ICD 08635

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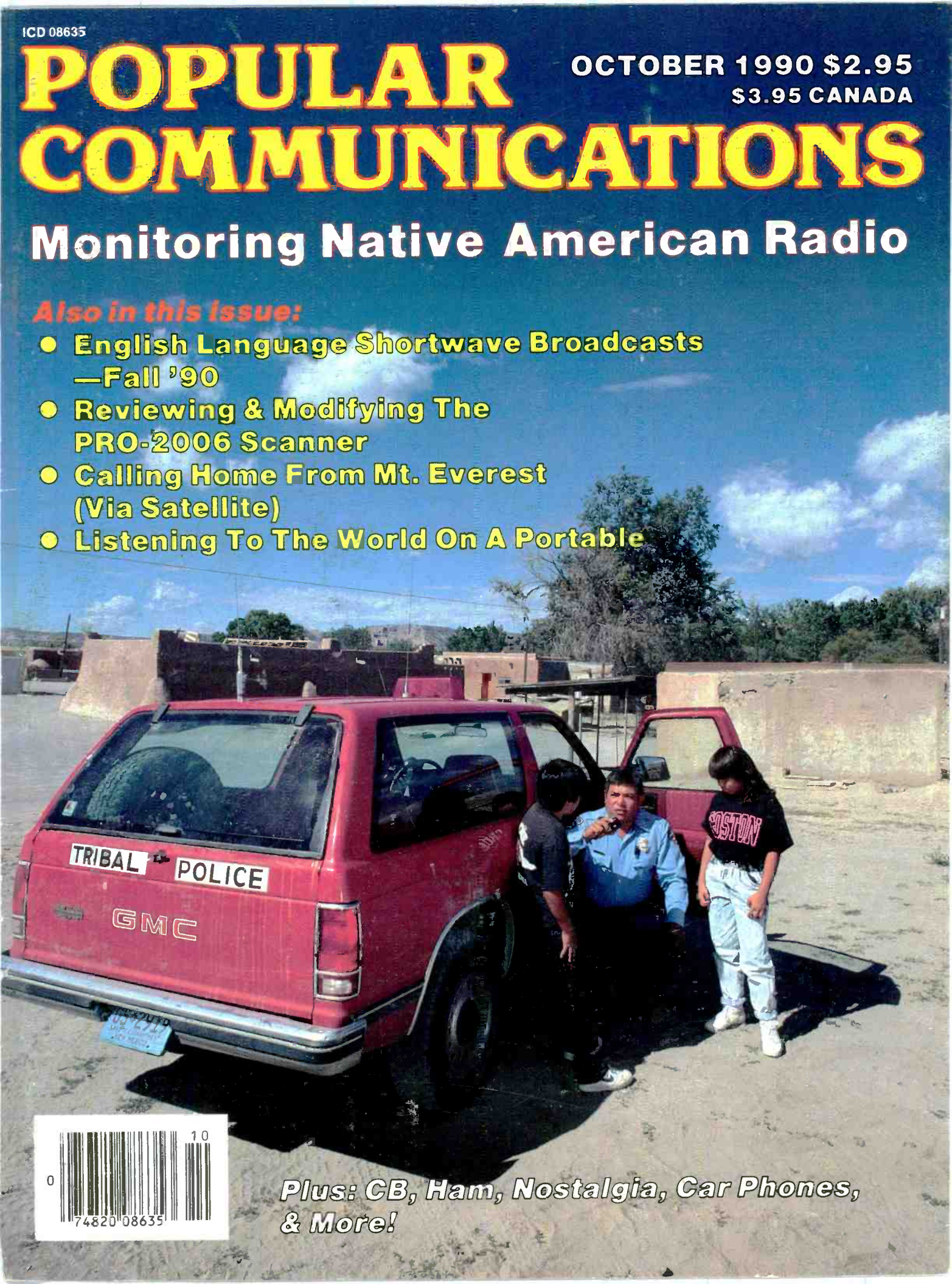

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OCTOBER 1990 **VOLUME 9, NUMBER 2**

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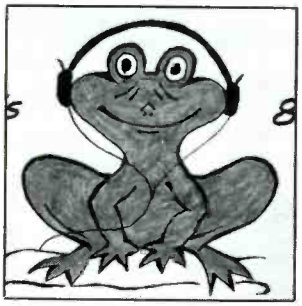

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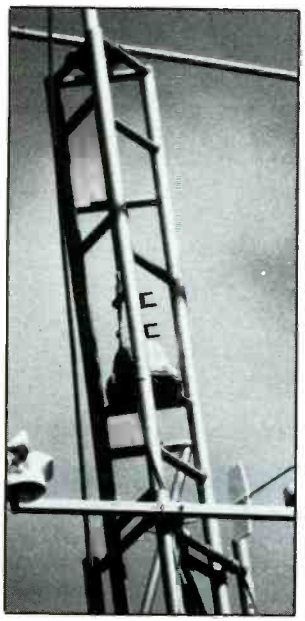

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FEATURES

COLUMNS

DEPARTMENTS

This month's cover: *USA—Santa Clara Pueblo, NM: Tribal Sheriff Stanley H. Tafoya talks to tribal headquarters on police radio. Photo by Larry Mulvehill.*

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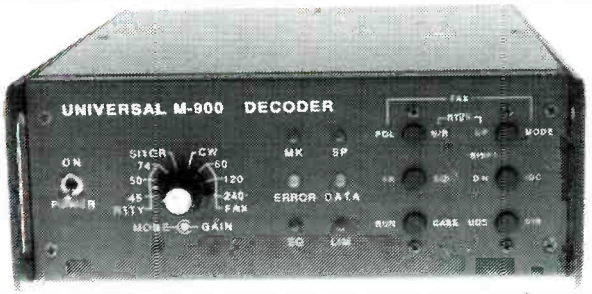

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BEAMING IN

BY TOM KNEITEL, K2AES

AN EDITORIAL

Sounded Like A Good Idea At The Time

So many of the things we do for recreation or a livelihood require the issuance of permits or licenses. An efficient bureaucrat needs to issue one before you may drive or own a vehicle (and sometimes park it), fly or own a plane, be a barber, be a radio operator, use certain chemicals, open a store, add a room to your house, be a doctor or a lawyer, own a dog, even go fishing, and so much more.

It's the mission and the delight of a fantastic infrastructure of federal, county, and municipal agencies and bureaus created and maintained to issue, administer and keep records on this glut of licenses and permits. To be sure, this is a noble calling and, indeed, there is a genuine public need for at least some of this effort.

Within the federal system, licenses and permits of one kind or another are issued by dozens of agencies— FCC, EPA, Dept. of Agriculture, FAA, SEC, FDA, Coast Guard, ICC, ATF, Army Engineers, Dept. of Commerce, OSHA, Dept. of Energy, Dept. of Health and Human Services, Dept. of Labor, NRC, and an almost endless string of others. Each has established criteria for you and I being allowed the privilege of acquiring and continuing to keep the authorizations to do whatever it is that each of these agencies is in charge of allowing us to do.

For instance, the FCC is in charge of issuing licenses to allow persons and companies to broadcast. Last year the license of station WKSP (1090 kHz, 5 kW) in Kingstree, SC was brought up for revocation proceedings by the FCC. WKSP is located in a rural area of the state and carries a lot of farming and black ethnic programming. WKSP had been owned and operated uneventfully for ten years by its present licensees. No fault was claimed with WKSP's broadcasting activities, but the FCC said that a station principal had recently been convicted of drug-trafficking and that therefore he no longer met the character standards the agency had established for its broadcast licensees.

Four years ago, the FCC had established these character standards for broadcasters. They said that station owners couldn't have felony convictions that reflected upon their honesty or truthfulness, nor could they have been found guilty of any anti-competitive activities within the field of broadcasting.

Not long after the WKSP incident began, the FCC received an inquiry from Rep. John Dingell (D-Mich.), Chairman of the House Energy and Commerce Committee, who expressed surprise and dismay that the FCC's character standards for broadcasters were so lenient that they didn't disqualify persons convicted of violent crimes.

That inspired FCC Chairman Alfred Sikes to bring about stringent revisions in the standards. This was accomplished at an open meeting last May. The newly revised standards disqualify persons with all felony convictions, as well as certain misdemeanor convictions from becoming or remaining broadcast licensees. Furthermore, the FCC will also consider violations of antitrust laws (or other anticompetitive behavior) relating to *any* mass communications medium as a possible reason to disqualify a person or company as a broadcast licensee.

Under the earlier 1986 regulations, broadcasters had been required to divulge changes in their felony conviction status at license renewal time (every five or seven years for TV or radio stations). The revised regulations call for such information to be furnished to the FCC as soon as a conviction occurs.

The revised 1990 standards received mixed reviews. Petitions for reconsideration of the new FCC policy were received from Media Access Project/Telecommunications Research Action Center, Chronicle Broadcasting Company, Post-Newsweek Stations, Inc., The Providence Journal Company, Shenanhoah Valley Educational Television Corporation, and the Spartan Radiocasting Company. But others felt the tough new standards weren't strong enough. One Washington attorney said that the new standards would strengthen his client's petition against a company seeking a direct broadcast satellite (DBS) system because that company had a $35-million antitrust judgment against them relating to a franchise renewal matter.

My initial impression was that the FCC had hit upon a practical method of keeping the riffraff and rabble from the airwaves. This might also be your first reaction. Certainly, it appears that admirable motives are behind a desire to maintain a high character level for licensees. Yet, as I thought about the whole thing, I came to realize that the basic premise of the concept is nevertheless fraught with far more potential dangers than redeeming qualities.

What triggered this thought process was when a representative of the company seeking that DBS system noted that their $35-million antitrust judgment had occurred ten years earlier and came about as the result of a single unauthorized act by one of their employees. He found it hard to believe that this could possibly be a valid factor in disqualifying the company from obtaining an FCC license for the system they wish to operate. Frankly, I did, too.

Denial or revocation of a license to broadcast could ultimately rest in the hands of only one or two agency employees, and everybody at the FCC is either a political appointee or a civil servant. Nobody there is voted in or out of office based upon their ability, intentions, or even promise to please the American electorate.

Notwithstanding all of this "character standards" clutter, for decades the FCC has had a big fat book full of meaningful standards for its broadcast applicants and licensees. These relate to technical and financial aspects of their operation, and the ability to responsibly and honestly meet the public's interest, convenience, and necessity. These seem to me to be sufficiently thorough to keep broadcasting stations, applicants, and licensees on a true and steady course. The rule book might work even better if the agency had adequate resources and manpower to give these regulations the fullest possible enforcement.

If a proposed or existing broadcaster is able to meet these requirements, then that person or company should be considered qualified to broadcast. If an application is proven to contain deliberately falsified information, or an existing station is found to be operating in a dishonest or irresponsible manner, *then* that's when it's time to pull the plug. As many failed applicants and former licensees (having impeccable character standards) can attest, there are already many legitimate ways of facing the loss of one's broadcasting license, or for failing to qualify for one. Being found guilty in advance is inherently wrong.

Interestingly, the FCC selectively singles out its broadcast applicants and licensees as requiring special character standards. Yet, the agency is disinterested in screening the moral character of people operating in the taxicab, maritime, business, and other radio services. This is an unfair double standard. How many people using car phones employ those devices to actively deal in illicit drugs? Any DEA agent or cop involved in catching drug dealers will tell you that a car phone is standard and required equipment for drug dealers. Yet, name one car phone user who has ever been refused the use of the airwaves, or removed from them by the FCC.

(Continued on page 74)

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CIRCLE 97 ON READER SERVICE CARD

MAILBAG

LETTERS TO THE EDITOR

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

Famous Last Words

Have been reading POP'COMM for years and I have every issue ever printed. Am studying for my Novice ham ticket. Thought you might like to see some famous last words heard in communications circles:

1. Don't be silly, running the antenna wire along the electric fence shouldn't cause any problems.

2. If I only had that new XZ-1000 receiver, I'd never have to buy another piece of equipment.

3. Storm? Don't worry about my antenna, it's not high enough to get struck by . . . .

4. Let's see. Program. Frequency-Enter-Manual. Delay, Mode, Lockout, Manual, Manual. No, it's Program, then Frequency, then Enter, Manual, Delay, Mode, Lockout. No, wait, I think it's . . . .

5. It's just the dial light bulb. Don't worry, I'll have it changed in a minute.

6. OK. Turn down RF gain. Increase AF gain. Turn off AGC. Adjust notch filter. Set IF shift to plus. Push in NB switch. Turn off squelch. Set RIT to center. Push F lock in. Say, where did I put my glasses?

7. This scanner you got me is great, honey. I just located the dog catcher's frequency and he's picked up some sap's Golden Retriever and it's going to cost $350 to get him out of the pound. This guy is so loud that it sounds like he's right here. Honey, where's Rex?

8. Learning CW would be a snap if all you had to do is send.

9. You know you're in trouble when you tune in KKN50 for CW practice and they keep spelling your name over and over again.

Maybe POP'COMM readers have some of their own to contribute.

Richard Sprau,
Lake City, FL

Calling All Alaskan Hands

I am stationed aboard a USCG ocean going buoy tender. During one of our jaunts along the Aleutian chain, I spotted an unusual complex. Located on Unimak Island, above the old Loran-A Cape Sarichef Station, are two huge reflector type antennas. There are also satellite dishes pointed skywards, plus several buildings. I questioned our Warrant Bosun Mate (who's been in the Coast Guard and Alaska forever) and he said it might be part of the "White Alice" system. I believe the large reflector antennas were aimed towards polar areas or the USSR. Is this installation part of the DEW Line or BMEW System? Has anybody else seen this facility?

David Childers,
USCGC Firebush,
Kodiak, AK

There's a USAF installation on Unimak and that's probably what you've seen. The BMEWS facility is inland at Clear, AK, and the DEW line seems to hug Alaska's northern coast before it heads east across Canada. If any readers have more specific information on the Unimak installation, let us know—Editor.

Nice Words

POP'COMM keeps getting better with each issue. I've been monitoring utes for years and the anti-smuggling story in the June issue was great.

Steve Beatty, NOCRE,
Minneapolis, MN

At last, an excellent article on using UTC world time (June issue). Ed Noll's charts will finally let me throw away my feeble attempts to create my own conversion tables which somehow never seemed to work properly. And I think POP'COMM's down-to-earth editorials alone are worth the price of the magazine.

Paul B. Bascom,
Mesa, AZ

With the FCC out of the monitoring and policing end of the hobby, there is a thumb your nose attitude about the rules and regulations. This, plus the discourteous actions noted on the bands. On some bands (20 meters, for instance), it's getting like that open stretch of highway where everyone knows there is never a cop.

To the uninitiated, sometimes the ham bands sound like a bad joke. To users of the bands, it can get downright embarrassing. People I tell that I'm a ham operator think that it's a form of CB radio, others suspect I'm a spy. People have asked me why I spend so much money on a lot of radios.

Fact is, some of the things outsiders say in reaction to a general description of ham radio are interesting. They say they don't need a license or lots of equipment to direct dial Europe for pennies per minute, and they don't have to tolerate interference, fading, or propagation problems. They can make telephone calls from their car without a license or worrying about a repeater being clogged by rag chewers.

The point is that, with the communications technologies available to the general public these days, ham radio is going to have to come up with some better reasons for people to join our ranks than the reasons which had served us so well for decades. Shortwave signals to Africa and computer nets aren't the answer. The challenge of working DX in a world that is rapidly shrinking doesn't thrill these people as much as it did when those nations were so far away, and you couldn't see exotic lands, live by satellite every night of the week.

Too many people's lives center on the TV set and the factors that affect their own personal affairs. Most people can't find Paraguay or Guatemala on a map, or tell you what language is spoken in those nations, nor do they care. The hobby suffers because people live in their own little worlds and just don't care who else is out there, much less wish to go to any particular trouble to talk to them.

Mark F. Henning, N2DUJ,
Hamburg, NY

I thought I owned the franchise on being cynical! While Mark sees things with a somewhat more extreme attitude than most, he does bring up some points that do open up areas for serious consideration—Editor.

Greetings From Egypt

I am enclosing a copy of the first issue of *Egyptian Echos*, the newsletter I am editing for the Egypt Amateur Radio Society. It is devoted to ham radio, but we may occasionally include news on SWL and monitoring. I am an assistant professor of electrical and computer engineering at Suez Canal University. From 1983 to 1989, I lived in the U.S., where I received the callsign KB2HVS (which I still hold), and where I first found POP'COMM, which I greatly enjoy. Presently I am on the 20 meter band with RTTY (baudot) and SSB.

Dr. Hamed Nassar, SU1HN,
P.O. Box 1578,
Alf Maskan, Cairo,
Egypt

Egyptian Echos is a very enjoyable newsletter, and it's all in English. Egypt has 55-million citizens but fewer than 25 licensed hams, so it's a close knit group. Readers might wish to drop Hamed a card or letter. There wasn't any price shown on the newsletter, but if you'd like a copy you might wish to include two or three IRC's with your request to help defray postage costs to you—Editor. PC

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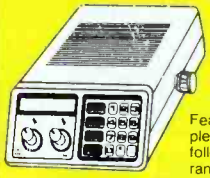

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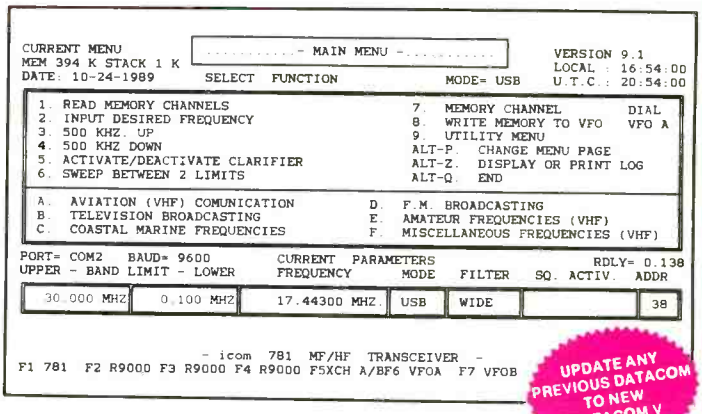

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CIRCLE 22 ON READER SERVICE CARD

Native American Radio

Broadcasting and Two-Way Communications Serving The American Indian. You Can Hear Them, Too!

BY JOE LIGHTCLOUD, KNM7RT

There are approximately 943,000 persons classified as Native Americans residing on about 250 Indian Reservations in the United States. These citizens are members of more than 500 different federally-recognized Indian groups, tribes, bands, villages, and pueblos.

Although English is the primary language of our nation, and a trip to any large city will make it readily apparent that we Americans also speak Spanish and several Asian languages, there are also many Native American languages in everyday use. People who live or work on Indian Reservations are invariably fluent in English, but many also use their own traditional Native American languages, along with retaining tribal dances, laws, stories, crafts, costume, songs, religious beliefs and other components of a rich cultural heritage that extends back thousands of years on the North American continent. In recent years there has been an upsurge of interest in learning "the old ways."

Although Native American dialects are the oldest languages spoken in North America, the majority of Americans not only have never heard them spoken but would not even realize that it was an American Indian language. The gibberish passed off as American Indian language in movies and TV productions is usually a pathetic parody that is more of an insult than even a reasonable imitation.

These are not easy languages for adults to learn. The story is often told of the famous "Navajo Talkers" of World War II. These were communications specialists who were Navajos. Their language was so totally obscure to enemy radio monitors that they were freely able to exchange high security two way voice communications in the clear. It didn't need to be held up for encryption, transmission by CW, or decryption—saved a lot of time and the need for special equipment. That made it perfect for use in the field when the rapid exchange of message between commands was essential. Not one Navajo message was ever known to be "broken" by an enemy monitoring station. It's been said that only a Navajo can understand the Navajo language; apparently that's true!

But you don't have to live on a reservation to hear some of these Native American languages. A broadcast receiver and a scanner will bring them to you.

Station KNNB, Whiteriver, AZ runs an Apache program format. (Photo courtesy Lloyd Kantor, Vail, AZ.)

Broadcasters

There are AM and FM broadcast stations that run all or part of their programming in Native American dialects. It surprises most people to learn this, but it's true. Some of these stations are:

Arizona: KNNB/88.1 MHz in Whiteriver is owned by the Apache Broadcasting Company. The station runs daily programming in Apache, however, with only 635 watts their signal isn't a powerhouse, even though the KNNB antenna is at 600 ft. elevation. KTBA/1050 kHz, 5 kW in Tuba City has Hopi and Navajo four hours each day.

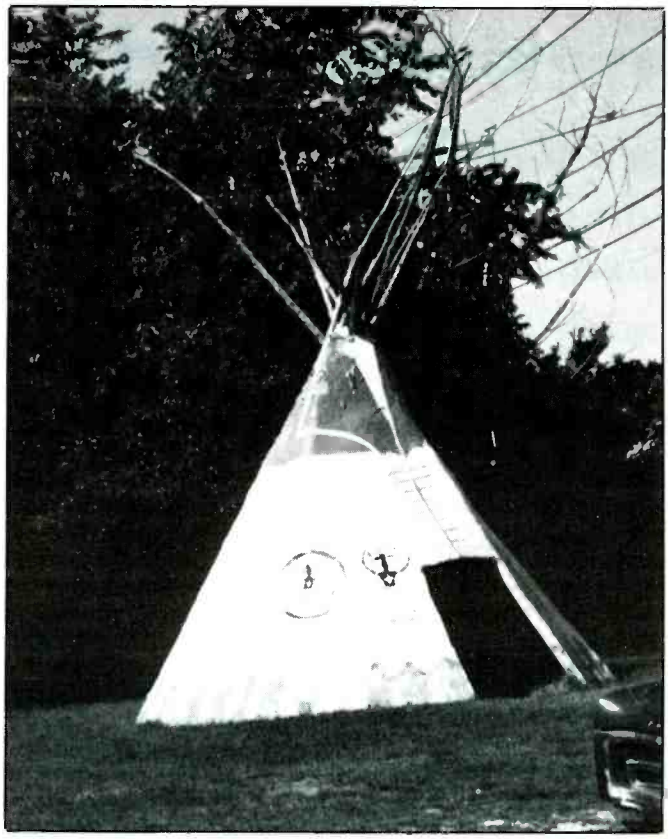
California: KIDE/91.3 MHz in Hoopa has programs in the Hoopa language 0 hours per week. The KIDE transmitter runs 305 watts and the antenna is 1,560 ft. below sea level.

Colorado: KSUT/91.3 MHz at Ignacio is a low powered station (425 watts into an antenna elevated 18 ft.) that produces two hours per week in the Ute language.

Montana: KTYZ/92.7 MHz at Wolf Point has an hour per week of American Indian programming. This station has an 860 watt signal and an antenna 508 feet in height. Watch for 100 kW newcomer KBFT/88.7 MHz at Blackfeet, MT which will also have American Indian language programming.

New Mexico: KNDN/960 kHz in Farmington runs 5 kW and has Navajo language programs. Other Farmington stations also offering Navajo programs are KNMI/88.9 MHz, and KSJE/90.9 MHz. In Gallup, KGAK/1330 has 5 kW and plenty of country music mixed in with its Native American language. Ramah's KTDB/89.7 MHz runs 15 kW worth of Navajo programming into its 290 ft. Antenna. At Zuni, KSHI/90.9 MHz offers American Indian programs, as does KHAC/880 kHz with 10 kW at Tse Bonito, which has 20 hours per week in Navajo.

North Dakota: KEYA/88.5 MHz at Belcourt operates several hours a week with Chippewa programming. The run 19 kW into a 263 ft. high antenna. Station KMHA/91.3 MHz at Four Bears is a 100 kW powerhouse (380 ft. antenna) that offers six week-



ly hours in Mandan, Arikara, and Hidasta.

Oklahoma: KZUE/1460 kHz, 500 watts, at El Reno has an hour per week in Native American. At Eufaula, KCES/102.3 MHz has several weekly hours in Creek and Chippewa. WWLS/640 kHz, 1 kW in Moore has an hour each week, but KXVQ/1500 kHz, 5 kW at Pawhuska offers five hours per week.

Oregon: The Confederated Tribes of Warm Springs operate two stations at Warm Springs. The commercial station is KWSI/96.5 MHz. The other station is KWSO/91.9 MHz, which has a 3.3 kW transmitter and offers American Indian language and music.

South Dakota: Station KUSD/690 kHz, 1 kW at Vermillion has 30 minutes each week in the Sioux language.

Washington: KDNA/91.9 MHz at Everett is an 18.5 kW station with two hours per week in Native American language. Forthcoming station KSER/90.7 MHz in Everett will have American Indian programs.

There are other stations with American Indian programming. These are a sampling, and I didn't include several stations in Alaska that run programs in Eskimo.

Stations expected on the air soon which will be offering programs in Native American languages include: KSER/90.7 MHz in Everett, WA; also KBFT/88.7 MHz with 100 kW in Blackfeet, MT.

Let's not forget that 1975 Native Indian clandestine broadcaster located in the area of Keshena, WI. Dubbing itself *The Menominee Warriors' Station*, it was on 1580 kHz. The choice of frequency was quite strategic since it was only 10 kHz removed from the operations of a popular commercial broadcaster in a nearby community; area residents could hardly avoid hearing the station. The clandestine broadcaster was used to vent a lengthy list of complaints harbored by some tribal members. After a few days it made the local and national news media, then vanished as suddenly as it had appeared. The station operators were never apprehended.

On A Scanner

The federal Bureau of Indian Affairs (BIA) has a law enforcement division that operates on many reservations. These operations, and the other BIA activities, require VHF and UHF communications. Indian schools on the reservations use 40.01, 40.03, 40.31, and 40.33 MHz for their busses. BIA fire departments operate on 166.6125 and 168.40 MHz. An extensive listing of BIA stations across the nation is in the new 7th edition of the *Top Secret Registry of U.S. Government Radio Frequencies*.

Many reservations maintain their own tribal law enforcement, fire, and conservation agencies, staffed by personnel drawn from within the local community. You can hear these on your scanner, too, since their communications are FCC licensed on standard public safety channels.

For instance, on the cover of this issue of POP'COMM, you see Tribal Sheriff Stanley H. Tafoya communicating from his vehicle located in Santa Clara Pueblo, NM. The communications system uses the callsign KNCE513 and is licensed to the Eight Northern Pueblo Governors' Council. There are 175 mobile units in this network, which has bases and repeaters at nine locations on 154.725 MHz, with the mobiles on 155.91 MHz.

The communications systems for various services at some reservations are quite extensive and utilize many frequencies. One example is the Leech Lake Chippewa Reservation in MN. The BIA uses two frequencies, so does the U.S. Dept. of Justice. Then there is a housing frequency, a bus service frequency, three tribal fire department channels, four tribal forestry conservation channels, four tribal police frequencies, a local government frequency, plus several business channels.

Next time you hear an unfamiliar language coming through your scanner or broadcast receiver, it's probably not DX from some nation on the other side of the world. Could well be that it's from the Indian Nation, right here in the U.S.A.

Whether it be from the Passamaquoddy Tribe in Perry, Maine, or the Colorado River Tribe in Blythe, California, the Makah Tribe in Washington State, the Seminole Tribe in Clewiston, Florida; or the many other tribes from coast to coast operating their own scanner-band communications systems, or heard on AM/FM broadcast stations, these are American languages still used in practically every state of the Union. **PC**

Radio's Golden Era

Radio And Wireless As They Used To Be

BY ALICE BRANNIGAN

"Curious" was the word used by Mike Moran, of Brownsburg, IN about his interest in a station that he says was operating not far east of his home town about 1930, but he thinks was finally done away with. Says he and a ham friend were talking about the station and recalled it as WKBF, which later became WIRE.

We like curious readers, they're our stock in trade. To see about this station, we checked out Indiana's WKBF and found that it was started as back room station WBBZ in 1924 by ham operator Noble Butler Watson, callsign 9WS, of 233 Iowa Street, Indianapolis. The station ran 50 watts on 1320 kHz.

By 1928, Watson's station had evolved into station WKBF *We Keep Building Friendships*, running 250 watts on 1190 kHz, then later that year switching to 1400 kHz. The station had moved to 902 North Meridian, Indianapolis, and was soon sharing time with WBAA and WCMA.

Mike's recollection of the station is, as he correctly surmised, from 1930. That's when it had moved to 540-1/2 North Meridian, with its transmitter in Clermont, IN. The transmitter location is a few miles east of Mike's home town.

Later, under the corporate name Indianapolis Broadcasting, WKBF changed its call letters to WIRE, increased its power to 500 watts and, by 1936, to 1 kW. The early 1940's national frequency shakeup saw WIRE go to 1430 kHz, increase power to 5 kW, and move its studios and offices to the Claypool Hotel, Indianapolis. The transmitter was moved to 44th and Knollton Rd.

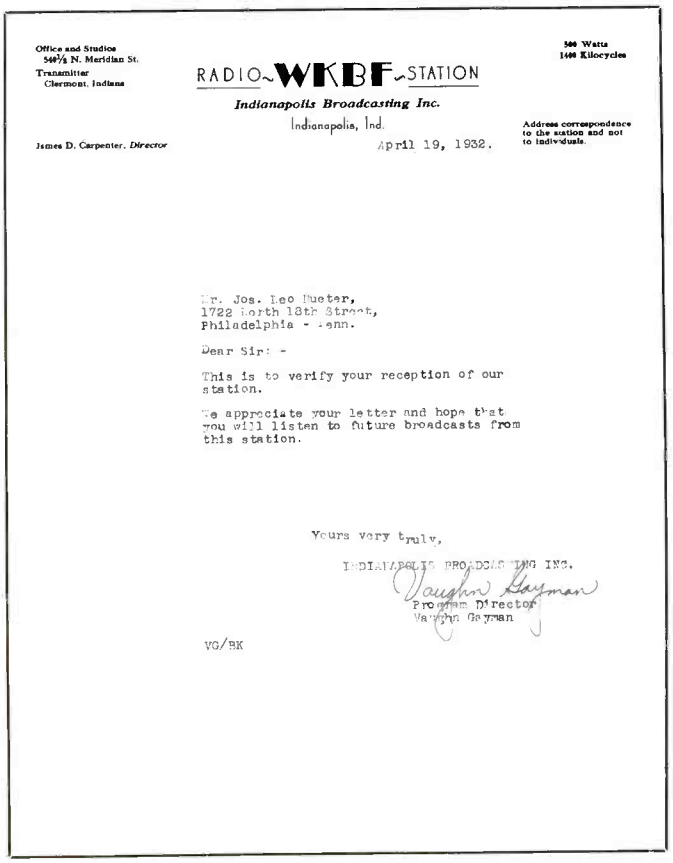
The surprise of it all is that, although Mike had assumed the station was history, it's still on the air! Under the ownership (since July, '86) of Win Communications of Indiana, it's now known as WXTZ playing country music and farm news, still with 5 kW on 1430 kHz. It's just long gone from its old site in Clermont.

Early Rocker

On July 14, 1922 a station first went on the air that would send ripples through broadcasting more than forty years later. This was station KFBC, licensed to W.K. Azbill, in his home at 5038 Cliff Road, San Diego, CA. It wasn't much, just one more 15 watt homebrewed resident of 833 kHz, which was the frequency where most broadcasters were dumped in 1922.

Azbill was luckier than many, for while the mortality rate was high for these little stations, he managed to hang in long enough to up his station's power to 50 watts, and eventually move it to 1340 kHz, then 1390 kHz. He called KFBC the *Normal Heights Station*.

In 1927, Azbill assigned the license to the Union League Club, and a few months later they sold KFBC to a man with a dream. That was Arthur Wells Yale, M.D., who installed the station in San Diego's Balboa Theatre Building, upped the power to 100 watts, and put it on 1210 kHz, although the FRC shifted it again to 1340 kHz late in 1928. Yale's slogan for KFBC was *Music For The Sick*, and he was convinced that if the ill and infirmed would listen to the specially pro-



Office and Studios
540½ N. Meridian St.
Transmitter
Clermont, Indiana

RADIO-WKBF-STATION

Indianapolis Broadcasting Inc.
Indianapolis, Ind.

500 Watts
1400 Kilocycles

Address correspondence to the station and not to individuals.

James D. Carpenter, *Director*

April 19, 1932.

Mr. Jos. Leo Hueter,
1722 North 18th Street,
Philadelphia - Penn.

Dear Sir: -

This is to verify your reception of our station.

We appreciate your letter and hope that you will listen to future broadcasts from this station.

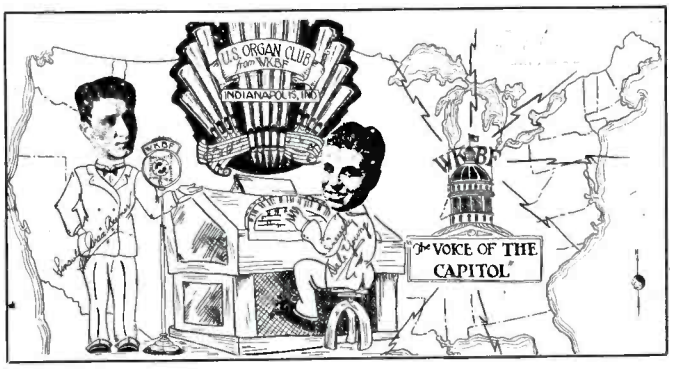
Yours very truly,

INDIANAPOLIS BROADCASTING INC.
Vaughn Gayman
Program Director
Vaughn Gayman

VG/BK

For a brief time, WKBF was transmitting from a site in Clermont, IN, as noted at the upper left hand corner of their letterhead. (Courtesy Joe Hueter, PA.)

Whatever crazy thing the U.S. Organ Club might have been, it had a spot on WKBF and it issued these listener cards in the 1920's. The youthful announcer (shown to the left) getting his first break in radio was then-unknown Brace Beemer. He went on to great fame in radio, first as the announcer on The Lone Ranger radio program (started in 1933 over WXYZ in Detroit), and then (from 1941 through 1955) as the familiar radio voice of The Lone Ranger, himself. Beemer was a farmer's son who was awarded a Purple Heart in WWI. He died in 1965.



FORMERLY WKBF

WIRE

IN INDIANAPOLIS

AFFILIATED NBC STATION

March 27, 1935.

Mr. Joseph L. Hueter,
1613 North 18th Street,
Philadelphia, Pennsylvania.

Dear Mr. Hueter:

We are very glad to verify your reception of our program on March 25th.

Thanking you for your card and hoping you may listen to future broadcasts from this station, we are

Yours very truly

D.W."Plug" Kendrick
General Manager

DWK:F

When WKBF changed its call letters to WIRE, the station worked the former callsign into the design of the 1935 letterhead. (Courtesy Joe Hueter, PA.)

PICKWICK BROADCASTING CORPORATION LTD.

GENERAL OFFICES

LOS ANGELES

February 21st, 1931

Joseph Hueter,
1610 North 18th St.,
Philadelphia, Pa.

Dear Sir:

Enclosed please find KGO stamp verifying your reception of our program as per your letter of February 15th, 1931.

Our frequency is 1330 kilocycles, 225.4 meters. We are operating on 500 watts. Our permit calls for full time. We are on the air from 7:00 a.m. until 12:00 midnight.

If you have any further comment concerning our programs we will appreciate very much your advising us.

Sincerely

RADIO STATION KGB

R. G. Binyon, Mgr.

GB

When Pickwick Broadcasting purchased KFBC, the first things they did included changing the station's callsign, frequency, and power. These steps were taken in an effort to distance their operation from the eccentricities of the previous owner. He was a physician who broadcasted music he contended would heal the sick.

