AM rptng 555 x3, 911 x3, 51. At 2135, 911 x3, 96, 51 Over, Over then into 5F grps. Ended w/Krai. Same YL as on 3225/4030/4880 kHz. (Mason, England)

7862: YL/SS in AM at 0534 w/5F grps. Smae type of ending as hrd on 8186 kHz. (Balogh, ON, Canada)

7917: Bonder and Sycamore Tree in comms re comm outages. USB at 0508. (Balogh, ON, Canada)

8120: YL/GG in AM w/1-0 count and 911 x3. At 2010 after ten tones YL goes into 4F grps foll Gruppen 131. (Mason, England)

Station 9VG, Singapore. Picture supplied by Walter Treftz.

Table 2
Texas State Guard Frequencies

2710, 2726, 3201, 4440, 4520, 5214, 6385, 7360, 8710, 13191.5, 15212.5, 5820 (all kHz) USB mode. The only call recovered thus far is KKE397, Austin which was heard on 2726 kHz. 5820 kHz was shown as the Primary.

8056: YL/SS w/5F grps in AM at 0537. After this transmission I hrd OM's in Background w/"This is Mt. Noonan, Over." I wonder?? (Balogh, ON, Canada)

8186: YL/SS w/5F grps in AM at 0514. This one ended w/Finalez, Finalez (pause) Finalez." (Bologh, ON, Canada)

8369: DHCW. Columbus Wellington contacted NMC in CW at 1636. QSY to 8424, then sent AMVER position report. (P.H., CA)

8490: YL/GG in Am rptng 04506 x3, 154. 2005-five long tones then 04506, 154, 135. Entire msg rpted next day at some time on 6708 kHz and the day after at 1900 on 5318 kHz. Skeds noted thus far for this YL/GG stn are: 5318 kHz WED 1900, THU 2300. 6708 kHz TUE 2000; 8490 kHz MON 2000, FRI 1900. (Mason, England)

8718.9: NSBJ, USS Ponce, LPD-15 clg USCG COMSTA New Orleans at 0040. This freq very close to one used by units wkng COMSUPRON-8 on 8719 kHz. (Gordon, CT)

8764: CG stn Boston clg saling vessel Eagle in SSB at 0532. (Buchignani, PA)

8855: Piarco Aeradio wkg Surinam 763 at 0440; Manaus wkg Clipper 442 at 0545. Both USB mode. (Sabo, CA)

8912: Ping Pong wkg 46 in USB at 0151 on anti-smuggling "YC" channel. (Sabo, CA)

8918: Charlie Mike in LSB clg Yankee Delta. Answered by another similar call stn, then cleared. All had heavy SS accents w/some Spanish lang. every now and then. Sounded like a net control clg up stns for check-ins. Poss S.A. Mil comms. (Hrd at 0444. (Femandez, MA)

8921: Speedbird London hrd 0255 clg Speedbird 298. (O'Connor, NH)

8942: Quantas 28 to Manila Aeradio w/position report in USB at 1425. (Sabo, CA)

8984: L6E9 Helo & Miami Ops in USB re relay of comms from Navy Helo 492 concerning taking downed USAF pilot and all pieces of survival gear to Key West, then to be transferred to USAF C-130 Rescue and taken to Homestead AFB for medical evaluation. 8E (Helo) was arriving on scene to pick up survival gear at rescue site. Location was given in coded form. Hrd at 0435. (Fernandez, MA)

8993: GXW, Portland naval Radio, England in USB at 2204 wkg TOE. (O'Connor, NH)

8993: MAC 18331 at Monrovia in USB at 0703 wkg MacDill w/pp to Phantom w/request for diplomatic clearances. (Symington, OH)

8993: A/C ALM9-91, Tail -21292 w/pp to Format via MacDill. Had to divert to Goose due to inflight systems failure. (G. Westinghouse, MA)

9017: Workout, Ear Guard and Punch Hit hrd in USB at 0402-0410. Ref's re Exercise Pacific. Called This channel X-904 and then QSY to W-103. 9see 6757 kHz) (Sabo, CA)

9023: Huntress and Oak Grove in USB at 1437 w/clear & scrambled comms. (Willmer, MI)

9074: YL/SS in RCS w/4F grps, address 427, group count 93 hrd at 1400. Also hrd on 11532 kHz. (Willmer, MI)

9222: YL/SS at 0400 on RCS. Address 185, group count 96, text of 3/2F grps. (Willmer, MI)

10000: OM/EE in USB at 1338 on top of WWv and clg any stn and using iden Five Bravo, (Fernandex, MA)

10215.5: SLHFB "U" in CW at 0428. Sending 1tr U every 5 secs. (Fernande, MA)

10240: OM/RR in AM at 1231 w/708 1. (Charret, FRG)

10254: YL/GG in AM at 1904 w/text of 3/2F grps. (Charret, FRG)

10295: FSB71, INTERPOL, Paris, France in CW w/ID mkr and RTTY burst between, Hrd at 0420. (Fernandez, MA)

10403: YL/GG in AM at 2000. Address 781 foll by 1-0 count. (Charret, FRG)

10734: YL/GG in AM at 1904. Address 285, 1-0 count. (Charret, FRG)

11055: Andrews AFB, MD wkg pp for SAM-205 to US Embassy in Warsaw in USB mode at 0508. (Sabo, CA)

11120: YL/EE in AM at 0612 w/5F grps. (Charret, FRG)

11176: SAM683 in USB at 1959 requesting rdo check from Albrook. (Watts, KY)

11204: Color coded wx in USB from RAF at 0530. (Watts, KY)

11233: Trenton Military w/wx in USB at 0030. (Watts, KY)

11243: Imlac 99 wkg Open Door in USB at 1807 w/authentication codes. (Symington, OH)

11246: Elvis 03 hrd 2157 w/MacDill for rdo check in USB; also Novar 62 in USB at 2014 wkg MacDill. (O'Connor, NH)

11255: Y3K & Q2N in USB at 1842 w/comms re freq skeds/shifing (in coded form). Other stns hrd were Q5N (YL), Fol, and O0O as net control Attlantic Fleet freq. (Fernande, MA)

11462: YL/EE in AM at 1810. Address 414, 1-0 count. (Charret, FRG)

11500: Two OM/SS hrd on USB at 0243. Mexican Navy. Were chatting after sending RTTY tfc on 11501.7 kHz. (Margolis, IL)

11538: NJZY, USS New Jersey, BB-61 (NNNOCNH) wkg NNNONUW at 2230 for MARS patches. (Gordon, CT)

12158: YL/SS in AM at 1803 w/nbrs ending at 1805 w/Final, Final. Carrier stayed on until 1818. (Crabill, VA)

12429.2: WMLH, Chesapeake Bay in USB at 2128 in comms w/WMLG, Delaware Bay, re new satellite TV/Cable system aboard. (Balogh, ON, Canada)

12620: YL/EE in AM at 1820 w/5F grps. (Charret, FRG)

12728: PPR, Rio de Janeiro, Brazil w/CW time signals ending at 0130. (Crabill, VA)

13181.5: USN stns C3N, V1M and Z6G in USB at 0321 w/comms re action msgs. (Balogh, ON, Canada)

13244: Cisco 72 hrd 2206 in USB wkg MacDill; also MAC-106TW in USB at 2228 wkg USAF Ascension Island. (O'Connor, NH)

13247: SAM 26000 in USB at 1240 in contact w/Andrews AFB testing RTTY. Mentioned India Oscar frequencies 351 and 276 and data transmissions. AF1 was in flight during comms. (Willmer, MI)

13306: KLM731 in USB at 1741 w/position report to New York. (Watts, KY)

13449.6: Auto/CW stn at 1146 sending 4 character grps of mixed L/F's. Very bad echo to signal. Sample hdng: NR17 -R- 212.35 -GR50 BT (missed one nbr of DTG) (Ed.)