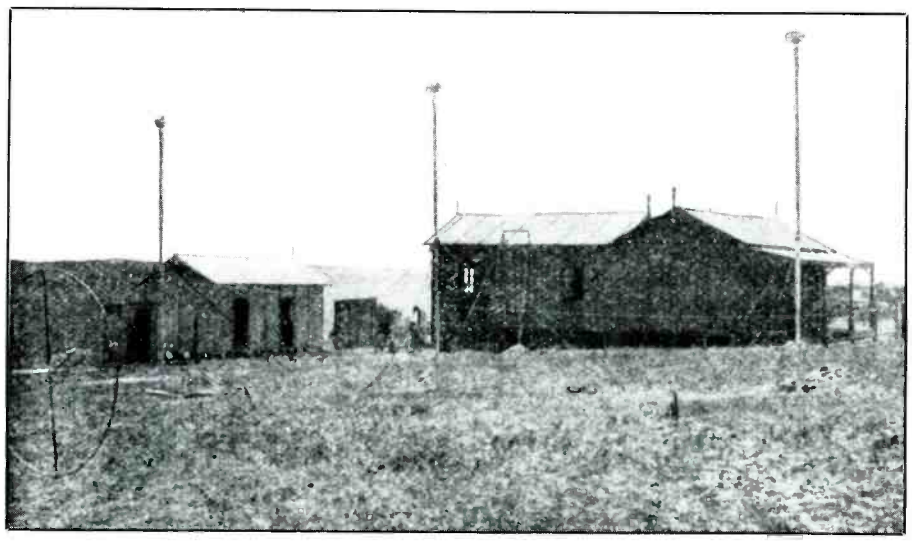
grammed music his station was broadcasting, their ills would soon fade away.

The only thing it seemed to cure was Dr. Yale, and that was from any further ambitions to be a broadcaster. Within a year, Yale sold KFBC to the Pickwick Broadcasting Corp., which wasted no time at all in distancing itself from any memories the audience might have of Dr. Yale's failed crackpot scheme.

For starters, Pickwick changed the frequency to 1370 kHz and increased the power to 250 watts. Then, in an additional effort to create a major image change, they dropped the old KFBC call letters in favor of using KGB. No, they didn't name the station in honor of the Soviet secret police agency, the callsign was made up of the initials of one of Pickwick's honchos, George Bowles.

Pickwick owned KGB relatively briefly, and had it operating on 1330 kHz in 1931 when they sold it to Don Lee, Inc. Don Lee brought it up to 500 watts, and had KGB at 1 kW by the mid-1930's. In the early 1940's, KGB was shifted to 1360 kHz. The offices were at 1017 First Avenue, with the transmitter still in the Pickwick Hotel (two 190-ft. towers on the roof).

In 1954, Marion Harris became KGB's licensee. That's when the station stood only ten years from being one of the first, best, and most popular exponents of the Top 40 AM rock music format that was the sound of radio in the mid-to-late 1960's, and tapering off into the early 1970's.

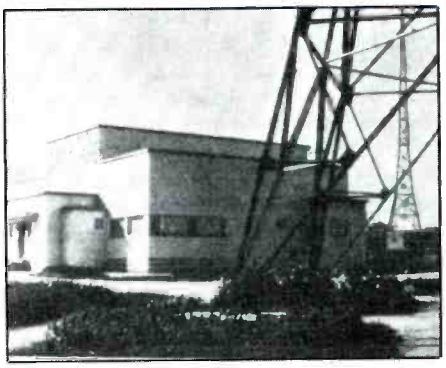


The transmitter building for Australia's first broadcast station, 2FC. This is how it looked when the station began its long career.

By spring of 1972, the format had run its course. KGB had exactly eight years riding the curl of the wave with the Beach Boys and wonderful sound that went along with that era. KGB changed its format and a few years later, even changed its famous call letters. It turned into KCNN, then tried life as KPQP, and finally changed to its present callsign of KPOP, where it spins platters with a middle-of-the-road (MOR) gold sound. Its FM outlet, on 101.5 MHz, continues the callsign as KGB-FM.

The 1360 kHz, 5 kW (1 kW nights) transmitting site is in San Diego at the intersection of Kalmia and 52nd. Looks like a typical private home in the residential neighborhood, except for the tower in the yard.

Bill Earl's fine book, *When Radio Was Boss*, includes coverage of KGB during its 1964 to 1972 period.



The epitome of a modern shortwave broadcaster in the late 1930's. The photo shows station CT1GO in Portugal, known as the "Radio Clube Portugues." Good looking in every respect.

A WWI U.S. Army wireless truck required a crew of six to string out endless yards of low frequency antenna and counterpoise wires. The tripod on the roof was needed to put up the masting. Six mast sections are shown mounted on the side of the truck. Solid hard-rubber tires were used because they were standard equipment and also puncture proof, even though they had a low comfort rating. Pneumatic tires had already been around for more than 20 years but were still an optional extra. They didn't become standard equipment until 1924.

Flying High

Speaking of books, reader Bill Hafeli, Registered Monitor VEM8BC-21, of Mission, British Columbia, tells us that he was reading a book about early aviation in Canada's west. The book, *The Snowbird Decades*, published in 1979 by Butterworth & Co., in Vancouver, BC told a story that he thought would interest you.

Seems that, in 1935, the Mackenzie Air Service was flying routes from northern Montana, through Alberta, and to several points in the remotest parts of the Northwest Territories. Although the communications facilities of the Royal Canadian Corps of Signals were available for Mackenzie's use, the line wanted to add its own ground stations to serve its routes.

Two ground stations were built, C2HO in Edmonton, and C3HO in Yellowknife. These stations operated on 4355 and 5460 kHz, using 4.5 watts, and CW only. The aircraft operated with 7 watt rigs, but could run 25 watts for brief periods of time. The aircraft antennas were trailing wires about 90 feet in length.

The pilots grumbled loudly about having to learn CW, and about having to act as radio operators in addition to their other duties. And when the radios didn't work properly, they were *really* angry. Still, the use of the radios soon became second nature to the pilots, and the safety role they played was important.

In 1936, Mackenzie installed new equipment that offered voice as well as CW operation. That inspired a local CBC outlet to suggest the idea of a live broadcast pickup from one of Mackenzie's airborne aircraft. This created a dilemma. The station wanted to run the program at night, when its audience was largest. On the other hand, Mackenzie's planes were not equipped for night flying. Still, Mackenzie Air Service did not want to miss out on this wonderful publicity opportunity for aviation in general, and itself in particular.

The answer was to build a studio in the Mackenzie hangar at the airport in Edmonton. The whole live program, claimed to be from an aircraft in flight in contact with station C2HO, was done from inside the hangar, complete with realistic sound effects. The audience loved every minute of the program.

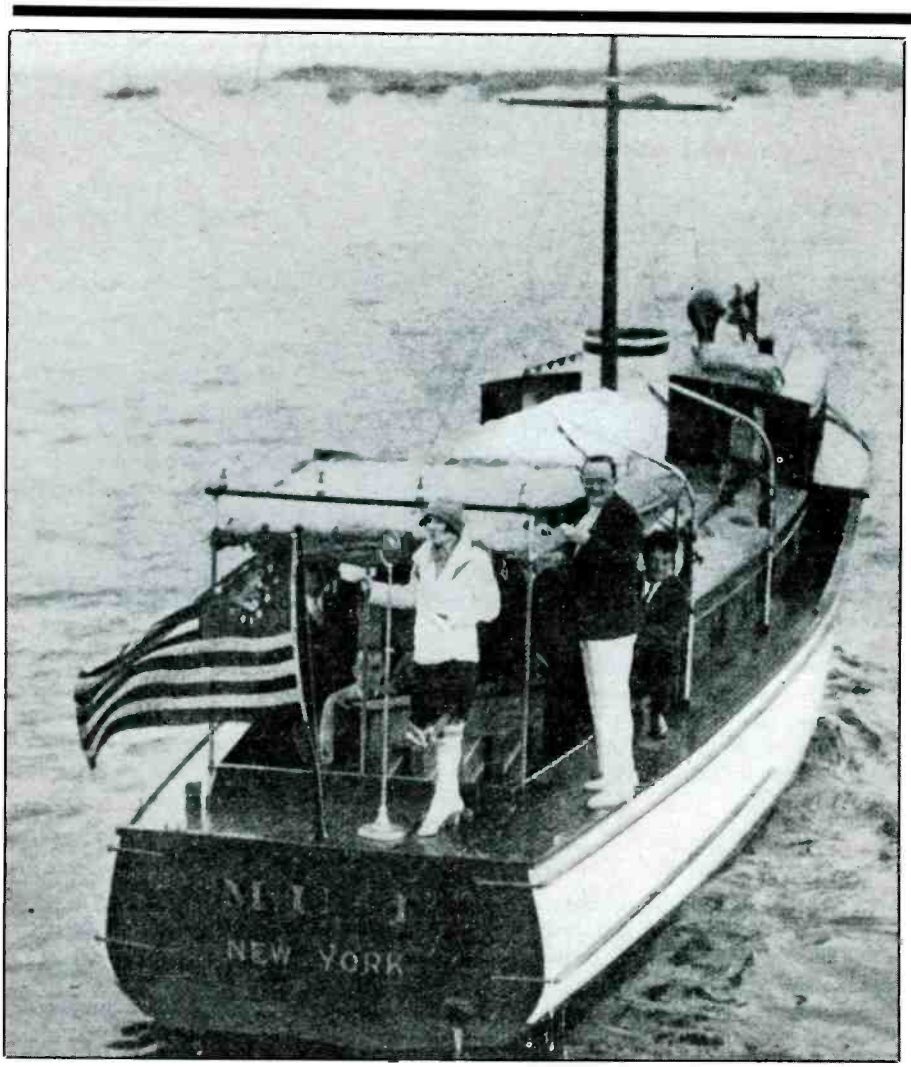
However, despite this little deception, Mackenzie Air Service, working with the Royal Canadian Corps of Signals Network, really does get credit for opening up a new era in communications in western Canada.

First Down Under

Although we have devoted a bit of space here in the past to the claims of those who claim to have been the first broadcaster in North America, we haven't cast our glance to the famous firsts elsewhere in the world.

For instance, in Australia, broadcasting license No. 1 was issued to Farmer & Company, Ltd. to operate a station at Northbridge, in the municipality of Willoughby, about seven miles from Sydney, N.S.W.

A truck wasn't required to transport this two-part "field wireless outfit," but it still required two carts. The one at the left is the gasoline-run generator. It was these types of units that brought about the design of more highly portable shortwave equipment that, at the very least, didn't need massive antenna systems.



Only known photo of broadcasting station WRMU aboard the good ship "MU-1," back in the late 1920's. Note the microphone and lady singer located precariously near the edge. One sour note and she's shark bait.

This station went on the air in early 1924, running 1 kW on 273 kHz, with plans (and authorization) to later increase power to 5 kW.

The station's location was on the highest point in the municipality. Two 200-ft. steel lattice towers were constructed, separated by 575 ft. The transmitter house, which was located midway between the towers, housed the main rig, a 500-watt auxiliary transmitter, and living quarters for the operating staff.

The antenna itself was a four-wire cage held in shape by brass hoops. An elaborate counterpoise system about fifteen feet above the ground was part of the radiating system.

The 2FC studios were located in the Farmer & Company's large retail store, which was miles away in Sydney. These consisted of several sound-proofed broadcasting and control rooms. Programming was fed to the transmitter by landlines.

Programming included music, news, commentary, and stock market reports.

Station 2FC did move up to 5 kW, then later shifted to 610 kHz, where it remained for many years. By the late 1940's, it was running 10 Kw. The modern version of 2FC is still operating in Sydney, and under the same callsign. Now it operates with 50 kW on 576 kHz and is part of the Australian Broadcasting Corporation's National Broadcasting Service. It offers the ABC's Metropolitan Service.

Portuguese Shortwaver

One of the more popular shortwave broadcasters during the 1930's was CT1GO, Parede, Portugal. Known as the *Radio Clube Portugues*, CT1GO operated daily on 6198 and 12400 kHz.

We were fortunate to get a rare photo of this old timer taken in 1937, thanks to M. Constantin, of Paris, France.

From the appearance of the station in the photo, it looks like it was a very modern installation. Those two towers must have cost a pretty escudo or two.

Point of Information

Over the months several inquiries have come in expressing some interest in getting a better perspective on when it was that communication on shortwaves was developed. Many readers realize that by the mid-1920's, shortwave stations were operating on frequencies as high as 22 MHz, but how this evolved isn't quite clear.

The Army Signal Corps began experimenting with voice and CW on frequencies between 2.5 to 30 MHz late in 1917. The reasons for this were to get away from the interference on the more commonly used and crowded frequencies (some of which were later given over to broadcasting). Also, they wanted to devise equipment that could operate efficiently with small antennas.

Small antennas were needed for use in aircraft installations, and also for small, portable field radios.

This experimental work resulted in the completion, in 1918, of working 'phone equipment for aircraft use that operated between 2.6 and 4 MHz. In addition, a portable field telegraph set was designed for operation on about 4160 kHz. This was a major advance in military communications, inasmuch as most of the field communications in WWI (1914 to 1918) had to be accomplished using bulky low frequency radio equipment that needed a whole crew of troops to transport, set up and operate, plus large and complex antenna systems to be effective. Alternate communication methods required telegraph lines to be strung, or the use of messengers, carrier pigeons, visual signals, or other methods that were slow, awkward, dangerous, not secure, unreliable, or a combination of these factors.

All At Sea

The early days of broadcasting were the trying grounds for all manner of novel experiments. In an era when new ideas were hot items, many people were coming up with ideas to catch the public's fancy with something completely different than was being offered elsewhere. For the most part, the government was willing to license some rather curious stations, although in later years they backed away from tolerating broadcasters with ideas that were especially far from the narrow and well-trodden path.

For instance, in 1925, the Kodel Radio Corp., Cincinnati, OH had a good idea. Kodel built receivers, and it owned 1 kW station WKRC on 710 kHz. They purchased a confiscated 37-ft. rum-runner yacht, the *Betty Marie*, to be moored in the Ohio River behind their factory on East Pearl Street. The vessel had a galley, sleeping accommodations for twelve persons, and was equipped with a powerful engine.

Kodel announced that it was applying for a license for 30-watt operation on frequencies between 3750 and 7500 kHz so that the yacht could be a floating remote broadcast pickup station for WKRC. The vessel could sail from New Orleans to Pittsburgh broadcasting concerts, boat races, and other events.

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HYPERSCAN™

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You'll be "on the scene" of local action in a flash with the Realistic PRO-2006. More than 196,000 frequencies are at your command, including 800-MHz police and emergency bands. At up to 26 channels per second, you'll scan faster than most scanners not equipped with HyperScan.

You get search mode and selectable priority function, frequency coverage from 25-520, 760-823, 851-868 and 896-1300 MHz, and precise ZeroMatic® tuning that locks on-frequency for best reception. A backlit LCD display, memory backup and full array of accessory jacks are included.

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AMERICA'S TECHNOLOGY STORE

CIRCLE 162 ON READER SERVICE CARD

MFJ
SHORTWAVE ACCESSORIES

REMOTE ACTIVE ANTENNA

MFJ-1024 **$129.95** **Receive** strong clear signals from all over-the-world with this 54 inch active antenna that rivals long wires hundreds of feet long.

"World Radio TV Handbook" rates the MFJ-1024 as "a first rate easy-to-operate active antenna ... Quiet with excellent dynamic range and good gain ... Very low noise factor ... Broad frequency coverage ... the MFJ-1024 is an excellent choice in an active antenna."

Remote unit mounts outdoors away from electrical noise for maximum signal and minimum noise pickup. Mount it anywhere - atop houses, apartments, ships, buildings, balconies.

Covers 50 KHz to 30 MHz. High dynamic range eliminates intermodulation. Control unit has 20 dB attenuator, gain control. Lets you switch 2 receivers and auxiliary or active antenna. 'On' LED. 6x2x5 inches. Remote has 50 ft. coax and connector. 3x2x4 in. 12 VDC or 110 VAC with MFJ-1312, $12.95

INDOOR ACTIVE ANTENNA

MFJ-1020A **$79.95** **Now** you'll rival or exceed the reception of outside long wires with this **tuned** indoor active antenna. **'World Radio TV Handbook'** says MFJ-1020 is a "fine value ... fair price ... best offering to date ... **performs very well indeed."**

Its unique tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Functions as a preselector with external antenna. 0.3-30 MHz. Telescoping antenna. Controls are Tune, Band, Gain, On-Off/Bypass. 6x2x6 in. Use 9 Volt battery 9-18 VDC or 110 VAC with MFJ-1312, $12.95

ANTENNA TUNER/PREAMP

MFJ-959B **$89.95** **Don't** miss rare DX because of signal power loss between your antenna and receiver.

The MFJ-959B provides proper impedance matching so you transfer maximum signal from your antenna to your receiver from 1.6 to 30 MHz. You'll be surprised by significant increases in signal strength.

20 dB preamp with gain control boosts weak stations. 20 dB attenuator prevents overload. Select from 2 antennas, 2 receivers. 9x2x6 inches. Use 9-18 VDC or 110 VAC with optional AC adapter, MFJ-1312, $12.95

For your nearest dealer or to order:

800-647-1800

Order from MFJ and try it. If not satisfied return within 30 days for refund (less s/h). Add $5.00 s/h. One year **unconditional** guarantee. **Free catalog.**

MFJ ENTERPRISES, INC.

Box 494, Miss. State, MS 39762
601-323-5869 **Telex:** 53-4590 MFJSTKV

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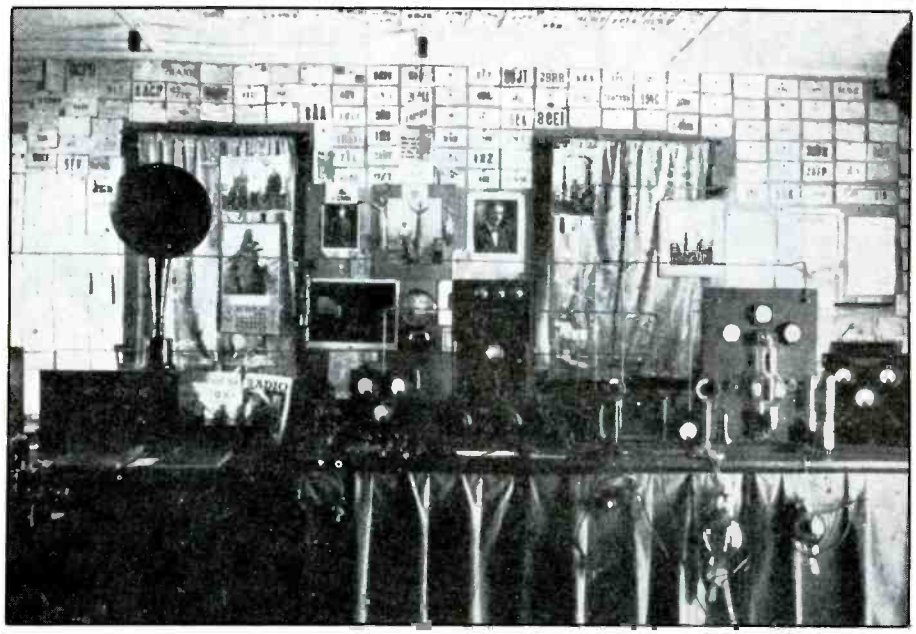
CIRCLE 168 ON READER SERVICE CARD



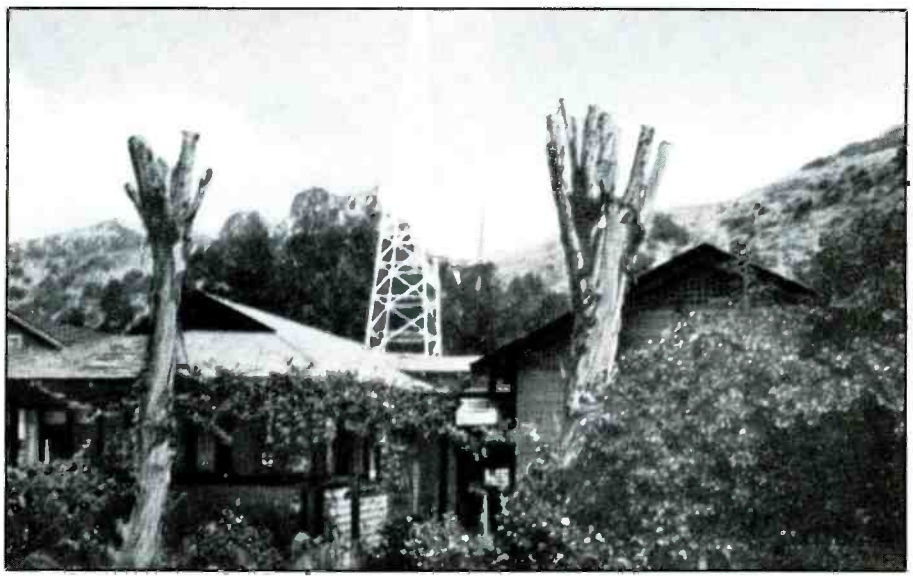
The main studio of broadcast station KFWO was a ham shack covered with QSL cards. Walls and ceiling were decorated. This is how QSL's got dubbed "wallpaper." KFWO was located on Catalina Island, California.

When last heard from, two collapsible 25-ft. masts were being built, and a transmitter was being designed. Kodel said that the government had agreed to issue a license to the floating station, but we don't know the final outcome and couldn't locate any record of a license being issued.

But, in 1925 there was a broadcasting license issued to a yacht. This was the yacht *MU-1*, owned by the A. H. Grebe Radio Company, Richmond Hill, NY. We have mentioned this company previously.

The *MU-1* was authorized as 100-watt broadcast station WRMU on 1270 kHz, and later on 1470 kHz. Although it didn't maintain a regular schedule, it did actually broadcast from the waters in the areas around New York City, splitting time with station WGMU (another of the several stations owned by Grebe). Furthermore, the *MU-1* also had a license to operate as an experimental shortwave relay station under the call letters W2XAO, 2833 kHz.

WRMU was licensed from 1925 to 1929, and was certainly one of the more unusual stations of the early days. The next American floating broadcaster was pirate RXKR in 1933 (see POP'COMM for August '83), fol-



Exterior of KFWO/6XAD/6ZW shows a neat little cottage surrounded by lush vegetation, but visually marred by the destroyed remains of what were once two large shade trees. Were they chopped down because they got in the way of the antenna? The tower is mounted atop the roof.

lowed more than fifty five years later by *Radio New York International*.

We think we rounded up the only photo of WRMU in operation. It was taken in Manhasset Bay, NY during the 1926 Gold Cup Regatta. This WRMU program was rebroadcast by yet another Grebe station, WAHG, 950 kHz, in Richmond Hill, NY. Although it's difficult to make out in the old photo, the name of the vessel and its hailing port (New York) are written on the transom.

The lady at the WRMU microphone is singer Vivienne Segal. Don't know who the gent is over to the side, but he's hanging on for dear life. Miss Segal is wearing high heels, the fellow standing near her is also in street shoes, so we imagine A.H. Grebe was so wealthy that he didn't care what the WRMU staff did to his varnished wood decks. There's a band playing down below, on the main deck. The *MU-1* looked to be a rather swank luxury craft.

All of Grebe's broadcasting enterprises were amalgamated into New York City's WABC, 860 kHz, 5 kW owned by the Atlantic Broadcasting Corp. In several stages, that station evolved into the present WCBS, all news with 50 kW on 880 kHz, owned and operated by CBS. The present WABC (770 kHz, 50 kW) in New York City is unrelated to this evolution and was WJZ on 760 kHz, 30 kW, when all of these things were taking place.

Another Offshore Station

Offshore, but not afloat, was the odd little broadcast and communications empire of Major Lawrence Mott, of the U.S. Army Signal Corps. Everything was located in his home at 346 Claressa Avenue, Avalon, on Catalina Island, CA.

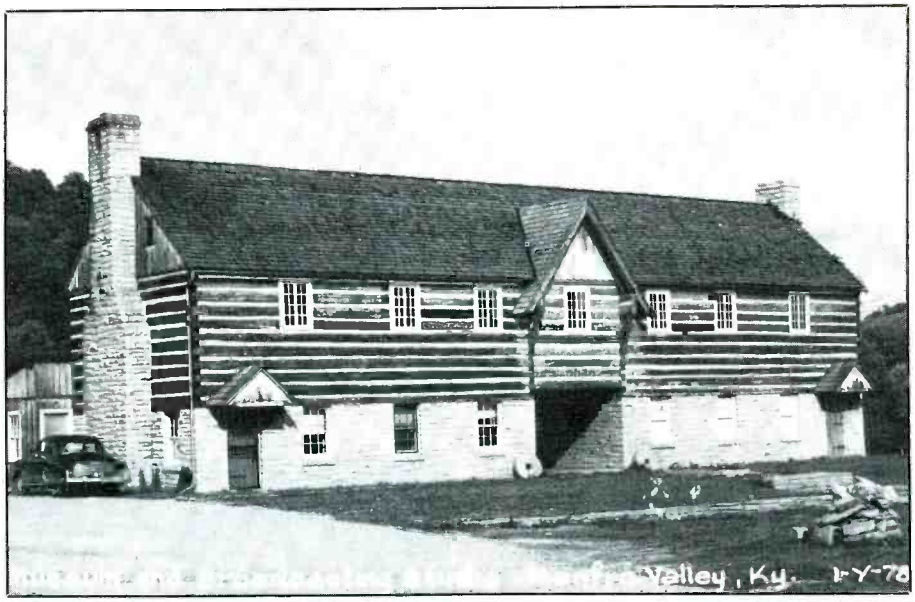
In the early 1920's, Mott had a license for an experimental station, 6XAD. In 1923, the government granted him a special Amateur license with the call letters 6ZW.

Mott operated these stations with tenacity and apparently succeeded in capturing a world's record for low power transmission in May, 1923. That was when his 100 watt transmitter was reported several nights in succession by hams in New Zealand and Australia, about 7,000 miles from Catalina.

Next, in 1925, Mott was able to obtain a broadcast station license for the station in his home. He was assigned the call letters KFWO for 250-watt operation on 1420 kHz. He used to announce the slogan, *Catalina For Wonderful Outings*.

KFWO was a rather lackadaisical broadcaster, with a sporadic schedule of a few hours on, then off, then back on again throughout the afternoon and evening. It was, after all, a one-man operation, and more of a hobby or experimental pursuit than anything else.

In 1928, the government told KFWO to cut its power to 100 watts and move to 1500 kHz to split time there with Santa Ana's KWTC. Mott's experimental station, then licensed as W6XAD, was still permitted 250 watt operation on any frequency above 300 kHz. By this time, however, he used it mostly as a shortwave relay for KFWO on 5650 kHz.



This "Museum and Broadcasting Studio" were shown on a postcard dated 1953. The location is Renfro Valley, KY. But what broadcasting studio was it? Anybody know?

All of Mott's broadcasting activities wound down in 1929, and KFWO became merely an obscure little, nearly-forgotten piece of broadcasting's past. One of the many personal and oddball broadcasting stations that fell by the wayside when the novelty wore off and broadcasting became serious business as the 1930's approached.

A photo of 6ZW/6XAD/KFWO shows (at the far left), a 50-watt transmitter; then the 100 watt transmitter that was picked up in Australia and New Zealand. Towards the center of the desk there is a Grebe CR-5 receiver and an amplifier, then switching panels for the antennas and station equipment, also meters to monitor the line voltage. The large unit towards the right is the 250-watt broadcast transmitter using a GE-250 tube. It was capable of running double the power when using a Mullard 500 watt tube. At the extreme right is a 200-watt phone and CW transmitter using four 50-watt GE tubes and a speech amp containing a WE-5 tube.

We think this is the first time the interior of Mott's station has ever been published. The exterior photo of the station is via a picture postcard (it ran here back in December of '86) showing a cozy bungalow fronted by the battered remains of two formerly-large trees. My guess is that the foliage on those trees had interfered with the broadcasting and communications activities there and were sacrificed for the cause by the intrepid Major Mott. Interesting, though, that Mott's station was apparently such a local landmark that color postcards were being sold so tourists could remember the place!

October Mystery Photo

Speaking of picture postcards, we were sent one by Paul Quigley, Talladega, AL. He asked if we could provide any information on the radio activities shown in this gem he rescued at a garage sale. Unfortunately, we can't readily identify what it's all about, but perhaps our readers can.

The postcard is dated 1953, showing a large two-story log and brick building with a stone chimney at each end. The word "Museum" is written above the center entrance. A Buick is parked at the left of the building. The caption on the photo reads, "Museum and Broadcasting Studio, Renfro Valley, Ky." The handwritten message on the other side refers to having stopped there for lunch and admiring the views.

However, there are no antennas to be seen in this photo, and there doesn't seem to have been any broadcasting station licensed in Renfro Valley, KY. This is a very small community in Rockcastle County, on State Route 25, near Lake Linville. It's at Exit 62 on I-75. Might not even be on your map.

What kind of broadcasting studio is (or was) at this museum? If anybody knows, why not pass along the information and we'll run it here. Could be a story in this place! Incidentally, the broadcasting studio couldn't have been connected to the operations of WRVK (1460 kHz, 500 watts) in nearby Mt. Vernon, because that station wasn't operating before April of 1957.

The Bottom Line

I see by the clock on the wall that our time is up for now. Next month we'll be back with more rummaging through the pages of history. You're invited to join us. And thanks to those who generously furnished us with materials in these pages, including old timey QSL's, radio station photos and postcards, station directories, new clippings, and whatever. PC

The PRO-2006 – It's Here!

Reviewing & Modifying This New Radio Shack Scanner, as Done by The Man Who Wrote The Book!

BY BILL CHEEK

Relax; take a deep breath; and slowly exhale. Scanning and monitoring, as we know it, will continue on a path of progress for at least another year! The Realistic PRO-2006 VHF-UHF Programmable Scanner from The Radio Shack Division of The Tandy Corp. quietly arrived on the scene to perpetuate the traditions of high-tech and high performance inaugurated by the PRO-2004 in 1986.

The PRO-2004 was replaced for 1989, by the PRO-2005 which sported a brand new look, but only some very minor design changes. We were sorry to see the PRO-2004 go, but delight ran rampant with the discovery that the PRO-2005 had it all and a little more. On the market barely over a year now, Radio Shack reduced the price of the PRO-2005 in March and by April it was apparent that the PRO-2005 had been closed out.

An announcement of the PRO-2006 was not made during the clearance sale of the PRO-2005, and this caused some temporary, but serious concern around the scanning hobby. For all we knew, the remarkable PRO-2005 was to be the end of the dynasty. There was deep concern, too, because rumor had it that the coming PRO-2006 was going to be *unmodifiable*. The PRO-2004 and 2005 were widely acclaimed for the ease of modification for extra features and highly enhanced performance.

Not to worry! Radio Shack has forged another link in the succession of state of the art scanners! The PRO-2006 has absolutely ALL the features and performance inherent in the PRO-2005 and one thing more: "HYPERSCAN" speeds of 13 and 26 channels per second! As a matter of fact, this is the only visible difference between the two radios. *(The PRO-2004/2005 had speeds of 8 & 16 channels per second.)* To top it off, the PRO-2006 looks just like the PRO-2005, inside and out! A little probing and romping around the innards of the new PRO-2006 revealed a couple of subtle differences from the PRO-2005: a new Central Processor Unit (CPU) chip and a 12 MHz Clock Oscillator. *(There was a 7.37 MHz clock oscillator in the PRO-2004 and 2005.)* Undoubtedly, the CPU in the PRO-2006 had to be redesigned to accommodate the 63% faster SCAN and SEARCH speeds. Odd, but little or nothing else changed.

And, how does the PRO-2006 perform? In two words, smoothly and flawlessly! It is, by far, easier to discuss what the PRO-2006 *doesn't* and *can't* do. For instance, it doesn't receive "image frequencies" and other forms of pseudo interference thanks to its "triple conversion" design and a rock solid, stable RF front end.

The PRO-2006 *can't* receive the UHF Television Broadcast Band, 520-760 MHz, nor the two Cellular Mobile Telephone Bands, 823.950-850.955 MHz and 868.950-895.955 MHz. While no one has yet figured out how to "liberate" the 520-760 MHz UHF-TV band, short of an external converter, the PRO-2006 continues the tradition of being *easily modifiable* to receive the cellular frequencies. About the only thing else within reason that the PRO-2006 *can't* do is detect single sideband (SSB) signals. This was not a notable drawback until last year when the FCC lopped off 2 MHz of the 220-225 MHz amateur (ham) band and gave it to the Land Mobile Service. A form of SSB called Amplitude Compandored Sideband (ACSB) is authorized on that new band, so it is now a deficiency that the PRO-2006 cannot detect SSB signals. (Most other scanners can't either!) Other than that, the 2006 is hard pressed to be faulted.

The PRO-2006 possesses excellent sensitivity and selectivity. This, combined with its many user-friendly features, makes for a fine scanner. All controls and features are accessed from the front panel and keyboard with exception of the Tape Recorder OUT jack, External Speaker Jack and the 0-10 dB Attenuator switch, all of which are on the rear panel. If you are not accustomed to the PRO-2004 or PRO-2005, it might take a little time to become handy with the User Interface at the keyboard, but it is not complicated; just a lot with which to become familiar.

The keyboard has twenty-nine keys con-

uniden®

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Bearcat® 760XLT-A

List price $499.95/**CE price $254.95/SPECIAL**
12-Band, 100 Channel • Crystalless • AC/DC
Frequency range: 29-54, 118-174, 406-512, 806-956 MHz. Excludes 823.9875-849.0125 and 868.9875-894.0125 MHz.
The *Bearcat* 760XLT has 100 programmable channels organized as five channel banks for easy use, and 12 bands of coverage including the 800 MHz. band. The *Bearcat* 760XLT mounts neatly under the dash and connects directly to fuse block or battery. The unit also has an AC adaptor, flip down stand and telescopic antenna for desk top use. 6-5/16" W x 1⅝" H x 7⅜" D. Model **BC 590XLT-A1** is a similar version without the 800 MHz. band for a new low price of only $194.95. Order today.

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The *Uniden* line of Citizens Band Radio transceivers is styled to compliment other mobile audio equipment. Uniden CB radios are so reliable that they have a two year limited warranty. From the feature packed PRO 810E to the 310E handheld, there is no better Citizens Band radio on the market today.

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Bearcat® 200XLT-A

List price $509.95/**CE price $239.95/SPECIAL**
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-A** 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-A

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.
Now...nothing excluded in the 806-912 MHz. band.
The Uniden 800XLT receives 40 channels in two banks. Scans 15 channels per second. Size 9¼" x 4½" x 12½." With nothing excluded in the 806-912 MHz. band, this scanner is an excellent choice for law enforcement agencies. If you do not need the 800 MHz. band, a similar model called the **BC 210XLT-A** is available for $178.95.

NEW! Bearcat® 147XL-A

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* 147XL 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-A** 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.

NEW! Ranger® RCI2950-A

List price $549.95/**CE price $249.95/SPECIAL**
10 Meter Mobile Transceiver • Digital VFO Full Band Coverage • All-Mode Operation Backlit liquid crystal display • Auto Squelch RIT • 10 Programmable Memory Positions
Frequency Coverage: 28.0000 MHz. to 29.6999 MHz.
The *Ranger* RCI2950 Mobile 10 Meter Transceiver by Ranger, has everything you need for amateur radio communications. The RF Power control feature in the RCI2950 allows you to adjust the RF output power continuously from 1 watt through a full 25 watts output on USB, LSB and CW modes. The RCI2950 also features a noise blanker, roger beep, PA mode and more. The Mic Gain Control adjusts the gain in transmit and PA modes to maximize talk power. Digital VFO. Built-in S/RF/MOD/SWR meter. Frequency selections may be made from a switch on the microphone or the front panel. There is even a repeater split switch for repeater offsets. The RCI2950 lets you operate AM, FM, USB, LSB or CW for full mode operation. The digitally synthesized frequency control gives you maximum stability. There's also RIT (Receiver Incremental Tuning) to give you perfectly tuned signals. With memory channel scanning, you can scan ten pre set frequencies to keep track of all the action. An optional CTCSS tone board is available (order # **RTONE**) for $59.95. For technical questions, call Ranger at 714-858-4419. Order your Ranger RCI2950 from CEI today.

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CIRCLE 154 ON READER SERVICE CARD

PRO-2006 Features

Here is a summary of the major features of the PRO-2006 for readers who are not familiar with its predecessors, and then we'll discuss performance:

Programmable Memory Channels:	400
Memory Scan Banks:	10 40 channels ea
Limit Search Banks; user definable:	10
Direct Search:	Up or down from displayed frequency
Temporary Monitor Channels:	10
Scan & Search Speeds; Fast or Slow:	26 & 13 channels or steps/sec
Manual Function:	Manual step through the Memory Channels
Selectable Operating Modes:	Narrow FM, Wide FM and AM
Search Steps/Increments; selectable:	5 kHz, 12.5 kHz, 50 kHz & (30 kHz*)
Frequency Ranges:	25 MHz-520 MHz (continues) 760 MHz-823.945 MHz** 851 MHz-868.945 MHz** 896 MHz-1300 MHz (continues)
Sound Squelch:	Auto starts SEARCH or SCAN after lockup on a carrier with no sound.
Scan Memory Bank Lockout:	Lockout up to any 9 of the 10 Scan Banks
Individual Memory Channel Lockout:	Lockout up to 399 of 400 channels
Locked Out Channel Review:	Displays locked out memory channels
Priority Channel, assignable:	Samples every 2 seconds
Delay; (Scan & Search):	2-seconds or 0 delay, selectable
Attenuator; 0 & 10 dB:	Switch on rear panel
Headphone Output:	Jack on front panel
Tape Recorder Output:	Jack on rear panel
External Speaker:	Jack on rear panel
Power Consumption: 120 VAC, 60 Hz:	18 watts
13.8 VDC:	10 watts

*Available only if modified for cellular phone bands
**Continuous coverage (760-1300 MHz) available with simple modification

sisting of the ten numerals, a decimal point, CLEAR, ENTER, PROGRAM, and fifteen function keys as follows:

MANUAL	PRIority	LIMIT
SCAN	SPEED Select	UP
DELAY	MODE Select	DOWN
LOCKOUT	STEP (Increment)	DIRECT
LOckout ReVieW	RESET	MONITOR

Several of these features deserve special mention, even though they were introduced in the PRO-2004 nearly four years ago. The LOCKOUT REVIEW is unique on the entire scanner scene. "L/O RVW" is operated similar to the MANUAL function except that it steps sequentially through the 400 memory channels and displays ONLY those channels which have been previously locked out. Channels that have not been locked out will be skipped and not appear in the LCD Display when L/O RVW is operated.

The LIMIT SEARCH banks allow the operator to define ten different SEARCH bands, each with programmable upper and lower limits. For example, one SEARCH bank can be set up to monitor the cordless telephone band, 49.67-49.99 MHz. Another can be set up for the 6 meter ham band, 50-54 MHz; another still for the Land Mobile segment, 150.800-158.650 MHz; and so forth, up to ten different bands!

Then there is another SEARCH function, properly called DIRECT SEARCH. This function starts a SEARCH at any frequency currently on the LCD Display. For example, say you are scanning some preprogrammed channels, and the scanner locks onto an active channel. While the scanner is locked onto that frequency, you can press MANUAL; then the DIRECT key and then either the UP or the DOWN arrow keys to initiate a SEARCH that *starts* at the displayed frequency. Other than the starting frequency, there is no end limit for the DIRECT SEARCH mode. DIRECT SEARCH will continue, up or down, until stopped or reversed by the operator. DIRECT SEARCH will not, however, allow the scanner to search beyond the limitations imposed by the CPU. For example, if you start a DIRECT SEARCH (up) at 519.000 MHz, as soon as the SEARCH reaches 520.000 MHz, it will jump over the UHF-TV Band and resume at 760.000 MHz. Nevertheless, DIRECT SEARCH is a most useful function, particularly for locating external sources of interference; nuisance signals and active adjacent channels. DIRECT SEARCH can be much quicker to operate than LIMIT SEARCH under certain circumstances. Few, if any other scanners have as many as ten LIMIT SEARCH banks, much less a friendly DIRECT SEARCH to go along!

Incidentally, during either a LIMIT or DIRECT SEARCH operation, when the search stops on an active frequency, that frequency can be instantly stored for later retrieval and analysis by pressing the MONITOR key. There are ten MONITOR channels for temporary storage of frequencies found during a SEARCH operation. SEARCH will resume when either the UP or the DOWN arrow keys are pressed. The contents of the MONITOR channels can be easily transferred to permanent memory at any time.

Another neat function that started with the PRO-2004 and continues through the PRO-2006 is the SOUND SQUELCH, a most useful and handy control. SOUND SQUELCH reactivates the SCAN or SEARCH functions whenever there is a lockup on a dead or soundless carrier. SCAN or SEARCH automatically resumes within ½ second after detecting an active but soundless frequency. This is especially useful for most "birdies" and certain silent, non-voice transmissions that you wouldn't want to listen to anyway.

The Owner's Manual for the PRO-2006 is a virtual reprint of the one for the PRO-2005, page for page, with exception of two or three. The manual is well organized and explains each function and control in adequate detail. Ample use is made of pictorials, diagrams, tables and charts. The uninitiated will have no trouble learning the ropes from the manual. Those who are familiar with the PRO-2004 or 2005 will probably not bother with reading the manual as there is nothing new except for a few "birdies" which may or may not exist. There is a least one error in the PRO-2006 Owner's Manual on page 33 where the AC Power Requirement is listed at "8 watts." The correct AC power consumption is eighteen (18) watts. The DC requirement of 10 watts is correct as stated.

The PRO-2006 is a dream to operate, particularly in a big city environment where congested frequencies and resulting interference can deprive the scannist of maximum enjoyment. My monitoring post is located only a short distance from several powerful repeater sites, but I wouldn't know they were there from operating the PRO-2006. Adjacent channel interference and strong signal overload are virtually non-existent beyond ± 20 kHz of the center frequencies of the repeaters. The PRO-2006, readily detected 100-mi distant Los Angeles VHF and UHF public service and weather transmissions. The antenna was a discone omni mounted at 30-ft above ground. My test instruments confirmed the published technical specifications of the PRO-2006.

The PRO-2006 Is Modifiable!

In keeping with intensifying interest and acclaim by hobbyists for the PRO-2004 and the PRO-2005, we will discuss the sometimes controversial topic of modifications. First, you must understand that in no way whatsoever do Tandy Corporation or the government support or endorse the idea of modifying your beloved multi-MegaHertz muncher. Nevertheless, it is neither illegal nor immoral to "liberate" some inherent, latent capability that resides in the PRO-2006!

The thing is, is that if you so much as disturb a single component inside the scanner, the manufacturer's warranty will immediately become null and void. If you restore the cellular telephone bands, just be aware that to intercept (listen to) cellular phone call is a violation of the Electronic Communications Privacy Act (ECPA) Of 1986.

The PRO-2006 possesses latent capability to tune the frequencies "wired out" at the factory. To regain continuous coverage from 760 MHz through 1300 MHz, all you have to do is unplug the set from the powerline, then:

1. Remove the plastic top cover from the radio.
2. Look *behind* the numeral "3" key, inside the front panel, and you will see two diodes and blank spots for two more. Locate D-502, the lower of the two visible diodes.
3. Snip the exposed, upper leg of D-502; push the two cut ends slightly apart.
4. Button the case back up and be content with the continuous frequency coverage of 25 MHz-520 MHz and 760 MHz-1300 MHz.

Next, press the STEP key three times while in any SEARCH mode, you will see, successively on the LCD Display, the step or increment indications of "5 kHz," "12.5 kHz" and then "50 kHz." Press the STEP key a dozen times or a hundred, and only the above three increments will be displayed.

Now, if you have restored the full frequency capabilities in your PRO-2004, 2005 or 2006, and first press the RESET key, then just as soon as a SEARCH enters the frequency ranges of 825-845 MHz and/or 870-890 MHz, you will see a 4th increment displayed: *"30 kHz"*! It's OK! This is appropriate for the spacing in those bands.

However, keep in mind:

1. It is illegal to listen to cellular telephone conversations.
2. Modifying your PRO-2006 will invalidate the manufacturer's warranty.
3. If you blow up your scanner, no one will sympathize will you.

Other Modifications Possible

The diode matrix consisting of D-501-D-504, located inside the front panel just behind the numeral "3" key, appears exactly like the that in the PRO-2005, although there are some subtle differences. First, the similarities: clipping D-502 restores cellular capability as discussed above. D-504, normally vacant in USA models, *eliminates* the 30-54 MHz Lo-VHF band as required in Europe and Australia, so leave D-504 empty! Now the differences: in the PRO-2005, you can get a 25% speed boost in SCAN and SEARCH by installing a diode in the pair of unmarked empty spots for D-501; a nice modification. Installing D-501 in my evaluation PRO-2006, however, accomplished absolutely nothing that I could determine so it's probably not worth your while to do it, unless you feel like being adventuresome and experimental.

Now we're left with D-503, the uppermost diode in that matrix. In the PRO-2005, clipping this diode *slows* the SCAN & SEARCH speeds. Get ready for a surprise now! *Clip D-503 in the PRO-2006 for a* **16% speed increase** *to 15 & 30 channels or steps per second!*

That's about it for the quick and easy modifications that can be done. Since the CPU is new and obviously different from the one in the PRO-2005, it may contain some "secret programming" that can be liberated by adding or snipping the other diodes elsewhere on the Logic/CPU Board for other enhancements. So, there is yet ample room for you "hackers" out there to conduct your own missions of discovery through the PRO-2006.

Other known and established modifications are also readily adaptable to the PRO-2006, including expanded programmable memory to 6,400 channels; S-meter; automatic tape recorder switch and many more as featured in my *SCANNER MODIFICATION HANDBOOK*, published by CRB Research Books.

In conclusion and summary, the Realistic PRO-2006 continues the fine tradition of excellence at an affordable price established by its forebears, the PRO-2004 and PRO-2005. It is changed only slightly from the PRO-2005, but certainly for the better while retaining all its good qualities. The PRO-2006 is an eminently suitable scanner radio for a wide range of hobbyists, from the dedicated communications professional to doctors, welders, pipefitters and farmers. PC

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BY R. L. SLATTERY

Wiretapping: A Fact of Life These Days

Wiretapping and Surveillance is a 100-page large-format book containing exact, complete, and uncut texts (with illustrations, charts, and diagrams) of two in-depth U.S. Government reports on wiretapping and electronic surveillance. The original reports are entitled *State of The Art Electronic Surveillance* and *The Authentication of Magnetic Tapes*. These contain an enormous amount of very specific practical information relating to the nuts-and-bolts of wiretapping and bugging, showing precisely how it's done to the smallest detail.

The book contains surprisingly thorough descriptions of an amazingly wide variety of electronic surveillance devices and techniques. Some of the topics covered are: audio eavesdropping; telephone wiretapping; room bugging; infinity transmitters; listen-backs and keep-alives; mike systems; special purpose mikes; radio eavesdropping devices; wireless mikes; miniature and microwave devices; tape recording systems; audio security countermeasures; detecting radio snooping devices; intercepting non-audio information; electronic aids to physical surveillance; tracking systems; how to detect doctored tapes, and much, much, more.

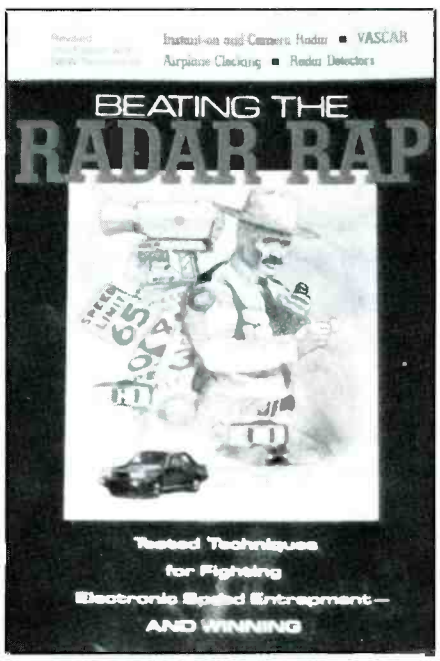
These studies were commissioned by the U.S. Government and represent the collective knowledge of a select group of experts in highly specialized areas of professional wiretapping and electronic surveillance. This is a fine book on the subject, and very informative. Highly recommended for investigators, as well as those who think that they might be bugged or wiretapped, or those who are thinking about getting into this rapidly expanding area of electronics. Actually, it's recommended for any and all who would like to know more about this interesting topic.

Wiretapping and Surveillance is $11.95, plus $2 for postage/handling from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Residents of NY State please add 90 cents sales tax.

Radar On The Roads

There's a new edition out of *Beating The Radar Trap*, by Dale Smith and John Tomerlin. This is the much talked-about book with all of the tested techniques for fighting electronic speed equipment in court—and winning!

The book is written in a clear, easy-to-understand style, enabling the average person to put the information in the book to direct use. At the same time, there's enough hard information here to satisfy attorneys seeking a guide to defending speeding cases, including tricky ones.



This 160-page book includes details about the arsenal of traffic radar in use today, sources of radar interference and inaccurate readings of speed measuring equipment, reasons for operator errors, radar case law and the legal process. New sections in this revised edition cover instant-on and photo radar, *Vascar*, aircraft clocking, radar detection equipment, and many interesting success stories of people who fought undeserved tickets and won.

Lots of information is included on speed clocking techniques with names such as panning, shadowing, batching, etc. You'll find it to be a large helping of detailed information such as you don't normally come across. Even if you don't drive, the information on radar and its present uses and misuses in the area of speed enforcement will enlighten you.

Dale Smith is the engineer who invented the original *Fuzzbuster* in the 1970's. John Tomerlin has been a highway affairs analyst for more than ten years, and an author on speeding and highway safety since 1972.

Beating The Radar Trap sells for $14.95 plus $2 postage and handling. It can be ordered by mail from RADAR, 4949 South 25A, Tipp City, OH 45371. Customers outside of Ohio can order it by telephone using a Master Card or VISA; call 1-800-448-5170.

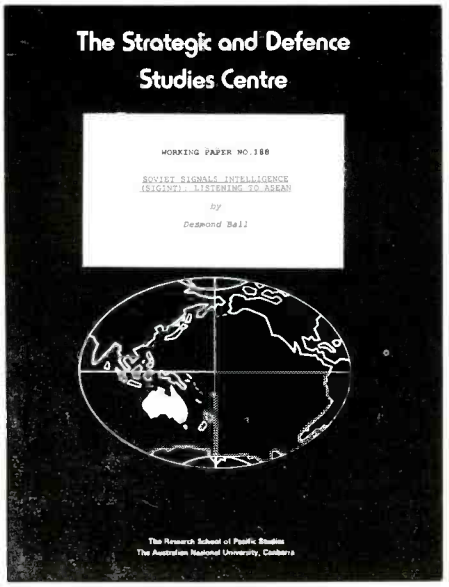
A Mystery Solved

This column received two excellent books produced in Australia. These have both been related to electronics intelligence gathering and SIGINT. We reviewed these books (one in October of '89 and the other in March of this year), but never knew who was kind enough to send them to us, their cost, or how they might be purchased. That's been cleared up.

We received an informative letter from Prof. Desmond Ball, of the Australian National University in Canberra, who is the author of these publications. Prof. Ball advises that each publication is available for $15 (Australian) plus packing and postage. Based upon the rate of exchange, $15 in Australian funds is probably equivalent to a little less than $12 in US funds, although the rate fluctuates and a bank would have to provide the latest data.

The two publications we had reviewed were *Soviet Signals Intelligence (Canberra Papers on Strategy & Defence #47)* and *Soviet Signals Intelligence: Intercepting Satellite Communications (Canberra Papers on Strategy and Defence No. 53)*. These are available from The Publications Officer, Strategic and Defence Studies Centre, Research School of Pacific Studies, Australian National University, GPO Box 4, Canberra ACT 2601, Australia.

Prof. Ball has also sent along two other publications in this series. One is *The Use of the Soviet Embassy in Canberra for Signals Intelligence (SIGINT) Collection (Working Paper No. 134)*, and *Soviet Signals Intelligence (SIGINT): Listening to ASEAN (Working Paper No. 188)*. Each of these is $3 in Australian funds, plus packaging and postage. The approximate rate of exchange would be less than $3 in US currency, plus some extra for postage.



These two newly received papers are fully illustrated with photos, maps, diagrams, and other graphic materials to amplify the text. As with the other studies done by Prof. Ball, these are professional level intelligence reports that probe far deeper into the communications activities being discussed than most hobby monitors manage to encounter.

Working Paper No. 188 tells of Soviet KGB and other intelligence officers performing signals intelligence duties from Soviet diplomatic establishments throughout southeast Asia. This includes Thailand, Indonesia, Philippines, Singapore, Kuala Lumpur, Vietnam, and elsewhere. There are descriptions of the antenna systems and other technical details known or suspected, information on what they're trying to hear, etc.

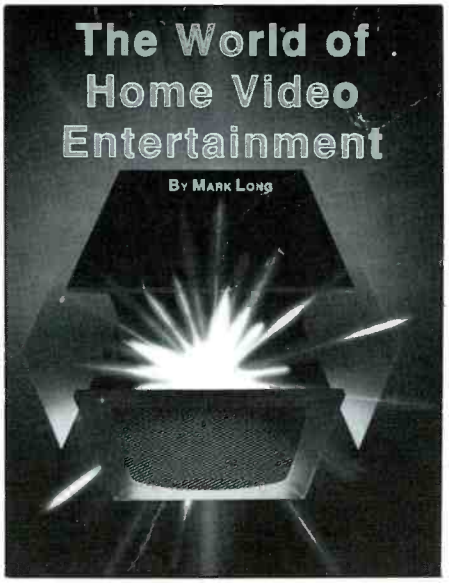
In every respect, these reports are great stuff. We recommend each and all most highly.

Prof. Ball is an authority on many aspects of Soviet signals intelligence and has produced quite a number of additional papers on the subject. He tells us that if any of our readers are researching a particular area of Soviet SIGINT, they may write to him at the address given here and perhaps he can provide information of use. Although he didn't mention it, our suggestion is that it would be appropriate for any readers who take advantage of this offer to include several International Reply Coupons (IRC's) with their request for information.

In Addition . . .

Daryll Symington has a new 7th Edition of his *Scanner Frequency Directory for Northwestern Ohio & Southeastern Michigan*. This is a staple-bound publication covering frequencies in various fields.

This publication is $9.95 plus $1.50 postage (or $2.50 for First Class or UPS) from Radio InfoSystems, P.O. Box 399, Holland, OH 43528.



We received a press release announcing the availability of a book entitled *The World of Home Video Entertainment*, by Mark Long. It is described as a mass market guide to home video entertainment, including satellite dishes, VCR's, camcorders, TV/monitors, projection TV, video laser disc players, home computers, and video games. This book is $15.95, plus postage (amount not specified in the information we were sent) from MLE Inc., P.O. Box 159, Winter Beach, FL 32971. PC

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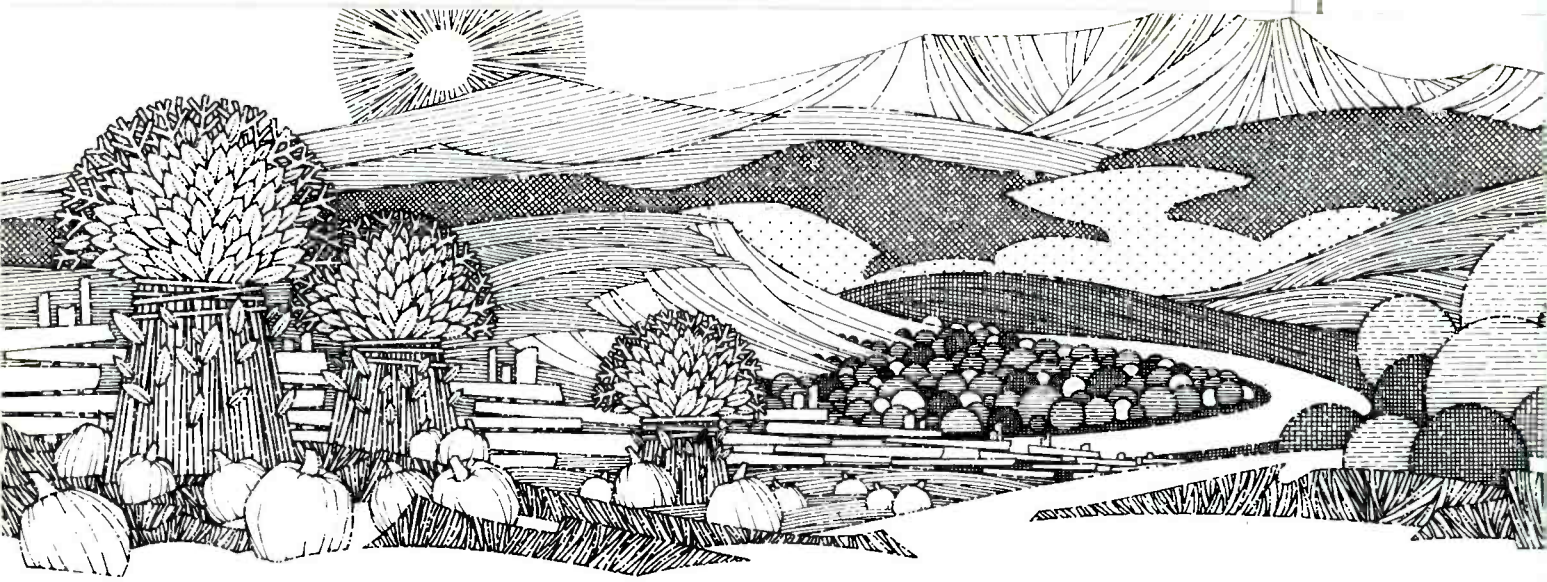

Selected English Language Broadcasts

Fall – 1990

BY GERRY DEXTER

Note: There are hundreds of English language broadcasts aired every day on shortwave. This is a representative listing and not intended to be a complete guide. While the listing is as accurate as possible, stations often make changes in their broadcasts hours and/or frequencies, often with little or no advance notice. Some broadcasters air only part of the transmission in English, or may run the English segment into the next hour or more. Some stations have altered schedules on weekends. Numbers in parenthesis indicate a starting time for English that many minutes into the hour. All times are in UTC.

Time	Country/Station	Frequencies
0000	R. Prague, Czechoslovakia	7345, 11680, 11990
	R. Beijing, China	15100, 17705, 17855
	HCJB (30)	15155, 17875
	R. Budapest, Hungary (30)	6110, 9520, 9585, 9835, 11910, 16160
	R. Norway (Sun)	15165
	Kol Israel	9435, 11605, 15640
	R. New Zealand Int'l	9435, 11605, 15640
	R. Korea, S. Korea	15575
	R. Havana, Cuba	11820
	Spanish National Radio	9630, 11880
	R. Moscow	9530, 9720, 11735, 11950
	Vatican Radio (50)	6150, 9605
	R. Yugoslavia	11735
	Herald Broadcasting, USA	9410, 9850, 13760
	R. Netherlands (30)	6020, 6165, 15315
0100	R. Prague, Czechoslovakia	5930, 7345, 11680
	Voice of Greece (30)	9395, 9420, 11645
	R. Berlin Int'l. (45)	6080, 11690, 13610, 13760, 15240
	RAI, Italy	9575, 11800
	R. Austria Int'l (30)	9870, 9875, 13730
	R. Japan	5960, 17765, 17810, 17835, 17845
	Kol Israel	9435, 11605, 15640
	Deutsche Welle, W. Germany	6040, 6145, 9565, 11865, 15105
	RAE, Argentina	11710
	KUSW, Utah	11695
0200	R. Portugal (30)	9600, 9680, 9705, 11840
	R. Tirana (30)	9500, 11825
	R. Sweden (30)	11705, 15295
	R. Canada Int'l (M-F)	9535, 9755, 11845, 11940, 13720
	R. Havana, Cuba	9710
	R. Baghdad, Iraq	9515, 11810
	R. Romania Int'l	5990, 6155, 9510, 9570, 11940
	Swiss Radio Int'l	6135, 9885, 12035
	Voice of Free China, Taiwan	5950
	Radiobras, Brazil	11745
	R. Cairo, Egypt	9475, 9675
	R. Kiev, Ukraine	11770, 12005, 12060, 15180, 17665, 17690
	Trans World Radio, Bonaire (55)	9535, 11930
0300	R. Prague, Czechoslovakia	5930, 7345, 11680
	R. Sofia, Bulgaria	11720, 11735, 11750, 17825, 17855
	Voice of Greece (40)	9420, 11645
	R. Berlin Int'l, E. Germany	6080, 9730
	R. France Int'l (15)	7135, 9550, 9790, 9800, 11705, 11995, 15155
	R. Beijing, China	0690, 11715, 15100, 17855
	R. Tirana, Albania (30)	9500, 11825
	R. Japana	15195
	Deutsche Welle, W. Germany	9545
	Voice of Turkey	9445
	R. Cultural, Guatemala	3300
	HRVC, Honduras	4820
	R. For Peace Int'l, Costa Rica (15)	7375
	R. Netherlands (30)	6165, 9590
0400	R. Prague, Czechoslovakia	5930, 7345, 11680

Time	Country/Station	Frequencies
	R. Beijing, China	11685
	Kol Israel	9435, 11605, 11655, 12077, 15640, 17630
	R. New Zealand Int'l	17680
	R. Romania Int'l	5990, 6155, 9510, 9570, 11940
	Swiss Radio Int'l	6155, 9885, 12035
	R. Havana Cuba	5965, 9710, 11760, 11820
	WHRI, Indiana	7315, 9495
0500	R. Beijing, China	11840
	HCJB, Ecuador	15155, 17875
	Voice of Nigeria	7255
	R. Namibia (30)	7165, 7190
	R. Austria Int'l (30)	6015
	Spanish National Radio	9630
	Vatican Radio	6185
	BBC, England	5965, 6195, 9640, 9915
	Deutsche Welle, W. Germany	5960, 6120, 9670, 9700, 11845
	R. Berlin Int'l, E. Germany	5965, 6115, 9760, 13610, 13690, 15440
	KUSW, Utah	6175
0600	Voice of America	3990, 6035, 6080, 6125, 7280, 9530, 9540, 9575, 11915
	R. Havana Cuba	11835
	Herald Broadcasting, USA	9455, 9840, 11980
	BRT, Belgium (30)	6035, 11965, 13675
	ELWA, Liberia (30)	11830
	R. Polonia (30)	7270, 9675
0700	R. Berlin Int'l (45)	6115, 9730, 11785
	HCJB, Ecuador	9610, 11835, 15270
	Solomon Is. Broadcasting Corp.	9545
	Trans World Radio, Monaco (40)	9485
	R. Netherlands(30)	9630, 9715
	BBC (30)	9640
0800	R. Beijing, China (30)	11710, 11755, 15440
	KTWR-Trans World Radio, Guam (03)	15200
	R. Norway (Sun)	15165, 25730
	KNLS, Alaska	11715
	WHRI, Indiana	7355
0900	R. Beijing, China (30)	11710, 11755, 15440
	R. Australia	5995, 9580, 9760, 15160, 15240, 17715
	BRT, Belgium (30)	6035, 13675, 21810
	R. Afghanistan (30)	15350
1000	R. Japan	6120
	Kol Israel	1585, 15485, 15650, 15595, 17590
	R. Korea, S. Korea (30)	11715
	R. Moscow	9600, 15475, 11840
	Voice of America	9590, 11915, 15120
	Voice of Vietnam	9840, 12020, 15010
	R. Netherlands	6020, 11890
	Voice of Greece (40)	11645, 15630
	Trans World Radio, Bonaire (55)	11815, 15345
1100	R. RSA, S. Africa	9555, 11805, 11900, 17835
	R. Beijing, China	17855
	HCHB, Ecuador (30)	11740
	NBC, Papua New Guinea	4890
	R. Pyongyonag, N. Korea	9645, 9977, 11715
	BBC, England	5965, 6195, 9740, 11775
	R. Ulan Bator, Mongolia	9615, 12015
	R. Pakistan	17555
	BRT, Belgium	17555, 21810
1200	R. RSA, S. Africa	9555, 11805, 11900, 17835
	R. France Int'l (30)	9805, 11670, 15195, 15425, 17650, 21635, 21645
	R. Beijing, China	9530, 11600, 15450, 17855
	R. Norway (Sun)	15165
	R. Canada Int'l (M-F)	9635, 11855, 17820
	R. Korea, S. Korea (15)	9750
	BRT, Belgium (30)	17555
	R. Finland	15400, 21550
	Vatican Radio	17870, 21515
	R. Yugoslavia	17740, 25795
	Adventist World Radio, Costa Rica	9725, 11870
	R. Jordan	13655
	R. Tashkent, Uzbekistan	7355, 9500, 11785, 15470, 17745
	Voice of Vietnam	9840, 12020, 15010
1300	R. Peace & Progress, USSR	11870, 15180, 15480, 15560, 17635, 17730, 178805, 17835, 21505
	R. Beijing, China	9530, 11600, 11660
	R. Tashkent, Uzbekistan	7325, 9715, 11785, 15460, 17740
	R. Norway (Sun)	9590
	UAE Radio, UAE (30)	15320, 15435, 17775, 21605
	R. Australia	6080, 7205, 9580, 9655, 11930
	R. Jordan (15)	9560
	R. Finland	15400, 21550
1400	R. RSA	7230, 15270, 17765
	R. France Int'l	11925, 21770
	R. Beijing, China	7405, 11815, 15165
	FEBA, Seychelles (58)	9590, 11865, 15330
	R. Japan	11815, 11865
	R. Polonia (30)	6135, 9540, 11815
	R. Moscow, USSR	15305, 15475, 15480, 15560, 17585, 17660, 17810
	R. Korea, S. Korea	9570
1500	KTWR, Guam	11650
	R. Sweden (30)	17880, 21500, 21655
	R. Japan	11815, 11865, 21700
	BRT, Belgium (30)	17550, 21810
	Voice of Vietnam	9840, 12020, 15010
	R. Moscow, USSR	11840, 15475, 17585, 17810
	Voice of America	9700, 15205
	BBC, England	11775, 15260
1600	Voice of America	7195, 9575, 11920, 15410, 15445, 15580, 15600, 17785, 17800, 17870
	R. France Int'l	6175, 11705, 11845, 12015, 17620, 17795, 17845, 17850
	R. Pakistan	17555, 17650, 21480, 21740
	R. Norway (Sun)	17765, 21705
	UAE Radio, UAE	21605
	R. Moscow, USSR	9740, 11840, 15475, 17585, 17810
	BSKSA, Saudi Arabia	9720
1700	R. Japan	9695, 11815, 11865
	BRT, Belgium (30)	13675
	R. Moscow, USSR	9740, 11840, 15475, 17810
	WMLK, Pennsylvania	9465
	Kol Israel	11585, 11655
	Radiobras, Brazil	15265

Time	Country/Station	Frequencies
1800	R. RSA, S. Africa	7230, 15270, 17765
	KVOH, California	17775
	R. Kuwait	13610
	R. Canada Int'l	5995, 7235, 15325, 17875, 21675
	R. Afghanistan (30)	9635, 11830, 15440
	Voice of America	15410, 15445, 15580, 15600, 17785, 17800, 17870, 21486
	R. Norway (Sun)	21730
	R. For Peace Int'l, Costa Rica	13660, 21566
	RAE, Argentina	15345
1900	HCJB, Ecuador	15270, 17790, 21470
	R. Norway (Sun)	15165
	Kol Israel	11605, 12077, 15485, 15640, 17590, 17630
	Spanish National Radio	15375
	R. Canada Int'l	13670, 15260, 17820
	R. Portugal	11740
	VOIRI, Iran	6035, 9022
2000	R. Damascus, Syria (10)	11765, 12085
	R. Havana Cuba	11850
	R. Africa, Eq. Guinea	7189
	R. Baghdad, Iraq	11720
	KVOH, California	11775
	R. Netherlands	9860, 13700, 15560
2100	R. Berlin Int'l, E. Germany (45)	5965, 7295, 9730, 13760
	HCJB, Ecuador (30)	17790, 21470
	Kol Israel (30)	111605, 12077, 15640, 17575, 17630
	R. Baghdad, Iraq	11720
	BBC, England	5975, 117715
	WRNO, Louisiana	13720, 15420
2200	Voice of America	9640, 11860, 15225
	R. Norway (Sun)	17730
	R. Canada Int'l	5960, 9755, 11905
	Voice of Free China, Taiwan	15320, 15440, 17845
	Voice of Turkey	9445, 9685, 17880
	Voice of UAE	9600, 11986
	R. Vilnius, Lithuania	6100, 11770, 12060, 15180, 17665, 17690
	KUSW, Utah	15580
	R. Moscow, USSR	9720, 11735, 11950, 12050, 15425, 17605, 17700, 17720
	R. Polonia	5995, 6135, 7125, 7270
2300	R. Sofia, Bulgaria	11660, 15330
	R. Berlin Int'l, E. Germany (45)	6080, 9730, 11890, 13610, 13760, 15240
	R. Budapest, Hungary (30)	6110, 9520, 9585, 9835, 11910, 15160
	R. Kiev, Ukraine (30)	11790, 13645, 15185, 15455, 15485, 15525
	Kol Israel	9435, 11605, 15640
	R. For Peace Int'l, Costa Rica(30)	7375
	R. Tirana, Albania	6120, 9760, 11825
	R. Luxembourg	9725, 11870
	Adventist World Radio, Costa Rica	9725, 11870

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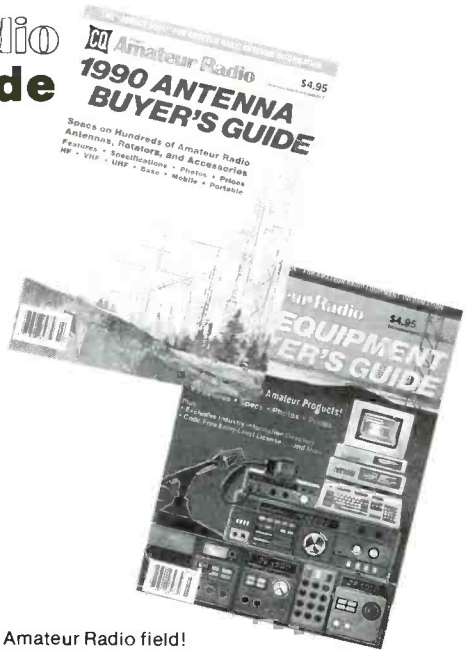
CQ Amateur Radio Buyer's Guide



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THE MONITORING MAGAZINE

Calling Home From Mt. Everest!

Portable SatCom System Links Expedition With The Rest Of The World

When the 1990 Peace Climb Expedition successfully scaled the peak of Mt. Everest, the three climbers celebrated with a telephone call from the summit back to the United States. Their telephone call from the top of the world was made possible by an advanced satellite communications system.

The Everest expedition is equipped with a Magnavox MX-2400T transportable satellite earth station. The MX 2400T is a compact suitcast-mounted unit, which provides high-quality telephone, telex, facsimile and video communications to and from the Base Camp.

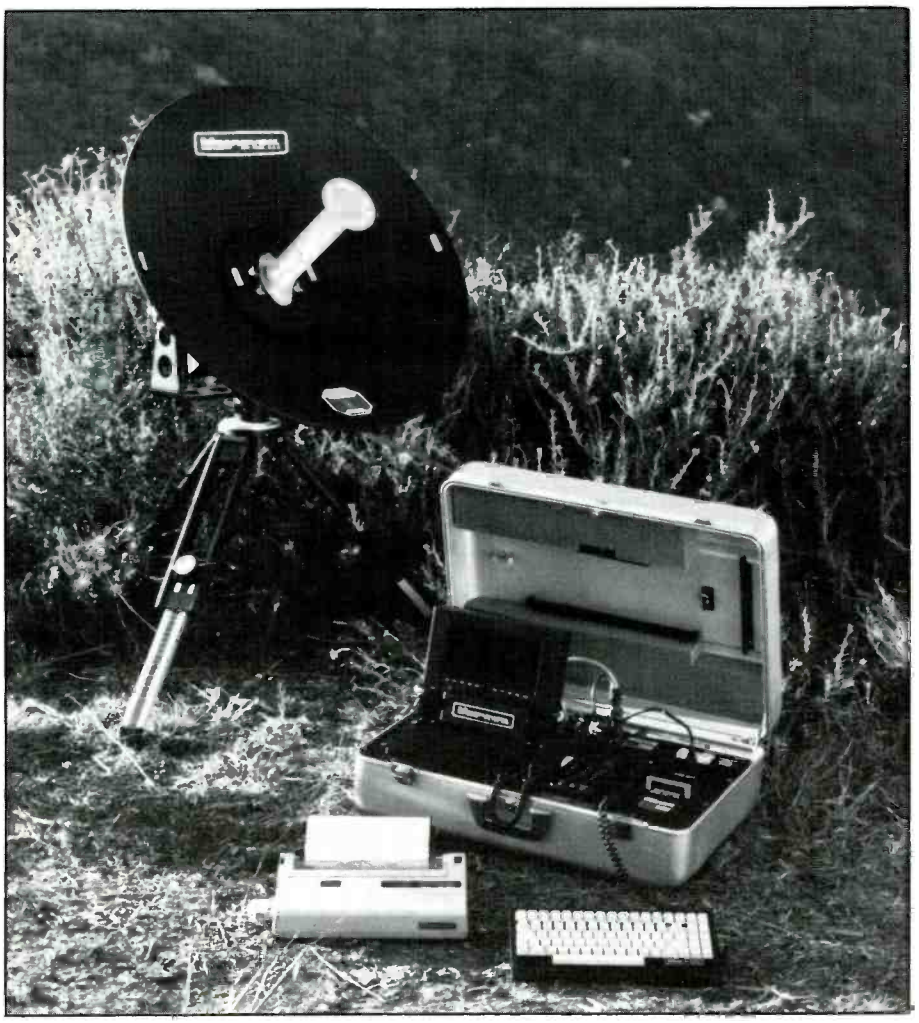
The satcom has provided the primary communications link with the Mt. Everest Base Camp, and has been used for daily telephone and fax traffic to coordinate the extensive logistics support required for the expedition. The satcom system has also been used for progress reports to television networks, newspapers and other news media, and to transmit still video images from the expedition. On April 22, Earth Day 90, expedition leader Jim Whittaker used the satellite earth station for a special telephone link with President George Bush.