13554.7: Unid stn on CW (speed key, good fist) sending 5L grps, Spec characters noted—AA, IM, OE, OT. Hrd at 1250. (Ed.)

13608.6: NRV, Guam COMMSTA wkg unid LORAN stn re sending/receiving freqs 17488/19296.5 kHz, USB at 0704. All these freqs listed as being used by NORPAC LORAN net. (Sabo, CA)

13826: NBTM, USCGC Polar Star, WAGB-10 (NNNONXZ) wkg NNNOPRQ at 1350.

13921: YL rpts CIOX2 on USB 2146-2151 & other frequent intervals throughout night. During monitoring session, another YL hrd rptng PCD2 several times. Short time later 5L grps bcst to PCD2 ending at 0318. CIOX2 callup came in strongly at my ATH, but not PCD2 which indicates latter beamed in diff direction. Bcsts not hrd following nite. (Margolis, IL)

13940: Cuban Embassy, Managua, Nicaragua w/CW tfc incl coded msgs at 2037. (Margolis, IL)

14403: MFA, Jakarta, Indonesia, w/OM talking in Indonesian on USB at 1139 and other times afterward. These comms took place between several RTTY xmsns. (Margolis, IL)

14441.5: NRPN, USCGC Ironwood, WLB-297 (NNNOCQT) wkg NNNOOTW at 2325; NODG, USCGC Basswood, WAGL-388 (NNNOCPH) wkg NNNONSD at 1400, Basswood is Light House Tender homeported Guam; NXPZ, USS Mount Vernon, LSD-39 (NNNONZN) wkg NNNONSD at 0015; NVJD, USS Cleveland, LPD-7 (NNNOCNM) wkg NNNONUW at 0100, Cleveland and Juneau were part of clean-up units for Prince William Sound oil spill this past Summer. All of above passing MARS patches. (Gordon, CT)

14477: NNNOCVO, USS Spartanburg Co wkg NNNOPRS at 0211; NNNOCUV, USS Comte de Grasse wkg NNNONAV at 0017; NNNOCYG, USS Ticonderoga wkg NNNONAV at 0007; and NNNOCYZ, USS Whidbey Island wkg NNNONAV at 0025. All in USB mode for MARS patches. (Symington, OH)

14687: Atlas 17 in contact w/Controller 17 in USB at 0120. Talk of "carelessness. Seeing mistakes never made before. Recipient really wants shipment. If they stay on same freq we should have them." At this point stns went scrambled. (Willmer, MI)

15000: BSF, Taipei, Taiwan at 1310 behind WWV w/time signals. (Crabill, VA)

15093: Unid CW stn w/SS tfc at 1824 that mentions "inteligencia." (Margolis, IL)

15705.5: SLHFB "U" in CW at 0122 sending ltr every 5 secs. (Fernandez, MA)

16372.5: OM speaking in unid lang in dpx comms w/"Training Center" on USB at 0829. Once in a while, a word or two would be spoken in EE. That's how I noted "training center." (Margolis, IL)

18005: Hyphen in USB at 1527 w/SKYKING bcst. (O'Connor, NH)

18653.5: CLP1, Havana, Cuba (MinForA ffairs) in CW at 1218 wkg unknown stn. Told o/s to pass his tfc via CLP8, Conakry, Guinea. CLP1 then told other end to QSY 20431 kHz. Stn hrd tuning that freq and CLP1 told him to GA w/tfc. O/s commenced sending 5F grps (cut nbrs). Dropped at 1226. (Ed.)

18755.8: Unid Interpol stn w/police msgs in EE, FF and SS. This stn was relaying msgs from Interpol Rome, Bangkok, and other QTH's to a 2nd Stn. (Margolis, IL)

20188.5: USAF MARS net in USB at 2157 incl AIR wkg AGA7BI, Bitburg AB, FRG w/pp. (Sabo, CA)

20748: Unid w/5L grps in CW from 1649-1657. (Margolis, IL)

20885: OAE21, USMAAG, Peru in LSB at 1707 wkg AHF4, Albrook w/pp re 100K M-60 ammo for DEA. (Symington, OH)

20970: Canadian Forces Amateur Radio (CFAR) stn CIW806 aboard an unid naval vessel clg N913 & CIS9, Petawana, ON on USB at 1409. (Margolis, IL)

20996.9: US Army MARS w/AAA5CZ (somewhere in AL) & others in USB mode at 2127. Called this the "Panama-to-Conus PP Net." (Sabo, CA)

20997: NMYU, USS Sylvania, AFS-2 (NNNOCZL) wkg NNNOFMN at 2040 w/MARS patch. (Gordon, CT)

21754: Unid stn told another that W-106 was primary, W-109 was secondary, and to try X-905 is negative contact. USB at 2205. (Sabo, CA)

24140: YL/SS w/4F grps on AM at 2019. (Margolis, IL)

28174: VE3TEN, Propo beacon in Canada, CW at 2048. (Haire, MS)

29405: RS10, Soviet HAM satellite. Heard robot clg CQ in CW at 1600 but no one answered. (P.H., CA) PC

LISTENING POST

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

BY GERRY L. DEXTER

Although the high sunspot numbers we're experiencing have left the tropical bands in a pretty sorry state (especially last summer) the higher shortwave frequencies are more alive with activity than they have been in years. The bands are full of signals from all over the world and such ranges as 17 and 21 MHz are open deep into the local nighttime hours. So if your not listening to the shortwave broadcasting bands these days, you're really missing out on a lot of interesting things!

I've been one of the many who have always wished that there was a shortwave broadcast station in Macao—the Portuguese equivalent of Hong Kong. Well, apparently such an animal is on the way. Radio Macao is planned for a 1992 start, operated by Teledifusao de Macau, it will beam programs to Portuguese communities throughout Asia. Oh boy!

Speaking of new "countries," All India Radio from Fort Blair in the Andaman and Nicobar Islands is now active with a regular schedule. The islands are part of India, but the radio country list of the North American Shortwave Association considers this a separate radio country. Fort Blair is now broadcasting with 10 kilowatts on 4760 between 1200 and 1730. We might have a shot at this during the winter months.

Radio East Africa is a new "station," though it is really only another arm of Radio Africa which, in turn, is just another guise for radio Nacional in Equatorial Guinea. Radio East Africa began a weekend service of paid religious broadcasts on July 1. It's aimed at English-speaking audiences in the eastern part of the continent. Broadcasts run from 0500-1500 on Saturdays, 0500-1200 on Sundays using 9585. The Radio Africa service, also airing paid religion, is on from 1700-2200 daily on 7190 (or slightly below). Reception reports can be sent to Pan American Broadcasting, 10201 Torre Ave., Suite 320, Cupertino, CA 95014. Or to P.O. Box 805, Malabo, Equatorial Guinea.

Italy's RAI plans to spend a barrel of money on improving its shortwave facility, including an upgrade of the control system and a complete re-do of all the antennas. Let's hope some some of those funds go to hiring some understandable announcers!

Religious broadcaster, KCBI in Dallas, which has been off the air for a year or so, has reportedly been sold to a church, or other religious group in Miami, which wants to use the facility to beam to Cuba.

We have not noted it yet, but some listeners are reporting the return of old-timer La Voz de Guatemala on its old 6180 spot. Check for this one in the evenings, or early in the morning.

15 youngsters graduated from William Moser's "Radio World" class, building their own shortwave sets to qualify.

Milivoj Rudan's grandson Tommy at the controls of Milivoj's Stoney Creek, Ontario shack.