The satcom system also helped to save the life of one of the climbers, LaVerne Woods, who had to be evacuated from the mountain to obtain emergency medical treatment in Kathmandu, Nepal.

"The communication system has been invaluable: we have been able to solve problems and give assistance that is usually not available to climbers on Everest," said a spokesperson from the U.S. Peace Climb headquarters in Port Townsend, Washington. "And because we could establish immediate contact with doctors in Kathmandu, LaVerne received quick appropriate medical treatment that may have saved her life."

The phone call from the summit was accomplished using a handheld short-wave radio link from the climbers back to the Base Camp, which was relayed through the Magnavox satcom along with prerecorded video images to the United States for network news broadcast.

Satellite calls from the MX-2400T are routed through an INMARSAT communications satellite centered over the Indian Ocean to a fixed earth station in Ibaraki, Japan, where the calls are patched into the global switched telecommunications networks.



The Magnavox MX-2400T; transportable satellite comms in a suitcase

The 1990 Peace Climb was the brainchild of Jim Whittaker, the first American ever to reach the summit of Mt. Everest. Whittaker assembled three teams of climbers from the Soviet Union, People's Republic of China and United States, for the assault on the world's highest peak. Their aim, according to Whittaker, was to demonstrate that mankind can overcome the greatest obstacles and achieve the highest goals, including peace and a clean environment, through cooperation, trust and commitment. To reinforce their environmental concern, the climbers are removing all signs of their ascent when they depart, and are also cleaning up the decades of debris and gear left behind by previous expeditions.

The MX-2400T is manufactured by Magnavox/NAV-COM, a high-tech supplier of communications and navigation technology.

RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Have you noticed there are more systems of RTTY transmissions on HF Radio today than there was a few years back? It seems there are more modes than Bayer has aspirin, and new ones keep cropping up each year. At this rate, commercial RTTY decoders soon will become so large, to accommodate all these modes, that they'll be bigger than console television sets.

Standard baudot RTTY speeds are now commonly found at 40.5, 45.45, 50, 57, 72, 75, 81, 96, 100, 150, 200, and 300 baud. Where there use to be five speeds, we now find 12 in common use, and even more if one takes into account that the speed can be varied anywhere between 30 and 250 baud. Frequency shifts have seen the standards of 170 Hz, 425 Hz, and 850 Hz, increased with the addition of narrower and wider shifts ranging from 50 Hz to 1200 Hz. There's ASCII transmissions at 110, 150, 200, and 300 baud, but they are rarely used by utility stations over HF Radio.

ARQ (SITOR-A) and FEC (SITOR-B) were once transmitted at 170/100. Now ARQ also seems to run at 200 baud—that's what the speed counter on my decoder occasionally reads—and at all sorts of frequency shifts for the two modes.

Bit inverted RTTY still can be found, although it has never been used much on HF Radio. The Federal Communications Commission seems to be its biggest advocate in the United States.

Some countries have developed ARQ systems for their own diplomatic use. There is a Canadian duplex ARQ system, CAN-ARQ; Hungarian duplex, DUP-ARQ; East German duplex, GDR-ARQ; Siemens simplex ARQ system, SI-ARQ (there's also a Siemens simplex FEC system, SI-FEC), used by the Austrians; and Swedish simplex, SWED-ARQ.

The standard 96-baud ARQ system, called, depending on where you live, ARQ-28, TDM2, MOORE, or 96-TDM, operates at baud speeds of 86, 96, 100, and 200. The standard 192-baud ARQ system, a.k.a. ARQ-56, TDM4, or 192-TDM, runs at 172, 192, or 200 baud. Both are multichannel systems, with TDM2 using two channels for data, and TDM4 using four channels. Add to that ARQ-PLEX, which is TDM2 using inversion, and ARQ-INV, or TDM2 using further subchannel subdivisions.

ARQ-E, a synchronous, single-channel, full duplex ARQ system, can operate anywhere between 30 and 250 baud, but the usual speeds are 48, 64, 72, 86, 96, 144, and 192 baud.

ARQ-E3, another single-channel ARQ system, operates normally at 48, 64, 72, 86, 96, 100, 192, and 200 baud, but its baud rate, too, can be adjusted between 30 and 250.

There is a simplex ARQ system called ARQ-S, which transmits at 96, 100, 144, 192, and 200 baud, but can run between 30 and 200 baud. It uses character lengths of four, five, or six bits.

A one-way traffic FEC-A, normally runs at 96, 100, 144, 192, and 200 baud, but rates between 30 and 250 baud can be selected.

FEC-S is a simplex FEC system with speeds of 96, 100, 144, 192, and 200 baud, and also adjustable between 30 and 250 baud.

There is an AUTOSPEC synchronous mode operating basically at 68 and 137 baud, but variable rates between 30 and 250 baud can be selected.

Other systems monitored are Packet Radio, used in the United States mostly by ham radio operators and the Army, Navy, and Air Force MARS organizations; and multi-frequency-shift keying (MFSK) systems such as Piccolo, used by the British diplomatic service; and Coquelet, used by the French diplomatic service. There's also voice-frequency telegraphy (VFT), common referred to in the United States as frequency-division multiplex (FDM), running at 50, 75, 100, and 200 baud.

Usually spotted on 518 kHz, is the NAVTEX system, which uses FEC in a narrowband, direct-printing telegraphy mode, for broadcast of navigational and weather information.

Add to this list all the different encryption systems devised by the U.S. military, and other military and diplomatic services as well, and what we have is a huge Tower of RTTY Babel. It's no wonder, then, why newcomers to RTTY monitoring are befuddled by it all as they unsuccessfully attempt to pull in many stations clearly.

My advice to them is to go through our RTTY Intercepts section, picking out only those loggings that are handled by their particular decoders, i.e., standard baudot RTTY, and ARQ and FEC if your unit has these capabilities, and try to gain experience at pulling them in clearly. Forget all other transmission systems; they'll only add to your exasperation.

The listening post of John Kleinow, KW19DR, of Wisconsin, includes a Panasonic 2800 receiver, microlog, rtty decoder, Commodore 64 personal computer, Commodore 8023 printer, and a video monitor. John, who is retired, says he's been in the field of communications for 55 years.

RTTY Intercepts

2656.2: Un-ID U.S. mil. w AP/UPI nx at 0521, FDM 85/75, mode B, channel 3 (Hal Bilodeau, IL). A U.S. Navy freq.—Ed.

4004.5: LRO2, Telam, Buenos Aires, Argentina, w/nx in SS, 850/50R at 0948 (Ed.).

```
FAAE    FAAE    FAAE    FAAE
DE      DE      DE      DE
6WW     6WW     6WW     6WW
TESTING         TESTING         TESTING
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
SGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSG
1 2 3 4 5 6 7 8 9 0 9 8 7 6 5 4 3 2 1
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
AS AS AS AS AS AS AS
FAAE    FAAE    FAAE    FAAE
DE      DE      DE      DE
6WW     6WW     6WW     6WW
TESTING         TESTING         TESTING
RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRY
SGSGSGSGSGSGSGSGSGSGSGSGSGSGSGSG
1 2 3 4 5 6 7 8 9 0 9 8 7 6 5 4 3 2 1
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
AS AS AS AS AS AS AS
```

6WW, the French naval base at Dakar, Senegal, was monitored by the RTTY column editor as it sent this test tape on 183365 kHz at 1645 UTC, 850/74R.

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	**Gennan**
ID	**Identification/ied**
MFA	**Ministry of Foreign Affairs**
nx	**News**
PP	**Portuguese**
RYRY	**"RYRY . . . "test tape**
SS	**Spanish**
tfc	**Traffic**
w/	**With**
wx	**Weather**

4006: Un-ID sta idling at 2040, ARQ-E 401/72 (Peter T., England).

5252.2: RFFGBEM, French mil., possibly Strasbourg, France, w/an "exercice" msg to RFFGBEMC, using circuit ID of UCA. Was ARQ-E 398/72 at 2057 (Peter T., England).

5263: Un-ID French mil., w/"de Paris controle de cle" & and IQJ circuit ID, 48/ARQ-E3 at 1100 (Peter T., England).

5288: Un-ID sta. idling at 20055, 96/ARQ-E3 (Peter T., England).

5460: VOA, Tangier, Morocco, w/nx in EE, 425/75N at 0224, & in AA at 0354 (Ed.).

5740: HZN, Jeddah Meteo, Saudi Arabia w/coded wx, 850/50N at 0248 (Ed.).

5760: Un-ID ends ARQ xmsn at 0254 w ". . . locator only. 2 mobile OES and that is all NNNN" (Ed.).

5796.5: "HRC" from OH & "QKW" from PA w/msgs to each other at 0233, Packet 1030/300. Never did see the front part of their c/s's. These are MARS stas and the freq is assigned to the USAF (Ed.).

5845.8: RFFQ, Un-ID French mil. sta. w/a test msgs to RFFDCHN on the IXV circuit. Was ARQ-E 409/96 at 1945 (Peter T., England). The IXV circuit has been reported to be from Strasbourg—Ed.

5887.5: IMB2, Rome Meteo, Italy, w/coded wx, 850/50N at 0328 (Ed.).

6416: WLO, Mobile R., AL, w/plaintext wx in FEC at 1544 (Ed.).

6499.5: WLO w/a list of auto-telex freqs, FEC at 1548 (Ed.).

6910.5: Un-ID w/aero wx at 0405, 850.75R. Xmsn was weak & w/extreme fadeouts (Ed.).

6941.5: TRK, ASECNA, Libreville, Gabon, w/aero wx, 425/50R at 0042 (Ed.).

6942: RFFAB, defense ministry, Paris, France, w/a plaintext msg in FF to RFFHCYAH on the "INK" circuit, ARQ-E 378/72 at 1802 (Peter T., England).

6943: 5TX, ASECNA, Nouadihibou, Nauritania, idling at 0055, ARQ-E3/48 (Ed.).

7913: 9JZ6, Lusaka Aero, Zambia, w/coded wx at 0456, 425/50N (Dallas Williams, CO).

7727: FDY, French Air Force, Orleans, France, w/RYRY & FDYFDY, 50/363R at 1817 (Bilodesu, IL).

8010: 5UA, Niamey, Nigeria, w/coded msg at 0248, 850/50 (Robert Charlton, ON). This sta. is ASECNA, Niamey, Niger (Nigeria). It was not sending a coded msg, but coded wx. A coded msg is private and is not intended to be broken by outsiders. Coded wx is a shorthand method of sending info about wx conditions, which anyone can decipher by obtaining easily available decoding charts from wx agencies—Ed.

9070: 6VU, Dakar Meteo, Senegal, w/RYRY + QJH1 at 0514, 425/50R (Ed.).

9846: TUH, ASECNA, Abidjan, Ivory Coast, w/RYRY + QJH1, 425/50R at 0512 (Ed.).

9994: CSY, Santa Maria Aero, Azores, w/RYRY, 850/50N at 0321 (Ed.).

10132: TNL97, Brazzaville Meteo, Congo, 900/50R at 2317 (Charlton, ON). What was the substance of this xmsn?—Ed.

10223: Un-ID s/off w/"Tks for all OM ZNN et R + Exu et info VY 73 et 88 GB SK." Was 500/75N at 0438 (Williams, CO). My database show CLP1, MFA, Havana, Cuba, occasionally using this freq.—Ed.

10382: VOA, Greenville, NC, w/nx at 0357, FDM 85/75R, mode B, channel 1 (Bilodeau, IL).

10893.5: LRB39, Telam, Buenos Aires, Argentina, w/extremely garbled nx in SS at 1050, 850/50R (Ed.).

11012.5: SUU, Cairo Meteo, Egypt, w coded wx, 425/50R at 0155 (Ed.).

11013: DyN, Buenos Aires, Argentina, w/nx in SS, 850/75N at 0021 (Ed.).

11015: RPFN, Monsanto Navrad, Portugal, w/foxes, counting, & RYRY, 85075R at 0320 (Ed.).

11017: RPFN, w/foxes, counting, & RYRY, 850/75R at 0300, foll at 0320 w/RPFNH calling RPTI, then back to test tape. At 0326 w/encryption foll by more test tape, then off at 0335 (Ed.).

11133: BZG41, Xinhua, Beijing, China, w/nx in FF, 425/50R at 1441 (Harold Manthey, NY).

11175: 5HD, Dar es Salaam Aero, Tanzania, w/RYRY at 0416, 170/50R (Williams, CO).

12063: RFLIG, French Navy, Cayenne, French Guiana, w/"controle de voie: at 1005, ARQ-E 850/72 (Ed.).

12265: BZR62, Xinhua, Beijing, China, w/nx in EE at 1508, 425/75R (Manthey, NY).

12507: UFB, Odessa R., USSR w/a coded msg, 170/50R at 2247 (Charlton, ON). This was not UFB sending, but probably receiving. This frequency is used by ships, not coastal stas, to send tfc—Ed.

12688.5: UQK, Riga R., Latvia, w/tfc in RR to UUAK (ship c/s), 170/50N at 1847 (Ed.).

12705: UQK, Riga, w/tfc in RR & tfc w/4F grps, 1710-1734, 170/50N (Ed.).

12740: Un-ID w/continuous encryption that was periodically interrupted by a string of RYRY. The RYRY string always ended, ". . . RYRYVMGTCNJ," then a carriage return/line feed, "BH," and another carriage return/line feed, foll by more encryption. Was 170/100N, 1947 to past 0018, the next day (Ed.).

12750: NIK, USCG, Boston, MA, w/int'l ice patrol (IIP) bulletin in FEC at 0023. This BC gives the position and time of all ice sighted and reported to NMF, MNM, and the Canadian Coast Guard (Ed.).

13056: UJY, Kalingrad R., USSR, w/msgs in RR, 425/50 at 2231 (Charlton, ON).

13081: NMO, USCG, Honolulu, HI, w/xmsn schedule & freqs used, FEC at 0439 (Bilodeau, IL).

13399: DFZG, MFA, Belgrade, Yugoslavia, w/RYRY + ID, 425/75N at 0520, foll at 0532 w/Tanjug nx in SC "for all" (Ed.).

13410: 6WW, French Navy, Dakarm Senegal, w/unclassified tfc in FF that included plaintext wx, coded analysis, msgs, AP/AFP nx, navareas, & operational msgs. Was 850/75N at 0610, and was the same BC seen the previous day on 18365 at 1457 (Ed.).

13526: Un-ID w/wx in EE & GG at 0400, 425/100N ("Bunky," IL). It's DHJ51, Grengel Meteo, FRG—Ed.

13542: ZRO3, Pretoria Meteo, RSA, w/coded wx, 425/75N at 0536 (Ed.).

13665: 6VU73, Dakar Meteo, Sensgal, w/coded wx, 425/50N at 0549. Severe QRM from Radio Moscow on same freq. Only a good filtering system brought the wxcast to a readable level (Ed.).

13780: HMF35, KCNA, Pyongyang, North Korea, w/RYRY, 250/50N at 0558, foll by nx in RR at 0601 (Ed.).

13830: KAA60, FCC, Grand Island, NE, w/KQA62, 850/50R at 2238 (Charlton, ON). What was the substance of this xmsn???—Ed.

14367.2: BZP54, Xinhua, Beijing, China, w/RYRY at 1205, 425/75R (Ed.).

14382: GXQ, British Army, London, England, w/RYI's & foxes, FDM 170/50 at 2022 (Manthey, NY).

14402: ZUD89, PPTT, Pretoria, RSA, w/tfc at 1213. Mode was Autospec/68 baud, which my European-made RTTY decoder can decode (Ed.).

14488.5: Un-ID Austrian diplo sta idling at 1440 in 96-baud ARQ that has slow pulses, 3 chirps every 2 secs. ARQ mode is the Siemens System, one of a few different ARQ systems that have appeared on HF Radio the past couple of years. Only current commercial European decoders, which mine isn't, are programmed to decode these various systems (Ed.).

14490: RNK36, Tass, Moscow, USSR, w/nx in EE, 425/50R at 1446 (Ed.).

14497: CSY66, Santa Maria Aero, Azores, w/NOTAM re air route over Florida to be affected by launch of the Space Shuttle. Was 843/50N at 0235 (Bilodeau, IL).

14505.4-14507.4: VDD, Canadian Mil., Debert, NS, w/foxes, counting, & TEST w/o ID on 8 of 9 FDM channels, and encryption on 1 channel, 170/75N&R at 1208 (Ed.).

14510: RIC75, Tass, Moscow, USSR, w/some RYRY seen through severely garbled xmsn at 1448, 425/50R (Ed.).

14529.5: AFA6CC (USAF MARS) w/a CQ to AFA5ET, then AFA1CY tells AFA5ET it has 325 msgs in its "PRMBS" mailbox, foll by AGA1HA calling AFA5ET. Was Packet 1030/300 at 1340 (Ed.).

14584: Un-ID w/5L msgs, 425/75R at 1457. To CW at 1508 for s/off (Ed.).

14609.5: JAM33, Diplomatic Information Service, Tokyo, Japan, w/RYRY, foxes, & counting, 1057-1100, 425/50R (Ed.).

14750: RFFXI, French mil., Bangui, Central African Republic, w/a "non protege" (unclassified) msg at 2200, ARQ-E/72 (Ed.).

14760: BAT93, Xinhua, Beijing, China, w/nx in EE, 425/50R at 1133 (Ed.).

14785: ATP65, MEA, New Delhi, India, w/RYRY, 425/50N at 1416 (Manthey, NY).

14818: Y7A60, MFA, Berlin, GDR, w/a 5L msg at 0422, 425/50N (Ed.).

14950: RWM79, APN, Moscow, Ussr, w/nx in EE at 0404, in RR at 0408, in FF at 0410, then idling for a long time beginning at 0414. Was 425/100R (Ed.).

15667: FDY, French Air Force, Paris, France, w/RYRY & le bricks, 425/50R at 1707 (Williams, CO).

15670: HGM36, MTI, Budapest, Hungary, w/RYRY at 1610, 425/50N ("Bunky," IL).

15710: RED52, Tass, Moscow, USSR, w/nx in FF, 425/50kR at 1437 (Manthey, NY).

15830: RUZU, Molodezhnaya Base, Antarctic, w/coded wx at 1307, 500/50N (Williams, CO).

15832: Un-ID sta. w/5L grps, 1303-1306, 500/75N (Williams, CO).

16014.5: RFVI, French mil., Le Port, Reunion, relaying RFQP's "controle de voie" msg at 1257, ARQ-E3 425/100 (Ed.).

16016.9: Un-ID sta w/a telex in EE re electrical drawings specifications. Was ARQ/300, 1208-1232 (Ed.).

16044: CLP65, Cuban Embassy, Managua, Nicaragua, w/encryption after ZZZZZ and chatter in SS, 425/100N at 2029 (Ed.).

16116.7: 6VK317, PANA, Dakar, Senegal, w/nx in SS, 425/50R at 1850 ("Bunky," IL).

16140: RGW28, Tass, Moscow, USSR, w/nx in EE, 425/50R at 1321 and 2121 (Ed.).

16150.5: AFRTS, Los Angeles, CA, w/AP nx in EE at 0250, 85/75R ("Bunky," IL).

16153: Un-ID in ARQ, 2125-2130. Xmsn was 425 Hz shift/200 baud, which my RTTY gear cannot decode (Ed.).

16506.7: Un-ID w/ZRQ msgs that looked garbled, 1552-1609 (Ed.).

17010: URD, Lenigrad R., USSR, w/some type of ###'s tfc, 1239-1240, 170/50N (Ed.).

17020: UDK2, Murmansk R., USSR, w/telegrams in RR, 170/50N at 1235 (Ed.).

17021.6: WLO, Mobile R., AL, w/plaintext wx in FEC at 1244 (Ed.).

17024: SAB83, Goeteborg R., Sweden, working a ship in ARQ at 1246 (Ed.).

17411: Y7K32, MFA, Berlin, GDR, w/nx in GG at 1304, 350/50N (Ed.).

17440: Possibly XVA91, PTT, Hanoi, Vietnam, w/RYRY at 1145, foll by garbled ID in s/off at 1146. Was 425/50R. XVA91 has a circuit on this freq to Calcutta, India (Ed.).

17443.2: BZG48, Xinhua, Beijing, China, w/nx in FF, 425/50R at 1142 (Ed.).

17462: Un-ID ending CW xmsn at 1307 w/". . . tio K," then moves to 17464 for a RTTY xmsn at 425/162, the mode which was not known at this writing. The speed is twice that of 81 baud and four times that of the 40.5 baud xmsns (Ed.).

17470: BZS28, Xinhua, Beijing, China, w/badly garbled nx in EE, 425/50R at 1159 (Ed.).

17590: HZN49, Jeddah Meteo, Saudi Arabia, w/coded wx, 850/100N at 2334 (Manthey, NY).

17921: MFA, Cairo, Egypt, w/5L grps to Washington, DC, ARQ at 1415 (Ed.).

18016.9: Very weak un-ID sta w/ARQ tfc that appeared to be in AA, at 1306 (Ed.).

18029: PTT, Lubumbashi, Zaire, w/stock market quotes & transactions of the Zairebanque, Lubumbashi. Was in FF and 170/50N at 1333 (Ed.).

18030: 7L1, Czech Embassy, Havana, Cuba, w/tfc

in Czech, 425/100N at 1151, foll by a s/off in CW at 1153 (Ed.).

18032.8: PTT, Lubmbashi, w/invoices & money transfers tfc in FF to Kinshasa, 170/50N at 1227 (Ed.).

18033: Un-ID sta using 425 Hz shift/200-baud ARQ at 1432 (Ed.).

18035: ZRH, Cape Town Navrad, RSA, w/unclassified tfc to LOL, Buenos Aires Navrad, Argentina, 1159-1202, 850/75R (Ed.).

18040: TCY4, AA, Ankara, Turkey, w/nx in Tur, 850/50R at 1140 (Ed.).

18041.5: Un-ID idling w/slow ARQ pulses at 1555 (Ed.).

18050: YZ1, Tanjug, Belgrade, Yugoslavia, w/nx in FF, 425/50R at 1154 & 1555 (Ed.).

18165.5: Another un-ID idling w/slow ARQ ;ulses at 1623 (Ed.).

18220: CNM76, MAP, Rabat, Morocco. w/nx in FF at 1600, 425/50R ("Bunky," IL).

18310: RDT57, Tass, Moscow, USSR, w/nx in FF, 425/50R at 1528 (Ed.).

18321: OMZ10, Czech Embassy, Tripoli, Libya, w/tfc in Czech, 1110-1119, 425/100N (Ed.).

18350: KUP, Jamba, Angola, w/nx in EE, 425/50R at 1907 (Ed.).

18363.5: Un-ID w/RYRY + "Zaire Centre line test" at 1830, 425/50R ("Bunky," IL). It's 9PL, Kinshasa Aero, Zaire—Ed.

18365: 6WW, French Navy, Dakar, Senegal, w/unclassified tfc in FF, 850/75R at 1457. Spotted the next day at 1645 w/RYRY, SGSG, counting, and the alphabet, to FAAE, and several days after that w/unclas naval tfc at 2100 (Ed.).

18405: RCT57, Tass, Moscow, USSR, w/nx in EE, 425/50R at 1147 (Ed.).

18421: Bulgarian Embassy, Managua, Nicaragua, w/a 5L msg & tfc in Bulgarian relayed to Ottawa, Canada, from Sofia, Bulgaria. Was 425/50N at 2112 (Ed.).

18430.3: Un-ID w/RYRY, 425/50N, 1510-1511 (Ed.).

18450: RCF, MFA, Moscow, USSR, w/5L & 5F msgs, 1444-1515, 425/75N (Ed.).

18450.5: Un-ID in ARQ at 1215 & 1542. Another undecodable xmsn at 200 baud/425 Hz shift (Ed.).

18496: CNM80, MAP, Rabat, Morocco, w/RYRY & freq list, 425/50R at 1155 (Ed.).

18501.5: MFA, Jakarta, Indonesia, w/tfc that mentions several times about QRM complaints from Paramaribo. Was ARQ at 1527. Then went to standby until 1640, sending 5L msgs until 1654, foll by tfc in Indonesian at 1716 to s/off at 1721 (Ed.).

18540: RTV57, Tass, Moscow, USSR, w/RYRY at 1331, 425/50R, foll at 1334 w/nx in FF (Ed.).

18553.7: Msg at 1330 says RFLI, French Navy, Fort de France, Martinique, w/"controle de voie." But circuit ID of TGI says the sta here is RFTJ, Dakar, Senegal, which relayed Martinique's msg. Mode was ARQ-E3/192 (Ed.).

18560: 9BC31, IRNA, Teheran, Iran, w/nx in AA at 1151, 425/50R (Ed.).

18571.4: Un-ID w/5L grps in FEC at 1529. S/off 1530 w QRV (4X) (Ed.).

18603.8: VOA, Greenville, NC, w/RYRY to VOA, Botswana, 85/75R at 1313. At 1316 w tfc to Kavala, Greece, re "Kavala monitoring schedule." "PHL (Philippines—Ed.) frequency change," which was to take effect the next day after this BC, and other interagency business (Ed.).

18610: Vietnamese Embassy, Bonn, FRG, w/a 5L msg & tfc in VV, TDM-A/96 at 1524 (Ed.).

18634: CLP1, MFA, Havana, Cuba, w/circulars in 5F grps, 425/100N at 1303 (Ed.).

18648.5: SOT265B, PAP, Warsaw, Poland, w/nx in Polish, FEC at 1815 (Ed.).

18655: CLP1, MFA, Havana, Cuba, w/tfc in SS re "la base naval de Guantanamo (BNG)," & a 5F msg to Embacuba Bissau, 550/50N at 1820 (Ed.).

18823: Y2V38A, ADN, Berlin, GDR, w/nx in EE, 425/50N at 1631 & 1850 (Ed.).

18829: Un-ID w/a telexes in EE at 1411, 275/50N. One telex was marked "urgent" and was going to Warsaw (Williams, CO).

18951.5: Un-ID Cuban diplo w/encrytion after ZZZZZ, 425/75N at 1635. Went to 18950 at 1636, in which 2 OM in SS were heard on USB (Ed.)

18966.7: Msg says DE RFLI (French Navy, Fort de France, Martinique) "controle de voie," but circuit ID of HJL says the sta xmtng here is RFHJ, Papeete, Tahiti. Was ARQ-E3 425/192 at 1209 (Ed.).

18986.7; RFHI, French Navy, Noumea, New Calendonia, w/a service msg to RFHJ at 1239, ARQ-E3 425/100 (Ed.).

19171: CNM85, MAP, Rabat, Morocco, w/nx in FF, 425/50R at 1555 ("Bunky," IL).

19204.7: RFLI, French Navy, Fort de France, Martinique, w/"controle de voie," ARQ-E3/192 at 2326 (Ed.).

19390: Y7A76, MFA, Berlin, GDR, w/tfc in GG, 425.50N at 1545 ("Bunky," IL).

19765: Un-ID in ARQ at 1542. Another xmsn at 200/425 (Ed.).

19865.5: YZJ4, Tanjug, Belgrade, Yugoslavia, w/nx in SS, 5000/50R at 1725 (Williams, CO).

1987.7: MKD, RAF, Akrotiri, Cyprus, w/RYI's & foxes at 1709, FDM 325/50R (Williams, CO).

19980: EPJ2, IRNA, Teheran, Iran, w/nx in EE, 425/50R at 1707 (Williams, CO).

20085.5: ISX20, ANSA, Rome, Italy, w/nx in FF, 350/50N at 1150 (Ed.).

20091: Un-ID, w/a 5L msg at 13320, 500/75N. S/off w QRU SK at 1321 (Ed.).

20116.6: Un-ID in ARQ, 1604-2100. Was mostly idling but did send some brief tfc in EE. QRM garbled many words (Ed.).

20140: Y4A4, DP, Berlin, GDR, w/nx in GG at 1326, 425/50N (Williams, CO).

20204: YZJ, Tanjug, Belgrade, Yugoslavia, w/nx in EE, 425/50R at 1325 (Ed.).

20214.8: CLP1, MFA, Havana, Cuba, w/5F grps to Embacuba "Nigria," wherever that is, 550/50R at 1720 (Williams, CO). For the drop of an "E" the nation was lost. It's Nigeria—Ed.

20381: CAK, Santiago Aero, Chile, w/aero wx at 0115, 842/50N (Bilodeau, IL).

20420: Y2V20, ADN, Berlin, GDR, w/nx in EE, 425/50N at 1144 (Ed.). Same sta. w/nx in AA at 1316 (Williams, CO).

20617: KNY23, Czech Embassy, Washington, DC, w/tfc, appearing to be a visa list, that mentioned the chemistry dept. at Colorado State U. Was 425/75N at 1306 (Williams, CO).

20775: CLP1, MFA, Havana, Cuba, w/prensaminrex nx & circulars to Latin America/African embassies, + 5F msgs, 507/50N at 1720 (Bilodeau, IL).

20840: Y7A82, MFA, Berlin, GDR, w/RYRY at 1257, 425/50N (Ed.).

20962.1: USAF MARS stas AFA2XO & AGA6TR working each other before MARSgrams xmsns. Was 170/75R at 1826 (Ed.).

21916: CAI7E, Hanga Roa Aero, Easter Island, w/aero msgs to Santiago, Chile, 796/50N at 0048 (Bilodeau, IL).

22443: ODT, Beirut, Lebanon, w/ARQ phasing sig foll by CW ID of ODT, at 1817 (Bilodeau, IL). Sorry, hal—wrong sta. It's OST, Oostende R., Belgium—Ed.

22551: Un-ID sta. w/xmsn consisting of 2 numbers foll by 1 letter, i.e., 25B, 04C, etc., 843/75R at 1830. Perhaps some type of ###'s xmsn? (Bilodeau, IL). Nope. It's a test tape from GYA, Royal Navy, London, England. I guess the numbers represent the MHz bands for send or receive, and the letters constitute the channels on those bands—Ed.

22739.5: CLP23, Cuban Embassy, Lagos, Nigeria, w/5F grps stamped "urgent" foll by "econminrex" text in SS, 500/50R at 1632 (Williams, CO).

22936: Possibly CLP1 w/5F grps, double spaced, 1623-1626, 500/50N (Williams, CO).

23030: GYA, Royal Navy, London, England, w/test tape at 1611, 850/75R (Williams, CO).

23465-23467: MKK, RAF, London, England, w/foxes, counting, & RYI's on 9 FDM channels, 250/50N&R at 1627 (Ed.).

23520: RFVI, French mil., Le Port, Reunion, w/service msgs at 1646, foll by encrypted msgs stamped "classified." A 5L msg was sent at 1723, then the sta idled until shutting down at 1758. Mode was ARQ-E3 850/100 (Ed.).

23655.7: CLP1, MFA, Havana, Cuba, w/circulars in SS, 425/50N at 1532 (Ed.).

23691; PWZ, Rio de Janeiro Navrad, Brazil, w/tfc at 1608, 850/75R (Williams, CO).

23840: RFFA, Defense Ministry, Paris, France, w/a "non protege MCA notex" in FF, TDM-B/96 at 1537 (Ed.).

24426.9: Tfc slugged "Maputo," possibly from CLP25, Cuban Embassy, Maputo, Mozambique, intercepted at 1616, 500/75N (Williams, CO).

24591.2: Un-ID w/a telex in SS, 325/50N, 1658-1700. Sta. was not on long enough for me to ID, but it was not Cuban (Williams, CO).

25533: LOL, Buenos Aires Navrad, Argentina, w/RYRY to 5KM, 372/75N at 1915 (Bilodeau, IL).

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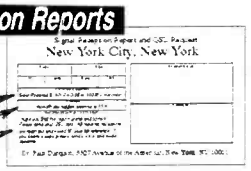

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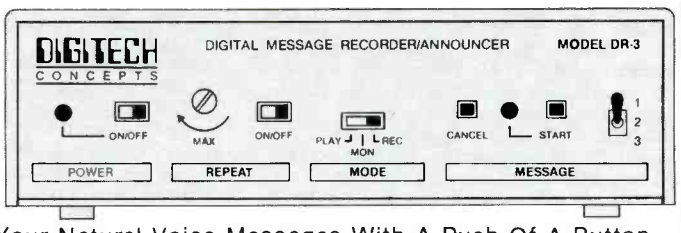

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WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

CB Station Shut Down; Equipment Seized

U.S. Marshals, with the assistance of Engineers from the FCC's New York Office, executed seizure of 27 pieces of radio equipment at the home of CB operator Dwayne Mayo, Jamaica, New York. The seized equipment included five (5) linear amplifiers capable of boosting transmitter power to 2000 watts which is well above the legal 4 watt limit. The FCC received a petition (signed by 30 area residents) stating that Mayo's CB transmissions could be heard on television and telephone equipment. FCC letters to Mayo about his CB operation went unheeded. On October 4, and November 13, 1989 he was issued fines totalling $1,600 for unauthorized CB operation.

FCC Amends Forfeiture Amounts

The FCC amended its rules to modify the forfeiture amounts that can be imposed by the Commission.

This action was taken because Congress amended Section 503 (b) (2) of the Communications Act. Under the amended statute, if the entity subject to forfeiture penalty is a broadcast station licensee or permittee, a cable television operator or an applicant for any broadcast, or cable television operator license, permit, certificate, or other instrument of authorization issued by the Commission, the FCC may assess up to $25,000 per violation or each day of a continuing violation, provided that the total amount assessed does not exceed $250,000 for any single act or failure to act. If the entity subject to forfeiture penalty is a common carrier or an applicant for any common carrier license, permit, certificate, or other instrument of authorization issued by the FCC, the Commission may assess up to $100,000 for each violation or each day of a continuing violation, provided that the total amount assessed does not exceed $1,000,000 for any single act or failure to act.

With respect to other entities subject to forfeiture penalty, the Commission may assess up to $10,000 for each violation or each day of a continuing violation, provided the total amount assessed for a continuing violation does not exceed $75,000 for any single act or failure to act.

FCC Amends The Aviation Services Rules

The Commission amended the Aviation Services rules to permit stations in the aviation services to use 40 channels in the 136-137 MHz band.

The Commission said that the best compromise for distributing the 40 channels among the various competing segments of the aviation industry was to provide: 1) 20 channels for traditional aeronautical enroute communications with eight of those channels reserved through 1993 for helicopter flight following systems within 180 miles of the shoreline of the Gulf of Mexico; 2) 15 channels for general aviation services such as automatic weather observation services (AWOS), automatic terminal information services (ATIS), control tower and advisory communications. The Federal Aviation Administration is authorized to use these channels on a shared basis for such general aviation purposes. Finally, five channels will be held in abeyance for future general aviation uses.