WWCR in Nashville has started regular programming, although the listed hours are variable, apparently depending upon how many program hours can be filled. Check 15690 between 1500-0200 and 7520 from 0200-0600. They are now sending out an attractive, though no-data, QSL card.

WWCR Nashville's attractive (but no-data) QSL card.

Several broadcasters responded to the China crisis by adding additional broadcast hours in Chinese. Taiwan seems to have gone a step beyond that and added a whole new service, even making it sound as though it were a different entity. The China Broadcasting Corporation is using 9610 between 2200-0000 and 9610 and 11725 from 0200-1500.

A brief hold has been placed on the decline and fall of Radio Denmark. The change from using Radio Denmark's own transmitters to a relay arrangement with radio Norway has been postponed until at least the first of the year, so you still have time to log Denmark direct.

The Danish Shortwave Clubs International have released the 17th Edition of their popular *Tropical Bands Survey*, a 36-page booklet listing all known and active shortwave stations between 2.0 and 5.9 MHz. It can be ordered direct for 9 International Reply Coupons from Bent Nielson, Betty Nansens Alle 49, DK-2000 Frederiksberg, Denmark. US listeners may want to check with the US distributor, Gilfer Shortwave, P.O. Box 239, Park Ridge, NJ 07656.

In the mail: Speaking of Radio Denmark, Tim Johnson in Galesburg, Illinois had one of those maddening experiences which, over the years, contribute to making up each individuals own DX'ing lore. Tim had been trying to get a good, clear logging and sent the report off, just as the station announced it would no longer QSL reports!

Ryan Lughermo (P.O. Box 41, Midland, MI 48640-0413) is looking for pen pals anywhere, as well as other SWL's in his area. Ryan, you and other Michigan-based SWL's might wish to check out the Michigan Area Radio Enthusiasts (MARE). They are an active, enthusiastic bunch; publishing a monthly bulletin and holding frequent get-togethers. You can contact them at P.O. Box 311, Wixom, MI 48096-0311.

African stations are the main interest of Ben Fuller, Jr., of Falmouth, Massachusetts. And it's easy to understand why, once you know that Ben is an anthropologist who spends a lot of time in Namibia, in villages so remote, they are 150 miles away from the nearest gasoline pump! Ben said he relied on shortwave as an information source during his 1985-88 stint there and that led to a greater shortwave involvement on his return home.

Milijov Rundun of Stony Creek, Ontario sends a photo of his shack, which also shows off his grandson Tommy who, says Milivoj, really enjoys listening. The main receiver is a Yaesu FRG-7700.

William Moser is Program Director of the Museum of Discovery in Harrisburg, PA and recently graduated 15 students from a

Radio Sweden sent this white, blue, red and yellow sticker to Andrew Hardy in Erie, PA.

"Radio World" class, in which each student built a simple shortwave set (see photo). Bill says he brought his QSL collection in one day, and it sparked considerable interest. It is always encouraging to see young people getting turned on to shortwave. Keep up the great work, Bill!

On of the many great things about shortwave is the occasional chance for in-person contacts between listener and broadcaster. A year ago, Gary Emerson of Golden, CO was an in-person guest on Peter Cavanaugh's "Australia Overnight" program on Radio Australia. Last summer, Peter was a guest in Gary's home for several days.

Larry Zamora in Grand Forks, North Dakota is happy with a QSL, background material and schedule he received from Trans World Radio in Sri Lanka. Larry tuned for and heard the station after hearing the schedule read on TWR's Bonaire DX program. Your timing was right on, Larry. TWR has just announced the discontinuation of broadcasts from Sri Lanka (which were over the SLBC's transmitters) until it can build its own facility in Sri Lanka.

Clem Carpenter in Cincinnati wants to know if the BBC still issues those full color "Big Ben" acknowledgment cards. Anyone know for sure?

Your reports are always welcome to the *Listening Post*! We ask only that you allow double space or more between items and include your last name and state abbreviation after each. Shack photos, station information and schedules, duplicate QSL's you don't need returned, press clippings, questions and comments are always appreciated!

Here are the logs for this month. All times are UTC and language is English unless noted otherwise:

Clem Carpenter in Cincinnati received this QSL from Radio Australia International. It's one of several designs used.

Abbreviations Used in Listening Post

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

Afghanistan: Radio Afghanistan on 15510 at 1847-1930 with local music, into EE news at 1900 with ID. (Tuchscherer, WI)

Alaska: KNLS at 1503-1522 on 11700. Religious program in Asian languages except for EE ID at 1515. (Tuchscherer, WI)

Albania: Radio Tirana, 9500 at 0233 with news. (Moser, PA) 0340 QRM'd by WYFR-9505. (Duggan, AZ)

Algeria: RTV Algerienne in AA at 0633 on 17745. (Gilbert, CA)

Antigua: BBC Relay on 5975 at 2305 with news. (Moser, PA) Deutsche Welle Relay 6040 at 0117 with features. (Moser, PA)

Argentina: RAE on 6060 at 0253 in SS. (Gilbert, CA)

Ascension Island: BBC Relay on 15260 at 0126. (Moser, PA)

Australia: Radio Australia, 9580 at 1202. (Reynolds, MO) 11800 at 1200, 15160 at 0725 and 21740 at 0105. (Johnson, IL) 17795 at 0250 (Moser, PA)

VL8K, Katherine on 2485 at 0912 with pops. (Berman, WA)

VLW Perth, 6140 at 1000 with news. (Berman, WA)

Austria: Radio Austria International, 6015 (via RCI, ed) at 0505. (Duggan, AZ 9875 at 0030 with multi-lingual sign on program in FF. (Moser, PA)

Belgium: BRT, 0025 at 2100 with drama. (Moser, PA)

Bolivia: Radio Nacional Cochabamba, 5975 at 0932 with Andean ballads, woman announcer with national news in SS. (Berman, WA)

Radio Cristal, La Paz, 5005 at 1045 in SS with pop music, woman announcer, promos, ID. (Berman, WA)

Radio Fides, La Pa, 6155 at 1055 in SS with man and woman announcers, ED, religious commentary. (Berman, WA)

Radio Illimani, LA Paz, 4945//6025 at 0205 in SS with salsa music, ID, promo, (Berman, WA)

Radio Nueva America, La Pa, 4795 at 0315 in SS with ballads. (Berman, WA)

Radio Panamericana, La Paz, 6105 at 0409 in SS with Bolivian music, news, IDs, promos. (Berman, WA)

Botswana: Radio Botswana, 4820 at 0350 with IS. (Moser, PA) (Since moved to 4830. Editor)

Brazil: Radiobras, 11745 at 0236. (Reynolds, MO 0221. (Moser, PA) 0205. (Johnson, IL) 0240 to 0252 sign off. (Duggan, AZ)

Radio Cultura do Para, 5045 in PP at 0831 news, commercials, ID. (Carpenter, OH)

Radio Marajoara, 4955 in PP at 0844. (Carpenter, OH)

Radio Clube do Para 4885 in PP at 0851. (Carpenter, OH)

Radio Nacional Amazonia, 6180 at 0838 with Brazilian pops and folk music. (Carpenter, OH)

Radio Universo, Curitiba, 6060//9565 at 0215 in PP with music, ID. (Berman, WA)

Radio Bandeirantes, Sao Paulo, 6090 at 0217 with news and comment in PP. (Berman, WA)

Radio Aparecida, 9630//11855 in PP at 0235. (Berman, WA)

Radio Relogio Federal, Rio, 4905 in PP with time checks 0337. (Berman, WA)

Radio Araguaia, 11830 at 1015 in PP with Brazilian pops. (Berman, WA)

Radio Guaiba, Porto Alegre, 6000//11785 (behind RBI) at 0346 in PP with pops. (Berman, WA)

Bulgaria: Radio Sofia, 15290 at 0345 with DX program, 17825 at 0645 with DX program. (Johnson, IL 15330 at 2338 with music, talk. (Gilbert, CA)

Burkina Faso: RT Burkina on 4815 at 0545 with music and talk in FF. (Gilbert, CA)

Canada: RCI on 5960 at 0026 with travelouge. (Moser, PA) 6140 at 0525 with sports. (Carpenter, OH)

CKZU Vancouver, 6160 at 0720 with Tommy Dorsey music. (Duggan, AZ)

CBC No. Quebec Service, 6195 at 0456 with IDs in EE and FF at 0500. (Duggan, AZ)

Chile: Radio Nacional, 15140 at 2130 in SS. (Gilbert, CA)

China: Radio Beijing, 11715 (via Mali, editor) at 0350. (Duggan, AZ) 11855 at 1345. (Lord, CA) 17855 with news at 000. (Johnson, IL) 1123. (Zatko, MS)

CPBS-2 on 15030 at 1000-1130 in CC. (Emerson, CO)

Colombia: Caracol Neiva, 4945 at 0846 with latin pops, ID jingles, commercials, all Spanish. (Carpenter, OH)

La Voz del Cinaruco, 4865 in SS at 0855 with Latin pops, full ID and time check at 0900. (Carpenter, OH) 0629. (Gilbert, CA)

Caracol Bogota, 4755 in SS at 0916 with news, commercials, IDs. (Carpenter, OH) 5075 at 0350 with ID, commercials. (Johnson, IL)

La Voz del Llano, 6116 at 0300 with ID, frequency announcement in SS at 0300. (Johnson, IL)

Radio Macarena, Villavicencio, 5975 at 0950 in SS with cumbia music. (Berman, WA)

Costa Rica: Radio Reloj, 6006 at 0827 with latin pops, commercials, frequent time checks and IDs. (Carpenter, OH)

Radio Impacto, on 5044 at 0506 with news, ID. (Shute, CA) 5030 at 0445 with ID in SS. (Johnson, IL)

TIFC at on 5055 at 0242 with music. (Moser, PA)

Radio For Peace International, 25945 at 1737. (Duggan, AZ) 2033 with promo and ID. (Berman, WA)

Cuba: Radio Havana Cuba on 9655 at 0405 with news. (Moser, PA)

Czechoslavakia: Radio Prague, 5930//7345//9540//11990 at 0315 with features. (Moser, PA) 13715 at 0310. (Johnson, IL)

Denmark: Radio Denmark, 15156 at 2256 with ID in EE and Danish followed by Danish programming. No longer issues QSLs. (Johnson, IL)

Dominican Republic: Radio Clarin, 11700 at 2311 with music, talk in SS. (Gilbert, CA)

East Germany: Radio Berlin International, 11785 at 0335. (Duggan, AZ) 0349 (Reynolds, MO) 11890 at 0220. (Moser, PA) 15240 at 0240. (Johnson, IL)

Ecuador: Radio Paz y Bien, Ambato, 4820 at 0918 with religious programming in SS. (Berman, WA)

Radio Progresso, Loja, 5060 in SS at 1040 with commentary. (Berman, WA)

Radio Catolica Nacional, Quito, 5030 at 0142-0205 in SS with concert music, IDs, talks, hymn. (Tuchscherer, WI)

HCJB on 9745 at 0735 with letters. (Moser, PA 15155 at 0200 with "Ham Radio Today". (Johnson, IL) 0228 with DX Party Line. (Reynolds, MO)

Egypt: Radio Cairo, 9475 at 0219. (Moser, PA) 0310. Off 0330. (Duggan, AZ)

England: BBC on 7325 at 2306 with news. (Moser, PA)

Finland: Radio Finland International, 11755 at 0255 with multilingual ID. (Duggan, AZ) 15185 at 0255 sign off. (Johnson, IL) 15400 at 1214. (Moser, PA)

France: Radio France International, 7280 at 0345 closing EE. Also 1300 on 21635 with news. (Johnson, IL)

French Guiana: RFI relay on 11670 at 0320 with news. (Moser, PA)

Gabon: Africa Number One, 4830 at 0459 sign on in FF, music, EE ID mentioning "Music on Africa Number One." (Moser, PA) 17630 at 0710 with commercial in FF and African music. (Johnson, IL)

Ghana: GBC 1,4915 at 0529 with drums, music, ID in vernacular. (Johnson, IL) 0600 with news. (Moser, PA)

Greece: Voice of Greece, 9385//9420//11640 at 0135 with news. Another time on 9420//11645 to 0150 close. (Johnson, IL)

VOA Kavala relay on 17830 at 0350-0407 in language, mideast music ID and news at 0400. (Tuchscherer, WI)

Guam: KTWR at 1528 on 11650 with Pacific DX Magazine and sign off. (Berman, WA)

KSDA, Adventist World Radio, 11980 at 1400 in CC. (Chord, CA) 13720 at 1025 with religion, ID and address in EE. (Moser, PA)

Guatemala: Radio Tezulutlan, 4835 at 0240 with talk in local indian language with lots of marimba music. (Johnson, IL)

Honduras: HRVC, La Voz Evangelica, 4820, noted variously in SS between 0250 - 0411. (Gilbert, CA; Moser, PA; Johnson, IL; Duggan, AZ)

Hungary: Radio Budapest at 0033 on 9520//9835. (Moser, PA)

India: All India Radio, 9565 at 1330 with news, commentary. EE service to SE Asia. (Story, TX) 11620 at 1455 in tentative Sinhalese. (Lord, CA 15050 at 1048 to 1100 close. (Emerson, CO)

Iran: VOIRI, 15084 at 0150 with ID in SS. (Johnson, IL)

Iraq: Radio Baghdad, 11945 at 0257-0314 in AA with local music EE ID and news from 0306. (Tuchscherer, WI) 13660 at 1957 in GG to 1957 close. (Carpenter, OH)

Israel: Kol Israel, 11585//17454 at 1715 in Hebrew with live music and speeches. (Berman, WA) 11605 at 2329 with IS and off. (Gilbert, CA 0014 with news. (Moser, PA)

Italy: RAI 9575 at 0109 with news and music. (Johnson, IL) 11800 at 0112 with news. (Moser, PA)

Japan: Radio Japan at 1403 on 11815//11865 in EE and 15195 in EE beamed to Japanese nationals in China. (Shute, CA) 15325 at 0315, 0325 and 0340. (Johnson, IL; Duggan, AZ)

Jordan: Radio Jordan, 13655 at 0618 with western pops, announcements, time checks, IDs. (Carpenter, OH)

Kiribati: Radio Kiribati, 14918 at 0652 with news about World Health Organization activities in Polynesia. (Berman, WA)

Lesotho: Radio Lesotho, 4800 at 0410. (Fuller, MA)

Liberia: VOA Relay, 7280 at 0646. (Carpenter, OH) 0730 on 11955. (Gilbert, CA 15580 at 1748. (Reynolds, MO) 15600 at 1807. (Moser, PA)

ELWA on 11955 at 0721 with religious program. (Carpenter, OH)

Libya: Radio Jamahiriya, 15235 at 0330 in AA. (Gilbert, CA)

Luxembourg: Radio Luxembourg, 6090 at 0018. (Fuller, MA) 0133 with rock and woman in EE. (Moser, PA)

Mali: RTV Malienne, 4783 at 0607 in FF. (Gilbert, CA) Tentative at 0602 on 5995 in FF. (Johnson, IL)