The Commission believes that allotting this spectrum will alleviate many of the frequency congestion problems currently experienced in the major hub airports such as New York, Chicago, Dallas-Ft. Worth, and Los Angeles. It will also aid in accommodating growth in the aviation services.

Today's action conforms the Commission's rules with the Final Acts of the 1979 World Administrative Radio Conference for the Mobile Services (WARC MOB-87). The 1979 WARC reallocated the 136-137 MHz band on a primary basis to the aeronautical mobile services effective January 2, 1990. In the United States, this band was reallocated for use in the non-Government aviation services.

This action also addressed two petitions by the Aeronautical Radio, Inc. (ARINC) and the American Petroleum Institute (API). ARINC is a communications company providing air-to-ground and ground-to-air communications for the safety and efficiency of aircraft operations. API is a national association representing approximately 200 companies and more than 5,000 individual members engaged in the exploration, production, refining, marketing and transportation of petroleum products and natural gas.

Additional Spectrum For Trunked In Private Land Mobile Radio Services

The Commission amended its rules to permit additional trunked use on land mobile frequencies above 800 MHz to increase the efficient use of existing private land mobile spectrum. Today's action will allow trunked systems access to 150 channels above 800 MHz that are currently reserved for conventional use only. The new rules will convert these 150 channels to a General Category for both trunked and conventional use.

Currently, trunked systems are only authorized on frequencies above 800 MHz and usually employ five or more channels. Trunked system users wanting to transmit are automatically routed by a computer to the first available channel. If no channel is available, the user is placed in a waiting line to be served in turn. To operate efficiently, a trunked system has historically required total control of all channels used by the system and as a result receives exclusive use of its licensed channels in its area of operation at the time the license is granted. Conversely, a conventional system can receive exclusive use of an 800 MHz or 900 MHz channel only after it has loaded, or used, at least 70 mobile units on the channel.

Under the new rules, existing General Category conventional systems may choose to convert to trunked operation either individually or by combining with other conventional systems. Existing trunked systems may expand either by applying for unassigned General Category frequencies or by combining with existing General Category conventional systems with the consent of the affected co-channel licensees. The Commission said that these provisions would help address the spectrum needs of many existing 800 MHz trunked licensees that qualified for additional channels several years ago and have been on waiting lists to obtain additional channels. Making the General Category available for expansion of existing systems, the Commission said, also promotes spectrum efficiency because the efficiency of a trunked system increases as the number of channels available to the system increases.

The Commission structured these rules after those governing 800 MHz intercategory sharing which require systems to be fully-loaded before acquiring General Category frequencies and limit trunked system expansion to only one frequency more than current loading would support. Additionally, new trunked systems may not use unassigned General Category channels.

The Commission, however, declined to adopt rules to permit the assignment of conventional systems in the General Category that are unconstructed or not yet placed in operation, or to include the SMRS Category at 900 MHz in the current sharing provisions.

New Part 15 Devices In 902-905 MHz Band Stayed

In response to a petition by the Sensormatic Electronics Corporation, requesting reconsideration of the *First Report and Order* in this proceeding, the Commission is delaying for one year the implementation of a portion of Section 15.249 of the new rules addressing non-licensed operation within

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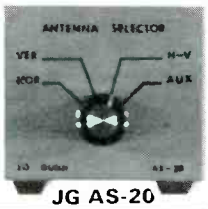

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CIRCLE 166 ON READER SERVICE CARD

the frequency band 902-905 MHz. This action will allow the manufacturers and users of anti-theft equipment to develop and install systems that are less susceptible to interference from new Part 15 devices.

Part 15 of the rules governs operation of radio frequency devices without an individual license. In the *First Report and Order*, the Commission revised these rules to encourage more efficient use of the radio frequency spectrum while providing additional technical and operational flexibility in the design, manufacture and use of non-licensed devices.

Sensormatic is a manufacture of Part 15 filed disturbance sensors used by stores as antitheft devices—the "tag sensors" attached to clothing and other articles to prevent shoplifting. Section 15.249 permits, for the first time, the non-licensed operation of any type of Part 15 device within several frequency bands, one of which is 902-928 MHz.

The Sensormatic anti-theft equipment, along with certain other limited types of devices, has operated under Part 15 within the band 902-928 MHz for several years. Sensormatic was concerned that new video transmitters and other devices operating under Section 15.249 would be demonstrated at retail stores located in close proximity to stores employing its equipment. It said these new devices could generate interference and cause the anti-theft equipment to no longer function, resulting in an increase in shoplifting and a corresponding increase in costs to consumers. Sensormatic maintained that its 30,000 installed systems, as well as the equipment it is currently marketing, could be rendered ineffective before replacement technology becomes available.

The Commission said that while a device operating in the same bandwidth could conceivably interfere with the extremely weak signal from a Sensormatic merchandise tag, the Sensormatic transmitter, which is always on and operates at 100 times the power permitted for the new Part 15 devices, would interfere with the new devices and, therefore, it was unlikely that any new Part 15 devices would be demonstrated in the vicinity of the security system.

However, noting that Sensormatic is currently developing a new system that is designed to be resistant to interference, the Commission said it would, out of an abundance of caution, delay the importation, marketing authorization and operation of new types of Part 15 devices operating in the 902-905 MHz portion of the 902-928 MHz band for a period of one year from the adoption date of this order.

FCC Modifies Decisions Concerning The Special Emergency Radio Service

The Commission modified its earlier decisions permitting private entrepreneurs to be licensed directly in the Special Emergency Radio Service (SERS). First, the Commission has restricted new non-eligible private carrier systems in the SERS to the one-way, paging-only channels. Second, the Commission concluded that limited secondary uses of MED Channels 1 through 8 are necessary for emergency medical procedures, this it has restored non-administrative secondary uses of these channels.

In June 1988, the Commission adopted an order permitting private entrepreneurs who are not considered eligible in the SERS to be licensed on SERS frequencies for the limited purpose of offering communications service to eligible SERS end users, such as hospitals, emergency medical services, and disaster relief organizations. The private carrier is responsible for all aspects of system operation, including maintenance, licensing and ensuring that end users comply with Commission rules.

The Associated Public-Safety Communications Officers, Inc. (APCO), the International Municipal Signal Association, the International Association of Fire Chiefs, Inc., and the National Association of State EMS Directors asked the Commission to modify its decision. While APCO urged the Commission to bar private carriage on all channels, in the SERS, the other petitioners objected only to private carriage on two-way channels. The Commission was also asked to restore limited secondary uses of the MED Channels.

Application For Restricted Radiotelephone Operator Permit Application And Temporary Permit

Only the Restricted Radiotelephone Operator Permit Application and Temporary Permit FCC Form 753 dated June, 1979 (later editions) will be accepted for processing.

Earlier editions of the application form will delay the issuance of the license, since applications will be returned without action, along with a request to refile on a current form.

For further to information, contact the Consumer Assistance Branch, Private Radio Bureau, Gettysburg, PA 17326, telephone number 717-337-1212.

Technical Standards And Licensing For Aircraft Earth Stations

The Commission proposed amending its rules to establish technical standards and licensing procedures for aircraft earth stations. Specifically, the Commission has proposed to adopt technical standards and corollary licensing procedures for aircraft mobile terminals used for Mobile Satellite Service (MSS) communications. The proposals put forth will implement previous Commis-

sion "L-band" proceedings allocating spectrum and establishing initial licensing parameters to provide for the MSS.

Recently, the Commission adopted five orders which collectively resolved many of the issues regarding use of the L-band for a generic mobile satellite service. The orders collectively: 1) reaffirmed the Commission's allocation scheme for the MSS; 2) upheld a Second Report and Order establishing Policies/procedures and technical/regulatory policies for the MSS; and 3) authorized the American Mobile Satellite Corporation to construct, launch, and operate the first generation domestic MSS.

In Gen. Dockett 84-1234, The Commission stated that mobile terminals located on aircraft and used for both AMSS(R) and MSS, such as airline passenger communications traffic, will be type accepted under Part 87 of the Commission's rules. This established the need to develop technical standards and licensing procedures for aircraft earth stations.

To accommodate this need and reduce the potential for interference, the Commission is proposing technical standards for the aircraft earth station component of the MSS-AMSS(R) system in five areas: output power, modulation, authorized bandwidth, emission limits and frequency stability. While the Commission considered information from a number of different sources, the proposed standards are based, in general, upon the work of Special Committee 165 of the Radio Technical Commission for Aeronautics. Special Committee 165 is a public committee sponsored by the Federal Aviation Administration. The International Civil Aviation Organization, International Maritime Satellite Organization, Communications Satellite Corporation and the American Mobile Satellite Corporation, as well as the Commission and other interested parties participated.

In addition to transmitter technical standards, the Commission has also proposed changing its rules concerning licensing of aircraft earth stations.

The Commission believes that these proposals will foster the rapid introduction of mobile aircraft earth station terminals for use in the newly approved satellite communications system provided for at L-band. The proposed standards, the Commission said, should mitigate intra-and-inter-system interference without burdening the manufacturers of aircraft mobile earth stations or licensees seeking to upgrade their communications capabilities by implementing satellite technology.

The Commission noted, however, that operation of aircraft earth stations within the jurisdiction of the United States must be consistent with other applicable FCC rules and policies not subject to this proceeding.

The Commission responded by affirming its earlier decision to license non-eligible private carriers in the SERS, but restricting such authorization to one-way paging-only channels. The Commission said that paging-only channels can accommodate additional traffic and that private carriers could significantly increase the efficiency and effectiveness of SERS paging operations. Although the Commission noted that private carriers could also offer benefits on two-way channels, it decided not to license additional two-way private carrier operations because this additional option could encourage SERS end-users to remain on congested two-way channels. Those two-way systems licensed prior to June 1, 1990 will be grandfathered and can continue operations.

With respect to MED channels 1 through 8, the Commission found it in the public interest to restore those secondary users associated with the rendition or delivery of medical services. Administrative communications, however, will continue to be prohibited. **PC**

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CIRCLE 167 ON READER SERVICE CARD

EMERGENCY

COMMUNICATIONS FOR SURVIVAL

BY GORDON WEST, WB6NOA

Severe weather may be approaching. As an emergency communicator, advanced warning of impending adverse weather conditions may allow you to better prepare for the communications task that will precede and follow this major impending weather event.

Guarding the NOAA VHF voice weather channels is one good way to prepare for "the big one." Inexpensive, tone-alert receivers are invaluable when storm fronts approach in the dead of night when you may be asleep. The National Weather Service has decided to stay with one tone alerting system for everyone, rather than develop (as they planned in 1980) five different tone alert groups. Now, one tone alert activates all tone-alert receivers.

At your command post, it's important to monitor the actual climactic conditions as the weather system passes overhead. Your emergency operations center (EOC) requires professional outside weather monitoring equipment that displays what's happening on the roof to everyone safely down below in the basement. Until recently, professional grade weather monitoring equipment was a $5,000 to $10,000 investment.

Now enters Heathkit with their Model IDA-5001 advanced weather computer system. You can buy it as a kit for under $500, or receive it completely assembled and tested for under $1,100. You can tie it into a PC-style computer with an RS-232 interface, and then tie in a $99 weather FAX program that will display color charts from high frequency broadcasts received on your EOC's HF ham radio set-up.

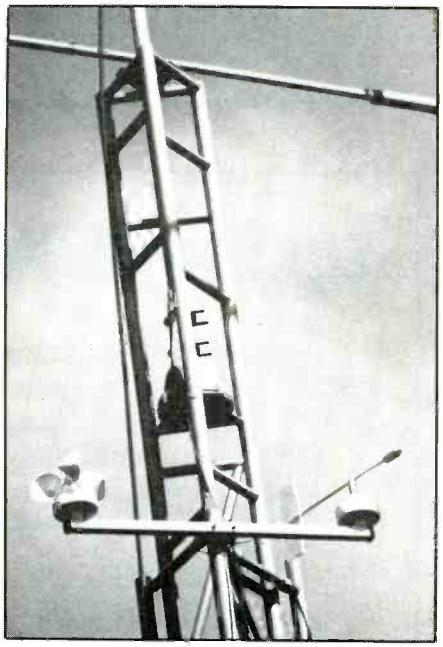
The Heathkit system is commercial grade. You can tell that instantly by the massive heavyweight construction of the wind speed and wind direction masthead vane-and-cups assembly. It could take a hurricane at 200 mph!

The wind sensors use an infrared transmissive-interruptive network formed by a light emitting diode and a light sensing transistor. This determines the wind speed component without weighing down the spinning cups in a very light breeze.

This same type of circuit is also used in the wind vane assembly that resolves wind direction down to 32 points of resolution. Wind speed shows two significant digits, with a display illustrating miles per hour, knots, or kilometers per hour.

An 8-conductor cable, approximately 100 feet long, interconnects the commercial grade wind sensing masthead assembly to the Heathkit readout down below.

Additional outside sensors include temperature, relative humidity, and a unique rain gauge.



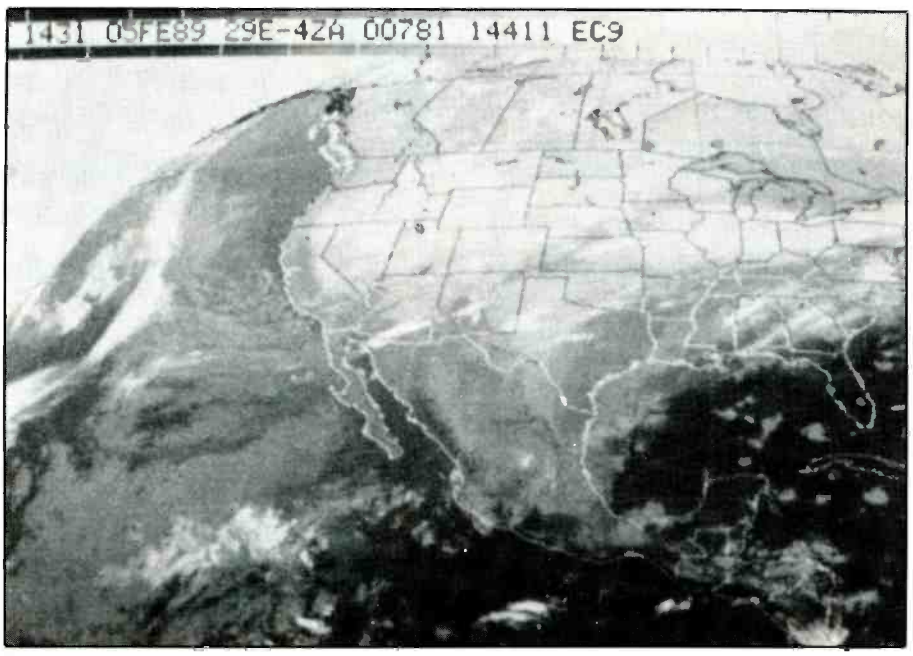
Tower mounted windsensors high atop command post portable mast. (Photo courtesy Gordon West).

The temperature sensor looks like an over-sized silver cylinder, and the humidity sensor looks like a typical smoke alarm. And the rain gauge has a large collection bowl with an ingenious way of sensing the amount of precipitaiton. As water drips on the inside sensors, a tilt-cup begins to fill up with rain, cycles and dumps its fluid, causing a magnetic switch to count 1/100ths of an inch of rain. Then the other cup fills, cycles back, and another 1/100ths of an inch of precipitation is measured. This is a very effective system of rain detection, even with just a trace falling.

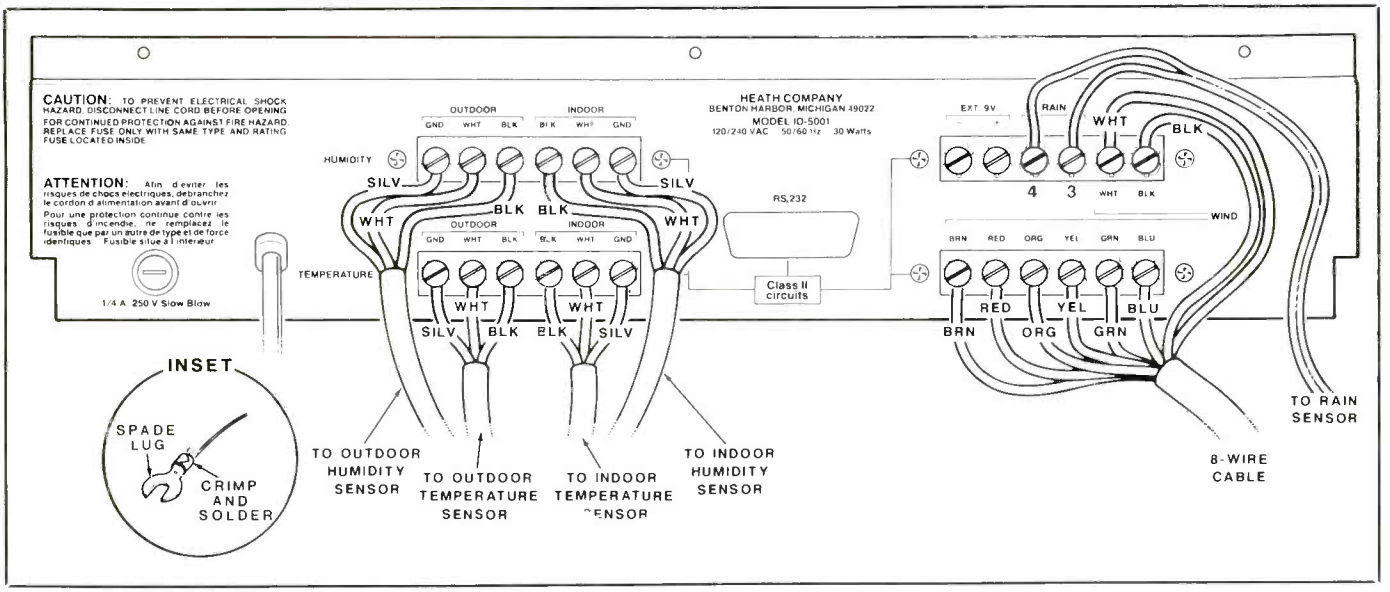
The Heathkit readout is an unbelievable LCD cobalt blue with a florescent tube backlit white-letter readout. The massive LCD screen not only displays current weather conditions, but also illustrates memorized significant weather events (record gusts, abrupt changes in pressure, etc), and even includes LCD arrows with multiple tails illustrating abrupt climactic changes.

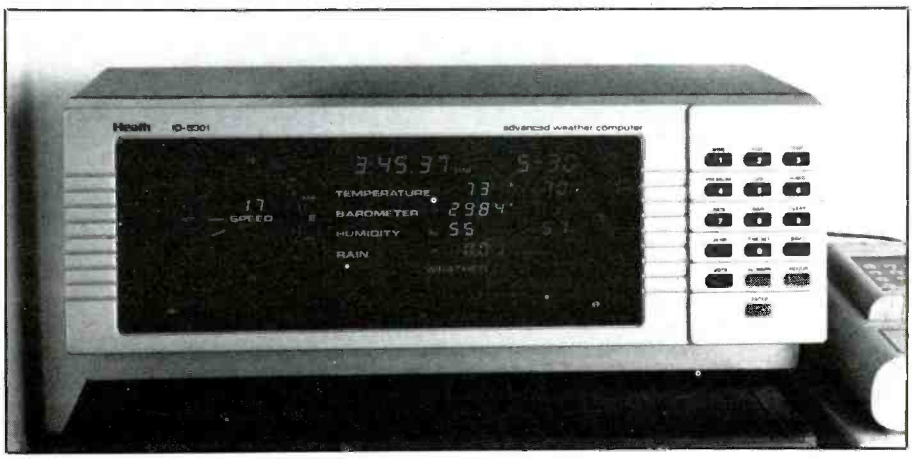
For emergency communicaitons set-ups, the best part of this system is the ability to display all of this information at once on one big, bold, LCD readout. Also, when hooked up to the RS-232 interface, an analytical view of the changing weather conditions may be stored on disk for permanent retention of the major weather event. This digitized information could also be transmitted over packet ham radio links to other command posts with a simple TNC and VHF or UHF handheld tied into a lap-top computer.

We tried this weather-via-packet configuration here in Southern California, and it worked flawlessly. Our PC computer, with the accompanying optional RS-232 digital interface and disk system, allowed us to au-



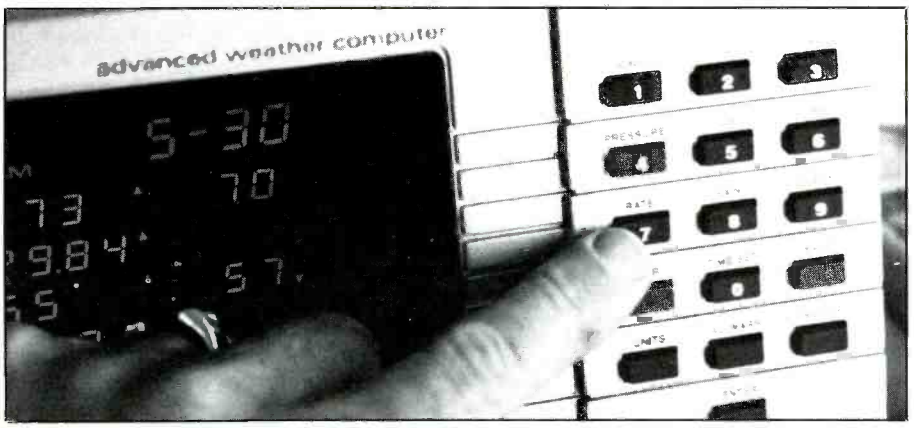
T.V. readout of captured weather image received from a pc type computer tied into Heath System. (Photo courtesy Gordon West).





Heathkit ID-5001 at a command post installation. (Photo courtesy Gordon West).

The big bold LCD display is easy to see at almost any angle. (Photo courtesy Gordon West).



The "rate" key lets you see what is changing over the last few hours. (Photo courtesy Gordon West).

tomatically transmit weather updates every 15 minutes.

We could also tie this system of the Heathkit weather station and the PC computer into a ham radio shortwave receiver, and tune in weather facsimile broadcasts continuously transmitted on 9090 kHz. The PC weather FAX system from Software Systems (San Clemente, California) simply plugs into the com-port of the PC, and the audio output jack of the ham radio worldwide set. The set is tuned to U.S. transmitting weather FAX stations (listed in the book supplied with the PC FAX system), and the upper sideband transmissions are decoded and displayed on the PC monitor in 15 shades of gray, or in color. I preferred the gray scaled for better resolution. You could also save each weather map on disk, or store literally hundreds of pictures on a hard drive. You could also print them out, too.

And the best part of the Heathkit and the PC Software Systems is that it's strictly a plug-in affair. That is, if you order the Heathkit weather station as a completed project, rather than kit. As a kit, it will take you at least 3 weeks to put together—and you better be good at soldering in order to get it flying on the first try.

For emergency communication command posts, the Heathkit and PC Systems station allows for complete weather monitoring for under $1,500 of hardware and software. All you will need is a shortwave receiver to decode the weather FAX signals.

And since major weather systems pose the most common call-up for emergency communicators, and elaborate weather station should surely be part of your emergency operations center's downstairs command post. Write Heathkit and PC Systems for their brochures, and put the equipment down on your "must have" budget for the upcoming season. I've tried the equipment personally, and I haven't found a better complement of weather sensing gear for the professional forecaster and emergency communicator. **PC**

YOU SHOULD KNOW

BY ED NOLL, W3FQJ

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

World Band Broadcast Listening With A Portable

Part 1: Description and Operation

The world band portable radio demonstrates an ability to convert people to shortwave broadcast band listening from many walks of life from youngster to senior citizen and from tradesman to executive. A shortwave portable radio you can leave at home or take with you. It can be a companion to vacationers and travellers, to salespersons and corporate trouble-shooters. Linguists from student to Ph.D. find the portable useful in travels and in classroom study of language as well as foreign customs and cultures. It is a natural educator. It brings the world to your living-room couch or kitchen. We don't know just how many people have been introduced to world broadcasting by the portable. There have been substantial numbers and its attraction to people worldwide is growing.

Such a radio usually incorporates the AM, FM, and shortwave broadcast bands. A portable of this type can often receive other segments of the shortwave spectrum as well as the LW (longwave) band region. In this respect it is important to choose a portable with a digital read-out to obtain precise tuning of the world band broadcast frequencies as well as other portions of the radio spectrum. There are a lot of frequencies to be covered which is a difficult assignment for a portable to do with the usual method of dial tuning. For example, shortwave broadcast assignments are separated by only 5 kiloHertz. A few numbered push-buttons and a digital display do the job simply.

The close-frequency spacing of shortwave broadcast stations make its selectivity important in receiving a given station as well as possible despite the presence of another station on an adjacent frequency. A portable should be designed to receive well on its telescoping rod antenna. To do so it must be sensitive. In addition, most portables also include facilities for attaching an external antenna which can be useful in increasing the level of the station picked up by the portable. However, modern good-performing portables are as sensitive and selective as some of the good table-top world band radios.

High sensitivity can be a problem, too. If a very strong signal is received on some other frequency than that to which the receiver is tuned, the receiver can be overloaded and cause interference or it can desensitize the receiver on the frequency you wish to receive. Such interaction is known as inter-

Fig. 1. World Band Portable. Ready for in door listening to foreign broadcast stations.

modulation distortion. Thus, in purchasing a portable, look into the matter of selectivity, sensitivity and overload. The rod antenna supplied with the portable can do a good job, particularly during the evening prime-time hours when stations from around the world direct English-language programming to North America, or to some other regions of the world when you are travelling and the prime-time hours for your location differ from those of the USA and the Americas.

The Sangean Mid-Size Portable

It is important to know the functions and capabilities of a portable if you are to enjoy your receiver and use it to best advantage. The popular Sangean ATS-803A, Figs. 1 and 2, shows you how different a world band receiver is operated and planned as compared to simple arrangement of a standard AM/FM receiver. The receiver's various features and controls are described.

Fig. 2. Front panel controls.

You will find other portables quite similar, but not identical. Consequently, your first assignment after the purchase of a portable is to read the operator's manual and go through each procedure. It is new, but not complicated, and you will soon catch on.

Let's first consider the more-or-less obvious plan of a portable. Most are battery operated. However, an accessory power supply is supplied, or is made available, that permits operation from the AC line. I usually keep my portable loaded with batteries and operate it that way most of the time. Battery power is supplied by six D batteries. Also, two AA batteries supply power for the microprocessor and the 24-hour clock. You can set the clock for local time if you like. I usually set the clock to UTC time which is a big help in coordinating time with schedules you receive from your favorite world band broadcast stations.

The 803A has a built-in loop antenna which is used for longwave (LW) and for AM broadcast band reception (MW). The telescoping rod antenna is used for shortwave and FM reception. A switch places these antennas in the circuit when the antenna switch is set to its internal (INT) position. For LW and MW reception the rod antenna is not needed and can be left folded on top of the case. When using an external antenna this switch is set to its (EXT) position. FM local reception is good, too, with the rod in the same spot on top of the receiver. However, weaker and long distance FM stations come in better with the rod extended. For MW operation a weaker station can be improved by rotating the entire portable to a position that delivers maximum signal. Remember, for this band that the internal antenna is a loop and has directivity.

The band switches FM-AM-LW-MW-SW are located at the bottom left, Figs. 2 and 3.

(Continued on page 42)

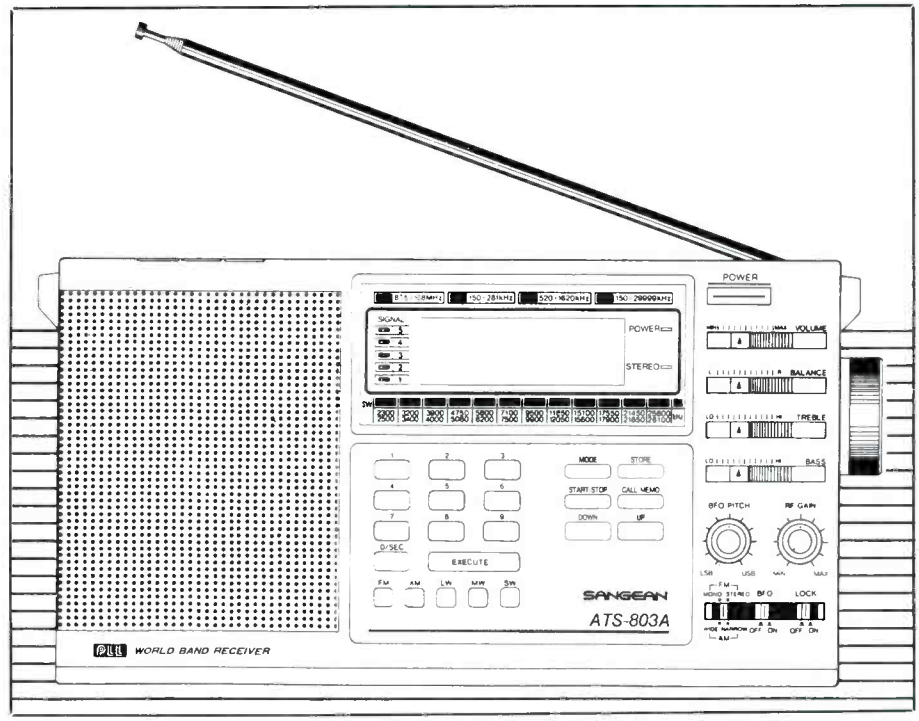


Fig. 3. Locations and labelling of controls.

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CIRCLE 171 ON READER SERVICE CARD

POP'COMM's World Band Tuning Tips

October, 1990

This Pop'Comm feature is designed to help you log more shortwave stations. Each month this handy, pull-out guide will show you when and where to tune to hear a wide variety of local and international broadcasters on shortwave.

Note that languages used will not always be English and that many broadcasts are not beamed to North America. Further, stations often make changes in the times and frequencies of their broadcasts. Changes in propagation conditions and your own receiving location will also have a bearing on what you are able to hear.

All times are in Coordinated Universal Time UTC.

Freq.	Station/Country	Time	Notes
2310	ABC, Alice Springs, Australia	1200	
2360	R. Maya, Guatemala	0030	SS & local
2450	R. Western Highlands, PNG	1230	EE/pidgin
3200	V of the Strait, China	1145	CC
3215	R. Orange, S. Africa	0300	Afrikaans
3220	HCJB, Ecuador	0200	Quechua
3230	R. El Sol de los Andes, Peru	0930	SS
3235	R.W. New Britain, PNG	1215	EE/pidgin
3270	R. Namibia	0430	various languages
3275	R. Mara, Venezuela	0200	SS
3300	R. Cultural, Guatemala	0230	SS
3325	R. Liberal, Brazil	0800	PP
3300	CHU, Canada	0400	time signals
3360	R. Federacion, Ecuador	0200	Quechua
3366	GBC, Ghana	0530	sign on, EE, GBC-2
3380	R. Chortis, Guatemala	0130	SS
3385	R. Ed. Rural, Brazil	0130	PP
3395	R. Zaracay, Ecuador	eves	irregular
3925v	Capital Tradio, Transkei, (S. Africa)	2245	EE
4606	R. Ayaviri, Peru	0230	SS
4725	V of Myanmar, Myanmar (Burma)	1200	Burmese, local
4750	R. Bertoua, Cameroon	0430	sign on
4753	RRI, Ujung Pandang, Indonesia	1245	II
4760	ELWA, Liberia	0600	EE
4765	Soviet Home services, Cuba	eves	RR
4796	R. Nueva America, Bolivia	0300	SS
4815	R. Guatapuri, Colombia	0200	SS, irregular
4821	R. Atahualpa, Peru	0900	SS
4825	R. Mam, Guatemala	0100	Mam, SS
4830	R. Tachira, Venezuela	eves	SS
4840	R. Valera, Venezuela	eves	SS
4850	R. Cameroon	0430	sign on
4870	RRI, Sorong, Indonesia	1230	II
4875	R. Journal do Brazil, Brazil	0300	PP
4895	Voz de Rio Arauca, Colombias	eves	SS
4910	LV de Mosquitia, Honduras	0100	SS, local
4920	ABC, Brisbane, Australia	1200	EE
4920	R. Quito, Ecuador	0200	SS
4940	R. Abidjan, Ivory Coast	0600	sign on, FF
4950	V of Pujian, China	1200	CC
4965	R. Poti, Brazil	0800	PP
4975	Ondas del Ortegueza, Colombia	0330	SS
4991v	R. Ancash, Peru	0400	SS
5004	R. Nacional, Eq. Guinea	0500	SS
5020	ORTV, Niger	0530	Sign on, FF
5025	R. Rebelde, Cuba	eves	SS
5045	R. Cultura do Para, Brazil	eves	PP
5055	RFO, Fr. Guiana	0800	FF
5850	R. Beijing	1130	various
5875	BBC	eves	various
5930	R. Prague, Czechoslovakia	eves	EE, others
5954	R. Casino, Costa Rica	1100	SS
5980	R. Guaruja, Brazil	0930	PP
5990	R. Romania Int'l	0100	various
6000v	V of Nicaragua	eves	various
6006	R. Reloj, Costa Rica	eves	SS
6015	R. Austria Int'l	0500	various, via Canada
6020	R. Australia	0800	EE
6040	Deutsche Welle, Germany	0100	via Antigua
6055	R. Continental, Peru	0900	SS
6060	RAE, Argentina	0100	SS
6070	CFRX, Canada	24hrs	EE
6090	R. Luxembourg	2300	GG/EE
6105v	R. Panamericana, Bolivia	1000	SS, sign on
6117v	R. Union, Peru	0500	SS
6130	CHNX, Canada	1100	EE
6135	SRI, Switzerland	0200	various
6150	Caracol Neiva, Colombia	eves	SS
6155	R. Austria Int'l	0400	various
6165	R. Netherlands	eve	various, via Bonaire
6175	BBC	eves	world service
6180	Trans World Radio, Bonaire	0100	SS
6185	R. Educacion, Mexico	0400	SS
6200v	Voz de Huamanga, Peru	0200	SS
6215	R. 15 de Septiembre, (clandestine)	0100	SS
6230	TWR, Monaco	0400	GG
6248	Vatican Radio	eves	various
6260	PBS, Ouinghai, China	1100	CC
6305	Voz del CID (anti-Castro)	0600	SS
6550	V of Lebanon	0400	AA
6570	Myanmar Defense Forces (Burma)	1200	Burmese
6726	R. Satellite, Peru	eves	SS
6900	Turkish Met. Radio	0600	Turkish
7121	Radio Nacional, Chad	0700	FF, others
7125	R. Japan via Gabon	0400	EE/JJ
7130	VOA, Kavala, Greece	0430	Polish
7135	BBC via Cyprus	0200	
7155	RFE/RL, W. Germany	eves	various
7170	R. Noumea, New Caledonia	0800	FF
7180	BBC via Hong Kong	0900	
7189	R. Africa, Eq. Guinea	2230	EE religion
7190	DYBS, Aden, Yemen	0300	AA
7200	R. Mogadishu, Somalia	0300	sign on, Somali
7215	R. Yugoslavia	2330	FF/EE
7230	AWR Europe, Italy	0630	FF
7240	R. Garoua, Cameroon	0430	FF
7255	Voice of Nigeria	0500	EE, others
7270	R. Polonia, Poland	0000	Polish
7275	R. Korea	1200	various
7300	R. Tirana, Albania	0500	various
7315	WHRI, Indiana	0300	
7325	BBC	eves	world service
7350	WRNO, New Orleans	0000	
7365	KNLS, Alaska	1200	
7375	RFPI, Costa Rica	0600	EE
7400	R. Moscow	eves	RR
7416	V of Vietnam	1130	various
7445	V of Asia, Taiwan	1100	EE, others
7504	CPBS, China	1300	CC
7550	R. Korea	1300	various