Radio Beijing, via Mali, 11715 at 0307. (Moser, PA)

Malta: Deutsche Welle relay at 0145 on 9565. (Johnson, IL) 0302 on 9605. (Moser, PA)

Mauritania: ORTM with chants at 0642 on 4845. (Gilbert, CA)

Mexico: Radio Universidad in SS at 0615 with semi-classical music on 614. (Duggan, AZ Mexican music at 1520. (Lord, CA)

Radio Educacion, 6185 at 0620 in SS. (Gilbert, CA)

La Voz de America Latina, XEWW on 9515 at 0545 with SS pops, promos, commercials in Spanish. (Berman, WA)

Monaco: TWR Monaco, 9485 at 0633 with sermon. (Carpenter, OH)

Morocco: RTM Morocaine, 15105//15335 at 0050 with regional music. (Gilbert, CA) (FF or AA?) 15335 at 2216 in AA. (Moser, PA)

Montserrat: DW relay on 9545 at 0301. (Reynolds, MO; Moser, PA)

Mozambique: Radio Mocambique, 3210 at 0415 in PP with pop music man and woman announcers, ID. (Berman, WA)

Namibia: SWABC, 4965 at 0442. (Fuller, MA)

Netherlands Antilles: Radio Netherlands Bonaire relay, 6020 at 0112. (Moser, PA 15315 at 0036. (Reynolds, MO 0033. (Moser, PA) 21685 at 1858. (Reynolds, MO)

Trans World Radio, Bonaire on 9515 in PP at 0750. (Carpenter, OH) 9535//11930 at 0438. (Duggan, AZ) 11930 at 0423 (Moser, PA) 15355 in SS at 0335. (Johnson, IL)

New Zealand: Radio New Zealand, 9850 at 1015 with news. (Moser, PA) 15485//17705 at 0620. (Johnson, IL) 17705 at 0445 (Duggan, AZ) 0558 (Gilbert, CA 0730 sign off. (Johnson, IL)

Nigeria: Voice of Nigeria, 7255 at 0500 with program line up. (Carpenter, OH 0535 with news, ID. (Johnson, IL) 0615 in FF. (Gilbert, CA)

Northern Marinas: KYOI, 9530 at 1458 with schedule, frequencies and into GG. (Berman, WA)

Northern Korea: Radio Pyongyang, 13650 at 0620. (Gilbert, CA) 15115//15160 at 0002. (Moser, PA)

Norway: Radio Norway, 15310 at 1955 with IS, ID and sign on. (Moser, IL) 0257 with ID in NN and EE. (Johnson, IL)

Pakistan: Radio Pakistan, 9715 at 1330-1400 with news, local music. (Story, TX)

Papua New Guinea: Radio manus, Admiralty Islands, 3315 at 1130 in unidentified language. (Emerson, CO)

NBC Port Morseby, 4890 at 1155. (Emerson, CO)

Radio Northern, 3345 at 11315 in unidentified language. (Emerson, CO)

Radio Gulf, 3245 at 1144 in unidentified language. (Emerson, CO)

Radio West Sepik, partial EE at 1146 on 3205. (Emerson, CO)

Radio Western Highlands, 3375 at 1140 in unidentified language. (Emerson, CO)

Radio New Ireland, 3905 at 1136 with some EE. (Emerson, CO) (If no in EE the language was probably Pidgin, Editor)

Paraguay: Radio Nacional Paraguay, 9735 in SS at 0048. (Gilbert, CA)

Peru: Radio Union, 6117 at 0815 with music and talk in SS. (Gilbert, CA)

Radio Altura, Cerro de Pasco, 3340 at 0300 in SS. Andean music, IDs and promos, (Berman, WA)

Radio Atlantida, Iquitos, 790 in SS at 0315 with latin music, IDs. (Berman, WA)

Radio Melodia, Arequipa, 5995 at 0339 in SS with salsa and "Melodia!" (Berman, WA)

Philippines: VOA relay, 15425 at 1153. (Moser, PA)

Portugal: RDP on 9600//11840 at 0255 in PP. Off 0300. (Berman, WA) 9680 at 0015, ID in PP. (Johnson, IL) 9705 at 0239 with news, music. (Moser, PA)

Qatar: QBS Doha, 17705, tentative at 1647 in AA with chants, then news at 1700. (Tuchscherer, WI)

Romania: Radio Bucharest, 9540 at 0200 with ID,

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news. (Johnson, IL 11940 at 0256 with IS, ID is SS. (Reynolds, MO) 0159 with IS, sign one, ID in EE (Moser, PA)

Rwanda: DW Relay, 7225 at 0400 with news and ID. (Johnson, IL)

Singapore: SBC on 11940 with American pops to 1700 when news. (Lord, CA)

Solomon Islands: SIBC, 9545 at 0740 with news. (Johnson, IL) 0742. (Gilbert, CA)

South Africa: Radio RSA, 4965 at 0358 with bird call/guitar IS, EE sign on the into Afrikaans service. (Berman, WA, Johnson, IL) 9615 at 0150 with IS, IS 0200. (Johnson, IL Reynolds, MO)

Radio Five, 4880 at 0445 with pops, commercials, requests. (Carpenter, OH) 11885 at 0640 with top 40. (Johnson, IL) Radio 560, 4880 at 0409. (Fuller, MA) (Not familiar with this station name - same as Radio Five? Editor)

South Korea: Radio Korea, 9570//9750 with "Seoul Calling". (Shute, CA)

Spain: Radio nacional Espana at 0000. (Johnson, IL) 0027 (Moser, PA) 0515. (Reynolds, MO) 15110 at 0002. (Zatko, MS)

Swaziland: TWR Manzini, 3200 at 0412 with hymns, religious programs in GG. (Berman, WA)

Sweden: Radio Sweden, 9695 at 0300 with news. (Johnson, IL) 0329 with vocals, Swedish ID and //11705. (Duggan, AZ) 11705 at 0029 with IS, ID in SS. (Moser, PA) 17800 at 0108. (atko, MS)

Switzerland: SRI, 6135 at 0215. (Moser, PA) 9725 at 0209 with DX show. (Reynolds, MO) 17730 at 0204. (Moser, PA)

Syria: Radio Damascus, 15095 at 2101 sign on with ID, anthem. (Moser, PA) 17710 at 2005 with ID, news, Arabic music. (Johnson, IL)

Tahiti: Radio Tahiti, 6134 at 0615 with FF news. (Duggan, AZ) 115171 at 0432 in FF. (Moser, PA)

Taiwan: VOFC via WYFR on 9680 at 0359. (Reynolds, MO)

Togo: RTT Lome, 5047 in FF at 0545. (Gilbert, WA)

Tunisia: RTT Tunis, 11550 at 0400 with ID, news in AA. (Johnson, IL) 0504 in AA. (Gilbert, WA)

Turkey: Voice of Turkey, on 9445 at 2247. (Moser, PA 0148. (Gilbert, CA) 0240. (Johnson, IL)

United Arab Emirates: Voice of the UAE, Abu Dhabi, 11965 at 2325-2345 with news and Arab Fables. (Story, TX)

UAE Radio, Dubai, 15435 at 10329 with ID and news. (Johnson, IL)

United States: WWCR Nashville, 0218-0228 with "Point of View" and discussion of plans for future broadcasts to China, 7520. (Tuchscherer, WI) 15960 from 1500 to past 2100, SS from 0000-0030 and EE start after 1900 on Saturdays and Sundays. (Tripka, PA)

WRNO, 13720 at 2315 in FF. (Duggan, A) 15420 at 2030. (Moser, PA)

WYFR, 6065 at 0742. (Moser, PA) 15345 at 1805 blocking Argentina's RAE. (Duggan, AZ)