Freq.	Station/Country	Time	Notes
7775	R. Beijing	1130	VV
7870	ICBS, Iceland	1900	Icelandic
9022	VIORI, Iran	0400	various
9280	WYFR, via Taiwan	1200	CC
9360	Spanish National Radio	eves	Greek, others
9395	V of Greece	eves	Greek, others
9400	R. Iran (anti-Iran)	0200	Farsi
9410	BBC	eves	world service
9435	V of Israel	eves	various
9445	V of Turkey	eves	EE/TT
9465	WMLK, Pennsylvania	0400	
9475	R. Cairo, Egypt	0200	EE
9480	R. Tirana, Albania	0400	FF
9495	TWR, Monaco	0830	various
9510	R. Romania Int'l	0000	various
9515	BBC	eves	various
9515	TWR Bonaire	0700	PP
9530	KHBI, Saipan	0900	
9535	TWR, Bonaire	0300	EE
9540	R. Nacional, Venezuela	1100	SS
9545	Deutsche Welle, via Antigua	0300	
9555	La Hora Exacta, Mexico	1200	SS
9560	R. Denmark, via Norway	0230	Danish
9565	R. Universo, Brazil	0900	PP
9570	R. Korea, S. Korea	1130	various
9575	Medi 1, Morocco	2030	AA/FF
9575	RAI, Italy	0100	EE
9580	Africa No. 1, Gabon	0500	FF
9590	TWR, Guam	1100	CC
9595	R. Tanpa, Japan	1130	JJ
9600	R. Portugal	0130	PP
9605	Vatican Radio	0030	FF/EE
9610	ABC, Perth, Australia	1300	
9615	KGEI, California	0330	SS
9620	R. Yugoslavia	2200	various
9630	R. Baghdad, Iraq	0300	AA
9640	R. Pyongyang, N. Korea	1100	EE
9650	R. Korea via Canada	1100	KK
9660	R. Runbos, Venezuela	1200	SS
9665	R. RSA, S. Africa	0445	various
9685	R. Japan via Fr. Guiana	2200	JJ
9700	R. Sofia, Bulgaria	0300	GG
9715	R. Tashkent, Uzbek SSR	1200	EE
9725	AWR Costa Rica	eves	EE/SS
9730	RBI, E. Germany	eves	various
9745	HCJB, Ecuador	eves	EE, others
9750	R. Korea, S. Korea	1200	KK/EE
9770	R. Australia	1300	VV/EE
9780	V of the UAE	2100	AA
9790	R. France Int'l	eves	FF/EE
9805	R. Cairo, Egypt	0300	AA
9815	KUSW, Utah	0300	
9815	IRRS, Italy	0600	Sun.
9820	TWR, Guam	1200	CC
9850	R. New Zealand	0700	
9870	R. Austria Int'l	eves	various
9895	R. Netherlands	eves	various
9910	AIR, India	0100	EE
9925	RTBF, Belgium	0330	FF
9950	R. Damascus, Syria	1700	RR
11550	RTV, Tunisia	0500	AA
11580	Voice of America	eves	
11605	Voice of Israel	eves	various
11645	Voice of Greece	eves	various
11660	R. Beijing, China	1200	EE
11670	R. Peace & Progress, USSR	eves	PP/SS
11680	R. Sofia, Bulgaria	0000	EE
11705	R. Sweden	0200	EE/Swedish
11710	RAE, Argentina	eves	various
11715	R. Beijing, via Mali	eves	EE/CC
11725	Central Bc System, Taiwan	1200	CC
11735	R. Yugoslavia	0000	EE
11745	Radiobras, Brazil	0200	EE
11750	BBC via Ascension	eves	world service
11760	All India Radio	1300	
11785	RBI, East Germany	0145	EE/GG
11790	UAE Radio, Dubai	1500	AA/EE
11800	R. Australia	1200	
11800	RAI, Italy	0100	EE
11815	LJB, Libya	2300	EE
11820	R. Finland Int'l	1415	various
11826	R. Tahiti	0500	FF/Tahitian
11830	R. Anhanguera, Brazil	0200	PP
11840	R. Beijing, via Canada	0300	SS
11845	Radio Canada Int'l	0030	EE/SS
11855	R. Australia	1200	Indonesian
11870	AWR, Costa Rica	eves	EE/SS
11880	Spanish National Radio	eves	SS/EE
11900	R. RSA, S. Africa	1500	African languages
11910	R. Budapest, Hungary	eves	various
11915	R. Tikhy Okean, USSR	0730	RR
11920	R. Abidjan, Ivory Coast	2200	FF
11930	R. Norway Int'l	2300	NN, EE Suns.
11938	V of People of Cambodia	1200	EE
11940	R. Jordan	0230	AA
11950	R. Havana Cuba	2230	SS
11955	Radio Canada Int'l	1300	
11965	Voice of the UAE	1600	AA
11970	R. Havana Cuba	eves	various
11980	AWR, Guam	1100	CC/JJ
11990	R. Kuwait	1600	AA
12005	RTV Tunisia	2300	AA
12015	R. Beijing, China	0000	CC
12035	Swiss Radio Int'l	0030	various
12060	R. Kiev, Ukraine	2300	
13610	R. Kuwait	2130	AA
13650	R. Pyongyang	1200	various
13665	R. Pakistan	1315	Urdu
13675	BRT Belgium	1700	Dutch
13730	R. Austria Int'l	eves	various
13745	R. Australia	1430	
13770	WSHB, S. Carolina	2000	
15010	V of Vietnam	1300	FF/EE
15020	All India Radio	1300	Sinhalese
15060	BSKSA, Saudi Arabia	1800	local
15095	R. Damascus, Syria	2110	EE
15100	R. Beijing, China	2300	various
15105	R. Yugoslavia	0000	EE
15115	HCJB, Ecuador	1200	EE
15125	RBI, East Germany	eves	various
15130	V of Free China via WYFR	2300	CC/EE
15150	R. Peace & Progress, USSR	0000	Creole
15165	R. Denmark, via Norway	1230	Danish
15185	WINB, Pennsylvania	2000	
15190	Lao National Radio, via USSR	1100	FF
15190	RTVC, Congo	2100	FF irregular
15215	R. Algiers, Algeria	2100	FF
15235	LBJ, Libya	0400	AA
15260	BBC via Ascension	eves	world service
15290	R. Liberty, W. Germany	0200	RR
15300	R. Japan	1100	various
15315	V of the UAE	2100	AA
15325	FEBA, Seychelles	1230	various
15330	RTVM, Morocco	1700	AA
15345	TWR, Bonaire	1100	EE
15365	All India Radio	1230	CC
15375	R. Cairo, Egypt	2100	EE/local
15400	R. Finland Int'l	1200	various
15415	LJB, Libya	2200	AA
15450	R. Peace & Progress, USSR	0300	SS
15460	R. France Int'l	1600	FF
15475	Africa No. 1, Gabon	1800	FF
15505	R. Kuwait	2200	AA
15540	RTBF, Belgium	1630	FF
15570	R. Netherlands	1700	EE/DD
15590	KUSW, Utah	1800	
17535	V of Greece	1500	Greek
17500	BRT, Belgium	1530	various
17595	RTVM, Morocco	1600	FF
17630	Africa No. 1	1500	FF
17660	R. Peace & Progress, USSR	eves	PP/SS
17670	R. Cairo, Egypt	1700	AA
17705	R. Denmark, via Norway	2230	Danish
17735	R. Oman	1400	AA
17740	R. Sweden	1200	various
17775	KNOH, California	days	SS
17800	R. Havana Cuba	1900	various
17815	Spanish National Radio	1700	SS
17835	R. Japan	0100	EE/JJ
21470	BBC via Ascension	1615	world service
21490	R. Austria Int'l	1600	various
21500	R. Sweden	1430	various
21515	Radio Netherlands via Bonaire	1730	DD
21535	R. RSA, So. Africa	1400	EE
21555	R. Yugoslavia	1200	EE
21595	Spanish National Radio	1800	SS
21605	UAE Radio, UAE	1600	AA/EE
21630	Vatican Radio	1630	various
21635	R. Japan via Gabon	0000	JJ
21675	R. Kuwait	1700	AA
21705	R. Denmark via Norway	1330	Danish
21810	BRT, Belgium	1530	various

PC

You Should Know *(from page 39)*

Whenever you depress the SW switch in steps you changeover to the next higher shortwave broadcast band in the sequence given below the digital display. Frequency range and meter band appear on the digital display as well. The frequency tuning knob is on the right side of the case, while jacks for applying external power, connection of headset, and output for supplying signal to a tape recorder are on the left side. Remember, in a previous column we gave the advantage of using a tape recorder in shortwave monitoring and, for that matter, reception on other bands, too.

The row of switches and controls on the right side of the front panel are on-off switch, volume, stereo balance, treble, bass, radio-frequency gain, and beat frequency oscillator (BFO) pitch. The first switch at he very bottom of this row selects mono or stereo operation in the FM mode, and wide or narrow audio band operation in the AM mode. Second is the BFO switch, while the third is a lock-out frequency switch. This latter switch locks in the frequency to which you have tuned the receiver. When locked "on" the tuning control is inactive and you cannot nudge it by mistake and change the received frequency. Other frequency and band switches are also locked out as well. Normal operation is restored when the lock-out switch is returned to its "off" position.

on your needs of the moment. Two other procedures involve the keyboard. One is called direct tuning. All you need do is press the AM button and go directly to the keyboard and dial in the specific frequency you want. If it happens to be Spain for their 9630 kHz 0000 UTC broadcast just depress the numbers 9-6-3-0 in sequence and the receiver will tune to this precise frequency after you depress the red EXECUTIVE button. Easy and fast!

The keyboard can also be used to store six frequencies in memory. After following the memory procedure each station can be recalled by depressing the CALL MEMO button and then quickly the channel number (proper one of the six) in which the particular station frequency is stored. The procedure for putting the frequencies is not given here. The method varies from receiver to receiver and you must follow the sequence for your portable exactly.

The portable receiver can also be used to copy code signals (CW), sideband signals (SSB), and includes a switch for obtaining 9 kHz band separation for European and other foreign medium wave broadcast assignments, a clock timer and sleep facility is included. The portable receiver is certainly doing its share to spread the word and demonstrate world band radio listening. Information on shortwave tuning tips for best portable listening and the use of an indoor antenna for your portable follow this article. Learn how to set up your portable at home and move it about. Watch for more coverage.

All-Band And Shortwave Tuning

The receiver can be tuned on any frequency from 150 kHz to 29999 kHz by setting the bandswitch control to AM and turning the main tuning control. This is the long way of doing it. The better plan is to use the last three switches, LW-MW-SW, to select the desired band you wish to receive. The correct frequency can then be chosen by rotating the main tuning control slowly. You can also tune over the bands with the DOWN/UP switches on the front panel. On the AM bands you will change frequency up or down in 1 kHz steps by repeatedly pressing the appropriate switch. If you hold a given switch down, the frequency change will be in 10 kHz steps.

Another method of tuning is called scan tuning which is similar to that used with VHF/UHF scanners. In this case, choose the desired band and depress the START/STOP switch. The portable will then tune over the band until it finds a signal and then it will stop. If you wish it to go on to another signal, depress the switch again and it will stop at the very next signal. When it reaches the end of a given band, it will jump to the opposite end quickly and begin the band scan all over again.

The method of tuning you use depends

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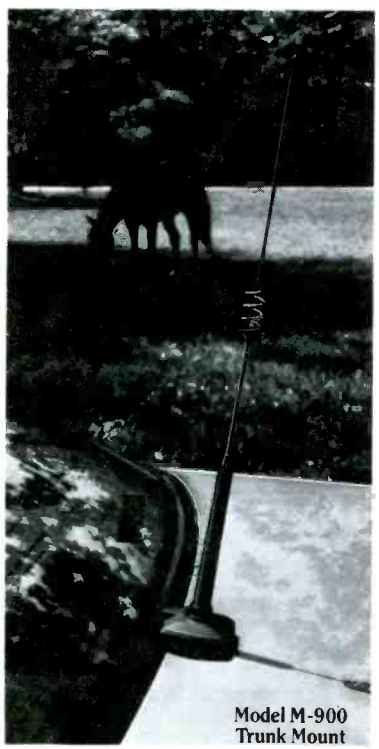

Model M-900 Trunk Mount

the A/S Black Stallions™

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CIRCLE 174 ON READER SERVICE CARD

THE HAM COLUMN

KIRK KLEINSCHMIDT, NT0Z
AMERICAN RADIO RELAY LEAGUE HQ

GETTING STARTED AS A RADIO AMATEUR

QSL Cards: The Final Courtesy

As The summer propagation doldrums give way to the improved band conditions of the fall, if you're like most hams, you'll be spending more time in your shack instead of playing baseball, going fishing and so on. Spending more time at your rig leads us to the topic of this month's column: QSL cards—getting them and sending them. There are finer points to each, some of which may not be obvious. Here are some tips to make the whole process a little easier.

Although paralyzed from the neck down, Rob Michon, WD80TI, of Ann Arbor, Michigan, uses a specially made "neck console" to operate his transceiver. Rob is a member of Handi-Hams and is working on upgrading from Advanced to Extra Class. His custom-engineered control system was designed and built by Roger Place, W8ZRF, of Ypsilanti, Michigan.

Getting Your Cards Printed

Many commercial QSL card printers advertise in the classified ad sections of ham publications. Choosing amongst them may be trickier than you think. By going commercial you're buying redesigned cards, unique only to the extent that your name, address and call sign are printed on them.

On the other hand, new hams often buy stock cards. They're inexpensive and by buying them you're sure to get a card that's got all the right information on it! Whatever you choose—custom or stock—make sure you don't buy too many cards. Novice and Technician hams have a habit of upgrading. So although the discount on 3,000 cards may seem attractive, stock up with caution!

One way to reduce the cost of QSL cards is to put together a group order, say, from your local radio club. Another is to limit your cards to one color of ink, preferably black.

Essential information that must appear on your QSL cards includes your call sign, name and mailing address. Include your country too, because many hams in the US and other countries collect US counties for the *CQ* magazine US County Award. The blanks where you fill in QSO information should be large enough to easily write in the other station's call sign, date (including year), time (in UTC, never local time), band, mode and signal report. Another helpful item is in to include a "PSE QSL TNX" line; circle either PSE or TNX, depending on whether you're requesting a return card or responding to a received card.

Whatever personal data you include is up to you. You've no doubt seen those alphabet soup QSL cards: DXCC, WAS, WAZ, QCWA and so on. Don't worry if at this stage in your Amateur Radio career you don't have any of these abbreviations to tack on. Remember, everything that's nonessential competes with essential QSO details, making the latter hard to find. When a DX operator scans your QSL card, he or she will appreciate its simplicity.

Be sensible about the graphics or line art that appears on your QSL card. Think of that piece of card stock as a "roving ambassador." Shun anything that may be offensive, and think twice about putting something "funny" on the card. How will your gag play in another culture, or even another state? For the same reason, you should think twice about being overly nationalistic or religious, too.

By the way, make sure all QSO information is on the front of the card. It's easy access to the information that counts.

There are exactly two ways to fill out a QSL card—perfect and wrong. Be careful, be accurate and be neat. If you make a mistake on a card, throw it away. Marked-over or altered cards (even if such modification are made in good faith) are *not* acceptable for awards. What if you're the DX station's only North Dakota contact?

Sending Those Cards

Here's a bit of sage advice that'll dramatically improve your QSL success rate: Hams in rare places (states, countries, etc) get inundated with QSL requests—make sure your card is sent with a self-addressed, stamped envelope (SASE)! And be patient, especially with overseas cards or cards sent via the Outgoing QSL Bureau.

What's the "Bureau?" It's an excellent, cost-effective way to send and receive QSL cards to and from DX stations. Instead of going through the rather expensive process of mailing a QSL card to a DX operator (and purchasing International Reply Coupons from the post office), simply sort and send them to the ARRL Outgoing QSL Bureau. For $2 per pound, the Bureau will include your cards in its regular mailings to hundreds of other similar bureaus set up in most DXCC countries. The "bureau route" is slower than going direct, but its popularity and cost-savings make it a popular way to go for DX QSLs.

So what's the catch? Well, you do have to be a member of the ARRL to use the outgoing service, but the services of its twin, the Incoming QSL Bureau, are available to all US amateurs.

Within the US and Canada, Incoming QSL Bureaus are maintained in each call district. QSL cards from DX bureaus arrive at the local bureaus, where they're sorted by the first letter of the call sign suffix. To obtain your cards, you send a couple of 5 x 7-inch SASEs to the bureau, which will forward a package of cards to you every month or so, depending on the number of cards you've received.

The Incoming and Outgoing QSL Bureaus allow thousands of QSL cards to be sent back and forth at a tremendous savings. If you haven't already, it's probably high time you "QSL via the buro."

For complete information on how to use the QSL bureaus, drop me a line at ARRL HQ, Department PCN, 225 Main Street, Newington, CT 06111. I'll be happy to send you an info kit.

See you on the bands! PC

SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

This is your last chance! Before the fall weather turns to nasty winter cold, it's time to get up on a ladder and check those coaxial connections on your antennas and make sure everything is bolted down well for the strong winds of winter. You really don't want to be climbing an icy ladder, do you?

Rod Messerschmidt of Somerville, New Jersey, said that he has heard something about new mutual aid frequencies to be used in the new 800 MHz band for public safety and he was wondering what these new mutual aid frequencies are. First of all, public safety committees across the United States are in the process of getting the Federal Communications Commission to approve regional plans for the use of this new band from 866-869 MHz (mobiles operate 45 MHz lower on 821-824 MHz). One of the provisions of this new band was the interoperability factor. This will allow any agency that operates on this band to communicate with any other unit that also operates on this band. The first thing that was done was the creation of five mutual aid channels that will support agencies being able to communicate among each other. Not only will agencies that use this new band be able to use these new mutual aid channels, but other agencies that use 800 MHz on frequencies from 851-866 MHz also will be able to use the mutual aid frequencies if their radios are capable of operating in the new band.

Before we forget, the new mutual aid channels are as follows: 866.0125, Channel 601, national public safety calling channel; 866.5125, Channel 639, tactical channel; 867.0125, Channel 677, tactical channel; 867.5125, Channel 715, tactical channel; 868.0125, Channel 753, tactical channel.

One thing that should be noted about these new channels is that if a public safety agency already holds an FCC license in any band in the police, fire local government, forestry conservation, highway maintenance or special emergency radio services, and it's region's plan already has been approved by the FCC to operate in the 866-869 MHz band, it can use any of the five mutual aid channels, including the mobile talkaround channels on the repeater output frequencies without obtaining a license from the FCC. This may be a boon for scanner listeners. It basically would allow law-enforcement and other agencies to use these new frequencies without obtaining a license. This means that the frequencies would not show up in FCC files or frequency directories and some smart agencies may use these new channels for surveillance purposes. Get the hint? The no-license provision, however, does not apply to base stations or control stations on these frequencies. It may behoove you to keep an ear on those five frequencies.

Here's the well-equipped listening post of John H. Lingaton of Duke Center, Pennsylvania. His scanners include the following: Bearcat III, Bearcat 210XLT, Regency MX3000, Realistic Pro-2020, Bearcat 200XLT and Realistic Pro-38. John has been a radio buff for 35 years.

Scott Rice of Chester, New Hampshire, sends in an extensive view of the Seabrook nuclear power plant. His report is as follows:

On page 54 of the May issue, the Communications Confidential column has a picture of a pole siren for the Seabrook nuclear power plant. The information and photo are from Tim Lucca. I have listened to him on the Seabrook station frequencies as he is called M-1. There are five siren maintenance people, M-1 through M-5. There are four channels that the siren maintenance people work on. Channel 1 is used for the New Hampshire siren poles, of which there are 96 of them for New Hampshire towns. The sirens are activated by the Rockingham County dispatch center in Brentwood, N.H. The sirens in PA mode speak both English and French telling evacuees where to go. The sirens have a status of: amber, attack; green, alert; red, fire; and white. The channels used are as follows: 451.050, Channel 1, siren maintenance New Hampshire siren repeater for poles; 451.050, Channel 2, siren maintenance talkaround; 451.675, Channel 3, siren maintenance Massachusetts vehicular alerting communications system (VACS); 451.675, Channel 4, siren maintenance talkaround.

Most of the Massachusetts towns do not have poles, but have trucks that have sirens on them. The trucks have cranes to lift up the siren and are the same sirens as used on the poles. Channel 3 is used by the Newington (N.H.) emergency operation center to activate the trucks in the staging areas. The trucks also work on an 800-MHz system on Channel 7 with the emergency operating center and the vehicular alerting notification system (VANS) supervisor. There are two supervisors per shift with 16 trucks and another eight trucks in backup. Bases at staging areas are 100 watts, with 35-watt mobiles in the trucks and 4-watt handhelds on the 800-MHz system. Each truck is called VL-1 through VL-16, which stands for "vehicle location" at the sites. Each truck has a vehicle number of 4550 through 4573. The 800-MHz system is as follows: 851.1625, Channel 1, traffic repeater; 851.1625, Channel 2, traffic talkaround; 852.1625, Channel 3, transportation repeater; 852.1625, Channel 4, transportation talkaround; 853.1625, Channel 5, facilities re-

peater; 853.1625, Channel 6, facilities talk-around; 854.1625, Channel 7, overflow repeater; 854.1625, Channel 8, overflow talkaround.

The overflow channel is used when radio traffic is excessively heavy on one of the other channels. The overflow channel also is used for communications not directly related to any assigned channel, such as the van operator or radio communications system failures. The traffic repeater is used to get people out of the Massachusetts towns. They are set up on key routes to direct traffic flow. The transportation repeater is used to help evacuate handicapped individuals, as well as bussing others to shelters. The facilities repeater apparently isn't used much, although all repeaters do ID themselves every 15 minutes.

Each truck has a staging area, which are: Staging area 1, VL-1 and VL-15, Fireman's Association, Seabrook; area 2, VL-2, VL-3 and VL-4, Massachusetts Electric, Newburyport; area 3, VL-7, VL-12 and VL-13, Public Service New Hampshire warehouse, Route 107; area 4, VL-5, VL-9 and VL-16, Crow Lane, Newburyport; area 5, VL-6 and VL-8, Newbury; area 6, VL-10, VL-11 and VL-14, G. Gordon and Sons, Newton; area 7, VL-1 (summer only), Henry's Motel; area 7, VL-50, spare vans, Seabrook station; area 7, VL-01, Salisbury satellite, in operation on weekends from May 15 to Sept. 16 and summer holidays only.

Seabrook also has radiation teams to monitor offsite radiation in towns within a 10-mile radius of the plant on the frequency of 153.575 MHz. The plant does radio checks with Manchester control, which is a part of the New England Power Pool. It also is used for pole observers P-1 through P-8. The observers are used to sit at the pole sirens in New Hampshire to check to see that the sirens work. The radiation teams use unit numbers as follows: ORO, Offsite Response Organization; NHY, New Hampshire Yankee; DPHS, Department of Public Health and Safety.

Some other frequencies used at the Seabrook station are as follow: 451.025 security (all digitally encrypted), 451.0375 handhelds, 451.0625 handhelds, 451.1375 hand-helds, 451.175 paging, 451.225 plant operations (all digitally encrypted), 451.6375 handhelds, 460.9125 handhelds, 460.9375 handhelds, 460.9625, 460.9875 handhelds, 461.2375 handhelds, 461.3625 handhelds, 461.5125 handhelds, 461.5375 handhelds, 461.5625 handhelds, 461.5825 handhelds, 461.6375 handheld emergency, 464.325 gate security, 852.6625 unknown use.

Thanks for the super report on a very interesting place to monitor, Scott.

If you have questions, frequency updates or comments, or would like to see a photo of your monitoring post appear here, write to: Chuck Gysi, N2UP, Scanning VHF/UHF, Popular Communications, 76 North Broadway, Hicksville, N.Y. 11801-2909. PC

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CIRCLE 158 ON READER SERVICE CARD

World's Most Powerful CB and Amateur Mobile Antenna*

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

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

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Aug. 21, 1987

Wilson Antenna Company Inc.
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Green Valley Commerce Center
Henderson, Nevada 89015

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

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

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

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

In order to handle higher power for amateur use, we used the more efficient direct coupling method of matching, rather than the lossy capacitor coupling. With this method the Wilson 1000 will handle 3000 watts of power.

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CIRCLE 147 ON READER SERVICE CARD

CB SCENE

BY BILL SANDERS, SSB-295

27 MHz COMMUNICATIONS ACTIVITIES

You usually see AM CB equipment mentioned as having 4 or 5 watt transmitters, so when we saw a new rig tagged as being "7 watts" it certainly was an eyebrow raiser. Hey, that's what how it's rated in several places on the manufacturer's spec sheet. Who am I to argue? If they say it's a 7 watt CB rig, then that's OK with me.

This is Midland International's portable Model 75-777, a handheld unit having many features. For example, it has a bar-type LED meter for measuring signal strength or power output. There's a button that instantly puts you on Channel 9. A bright green LED channel readout assures high visibility. There's an LED "off" switch, a low battery indicator, high/low power output switch. You can power the Model 75-777 by its snap-on battery pack, by a vehicle battery, or by an (optional) cigarette lighter power cord. It uses a rubber ducky type antenna.

For more information on this unit, contact Midland International Corp., Consumer Communications Division, 1690 N. Topping, Kansas City, MO 64120, or circle 101 on our Readers' Service.

Midland's Model 75-777 is an attractive portable that the manufacturer rates at 7 watts.

Patching Up Things

A few months back we discussed phone patches and how useful they can be around a CB station. This brought in some amount of mail from operators extolling the virtues of these inexpensive devices that let a CB base station take telephone calls from (and send them to) CB mobile units.

One good letter arrived from David Sweat ("Biscuit Burner") of Waycross, GA. Dave wrote that after he learned about phone patches here, he got one and put it on his Cobra 2000. Says it works just fine and he finds it handy for not missing any phone calls while he's on his boat. Dave is also into scanning and uses a Cobra SR-900 and Realistic PRO-38. Sent us a sharp photo of his base station, too.

We also received a letter from W.O. Brooks, Sr., SSB Network member SSB-493C, of 4326 Hawkeye, Memphis, TN 38109. He says that he has a phone patch that he'd like to install, but there are two problems. First, it didn't come with any instructions. Second, the manufacturer (Veritas Corp.) is possibly no longer in business, but is certainly no longer at its last known address in Farmingdale, NY. The model number is VCB-198.

W.O. would like to connect this device but needs to know how to accomplish the job, given the fact that the cable emerging from the thing has three wires plus a ground shield wire. He tells us that he purchased this patch recently. We have never heard of this brand, and we have also never heard of any patch being sold without hookup instructions. If any reader can provide W.O. with information on getting his unit in gear, he would appreciate the help.

Reader Input

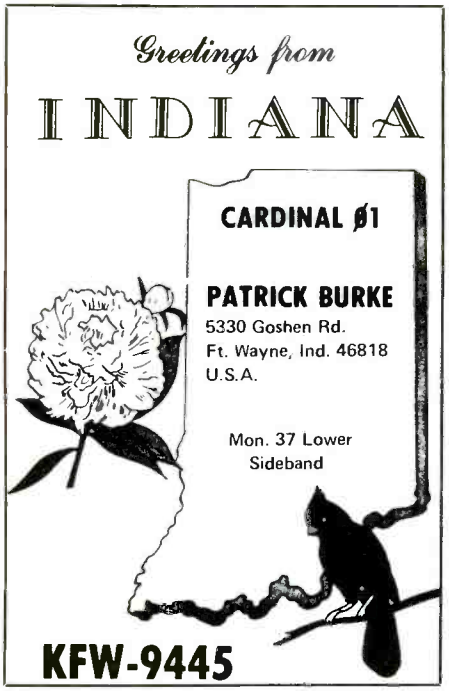
The column received very appealing shack photos from Jeff ("Dragon Master") and Julie ("Little Dragon") Seymour, Colonial Heights, VA. These folks tell us that our pages in POP'COMM are among the things they like best about the magazine since we are the only way for an active operator to keep in touch with 27 MHz operations these days.

Jeff tells us that he got into CB radio about 1970. His first radio was a handheld that operated only on Channel 14. Little by little he accumulated bigger and better equipment until now he's got a room full of communications and electronics equipment. He commented, "Once you get started, it just grows on you and you can't stop adding." We agree. Hardly a month goes past when we haven't ordered a book or a piece of CB, scanner, or shortwave equipment either by mail order or from a local dealer. And we have been around since the 1960's!

Pat Burke, SSB Network member SSB-349A, of 5330 Goshen Rd., Fort Wayne, IN was pleased when someone wrote in to this column to say that they'd like to see some space devoted to QSL swapping. That's because Pat swaps QSL's and also collects CB patches and decals. Pat's a member of a number of international groups that pursue swapping and he says it's a wonderful aspect of the great communications hobby. If you're into QSL's, patches, or decals, you might wish to contact Pat.

An interesting story from Eugene Douglas, Jr., of KS. He writes that in 1981, while stationed at Fort Ord, CA he was talking (via AM) to a CB'er named Bill, in St. Louis, MO. Gene was telling Bill that his parents had separated when he was an infant and that he had never met his dad, but that he

Look at Dave Sweat's station in Waycross, GA. He gets a lot of use from his phone patch.



Pat Burke, SSB-349A, of Indiana likes to exchange CB QSL's, and he also collects CB patches and decals. Here's his QSL. Wanna swap?

understood that he lived in a small Illinois town.

A few days later, Bill contacted Gene on Channel 26 and told him that he had checked around and learned that Gene's dad was the Chief of Police in the town specified. Gene promptly put a landline call through to the Police Department and spoke to his dad for the first time. Soon after, his dad flew to San Francisco to meet Gene, and it was a family reunion that had taken 32 years to happen. It happened because of CB.

These days, Gene is retired. Mostly now he operates on SSB (he's 34-Delta-1) with lots of beautiful equipment feeding into four different antennas. Gene thought we'd like to hear that story, and indeed we did.

Speakin' CB

I've got to admit that there are several different languages spoken on 27 MHz here in North America. No, I don't mean ethnic languages or regional dialects. I mean the way CB operators communicate, nominally in English.

Like, the way operators using SSB speak is radically different than the language you hear on the AM channels and never the twain shall meet. And, if you listen on Channel 19, you can easily pick the 18-wheelers out from the chatter of the 4-wheelers. Personally, I can't understand 90% of what the truckers are saying, what with their unique way of speaking which is often made worse by the use of echo chambers. Obviously they can understand one another, so the problem must be at my end. But, so far as I can comprehend most of what they say, they might as well be speaking in Bulgarian.

Louis Condrata, of Pasadena, CA wrote to say that he's been into CB radio for a few months and he never ceases to enjoy the amazing variety of special words, buzzwords, and phrases that developed within CB radio over the years. He's only sorry that he wasn't there to not only see it grow and evolve, but to be able to say that he was a part of its evolution. He tells us that, as an English teacher, he has collected many bits and pieces of this lingo, and has even attempted to figure out how some originated.

He sent along a listing and asked for our thoughts on some of the words and terms. For instance, he says that he's heard references to vehicles being asked by other mobiles to "beat the bushes," but he hasn't quite pinned down its exact meaning.

That job always befalls the lead vehicle in a group of CB mobiles traveling in the same direction. Police (*Smokies*) sometimes park off to the side of the road (*in the bushes*) where the patrol car (*Tijuana Taxi* or *Plain Wrapper*) can't be easily seen by oncoming motorists. *Beating the bushes* just means that the lead vehicle will let the other vehicles know when one of these cars is spotted.

Gee, I love that kind of talk. Haven't used it myself in about 15 years! Somehow, I have the feeling that the primary users these days of this old timey "truckers' lingo" are 4-wheelers who got on the air within the past week. Still, you do hear it and, from a cultural standpoint, it always fascinates. The most complete dictionary of CB lingo is in *Tomcat's Big CB Handbook*.

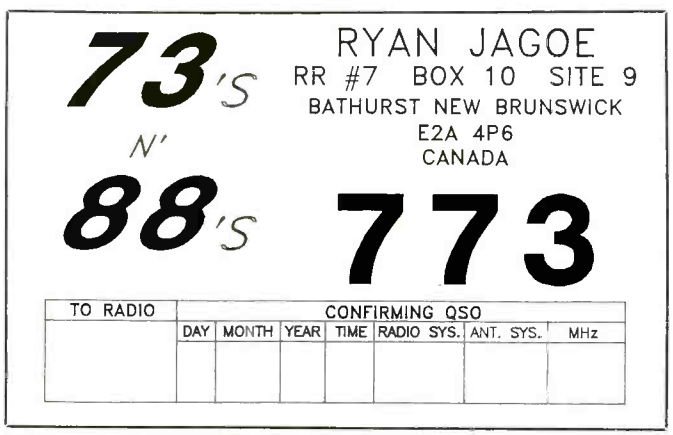
Mount Up

Solid state devices, which are the major components in CB transceivers, are known for their long life and low failure rate. However, to keep delivering these benefits there are certain precautions that must be taken to protect semiconductors from accidental damage and ensuing communications failure.

Proper power supply polarity, for example, is extremely important when installing a mobile rig. Most modern American vehicles have a negative ground electrical system. Proper installation in such a vehicle requires that the black (neg or −) lead go to the ground, and the red (pos or +) lead go to the "hot" or positive source of the vehicle's battery, either directly, via the fuse block, or the accessory side of the ignition switch.

Less well-known is the effect of the set's mounting position within the vehicle. The old vacuum tube sets were bulky, but were almost impervious to heat. Semiconductors are sensitive to heat. For this reason, you don't want to mount your CB rig in the direct flow of hot air from the car heater. It is possible that thermal protection provided by the manufacturer will not function at excessive heat levels. Some forethought will suggest the best mounting point for the transceiver.

Once the set is in place, determine whether any metal cables are touching the rear of the cabinet. If semiconductors are exposed at this point, there is some possibility of a short circuit developing if the component comes into contact with grounded metal such as a mounting strap, choke cable, etc. Allow several inches of free air space behind the cabinet to permit cooling air to circulate. Also, avoid operating the set im-



Ryan Jagoe, SSB-73C and also Unit 773, of New Brunswick, Canada tells us that his QSL was designed on a computer. He uses a TRC-453 running into an Antron 99 mounted 25 ft. up.

Our DX QSL of the month comes from 53-ES-11 in El Salvador. It was sent to us by Erroll Urbelis, SSB Network member SSB-6721, of Kings Park, NY.

mediately after entering a car on a hot day. If the windows have been closed, the temperature may reach well over 100 degrees F. Let the air circulate before turning on the transceiver.

Quote me on this. Never operate a CB rig without a proper load such as an antenna or a dummy load attached to the the set's RF output. It's easily possible to burn out the final RF stage of the rig as soon as the mike is keyed up. This is due to a build-up of voltage in a tuned circuit connected to this stage. The voltage may reach levels that puncture the semiconductor elements and cause complete failure. Such voltage is not developed when the circuit is properly loaded.

By "proper" load, I mean one with as near to a perfect 1:1 VSWR match as is possible. Use a VSWR meter to check this upon the installation of a new antenna or feedline, or changing of any connectors. If possible, leave the meter in line to monitor the VSWR at all times so that some unseen antenna system disaster will not suddenly surprise you with a blown final stage in your rig. VSWR meters usually show the "red" (danger) zone starting at 3:1, but any antenna system that reads out at more than 1.5:1 can get an improved match by the use of a CB antenna matcher. This is a simple tunable device that usually sells for about $25. No CB installation should be without an antenna matcher.

A CB rig hooked to an improperly matched antenna system produces reduced transmitting and receiving range. The worse the mismatch, the more the bite taken out of the station's performance, and the better the chances are of the station causing TV interference. If the mismatch is severe enough, performance drops sharply and some of the rig's components become damaged or even destroyed. However, a match between 1.1:1 and 1.25:1 means that the station is operating at its maximum potential and virtually no signal is being lost, wasted, or trapped within the antenna system.

Jeff and Julie Seymour's well-organized CB station in Colonial Heights, VA.

We aren't ones to "look down" upon anybody else's station, but this "fly on the ceiling" view of Jeff and Julie Seymour's station was too impressive to pass up.

Some operators have never bothered to check the VSWR of their antenna system. Some have never tried to optimize the match between the transceiver and the antenna system. These operators can't understand why they don't get out as well as they should, and why their rigs have "bad ears." Should we tell them what the problem is? *Nah!*

We be down and on the side. Why not send us your questions, QSL's, CB station photos, DX cards, and comments, and ideas? PC

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CIRCLE 170 ON READER SERVICE CARD

NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS

Bench/Portable Counter-Timer Has Signal Conditioning

Optoelectronics Inc., introduced a new "bench/portable" Model UTC 8030 universal counter-timer. Offering more than a benchtop frequency counter, Opto's instrument is a portable frequency finder as well.

As a benchtop counter-timer for lab use, UTC-8030 makes direct and prescaled FREQUENCY, PERIOD and TIME INTERVAL measurements, and calculates and

displays FREQUENCY RATIOS. Frequency and time interval measurements can be either discrete or averaged. An EXTERNAL REFERENCE jack is provided for lab reference clocks better than the instruments's ± 1 PPM accuracy.

Display resolution is 1 Hz in 600 MHz with a 4-second gate time. PROBE POWER is available at the front panel for probes with preamplifiers. A DISPLAY HOLD feature makes it easy to record ten-place frequency reading. UTC-8030 has a 50-ohm input for signals above 10 MHz, and a 1-Megohm input for signals below 50 MHz; input selection is by facia panel button.

Uncommon in a low-cost instrument, signal conditioning controls let the unit count exactly what you want it to count. Preset or adjustable over a ± 2.5 volt range, VARIABLE TRIGGER CONTROL is critical for eliminating jitter and other effects of noise when measuring periods and time intervals. A switchable 6 dB/octave LOW PASS FILTER is used to measure audio frequencies when mixed with rf carriers or heavily laden with noise. A switchable 20 dB ATTENUATOR also lets you switch out noise whenever the signal of interest is greater than 1 mV.

As a portable frequency finder for use in the field, UTC-8030 features an extremely wide dynamic operating range, spec'ed from 10 Hz to 2400 MHz, (useful from 1 Hz to over 3000 MHz). Sensitivity is spec'ed better than 1 mV up to 500 MHz (0.1 mV typical), and better than 10 mV to 2400 GHz. The unit also features a unique 16-segment LCD signal strength BARGRAPH, with each segment representing 3 dB. The bargraph is augmented by a unique AUDIO ANNUNCIATOR, which emits *beeps* in increasing rapidity with increasing signal strength. This makes it very easy to use. The unit's combined signal strength indicators, batteries, compact size and ultra-high sensitivity make it perfect for "off-the-air" measurements and frequency-finding at maximum distance from any transmitter up to 3 GHz.

Facia panel legends are printed into a handsome polycarbonate label for esthetics and durability. The cabinet is a sturdy aluminum 3.5 × 7.3 × 6.8 inch RETMA half-track.

UTC-8030 is priced at $579 each. Optional ± 0.1 PPM time base is $125; NiCad battery pack is $75; LCD backlight is $40. UTC-8030 and all options are available from stock.

For more information, contact: Optoelectronics Inc., 5821 NE 14th Ave., Ft. Lauderale, FL 33334, or circle 104 on our Readers' Service.

Event Manager Software

Today there's a new wave in radio listening.

With the Event Manager, you can have your radio and leave it, too.

The newly-developed program, which is IBM PC-compatible, remotely controls the Kenwood R-5000 Communications Receiver equipped with the IF-232C Interface and IC-10 Kit.

Based on the method of programming a 7 or 14-day VCR, the software allows multiple events on the same or following days, changing frequencies, modes and antenna settings as required.

Based upon a user-created event containing one or more entries, the receiver is turned off until the computer date and time match the day of the current record in the event file.

The receiver is automatically turned on and receiver settings—frequency, mode and antenna—are loaded from the computer into the receiver.

When the time on exceeds the number of minutes specified in the event record, the receiver is turned off.

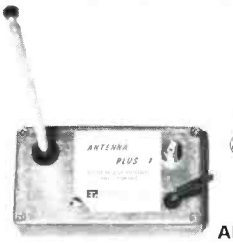
The cycle repeats until all records in the file are completed or the user interrupts the process.

Any device, such as a tape recorder, controlled by the receiver's rear apron relay contacts also will be turned on and off.

Event files may be saved, edited, and reused. The number of files is limited only by disk space. A fixed disk, 640 KB of memory, and a serial port is required.

The software package retails for $75, plus $2.50 shipping and handling, and is available through TRS Consultants, PO Box 2275, Vincentown, NJ 08088-2275. New Jersey residents must add sales tax.

SUPERCHARGE YOUR RECEIVER!



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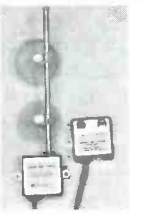

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CIRCLE 172 ON READER SERVICE CARD

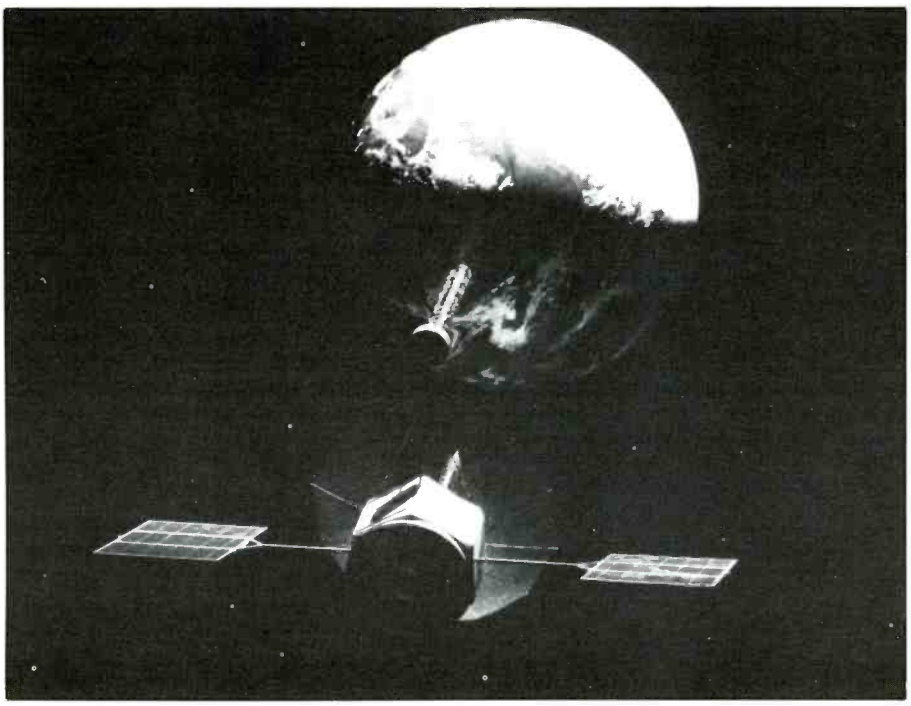
BY DONALD E. DICKERSON, N9CUE

Satellite C^3 I

C^3 I is a military term that stands for four crucial elements in winning a war or maintaining a standing army: Command, Control, Communications and Intelligence. Military satellites are playing a greater role each year in C^3 I, for both tactical and strategic forces. Satellites, ground stations and mobile communication terminals are central to fighting any modern battles. For this reason they are high priority targets in war time. The Department of Defense has been working to upgrade satellites and communication facilities to insure survivability. Our next generation military comsat, known as Milstar, will be hardened against jamming techniques.

Our current systems consist of a UHF and a SHF network of satellites. Milstar, which is currently under development, will use EHF. The UHF satellites come in two types. The Fleet Satellite Communications (FltSatCom) Satellites are government owned and carry Navy and Air Force communications. A second system known as Leasat are leased satellites. Both UHF satellite systems use 225 to 400 MHz.

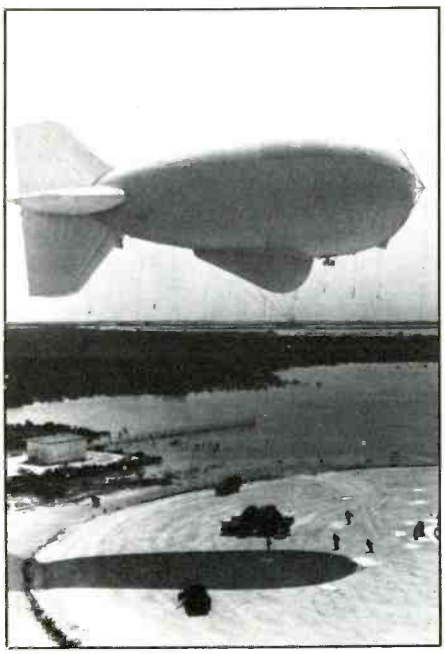
Fltsatcom were built by TRW. There are 5 in orbit. Each Satellite has ten 25 kHz and five 5 kHz channels. One single 500 kHz wide channel is also carried by all DOD satellites for one-way communications from the President or National Command Authority. This is used for the launch of Nuclear weapons.



FLTSATCOM

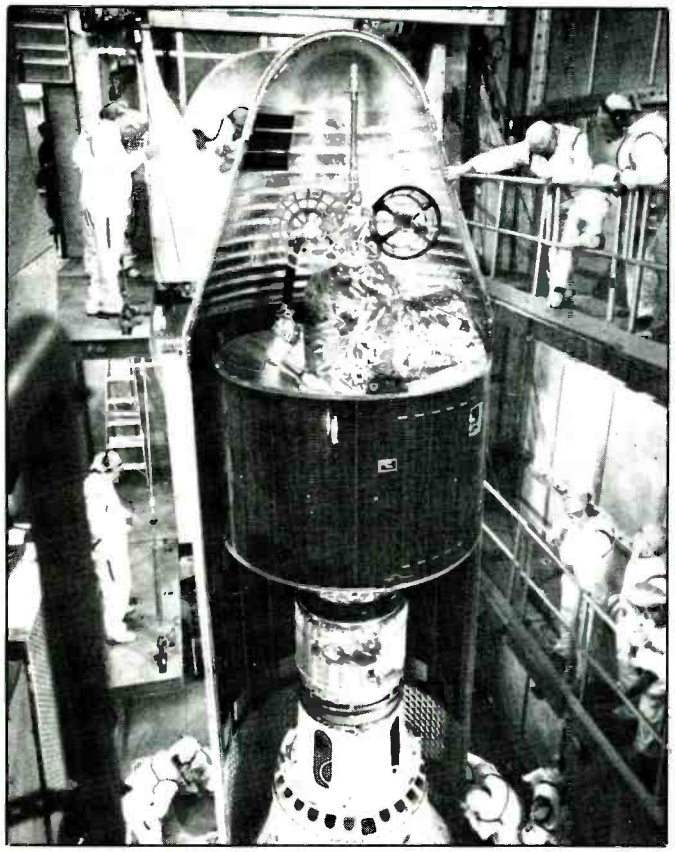
Using Frequency Division Mulitplexing techniques (FDM) up to 21 stations can simultaneously use each satellite. The UHF system is highly mobile. Small manpack, portable and vehicular mounted terminals are low powered and easy to operate. There are eight different manpack satellite transceivers in use on the Fltsat and Leasat (Leasats are also know as Syncom) satellite systems. Most manpacks are single channel radios. Larger multi-channel radios are used at permanent ground facilities and in portable communication vans.

Along with plain and encrypted voice communications the manpack radios also

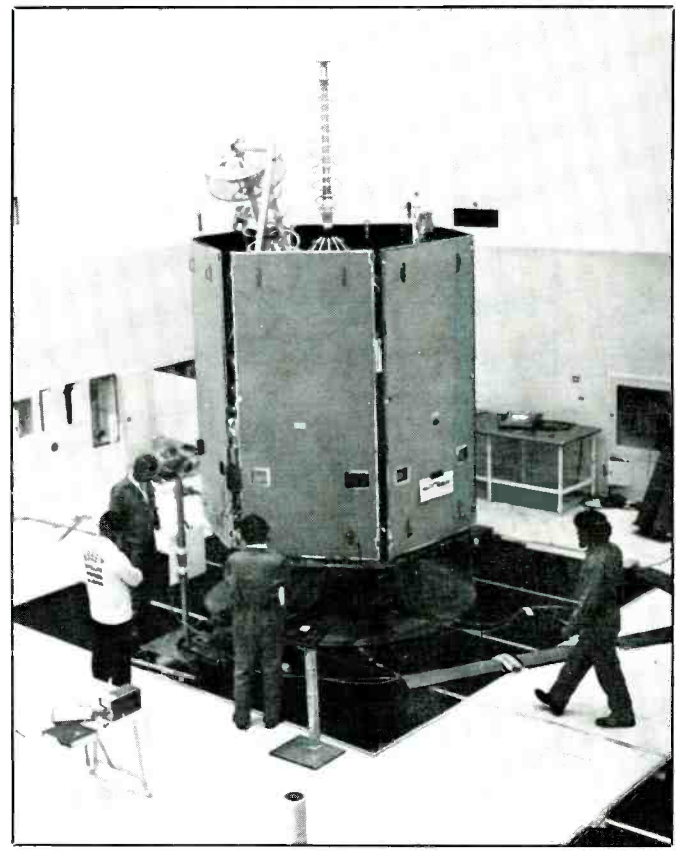


Skyhook Aerostat's currently carry radar platforms.

Satellite	Location	Frequency	
Fltsatcom	177°W	225-400	7/8 GHz
"	145°W	"	"
"	105°W	"	"
"	100°W	"	19/20/30/44 GHz
"	72°E	"	20/44 GHz
"	75°E	"	7/8 GHz
"	77°E	"	"
Milstar	148°W	225-400 MHz	2/20/45 GHz
"	120°W	"	"
"	90°W	"	20/45 GHz
"	19°E	"	2/20/45 GHz
"	30°E	"	"
"	55°E	"	"
"	90°E	"	"
"	133°E	"	"
"	150°E	"	"
"	152°E	"	"



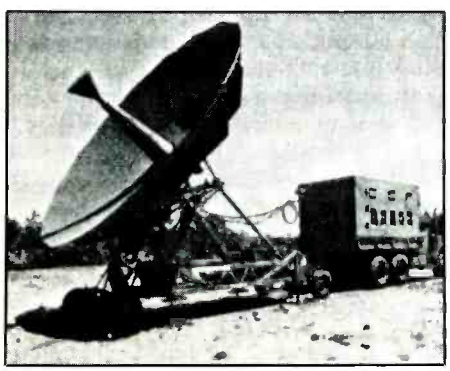
Kennedy Space Center, FL—Installation of the fairing around the weather satellite progresses at Complex 17-A on the Cape Canaveral Air Force Station.



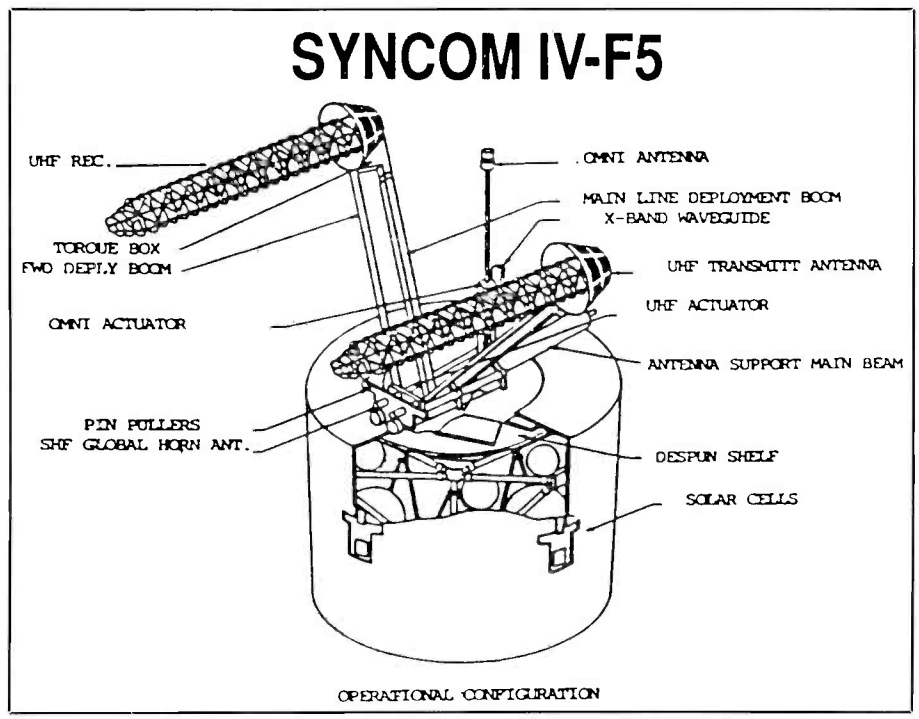
A FleetSatCom satellite being readied for launch.

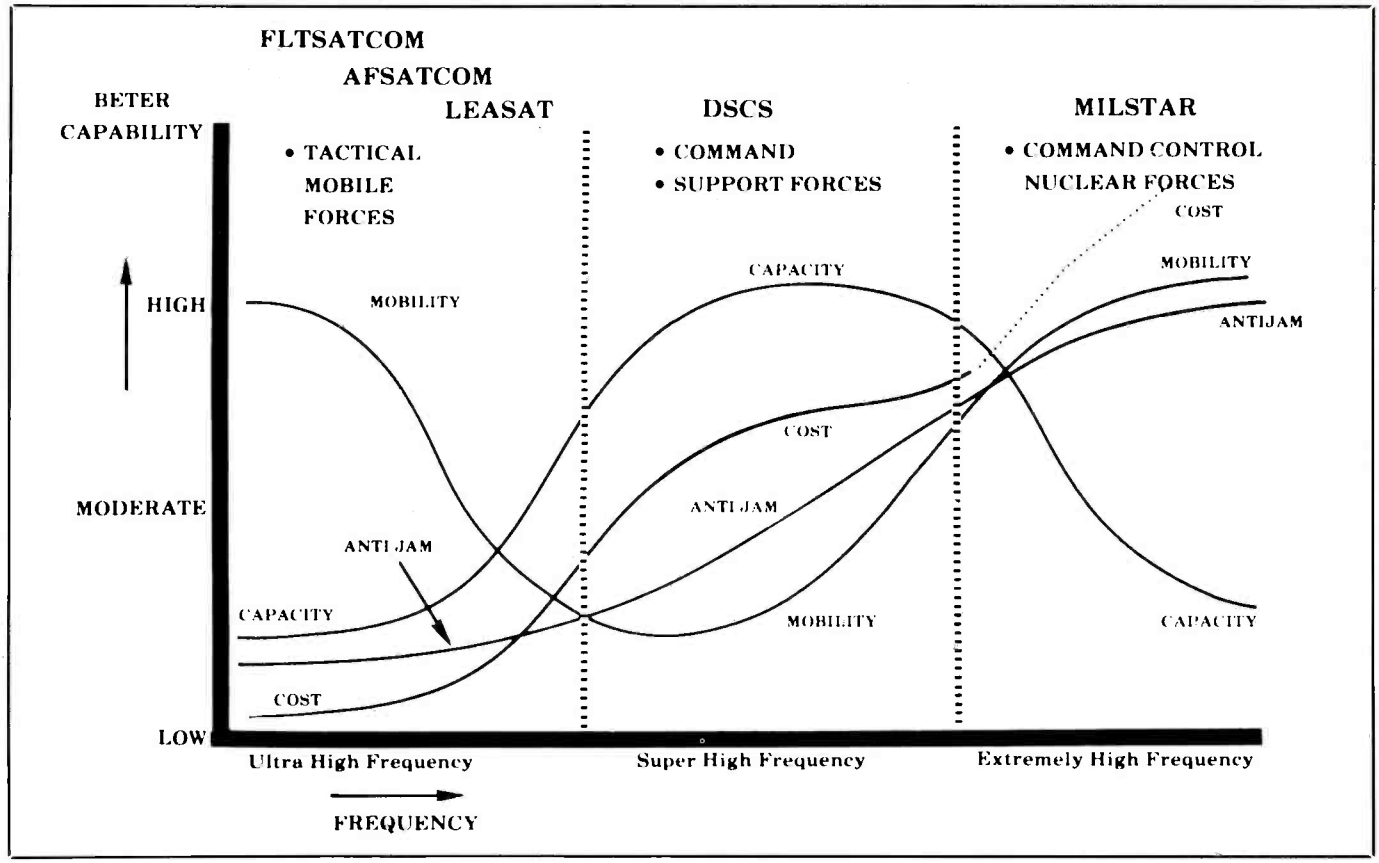
use a Packet data mode. Current models include the URC 101, URC 12 and PSC 3 transceivers. The KY 57 encryption unit can secure the Packet transmissions. The single channel transceivers can operate at speeds of up to 2400 baud. Secure packet is the mode used most by the 82 and 101st Airborne as well as our other rapid deployment teams. The UHF system is also used by SAC, MAC, Space Command, Military Intelligence, DOD, the Joint Chiefs and the NCA. A multi-service satellite network known as Flaming Arrow use the AN/MSC 64 transceivers. This network uses a low data rate Packet mode.

Joint US and NATO forces use a SHF satellite system known as the Defense Satellite Communications System (DDCS). These satellites operate on 7 and 8 GHz. The DCSC II and the newer DSCS III satellites support the Defense Communications System (DCS) and the Diplomatic Telecommunications System (DTS). DTS traffic consists largely of Embassy communications. As most of the telecommunications operators at any US Embassy are CIA or NSA, it is likely that these satellites also carry traffic for



DSCS Communication van.





both agencies. It should also be noted that the Embassy codes, that are changed daily, are transmitted to all CIA stations via satellite. Most of our radio codes are generated by the NSA, though CIA has it own small code section.

'Would-Be' Satellites

As communications satellites are some of the highest priority targets in war time, the Navy has been working on a high altitude communications relay platform which operates the same way a satellite does. The platform, carrying the same UHF/SHF transponders as a satellite, are carried aloft by balloon. Between 70,000 feet and low earth orbit, there is very little atmosphere and therefore the balloons are very stable. They can be launched from ships for special operations or deployed in groups to provide theater wide or world wide communications coverage. At 70,000 feet a single balloon can provide coverage of up to 500 miles using HT's (handy talkies). The Navy is also interested in the 120,000 feet range. It could provide wider coverage and with two dozen of these low cost (when compared to satellites) platforms worldwide coverage can be provided.

The platforms can stay aloft for up to a year. They are also difficult to spot by radar or visually. At an altitude of 70,000 or 120,000 feet it is even more difficult to target. High survivability and low unit cost make this program called, Zephyr, an attractive one.

Magnavox Electronic Systems is already marketing a portable and truck-mounted satellite terminal for use with the up-coming Milstar (EHF) satellites. Experimental EHF transponders have been placed on 5 Fltsatcom spacecraft which are already in orbit. This means the Scott may already be in use in some areas.

Magnavox has also developed a nonmilitary version of a mobile communication van for use by business and emergency services. This system is designed to provide worldwide telephone, telex, fan and data communications from moving vehicles. Calls are routed through satellites and earth stations operated by the international INMARSAT network. Telephone calls are direct dialed from the truck, using short-range UHF radio links. The truck contains a stabilized satellite dish, covered with an un-

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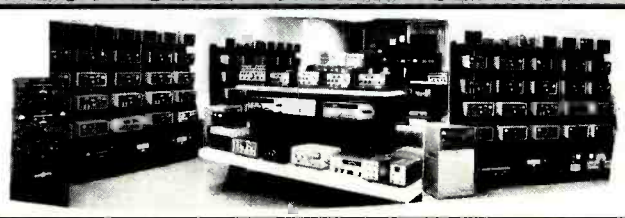
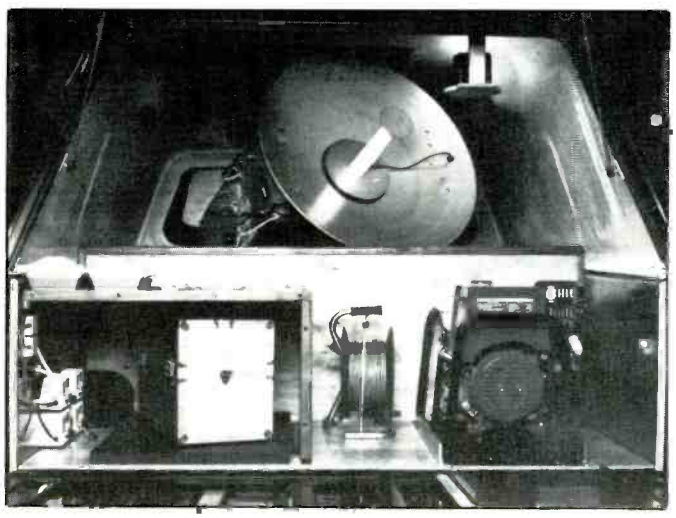

Send $3.00 for our current catalog and wholesale sheet.

The Magnavox mobile satellite communications center can be used when the vehicle is moving or still.

Rear view. The satcom antenna is mounted on a gyrosopically stabilized pedestal. This photograph also shows the portable generator (lower right) and storage space for remote telephone units.

The operator's station is located in the rear of the cab. It includes a satellite communications terminal, vehicle navigation system, fax, printer, telephones and other equipment.



marked fiberglass cover. The vehicle is fitted with a satellite navigation receiver which calculates its geographical position using signals from the new GPS navigation satellites.

Space Symposiums

I want to inform you of the up-coming 1990 AMSAT NA Space Symposium. This year's meeting will be held at the Johnson Space Center in Houston, Texas on October 19, 20 and 21. The registration fee is $20.00 for non AMSAT members, in advance, and $25.00 at the door. This year's meetings will begin at 8:00 AM at the JSC visitor's center auditorium on Saturday October 20th. For more information call (301) 589-6062 or write AMSAT, P.O. Box 27, Washington D.C., 20044. Topics to be discussed include Packet, PD3 experiments, Sarex shuttle missions and more. There are plenty of exhibits and tours of the space center to see as well as access to W5RRR which is, of course, satellite equipped. Houston is THE place to be in October.

See you next month. **PC**

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CIRCLE 169 ON READER SERVICE CARD

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

There are many African stations which North American listeners hear neither regularly nor well. Radio Tanzania is one of them, but that may be changing. The stations has been testing a new and apparently high power transmitter recently, using 5985 and 6105 and 0730 to 1000 and 5985 from 1100-1915. The down side of this news is that these time and frequencies are hardly best for optimum reception here, but we can hope improvements will come when the transmitter begins operating on a regular schedule. The station requests reception reports to: Chief Engineer, Radio Tanzania, PO Box 9191, Dar es Salaam, Tanzania. If you do hear 'em and send a report you might express the hope that a time and frequency good for reception in North America will be used.

Another radio country which only a handful of North American DXers have so far logged is the Andaman Islands, actually a part of India. All of India Radio's fairly new 10 kW outlet at Port Blair has been using that frequency during almost the same time period (our local morning) as the AIR outlet at Leh, in Kashmir State. Word is that Leh no longer operates here during our local mornings so that should improve chances of hearing Port Blair come the dead of winter. Check around local dawn.

Radio Nacional de Venezuela is reported to have introduced its long-promised English and French segments, with Portuguese yet to come. But the segments are only about 3 minutes in length! They're included as part of the station's regular schedule which, currently, is 1100-1200, 1400-1500, 1800-1900, 2100-2200, 0000-0100 and 0300-0400. 9540 has been noted in use recently but you might also try 5020, 11695 and 11850.

With a new government in Nicaragua that country's official station has changed its name from La Voz de Nicaragua to Radio Nicaragua.

The Dominican Republic—not a place populated by many SWBC stations, is about to get a new one. Radio Barahona in Santo Domingo is supposed to be going into operation on 4940. There's a Venezuelan already active on this frequency—Radio Continental in Caracas.

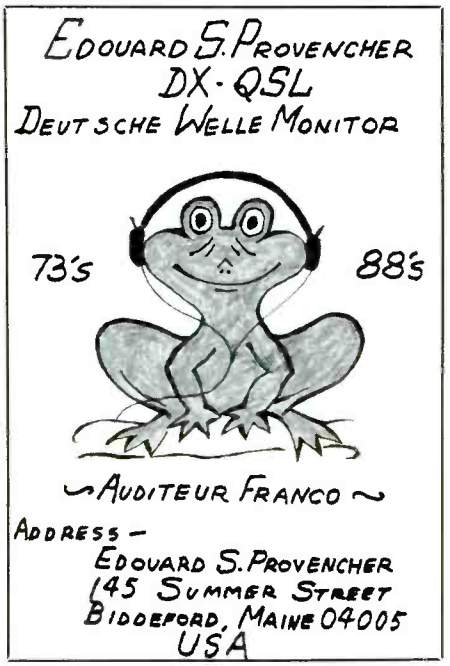
Cedric Marshall reports in the Ontario DX Association's bulletin that Radio West Sepik (3205) in Papua New Guinea is now called Radio Sanduan, reflecting a change in name for the province in which it's located.

Readers have been complaining about recent difficulties in getting QSLs out of Radio Australia. Word is that there's a shortage of staff in the frequency division, which issues QSLs, and from now on QSLs are restricted to one per customer per broadcast season. And they're talking about investing millions in a relay station in Thailand?

Radio Berlin International says it has undergone a reorganization and is now a semi-public body, financially supported, but not run, by the government." RBI says "it is open to all political and social forces in the country who respect the constitution."

Radio Prague's international service came back on the air on May 8, after a five week absence. The station now calls itself Radio Prague International. Bob Thomas of Connecticut provides their schedule: 0000-0015 on 7345, 11680 and 11990; 0100-0130, 0300-0330 and 0400-0415 on 5930, 7345 and 11680. Note that this is a considerable cut in the amount of time devoted to English for North America and about half as many frequencies as well.

Radio Beijing has introduced a flashy new program magazine called *The Messenger* which includes lots of color photos, features on the station's staff and programs, other articles, program schedule and so on. It's available free from Radio Beijing.

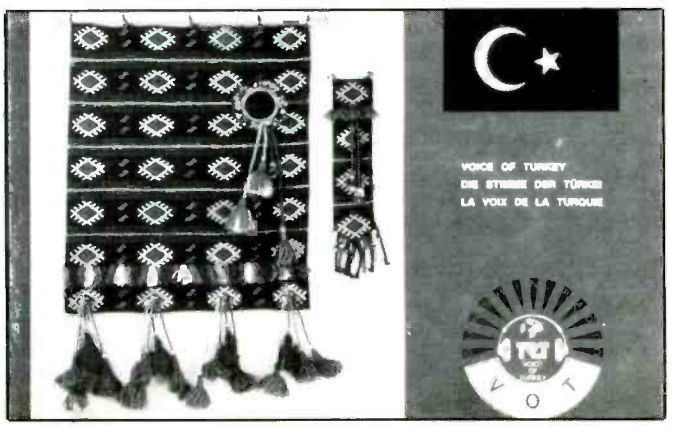


Ed Provencher's clever SWL card. The frog is bright green.

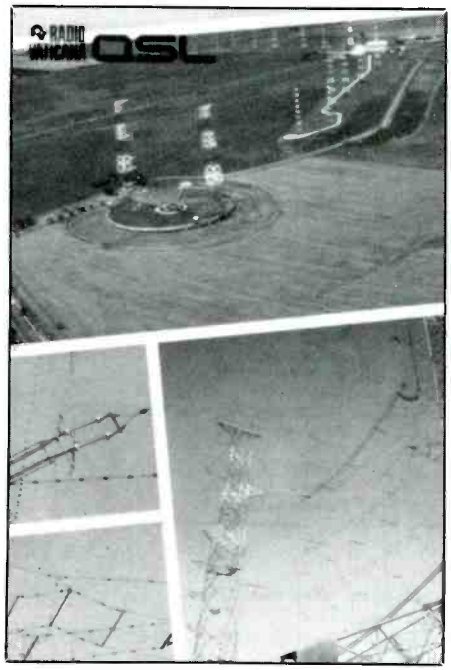
We'll probably be seeing name changes and perhaps schedule changes for the two Yemen stations, now that the Yemen Arab Republic and the People's Democratic Republic of Yemen have merged and become simply the Yemini Republic. San'a is now the political capital and Aden the economic capital.

The voices of shortwave come at us in what often seems like a zillion different languages. And most of us are doing pretty well to be able to spot four or five of the main ones when we hear them. But now there's a

One of Radio Moscow's current QSL cards shows this view of where Mikhail Gorbachev hangs out. (Thanks—Bill Walbesser.)



A current Voice of Turkey QSL. Thanks to Bill Walbesser.



This full color Vatican Radio QSL shows the station's rotating shortwave curtain antenna at Santa Maria di Galeria. Thanks to Bill Walbesser.

great way to expand our language recognition abilities with the Foreign Language Recognition Course, a 90 minute cassette being offered by the Ontario DX Association. The course was originally a production of Radio Canada International. Ian McFarland of RCI's SWL Digest has turned it over to ODXA which will use proceeds to help fund its efforts to help handicapped listeners. The tape contains samples and tips on recognizing 55 different languages and is available from the ODXA, PO Box 161, Station A, Willowdale, ONT M2N 5S8, Canada. The price is $5 US, $6 Canadian. Foreign orders should include $6 US or $7 Canadian . . . or 9 IRCs.

FROM THE MAILBAG: Tim Johnson of Illinois, calls our attention to a brief item in a recent *Speedx* bulletin in which columnist Ed Janusz suggests listeners write to the South African embassy to complain about the loss of Radio RSA's services to areas outside Africa. He supplies this address: Embassy of the Republic of South Africa, 3051 Massachusetts Avenue NW, Washington, DC 20008.

Edouard S. Provencher of Biddeford, Maine, sends along his very unusual and very nice SWL card (see illustration). He says the card is designed to turn the derogatory slang term for a Frenchmen (frog) into a plus. Ed says this design is used by many local businesses in his heavily French-Canadian area and is also officially used for the area's local French-Canadian festival each year. Ed also says he got a really special QSL from RBI—for a reception on the day the Berlin Wall came down!

Victor Menayang of Austin, Texas, is Indonesian and thus concentrates on hearing the Indonesian stations. Victor is interested in corresponding with others who are interested in DX'ing this country and can be reached at PO Box 7295, Austin, TX 78713.

And here's the unusual invitation to send us your logs and other shortwave broadcast information each month. Logs should be by country, with your last name and state abbreviation after each. Give us some room to cut them into strips, too. We're also looking for shack and station photos, QSL's you don't need returned, schedules, news clippings, questions, comments and what-have-you. Hope you'll make it a habit to write in regularly!

Here are this month's logs. Language is English unless noted otherwise. All times are UTC.