VCSN, 9850 at 0100 going into FF. Off at 0150 but back at 0200 (Tripka. PA) 0200. (Moser, PA) 15610 2149-2155 close. (Tuchscherer, WI)

VOA, 6035 at 0427 with "Saturday Morning." (Moser, PA) 9670 in Creole at 2150-2200. (Tuchscherer, WI)

KVOH around 0000-0100 on 13775. (Tripka, PA)

WHRI 7365 at 0230 seems to be alternating SS and PP on some days. PP noted UTC Sundays, SS UTC Fridays, all EE 0200-0300 Monday, not sure about rest of the week. (Tripka, PA) 13760 at 1745. (Moser, PA)

WSHB, 13760 heard announcing a South American transmission from 000-0200 in SS but actually programming was both SS/EE, SS for half an hour at 0000, the EE at 0030, SS 0100, EE 0130, SS 0155, EE at 0200. Announced 21640 to Europe changed to 15610. (Tripka, PA)

KUSW on 9875 at 0143. (Moser, PA)

USSR: Radio Moscow, 9765 with commentary at 0024. (Moser, PA)

RID time signals heard on 10005/15005 at 1408. (Shute, CA)

Uzbek SSR: Radio Tashkent, 11785 at 1331 with news, no mention of unrest there. (Reynolds, MO)

Vatican: Vatican Radio, 6150 at 0311 with news. (Moser, PA) 9605 at 0054. (Reynolds, MO) 11740 at 0545 with Latin Mass. (Gilbert, WA) 0630 with news and 11780 at 0050. (Johnson, IL) 0101. (Berman, WA)

Venezuela: YVTO time station, 6100 at 0605. (Gilbert, CA) (Now on 5000 again, Editor)

Radio Maturin, 5040 at 0925 in SS with promos and ID. (Berman, WA)

Radio Valera, 4840 at 0916 in SS with pop music, IDs. (Berman, WA)

Vietnam: Voice of Vietnam, 10010 at 1226 in presumed Cantonese. (Gilbert, WA) 15010 at 1005. (Johnson, IL) 1402 in possible JJ on both frequencies. (Shute, CA 15010 at 1945 with pop music, FF ID and sign off. (Berman, WA)

West Germany: Sudwestfunk, 7265 in GG at 0323 with pops, announcements, ID. (Carpenter, OH)

Deutsche Welle, 9735 at 0120. (Moser, PA) 11810 at 0347 with GG lessons, (Duggan, AZ)

Yugoslavia: 7215 at 0023. (Moser, PA) 15105 in FF at 2355. (Gilbert, CA)

Many thanks to the following good folks: John Tuchscherer, Neenah, WI; Tim Johnson, Galesburg, IL; Ben Fuller, Jr., Falmouth, MA; Kevin Story, Midland, TX; George W. Zarks, North Biloxi, MS; William Moser, Harrisburg, PA; Michael C. Tripka, Pittsburgh, PA; Cliff J. Reynolds, Hazelwood, MO; Jonathon D. Berman, Amboy, MA; Michelle Shute, Imperial Beach, CA; Warren Gilbert, Sherman Oaks, CA; Frank Duggan, Phoenix, AZ; Gary Emerson, Golden, CO; Earl N. Lord, Los Angeles, CA and Clem Carpenter, Cincinnati, OH. "Welcome back" to Shute and Moser!

Til next month . . . Good listening! PC

PIRATES DEN

FOCUS ON FREE RADIO BROADCASTING

BY EDWARD TEACH

Recent months have proven to be one of the most active pirate periods ever! I'm swamped with reports so let's get started right away and try to squeeze in as much as possible.

Free Radio One continues very actively with its relay of programs on the North American One satellite. John F. Bernard in Ontario has logged them several times on 7415 between 0000-0215. Robert Spivack of Massachusetts got them varying on 7420, chased by interference to 0530 close. Robert Ross in Ontario had them at 0120 on 7415. George Zeller in Ohio found them with their own programming, right-wing in nature, from 0249-0305 and again with an apparent repeat at 1527 and 0224, this time on 7396.8. A reporter who wants his name withheld says this Free Christain Patriots group is a large and growing organization. He's found the station on 7398, 7416, 7428 and 7438. Raymond Arritt in Kansas had them at 0240 and Mark Goodson in Pennsylvania at 1550 on 7415. Information packets have been received, but the promised QSL's have not yet appeared.

Conrad Dahon in Virginia heard **Turn Star Radio Shortwave** at 0205-0500 close on 6240. ID was "This is KRDC pirate 91.9 FM in New York and Turn Star Radio Shortwave, 6240 kilocycles on your shortwave dial." Address announced, but static made copy impossible.

Dick Prado in California heard **Zodiac Free Radio** at 0514 on 7420. Host Frank Marauder played jazz and an old "Amos 'n Andy" show. I've heard from Frank and he says the station is suffering interference from a utility station on 7423. Frank would like to have this identified if any of you want to have a go at it.

Red Rose Radio was heard by Bob Ross. Logged on 7415 at 0303, but it's apparently a US or Canadian pirate relaying a British FM station. Bob did get a QSL from the British station which is a legit broadcaster.

Hello Radio (or Heellllooooo Radio!) was noted by Mark Goodson on 7420 at 0330 with country music, comedy bits and recordings of TV station sign off announcements. John Bernard heard the station at 0402 and calls it "the weirdest station I ever logged!" It included, apparently, intentional heterodynes in the sign on and all sorts of other noises during the telecast, along with any number of strange features, such as the 1972 eclipse of the sun.

George Zeller caught **The Voice of Bob** at 0218-0246 close on 7418 with novelty music and parody stuff. A synthesized Donald Duck type voice gave the Hilo maildrop address. No slack on this one!

The Voice of Stench was another Zeller log, this one on 7415 at 2036 to 2017 close with mostly pop music and the Beaver Falls address. Also logged by Fraser Bonnett vacationing in Pennsylvania at 2310 on 7415.

This rather "sick" Radio Angeline QSL was received by Fraser Bonnett.

The Voice of The Purple Pumpkin was found by Bill Lauterbach in Michigan on 7418 with a test at 0148. Zeller had them on 7419 to 0149 close. Why do folks just *love* that station name?

Radio Garbanzo was heard by an Indiana listener on 7415 to 0450 when the signal was lost. The program was rock music with announcements that the station was having technical problems. Gave the Hilo address. John Barnard also had this one at 0419-0440 on 7412 and noted the DJ was taking pot shots at WENJ's golden oldies format.

The once fairly active **WYMN** has appeared again and was logged by Bill Lauterbach on 7418 until 0130 sign off. ID as "women's radio for the feminist movement" and, as in the past, playing music by female artists only. Also heard by Zeller at 0040-0138 and Bonnett at 0127.

WMIL, a country music station in Milwaukee, was heard being relayed on 7420 at 1300-1334 by Robert J. Bohn in Ohio who got a "QSL" reply from WMIL. I think I've seen an occasional report of this relay in the past.

Falling Star Radio was logged by Robert Ross on 6240 at 0330. The program was the "Sunday Night Extravaganza" and included classical music with announcer Pirate Joe. ID as KPRC, 91.9 and Falling Star Radio 6240 shortwave." Zeller heard the station with Pirate Bill at 0256-0330 and Barnard at 0230-0400, apparently only with KPRC mentions.

KBFA was found by Zeller on 7412 variable at 0257-0308 close with songs and an announcement about testing the station's new transmitter. ID as "From somewhere in the United States this is KBFA, Broadcasters of Free America." No addressed announced. This is likely the same as Bonnett's tentative "KSBA" heard with tests about this time.

Bonnett also had a log on a station he tentatively ID's as **The Voice of Elmer Fudd** on 7418 at 0222. He says an address was announced, but it was distorted and not copied.

Zeller reports **Samurai Radio** on 7444 at 0422-0431 close with ID's as "the voice of Oriental America. . . in the 39 meter band, shortwave." The broadcast included rock and ragtime music. A test was announced for 15201 following this broadcast, but that was not heard.

Another fairly new station is **KRUD Radio**. John Barnard noted this on 7420 at 0520-0610 close, programming heavy rock and announcing itself as the "Frank Zappa connection." Also heard by Conrad Dalton at 0530-0605 and by Tom O'Neill in Michigan to close at 0608. Heard by Ben Fuller, Jr. at 0535. Reports go to 3007R 4th Ave., Beaver Falls, PA 15010.

WKND on 6240 at 0405-0621 with the "Radio Animal" as the DJ was spotted by John Bernard who says that most of the broadcast was a religious/occult talk by "Brother Jim." Also heard by Fuller at 0425 (who would like confirmation of the station's

claim that it began on Halloween, 1988). Conrad Dalton had them with disco and cajun tunes at 0535-0622 and Mark Goodson found them at 0412, John Barnard logged them from 0200-0230.

Zeller reports **WKRT** on 7400 at 2017-2019 closing and says that although he's checked his tape many times the call could still be WKRC or WKRP.

Another Zeller log was **Secret Mountain Laboratory** on 7418 at 0029-0044 closing, featuring a documentary about an FCC deregulation proposal.

WKZP (K-ZAP) heard with rock and comedy on 7415 by Bill Lauterbach at 0117-0200 and announcing a Pennsylvania address. Probably the Beaver Falls drop.

Radio Angeline on 7418 was noted by Thomas Chandler in Virginia at 0319. Raymond Arritt in Kansas heard them at about the same time giving an address of P.O.Box 4054, Washington, DC (no zip provided by Ray). This station is apparently being aired over the Radio Clandestine transmitter. There were quite a number of reports for radio Clandestine this month which I won't be able to fit in this time, as it was necessary to condense things a great deal.

It has been a long while since there's been this much pirate broadcasting activity, so I hope you are catching them while you can! And, I hope you'll keep sending those log reports, QSL copies and so on into this column. If you operate a pirate station, we'd like to hear from you. PC

Beaming In *(from page 4)*

a card, QSL card, or letter telling him how you feel about his suggestion to take 6 meters away from ham radio and turn it into a new FM broadcasting band? Write to Mr. Lawrence J. Tighe, Jr., K2JIA, Radio Station WRNJ, Box 1000, Hackettstown, NJ 07840. If you don't do it, nobody else will.

Who should write? Hams, SWL's, ham organizations, members of SMIRK, and anybody else who is just plain tired and angry about seeing hobby radio become the newest source of transfusions with which to satisfy the frequency needs of other radio services.

If we let ourselves be robbed again, this time we'll probably deserve it.

Where's Ray?

Along about this time every year, lots of us radio types begin looking forward to the annual early-January Ray Briem three-hour call-in program about DX'ing. This ABC TalkRadio Network program goes out over the entire national network and provides a wonderful promotional opportunity for the DX'ing hobby.

Not only does it offer a forum for DX'ers to call in and chat with various broadcasting and DX hobby personalities, it also exposes the general public to the great hobby of SWL'ing. Undoubtedly, Ray's many special DX programs have brought many new members into the hobby.

But, don't bother looking for this special DX program this January. In fact, for reasons not fully understood outside the of the inner sanctums of ABC's corporate offices, don't look for any Ray Briem Show on the network. After many years on the network, the network pulled the plug on Ray late last September. The ratings had been good, and just before the axe fell, a major midwestern station had signed up to carry Ray. Figure it out!

As this is being written, Ray's show appears to have been cut down to appearing only on KABC in Los Angeles, where it originates. But its nightly appearance on the ABC TalkRadio network itself is history. The mystery is that not long before he cancelled the show from the network, ABC program director for talk programming gave an interview (to Paula Dragutsky, Editor of New York's *Talk Radio Guide* magazine) in which he described Ray Briem as "a class act . . ."

I, for one, wrote to Mr. Rimmer and squawked about his loss of this program. If you'd like to do the same, his address is: Mr. David J. Rimmer, Program Director, Talk Programming, ABC, 77 West 66th Street, New York, NY 10023.

Holiday Thoughts

From our QTH to yours, our best wishes go out to you for the best Holiday season ever. May Santa bring you those things you've been waiting for all year. PC

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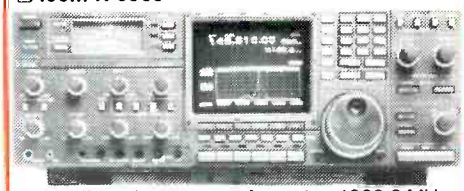

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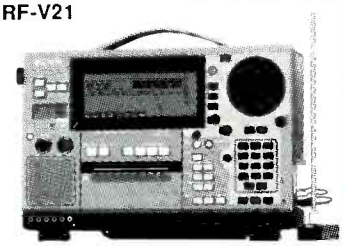

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CIRCLE 11 ON READER SERVICE CARD

CIRCLE 110 ON READER SERVICE CARD

Advertiser's Index

SCAN Photo

(from page 43)

foot longwire shortwave antenna, a Lunar GDX-4 scanner antenna, and a 16 foot stick antenna which Swank uses with his Cobra 90 LTD CB to communicate with others about what he's heard on his scanners.

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

SCANNING TODAY

(from page 10)

Miller, Chairman, New Jersey Senate Transportation and Communications Committee, 10 Furler St., Totowa, NJ 07512; and The Honorable Walter Rand, Chairman, New Jersey Assembly Transporation and Communications Committee, 514 Cooper St., Camden, NJ 08102. Don't wait to write; if you do, the year will pass and these bills will die. It's time for state legislators in New Jersey know that SCAN members care about these bills!

SCAN Letters

SCAN member Ron B. Gill of Weston, Ontario, asks SCAN whether we know where to find frequencies for the Toronto area in Ontario. Actually, we've found an excellent source called the "Haruteq Scanner Book," which is published in separate volumes for Ontario and Quebec. I've used the Quebec guide several times while in Canada and have found it complete and thorough. For ordering information, contact: Haruteq, P.O. Box 9268, Stoney Creek, Ontario L8G 3X9, Canada. They also can be reached by telephone during normal business hours at (416) 560-3807.

SCAN member Clint Chastain of Bryan, Texas, says he recently modified his Radio Shack Realistic PRO-34 handheld scanner to restore full 800 MHz coverage. He also attempted to add 66-88 MHz European coverage by installing a diode at position D9, as suggested in POP'COMM in May. However, he noticed that now with 66-88 MHz "mid-band" coverage, he has lost 30-54 MHz coverage. Clint asks whether the 66-88 MHz coverage can be added while retaining the 30-54 MHz coverage. A lot of scanners are manufactured to be sold in different markets, such as the United States and Europe. However, there is no need to monitor the 30-54 MHz band by European scanner hobbyists, who need to monitor the 66-88 MHz band for scanner action. The diode trick that Clint describes changes the scanner from a U.S. model to a European model. In other words, you have to choose whether you want to listen to 30-54 or 66-88 MHz. Given that about the only things you'll hear between 66 and 88 MHz are paging and two-way radio links as well as TV audio and visual frequencies, I'd opt for the 30-54 MHz action band here in the United States. It's a neat trick, however, for those who may consider taking their PRO-34 abroad while traveling.

Write to SCAN

We welcome your letters here at SCAN headquarters. If you have a question, please send it in. We also plan to dedicate a section of this column to new frequency updates. If your city or state has started using new frequencies, let us know so we can tell other SCAN members. We also seek nominations for the SCAN Public Service Award, as well as SCAN Photo Contest Winners. And finally, if you hear of any scanner-related news such as the use of scanners to apprehend criminals or laws that might affect scanner usage, please inform us. You can write to me at: Chuck Gysi, N2DUP, SCAN Editor, P.O. Box 414, Western Springs, IL 60558.

RF Limited Antennas. Unique antennas, bandwidth **500 kHz to 1500 MHz,** adjustable gain 0 to 20 dB. (see POP'COMM 9/89). Model 505C (Mobile) w/16 ft. cable $134.95. Model 707C (Base) w/50 ft. cable $169.95. $5.00 s&h. MC or VISA. Catalog: DOYLE COMMUNICATIONS, Rte. 8 Box 18, Lake Pleasant, NY 12108 (518) 548-5515.

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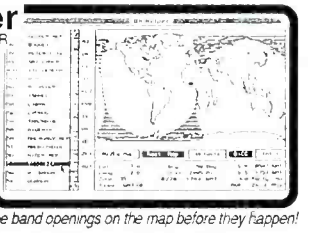

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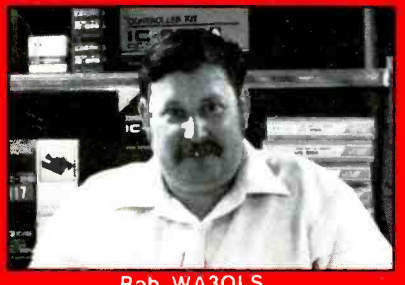

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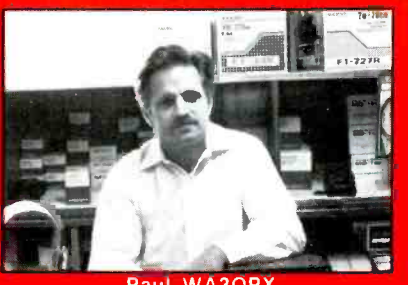

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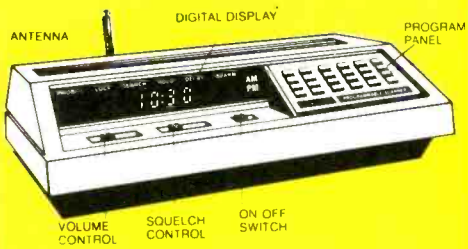

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UNIDEN **Bearcat** BC-600 XLT

$199.99 *($7.00 shipping)*

Digital Programmable 100 Channel Scanner

BC-600 XLT covers the following frequencies: 29-54 MHz, 118-174 MHz, 406-512 MHz. Features compact size of 6-5/16 Wx1-5/8 Hx7-3/8 D, scan delay, priority, memory backup, channel lockout, bank scanning, key lock, AC/DC power cords, telescopic antenna, mounting bracket supplied, one year factory warranty, search direct channel access, track tuning, service search including pre-programmed frequencies by pushing a single button for police, fire, emergency, aircraft, weather, and marine services. Plus exclusive optional features never available on any scanner before. First is an RF receive amplifier for boosting weak signals for only $24.99 plus a CTCSS tone board is available for only $59.99 to make this the number one scanner available in the USA. Optional cigarette lighter plug #600MPC $4.99.

BEARCAT BC-950XLT

Same features as BC-600XLT but also receives 800-954mhz.

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BEARCAT 70XLT

20 CHANNEL HAND-HELD SCANNER

Small size, 6"Hx1"Dx2¾"W, full digital readout, priority, search, channel lockout, scan delay, key lock. Covers following frequencies: 29-54mhz, 136-174mhz, 406-512mhz. Package includes rubber antenna, rechargeable Ni-Cad battery pack, AC adapter/charger, and carry case.

SPECIAL PACKAGE DEAL **$169.99** ($6.00 shipping each)

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Digital programmable 200 Channel hand-held portable scanner with raised button keyboard for easy programming of the following frequency ranges: 29-54MHz, 118-175MHz, 406-512MHz, 806-956MHz. Features include: Scan delay, memory backup, key pad lock, sidelit liquid crystal display, channel lockout, 10 twenty channel banks, direct channel access, automatic search, full one year factory warranty, 10 priority channels, Ni-Cad battery pack, AC adapter/charger, flexible rubber antenna, carry case are all included. Size is 2-11/16Wx1-3/8"Dx7-1/2" high. (Optional extended 2 yr warranty $59.98, 3 yr extended warranty $79.99).

SCANNER WORLD SPECIAL

COBRA SR-925

$99.99

(plus $7.00 shipping each)

Digital programmable, 16 channel, AC/DC mobile/base, with raised button keyboard for easy programming of the following frequency ranges: 29-54mhz, 118-174mhz, 406-512mhz. Covering aircraft, marine, police, fire, weather, trains, public service, plus much more. Features include: digital display, priority, scan delay, weather button, channel lockout, search, scan speed, automatic squelch, memory backup, one year factory warranty, external speaker jack. (Extended warranty 2 years extra $29.99, 3 years extra $39.99.)

Regency HX-1500 Hand-Held Scanner Package

Deal includes MA-549 Drop in Charger

$199.99 *(plus 8.00 shipping)*

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Scan the entire frequency range from 100 kHz to 905 MHz with Kenwood's R-5000, R-2000 and RZ-1. Listen in on foreign music, news, and commentary. Monitor local police, fire, and other public safety services, as well as the Marine channels, and the many other services 50 MHz and above.

(The VHF converter options must be used in the R-5000 and R-2000.)

R-5000

The R-5000 is a high performance, top-of-the-line receiver, with 100 memory channels, and direct keyboard or main dial tuning—makes station selection super easy! Other useful features include programmable scanning, large, built-in speaker, 110 volt AC or 12 volt DC operation (with optional DCK-2 cable), VHF capability (108-174 MHz) with the VC-20 option, dual 24-hour clocks with timer, and even voice frequency readout with the VS-1 option.

R-2000

The R-2000 is an all band, all mode receiver with 10 memory channels and many deluxe features such as programmable scanning, dual 24-hour clocks with timer, all-mode squelch and noise blankers, a large, front-mounted speaker, 110 volt AC or 12 volt DC operation (with the DCK-1 cable kit), and 118-174 MHz VHF capability with VC-10 option.

RZ-1
Wide-band scanning receiver

The RZ-1 wide-band, scanning receiver covers 500 kHz-905 MHz, in AM, and narrow or wideband FM. The automatic mode selection function makes listening easier. One hundred memory channels with message and band marker, direct keyboard or VFO frequency entry, and versatile scanning functions, such as memory channel and band scan, with four types of scan stop. The RZ-1 is a 12 volt DC operated, compact unit, with built-in speaker, front-mounted phones jack, switchable AGC, squelch for narrow FM, illuminated keys, and a "beeper" to confirm keyboard operation.

Optional Accessory
- **PG-2N** Extra DC cable

Optional Accessories

R-2000:
- **VC-10** VHF converter
- **DCK-1** DC cable kit for 12 volt DC use.

R-5000:
- **VC-20** VHF converter
- **VS-1** Voice module
- **DCK-2** for 12 volt DC operation
- **YK-88A-1** AM filter
- **YK-88SN** SSB filter
- **YK-88C** CW filter
- **MB-430** Mounting bracket.

Other Accessories:
- **SP-430** External speaker
- **SP-41** Compact mobile speaker
- **SP-50B** Mobile speaker
- **HS-5** Deluxe headphones
- **HS-6** Lightweight headphones
- **HS-7** Mini-headphones.

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