Antigua: BBC relay, 5975 at 0600; 17880 at 1950. (Walbesser, NY) 9640 at 0602. (Heumann, TX)

Deutsche Welle Relay, 6040 at 0150; 9690 in GG at 0603. (Heumann, TX) 15205 at 0300. (Walbesser, NY)

Australia: Radio Australia, 6020//6080 at 0810 in Papua New Guinea service. Also 9580 at 0830 and 13745 at 1641. (Johnson, IL) 9660 at 0746 and 15485 at 1604. (Norman, OK) 15240 at 0605. (Walbesser, NY)

ABC, Brisbane, 9610 heard til 0900 when QRM'd by R. Rumbos. (Johnson, IL)

Austria: Radio Austria International, 6015 (via Canada, editor) at 0541. (Heumann, TX) 9870//9875 at 0130. 9870 was 15 seconds behind the 9875 transmission, thereby causing Radio Austria to interfere with its own signals. (Johnson, IL)

Belgium: BRT, 13675 at 2340; 2350. (Neff, FL; Carson, OK)

Botswana: Radio Botswana, 7255 at 0347 with farm menagerie and cowbell interval signal. (Johnson, IL)

Brazil: Radiobras, 11745 at 0209 with news, music. (Taylor, OR)

Radio Inconfidencia, Belo Horizonte, 6010 at 0930 in PP with music, IDs, rapid talk. (Mierzwinski, PA)

Radio Bandeirantes, 9645 at 0835 with PP ID, cuckoo bird sound effect and station jingle. (Johnson, IL)

Radio Universo, 9565 at 0945 in PP with ID. (Johnson, IL)

Bulgaria: Radio Sofia, 11660 at 2045. (Neff, FL) 11720//11735 at 0329; 15290 at 0300; 15330 at 2143. (Walbesser, NY) 11680 at 2202. (Carson, OK)

Cameroon: CRTV Yaounde, tentative, 0450 in unidentified language. Poor signal, African music. (Johnson, IL)

Canada: Radio Canada International, via BBC transmitters at Daventry, 7235 at 1830. (Giannarelis, Greece) 9535//9755 at 0220. (Johnson, IL)

CFCX, Montreal, 6005 at 2045. (Neff, FL)

CHNX, Halifax, 6130 at 1130 with news and weather. (Neff, FL)

CKZU Vancouver, 6160 at 0523 with music, ID). (Taylor, OR)

Chad: Radiodiffusion National Tchadienne, 4904.5 at 0429 with national anthem sung by children, sign on in FF. (Johnson, IL) 0430. (Walbesser, NY)

Chile: Radio Nacional, 15140 at 2205 in SS. Many mentions of Santiago. (Johnson, IL) Tentative in SS at 0012. (Heumann, TX)

China: Radio Beijing, 11600 at 1225. (Northrup, MD) 11685 at 0410 (Carson, OK) 15040 in CC at 0242. (Walbesser, NY) 15100 at 0010. (Heumann, TX) 17705 at 0028. (Neff, FL)

CPBS-2 11505 at 2210 with news in CC. (Johnson, IL)

Taiwan-1 on 11100 at 1125 in CC. Also Taiwan-2 on 11000 at the same time with CC music. (Johnson, IL)

Fujian-1 PBS, Fuzhou, 5040 at 1035, man and woman in CC with music. (Johnson, IL)

Colombia: Caracol Bogota, 5075 at 0435 in SS with talks. ID. (Taylor, OR)

La Voz de Centauros, Willavicencio, 5954.9 at 0540 in SS. (Taylor, OR)

La Voz del Rio Arauca, 4895 with SS ID at 0950. (Johnson, IL)

Cook Islands: Radio Cook Islands, 11760 at 0645 music program, Radio New Zealand news at 0700, local news 0715. (Johnson, IL)

Costa Rica: Adventist World Radio, TIAWR, 9725 with religious program at 1220. (Neff, FL) 11870 at 0453 with SS close, into EE to sign off at 0501. (Carson, OK)

Radio For Peace International, 7375 LSB at 0135 with mailbag show. (Carson, OK)

Radio Reloj, 4832 at 0603 in SS and 6005 at 0945 in SS. (Mierzwinski, PA)

Radio Impacto, 6044//6160 at 0546 in SS. (Heumann, TX)

Cuba: Radio Havana, 6165 at 2302 in SS. (Heumann, TX) 11820 at 0145. (Walbesser, NY) 11800 at 1950 to 1955 when QRM'd by RAI sign on. (Johnson, IL)

Moscow home service, 4766 in RR at 0254; 0526. (Johnson, IL; Walbesser, NY)

Radio Rebelde, 3360//5025 at 0228 with two male announcers in SS. (Johnson, IL)

Cyprus: BBC Relay, 7135 at 0218 with CW QRM. (Walbesser, NY) 21470 at 1441. (Heumann, TX)

Czechoslovakia: Radio Prague, 5930 at 0103. (Neff, FL) 7345 at 0400 with 15 minute North American broadcast. (Johnson, IL)

Denmark: Radio Denmark, via Radio Norway, 9615 at 0130-0200 with domestic news. (Vaage, CA) (In Danish, editor)

East Germany: Radio Berlin International, 11785 at 0146; 0400. (Carson, OK; Walbesser, NY)

Ecuador: HCJB, 9610 at 0800, 15155 at 0209, 15295 at 2130. (Carson, OK) 11960 at 2353. (Heumann, TX) 21470 at 1932. (Walbesser, NY)

Radio Quito, 4920, 0454 in SS with music, ID.) (Taylor, OR) 0520. (Mierzwinski, PA)

Radio Centro, Ambato, 3290 at 0841, SS talks, "Radio Centro" ID. (Mierzwinski, PA)

Egypt: Radio Cairo, 9475//9675 at 0230 with North American service. (Johnson, IL)

England: BBC, 3955 at 0518, 15070 at 1842. (Walbesser, NY) 5975 via Antigua, 6005 via Ascension at 0539. (Heumann, TX) 7320//9825 in AA to Middle East at 0522. (Johnson, IL) 11820 at 2322, 17860 at 1609, 21660 at 1515. (Carson, OK) 12095 at 0132. (Neff, FL)

VOA relay, 7200 at 0517. (Walbesser, NY)

Equatorial Guinea: Radio Nacional, Malabo, 6250 at 0520, weak, with African music. (Johnson, IL) (Presume SS, editor)

Finland: Radio Finland International, 15185 at 2307 in EE. (Carson, OK) 21550 at 1211. (Neff, FL)

France: Radio France International, 5945 in FF at 0033, 11670 in FF at 2247. (Heumann, TX) 9805 with IS at 0755. (Johnson, IL) 15360 at 1645. (Carson, OK) 17620 in FF at 1810. (Walbesser, NY)

French Guiana: RFI relay, 9790 in FF at 0605, 11995 in SS at 2355. (Heumann, TX) 9800 at 0318. (Carson, OK)

RFO Guyanne, 3385 and 5055 at 0730 in FF with man and woman with news. (Johnson, IL) 5055 with music, announcements in FF at 0325. (Neff, FL)

Gabon: Africa Number One, 4890 at 0510 with news in FF. 9580 at 2220 with African and western pops. FF/EE IDs. (Johnson, IL) 21580 at 2045 in FF. (Neff, FL)

Ghana: GBC-1, 4915 at 2300 with children singing and abrupt off at 2303. (Johnson, IL)

Greece: Voice of Greece, 9395//9420 at 0058 in Greek. (Heumann, TX) 11645 at 0345 in Greek. (Taylor, OR)

Guatemala: Radio Cultural, 3300 at 0330 in EE. (Mead, ME)

Radio Maya, 3324.8 at 1037 with ID, frequency announcement in SS. (Johnson, IL)

Honduras: La Voz Evangelica, 4820 at 0330 with EE religious program. (Johnson, IL) 0345. (Mead, ME)

Hungary: Radio Budapest, 9835 at 0100 with EE sign on, news. (Neff, FL) 11910 at 0133 with DX program. (Carson, OK)

Iceland: Iceland State Broadcasting Service, 15770 at 2300 with news in Icelandic. (Johnson, IL)

India: All India Radio, 11620 with news at 1230. (Northrup, MD) Here at 2125. Also 15020 in Sinhalese

in vernacular. (Johnson, IL)

Kuwait: Radio Kuwait, 13610 at 2038. (Neff, FL) 15495//15505 at 2225. (Johnson, IL)

Liberia: ELWA, 4760 at 0610 with religious program. (Johnson, IL) 11960 at 0543 in AA with IS and "Radio ELWA" ID. (Carson, OK)

VOA Relay, 6035 at 0309, 7280 at 0553. (Heumann, TX) 21485 at 1815. (Walbesser, NY)

Lithuania: Radio Vilnius, 11770 at 2204 and 17665 at 2218. (Carson, OK) (Likely on in EE an hour later by now, editor)

Madagascar: Radio Netherlands relay, 15560 at 1830 with news. (Giannarelis, Greece)

Malta; Voice of the Mediterranean, 9765 at 0600 sign on. (Taylor, OR) 0630 with ID, features. (Johnson, IL)

IBRA Radio, 7110 at 2045 with religion. (Giannarelis, Greece)

Mali: Radiodiffusion TV Malienne, 5995 at 0622 with African music. (Johnson, IL)

Radio Beijing, via Mali, 11715//15100 at 0300. (Walbesser, NY)

Mexico: Radio Educacion, 6185 in SS at 0604 with ID, opera. (Johnson, IL) 0054, tentative, SS. (Heumann, TX)

Radio Universidad, Hermosillo, SS ID at 0515. (Taylor, OR)

Mongolia: Radio Ulan Bator, 12015 at 0833 with traditional music, ID by woman, 0836 with times and frequencies, off 0839. (Carson, OK)

Monaca: TWR, 6230 at 0340 with IS and program in GG. (Johnson, IL)

at 1428 and 15050 in EE at 1053. (Johnson, IL) 15335 at 1241. (Taylor, OR)

Indonesia: Voice of Indonesia, 11748 at 0914-1200 to Asia and the Pacific in Indonesian, CC, Thai and JJ. At 1200-1300 in Indonesian with music, ID, news; at times under QRM. (Menayang, TX)

Radio Republik Indonesia, Jakarta, 11760 at 0830-1145 in II with program for the armed forces, ID. Heavy QRM from Havana. (Menayang, TX)

RRI Ujung Pandang, 4753.2 at 1045-1150 in II and local dialect with news, music, ID. (Menayang, TX)

RRI Sorong, 4874.6 at 1115-1210 with talk program in EE and public education and information in II. ID. (Menayang, TX)

Iran: VOIRI, 15084 at 2235 with talk in unidentified language and interference from possible Iraqui bubble jammer. (Johnson, IL)

Iraq: Radio Baghdad, 11840 at 0259 with ID, into Arabic music. (Carson, OK) 13660 at 2100 in EE. (Neff, FL)

Israel: Kol Israel, 12077 at 0405 with news. (Johnson, IL) 15640 at 2137 with news, music. (Carson, OK)

Italy: RAI, 9575//11800 with woman and news at 0100. Also 11800 at 1955 with IS and into Swedish. (Johnson, IL)

Italian Radio Relay Service, 9815 with UN program at 0530. (Johnson, IL)

Ivory Coast: RTV Ivoirienne, 4940 at 0820 in FF. ID 0830. (Mierzwinski, PA)

Jordan: Radio Jordan, 9560 in AA at 2137 and 2230. (Johnson, IL)

Kiribati: Radio Kiribati, 14917.7 at 0700 with news

Abbreviation Used in Listening Post

AA	**Arabic**
BC	**Broadcasting**
CC	**Chinese**
EE	**English**
FF	**French**
GG	**German**
ID	**Identification**
IS	**Interval Signal**
JJ	**Japanese**
mx	**Music**
NA	**North America**
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**

Order Back Issues of POPULAR COMMUNICATIONS

HOW I GOT STARTED

Popular Communications invites readers to submit, in somewhere around 150 words (more or less), how they got started in the communications hobby. We'll accept them (preferably) typewritten, or otherwise easily legible. If you have a photo of yourself taken recently, or when you got started, please include it with your story. We can't return or acknowledge material, whether we use it or not. You need submit your story only once; we'll keep it on file to consider it for future issues. All submissions become the property of *Popular Communications*.

Each month we will select one to run in the magazine. It will be selected by our staff based upon telling a story that is interesting, amusing, or unusual. We reserve the right to edit the material submitted.

The winner selected each month will receive a free 1-year subscription (or 1-year subscription extension) to *Popular Communications*.

Address all entries to: How I Got Started, *Popular Communications*, 76 North Broadway, Hicksville, NY 11801.

Our winner for October, '90 is Paul Bracken of Ridgefield, CT. Paul told us:

"It was Christmas, 1960. I received a Hallicrafters S-120 receiver after hinting to my parents for several months. I'd been intrigued by the radio that my friend Jeff had. What gripped me about shortwave was listening to the Cold War, live and while it was taking place.

"Moscow, the Eastern European states, even Mongolia, and the VOA, BBC, and others were giving their side of the story. For a twelve year old, this was exciting beyond belief. I vividly recall listening to Fidel Castro's multi-hour diatribes against the United States at the height of the Bay of Pigs invasion, and the broadside blasts from Moscow during the Cuban missile crisis of 1962.

"I've taken these interests with me over the decades. Now I teach international security and business affairs at Yale. In the process, I still listen to what's happening in the world, the stunning changes in Eastern Europe and the Soviet Union. These events are alive and gripping as they were thirty years ago, and I have never lost my interest in hearing them." PC

Morocco: VOA relay, Tangier, 15205 at 2115. (Walbesser, NY)

Namibia: Radio Namibia, 7189.6 at 0627 with woman announcer and music. (Johnson, IL)

Netherlands: Radio Netherlands, 9860 at 2030 with Happy Station. (Giannarelis, Greece) 9895 in SS at 2235. (Johnson, IL)

Netherlands Antilles: Radio Netherlands Bonaire relay, 6020 in SS at 0238 (Heumann, TX) 6165 at 0027, 9590 at 0340, 9715 at 0744. (Carson, PK)

Trans World Radio, Bonaire, 9535 at 0330. (Carson, OK) 11815 at 1235 in EE, 11930 in SS at 1425. (Northrup, MD)

New Zealand: Radio New Zealand International, 17680 at 0400. (Mead, ME) 0650 and 1940. (Johnson, IL) From 0430 in EE and Polynesian languages. (Taylor, OR)

Nicaragua: Voice of Nicaragua, 6000 at 0505 with LA pops, several IDs by woman in SS; 30 minutes of news in SS at 0530. (Johnson, IL; Taylor, OR)

Niger: ORTN, 5020 at 0500 with children singing national anthem, sign on in FF and chants in unidentified language. (Johnson, IL)

Nigeria: Voice of Nigeria, 7255 at 0532; 0545. (Carson, OK; Heumann, TX)

North Korea: Radio Pyongyang, 11735 at 1230 in possible SS. (Northrup, MD)

Northern Marianas: KFBS, Saipan, 9465 at 1500 with RR religious program. (Giannarelis, Greece) 11650 in unidentified language. (Northrup, MD)

KHBI, 9530 at 0810 and 1055. Also 15055 at 1656. (Johnson, IL)

Norway: Radio Norway International, 9615 at 0100-0130. (Vaage, CA) 15165 at 1220. (Johnson, IL) 25730 at 1700. (Giannarelis, Greece)

Papua New Guinea: NBC, Port Moseby, 4890 at 1020. (Johnson, IL)

Paraguay: Radio Nacional, 9735 in SS with music, ID at 2250 and 0822. (Johnson, IL)

Peru: Radio Union, Lima, 6115 with Latin music, SS ID, talk at 0515. (Taylor, OR)

Radio Los Andes, (Huamachuco) 5030.5 with SS ID. Andean music at 1000. (Johnson, IL)

Radio Tropical, Tarapoto, at 0934 with national anthem and sign on in SS on 4835. (Johnson, IL)

Portugal: Deutshe Welle relay, Sines, 9545 at 0445 in GG. (Walbesser, NY)

Radio Portugal, 9680 at 0210 in PP. 9705 at 2155 with multi-lingual IDs and 15140 in PP at 1651. (Johnson, IL)

Romania: Radio Romania International, 5990 at 0247, 11940 at 2200 in SS, 0400 in EE. (Carson, OK) These and 9570 at 0234. (Walbesser, NY)

Rwanda: Deutsche Welle Kigali relay, 15270//17860 in GG at 0134. (Walbesser, NY) 0047 in GG. (Heumann, TX)

South Korea: Radio Korea, 9750 at 1235. (Taylor, OR)

Solomon Islands: SIBC, 9545 at 0725. Commercials for "Two Minute Magic Noodles" and "Juicy Fruit Gum," newscast. (Johnson, IL)

South Africa: Radio RSA, 7270 at 0431 sign on in Dutch. (or PP? ed) 21590 at 1340 in EE. (Carson, OK) 17745 at 1820 in FF. (Johnson, IL) 25790 at 1400. (Giannarelis, Greece)

Spain: Spanish National Radio, 9690 in FF at 2332, EE 0111; EE at 0523. (Carson, OK)

Radio Beijing relay, 9690 at 0300. (Walbesser, NY)

Radio Sweden, 9655 at 2115. (Johnson, IL) 11705 at 0233. (Carson, OK) 21500 at 1543. (Neff, FL)

Switzerland: Swiss Radio International, 0200 on 6095//6135//9735//9885//12035. Also on 17730 at 0200 via Brazil. (Walbesser, NY)

Syria: Radio Damascus, 15095 at 2030 with "Welcome to Syria" program. (Johnson, IL)

Tahiti: Radio Tahiti, 6135//11825.8//15171 at 0735 with island music (Johnson, IL) 11826.8 with group discussion. (Taylor, OR) (In FF and Tahitian, editor)

Taiwan: Voice of Free China, via WYFR, 11740 at 0400 in SS. (Neff, FL)

Togo: 5046 at 0530 in FF, African music. (Johnson, IL)

Tunisia: RTT Tunis, 11550 at 0440 with AA music. (Taylor, OR)

Ukraine SSR: Radio Kiev, 11770 at 0030. (Mead, ME) 11970 at 2325. (Neff, FL) 1205 at 0215. (Carson, OK)

Unidentified: 4945 at 2300 in either SS or PP with EZL music. (Johnson, IL)

United Arab Emirates: Voice of the UAE, 11985 at 2331. (Heumann, TX) 13605 at 2230. (Carson, OK)

UAE Radio, Dubai, 9600//11985//13605 at 2240 with "Oriental Panorama." Also 13605 at 2230 with Capital Radio relay. (Johnson, IL)

United States: KGEI, 9615 at 0727, "La Voz de la Amistad" ID. (Johnson, IL)

WMLK, 9465 at 0411. (Carson, OK)

Radio Marti, 9525 at 0015 in SS. (Johnson, IL) 11930 at 2110. (Giannarelis, Greece)

VOA Europe, special broadcast from Greenville. 21585 at 1900. 19261.5 LSB feeder with VOA Europe. (Giannarelis, Greece)

WINB, 15145 at 2256, EZL and full ID 2300. (Carson, OK)

USSR: Radio Moscow, 9530 at 0208; 11735//11750//11760 at 2250; 15550 in PP? at 2207 and 17585 at 1739 in EE. (Heumann, TX) 11750//12060 at 0430; 15185//15315 at 2120; 17695 at 1940. (Walbesser, NY) 12040 at 2300 to North America and at same time in SS on 12050 and PP on 12060 (Johnson, IL) 9540//9750 at 1317; 11950 at 0429; 15425 at 2116; 15475 at 1706 and 17665 at 2144. (Carson, OK) 17670 at 1600. (Neff, FL)

Vatican City: Vatican Radio, 11725 at 0315. (Carson, OK) 15180, tentative, 0015 in SS. (Heumann, TX) 17710//17730 at 2105 to Africa. Also 2058 sign on 17710//21650 to Africa. (Johnson, IL)

Venezuela: YVTO time station, 5000 in SS at 0537. (Walbesser, NY)

Radio Valera, 4840 at 0435 and 0510 in SS with IDs. (Mierzwinski, PA)

Ecos del Torbes, San Cristobal, 4980 at 0224 in SS with mentions of San Cristobal. (Johnson, IL)

Radio Tachira, 4830 at 0425 in SS. (Mierzwinski, PA)

Radio Nacional, 9540 at 0010 with SS ID. (Johnson, IL)

Radio Rumbos, tentative, 9660 at 0044 in SS. (Heumann, TX))900 sign on. (Johnson, IL)

Yugoslavia: Radio Yugoslavia, 7115 at 0338 in unidentified language. Also 11735 at 0001 in EE. (Carson, OK)

West Germany: Deutsche Welle, 6040 (via Antigua, ed) and 9565 at 0117. 9670 (via Antigua, ed) at 0536. (Carson, OK) 15390 at 1917. (Walbesser, NY)

VOA from Wertachal site, 11785 at 0432. (Carson, OK)

Thanks and a tip o' the headphones to the following reporters this month:

J. Mark Heumann, Port Arthur, TX; Frank Mierzwinski, Mt. Penn, PA; Tim Johnson, Galesburg, IL; Victor Menayang, Austin, TX; Bjorn F. Vaage, Granada Hills, CA; Mark A. Northrup, Gladstone, MD; George Neff, Tampa, FL; Kevin Meade, Cape Elizabeth, ME; Fred Taylor, Portland, OR; William Walbesser, Ravena NY; John Spencer Carson, Jr., Norman, OK and Aris Giannarelis, Athens, Greece.

Until next month—good listening! PC

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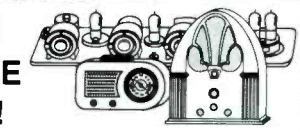

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TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

One of the hottest innovations in mobile communications technology may well be going on without your knowledge. That's because it hasn't (yet) received the national media attention it deserves. Still, it's growing, nevertheless.

This development is called *Starcom*, and it's accomplished via the use of SONY *2-Wayfarer* equipment. What it does is put two-way satellite communications aboard trucks, RV's, yachts, and other vehicles. And what an amazing array of services it offers!

This is *not* a voice communications system. The vehicle operator uses a keyboard terminal with an LCD display. The display presents 160 characters, broken into four lines of 40 each. The keyboard has a full standard typewriter layout plus special cursor and function keys.

What this does is uplink the vehicle through on-board 50-watt transmitting equipment (on a center frequency of 1618.25 MHz) to a transponder on one of the four *Geostar 2C* satellites. Signals from the satellite are downlinked and received by the equipment on 4184 MHz. Receiver modulation is specified as Direct Sequence BPSK 128 character message size per packet; setting time (typical) 15 seconds; forward error correction rate 1/2 (K = 3) Viterbi decoder.

The mobile transceiving hardware consists of two metal boxes (can be installed concealed) that weigh just over 20 lbs., and include a *Loran C* navigational receiving system in addition to the satellite communications gear. Two antennas are required. The *Loran C* antenna is a 16-inch whip. The satellite antenna is a disk about 9.5 inches in diameter by 3-inches high. It has no moving parts and doesn't need to be "steered" towards the satellite in order to function.

The satellite links this communications equipment with operators at *Starcom* headquarters. And what an array of services can be handled through *Starcom*!

Starcom Services

Emergency Messages: Operators will respond to a medical emergency by sending medical assistance. If a subscriber's medical records are on file with *Starcom*, operators will FAX them to the nearest hospital while help is enroute, plus notify a member of the subscriber's immediate family.

If there is a mechanical breakdown, operators send road service directly to the location. The on-board *Loran C* equipment pinpoints the location to within about 1/4-mile anywhere in the continental U.S. If the vehicle specs are on file at *Starcom*, operators will notify the road service of the tire size, engine type, year, make, and model of the vehicle.

Systems Monitoring: Most burglar alarm systems can be connected to the unit. If unauthorized entry occurs, *Starcom* operators immediately advise the nearest law enforcement agency and advise them of the exact location.

If a vehicle is stolen, the owner can call a local law enforcement agency and have them contact *Starcom*. The operator can advise them of the vehicle's exact location.

A wide variety of sensing devices can be hooked to the *2-Wayfarer* unit for continuous monitoring while on the road or in storage. Operators can quickly respond to any malfunction or failure.

Message Service: A person can leave a voice message of up to five minutes by dialing the *Starcom* electronic voice mailbox. The subscriber is then notified (via keyboard) that there is a voice message to be delivered. To hear the message, the subscriber calls the mailbox number from a Touch-Tone landline telephone. The message is sent automatically and retains its confidentiality.

Another way messages can be left is by a person dialing up a subscriber's special telephone number assigned by *Starcom*.

Sony's 2-Wayfarer mobile communications system hooks your vehicle, trailer, or boat to a satellite.

Trucking companies were the first on line to use Starcom and the Sony 2-Wayfarer equipment. (Courtesy Sony Mobile Systems.)

The Portable Office, by Comm 88 Cellular, looks like something straight from a "007" movie.

Audiovox recently introduced the TRAN-55 transportable phone.

The operator can then take the message and immediately relay it via keyboard, such as, "Call office ASAP regarding last minute price and spec revisions of Model B-588 prior to negotiating with XYY Corp."

Alternately, a mobile subscriber can send a keyboard message to a *Starcom* operator to relay to a specific person when they call in. Example: "When Joe Marks calls, advise him that I couldn't reach him by phone to let him know am running late and will be in Granite Falls tomorrow at 3 p.m. instead of 10 a.m."

Two-way comms between vehicles in the *Starcom* system (via keyboard terminal) are also available.

The Cost Factor

A person or company can lease a *2-Wayfarer* installation with *Starcom* services for 60 months (5 years) for approximately $185 per month. Or, an outright purchase of the equipment can be made for about $5,000. Some optional extras available include a pager, also a printer to make hard copies. *Starcom* service is $95 per month for those who own their equipment.

Subscribers get unlimited use of the service included in the lease, or flat rate monthly fee. Unlike cellular service, where you pay for air time by the minute, plus healthy roaming fees should you stray from your normal local service area, there are no air time, roamer, or other charges over the basic fee no matter how much use is made of *Starcom*. All messages are automatically encrypted for complete security.

Another nifty feature is that while cellular service is not available in so many parts of the nation, especially away from Interstates and population centers, *Starcom* is usable everywhere in the Americas from the Equator to just below the Arctic Circle.

Installation and maintenance facilities are located in many major U.S. cities, and there is a maintenance facility in Toronto, Ontario. There is a three year maintenance contract that covers repairs beyond the initial one year warranty.

E. A. King, Executive Vice President of *Starcom*, tells me that this system has proven immensely popular with trucking fleets and business users. New inroads are now being made into the RV market, with many units being installed in mobile homes, fifth wheels, and motor homes. RV users have found that *Starcom* offers security, message, emergency road service, and medical assistance not available over such a wide area in any other communications service, and at a flat rate price.

For more information on this system, contact Starcom Communications, 4245 Kemp Blvd., Wichita Falls, TX 76308, or circle 102 on our Readers' Service.

Makes A Good Point

Bob Brown, from Denver, CO passed along a newspaper clipping that brought up an excellent point. This was contained in Leroy Williams' "Traffic Beat" column in the *Rocky Mountain News*.

The point being made was that while it's possible to dial up 9-1-1 on your cellular to summon the police to the scene of an accident or crime, the cellular service may not necessarily put the call through to the appropriate agency. That's because, of the way cellular systems are structured, combined with the fact that this technology isn't particularly adept at sorting out the various law enforcement jurisdictions within the spread out area served. A single cellular service provider, for instance, could cover an area that is a patchwork of jurisdictions divided up between the state police (or highway patrol), several county sheriffs, as well as various township and municipal agencies.

As a vehicle travels and communicates via a cellular phone, it is in contact with a succession of different cell sites along its route. The mobile station is constantly being handed off from one site to another, with the site receiving the strongest signal from the mobile unit getting the job of handling the comms.

While each individual remote cell site may well be programmed to dial up 9-1-1 and reach the local police agency nearest that site, with some cellular systems there may be no assurance that it is the correct agency if there are two or more jurisdictions within that site's signal coverage. Furthermore, the signals reaching that site could well be from a mobile unit located in a jurisdiction actually covered by some other site.

The result is that time is wasted when one agency has to determine the proper jurisdiction and then transfer the call to the proper agency. Occasionally, calls have been dropped (lost) in the process.

Williams cites one example of a driver who was nearly run off the road by a drunk driver in the city of Aurora, CO. When she dialed 9-1-1, she connected with the Arapahoe County Sheriff's Department, which was the wrong agency for her location.

The two cellular service providers in the Denver area handle 9-1-1 calls differently

HAM RADIO IS FUN!

It's even more fun for beginners now that they can operate voice and link computers just as soon as they obtain their Novice class license. You can talk to hams all over the world when conditions permit, then switch to a repeater for local coverage, perhaps using a transceiver in your car or handheld unit.

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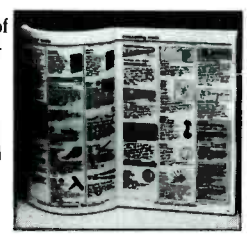

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from one another. *Cellular One* calls are handled in a manner generally similar to the method described above. *US West*, the other supplier, feeds all 9-1-1 to the Colorado State Patrol, which then transfers them as necessary to other agencies. Williams mentions that a system called *Enhanced 9-1-1* may ultimately be the best approach to dealing with the problem, and cellular companies can handle such calls.

This problem has come up in many areas of the nation. It certainly cries out for some initiatives to find a timely and workable solution before a system the public relies upon 9-1-1 ends up costing lives instead of saving them. It isn't fair to the public. It isn't fair to a lot of hard working police officers.

Portable Office

Steve Beatty, N0CRE, of *Comm 88 Cellular* came up with a clever concept known as the Portable Office. This is a briefcase cellular system that can be used with interchangeable peripherals such as FAX and copier, printing data terminal, or laptop PC via RJ11C jack.

Four models are available, each in a rugged, weatherproof, black aluminum case with custom interior and combination lock. Power can be from rechargeable batteries and from the AC/DC power supply and battery charger. Automatic antenna switching is included for selecting the removable 1/4-wave ground plane, or the mini-UHF port for external antennas.

The cellular in the system is a Motorola unit (choice of six models).

This is a truly exotic family of portable communications units, each looking like something from a James Bond film. When you open up the briefcase at the business conference or country club, you'll definitely be the center of attention. For more information on the Portable Office, contact Comm 88 Cellular, 3750 Texas Ave., Minneapolis, MN 55426.

It's In The Bag

The Audiovox TRAN-55 is a new transportable cellular. It's small and compact, can be operated from its own battery pack or plugged into a cigarette lighter. A seat belt strap securely mounts the phone into any vehicle.

Enclosed in a soft carrying case, it is a 3 watt unit that has features like multiple-city registration, last-number redial, 50-number memory, on-hook dialing, automatic storage, and call-in-absence indicator. A optional microphone is available for total hands-free operation. The MSRP is $695.

For more information, contact Audiovox, 150 Marcus Blvd., Hauppauge, NY 11788, or circle 103 on our Readers' Service.

We are always interested in hearing from our readers with questions and comments, ideas and opinions, news clippings, anecdotes and suggestions relating to mobile phones and other related communications systems. PC

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Some FCC busts over the past couple of months don't seem to have slowed down the pace of pirate activity. Here's what our reporters are hearing lately.

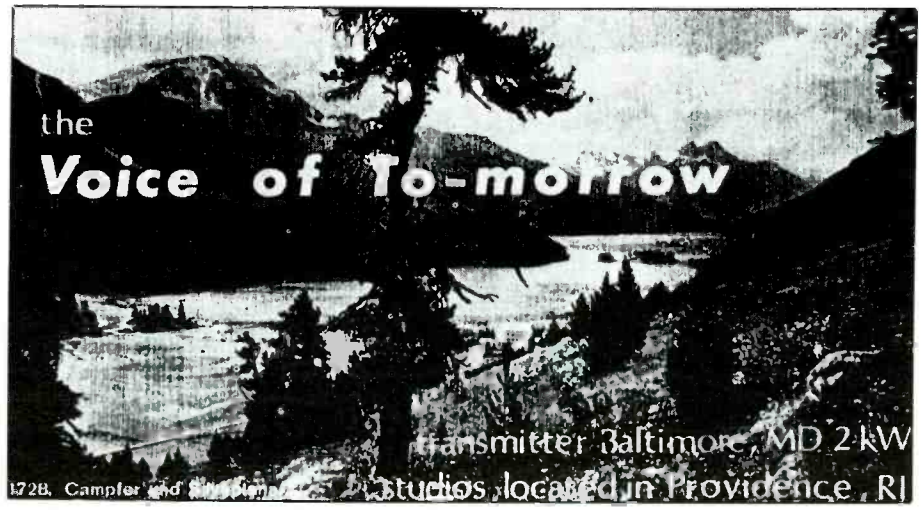
Tim Johnson in Illinois found **Radio Clandestine** on 7413 at 0215 with R.F. Burns, as usual joking about "transmitting from a vessel somewhere off the coast of North America." No QSL address was given—and I don't know if there is a current working address for these guys. Larry Turney of Chicago had them on 7416 variable at 0410. Johnson had them there as early as 0200 some days before his 7413 logging.

Midnight Radio was noted by Tim on 7415 LSB at 0029 with hosts Captain Midnight and Maxwell Silver. They said they hope to become the "band's most awesome pirate station." Tim notes that the program content was pretty crude. Gave P.O. Box 109, Blue Ridge Summit, PA 17214 as the address, but we don't suggest bothering; it's the address of TAB books!

The Voice of Tomorrow was heard by Tim Johnson on 6239.7 at 0255-0330, with someone giving a crackpot lecture on the holocaust, trying to prove it was all a propaganda effort. ID at 0317: ". . . breaking down the barriers of censorship to be the voice of white America, this is the Voice of Tomorrow." Ended with the Nazi song "Tomorrow Belongs To Me," kettledrum and wolf howl interval signal, then off at 0330. Also heard by Jeff Foster in Michigan on 7410 at 0026, with open carrier, then the wolf call at 0030. The program included a speech that "focused on a call for a nationalist movement, as opposed to global ideologies and religion." Address announced as P.O. Box 314, Clackamas, OR 97015.

Another Tim Johnson logging was the **Revolutionary Voice of Plainsville** (some say Slanesville, Ed) "from somewhere in Greenland" on 7410 at 0515. The station got into a conversation with WLIS about that time. At one point they played the old Radio Prague interval signal and gave such frequencies as 7355, 6855, 15475, though Tim points out that this was most likely a spoof. Address given as the Voice of Revolutionary Plainsville, c/o Plainsville Information Center, People's Republic of Plainsville Embassy, P.O. Box 6527, Baltimore, MD 21219. This station was also heard by Turney in Chicago on 7410 at 0550. Pat Murphy in Virginia had what was surely this station on 7410 at 0055. After 0700 the station was heard in contact with a station calling itself WLAF, which gave an address of P.O. Box 3083, Indianapolis, IN 46230.

Jeff Foster caught **WGAR** with Krishna readings and Mantra chants on 7415 at 2120-2145. No address announced.



White supremacist pirate The Voice of Tomorrow has made another of its rare appearances.

Jeff also logged **Radio USA** on 7420 at 0201 with just an ID. Then he found them at 0320 on 7395 with "MBS" and "Miss Scarlet." Included punk rock and gave the Wellsville address. Turney had this one with an ID at 0409.

Larry Turney had **Hope Radio International** from 0104-0144 on 7399 variable. He also had **Radio Comedy Club International** on 7377 at 0520. Still another Turney logging was **WEXK**, ID'ing as "the bad boys of rock" at 0200 on 7415.

Pat Murphy in Virginia logged RFM on 7400 at 0421 with ID "You are listening to RFM—can you hear us?" Gave an 800 number, but there was too much static to copy this. Also gave the TAB company's Blue Ridge Summit address.

Foster in Michigan had **Hope Radio International** on 7380 at 0510-0545 and the "inaugural transmission" of the Pirate News, with host "Radio Animal—the only radio announcer known to have fleas.."

Tim Johnson found **WLIS** (We love interval signals) at 0515 on 7410 which carried a number of interval signals of legit stations as well as a Monty Python feature. Said it was a member of the "Illegal Radio Network." This was also heard by Turney at 0515-0545.

One Voice Radio was logged by Foster on 7416 at 0208 with reading from a medical journal. Gave TAB's Blue Ridge Summit address. This was also heard by Tim Johnson who heard announcer identifying himself as "Happy Joe" who signed off with "Remember, you are responsible for your body. Your body—your mind." Turney also had this one, at 2338 on 0715. Save your postage until a better address comes along.

Robert Ross in Canada had **Tube Radio** on 7394.9 at 0100, with what announced as its second broadcast . . . "broadcasting from a tube to the world." "Weird" music and comedy bits. Address given as Box 6527, Baltimore, MD 21219. Also included a talk on radio tubes.

East Coast Pirate Radio was another logging by Larry Turney who had this one on 7417 at 0415-0423. Also heard by Foster on 7415 at 0433 with some cuts from Meatloaf's "Bat Out of Hell" album. "Good signal, bad taste," says Jeff.

Joe Jamaica in Florida reports an FM pirate operating in the Miami area on 89.3 and "traced" to the University of Miami campus. Joe says the programs, hosted by "Analog Ray," vary from industrial music to light jazz. Only the frequency is announced, no call or station name. Joe points out that the University of Miami has a licensed station, WVUM, on 90.5. He estimates the pirate is running around 10 watts.

Robert Ross's mailbox has seen a lot of pirate QSL's recently. Bob reports replies from WINN, WKND, Radio Dublin International, WLIS, Pirate Radio UK (via East Coast Pirate Radio), Radio USA and Tube Radio. You must really have a knack for pulling in those pirate QSL's, Bob! Good going!

That runs us out the door for this month. Remember to send in your pirate loggings whenever you have any. I'm also looking for news direct from pirate station operators! And copies of pirate QSL's, station photos, news stories and so on. Incidentally, in answer to one reader's question, I can't return material. your participation is much appreciated—both by me and, judging from the letters I get, the readers out there who are trying to log pirate stations. Thanks! PC

BY DON SCHIMMEL

COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Further study of the USB 6926 kHz (0232-0324) intercept by Perez, WI which appeared in the July 1990 loggings indicated the item might very well be a message transmitted by the Unidad Revolucionaria Nacional Guatelmalteca (URNG). The format of the text, SS/5F groups with 6 groups per line and each line numbered, was the same as that seen in previous messages copied by other monitors and identified as being URNG transmissions.

Sorry folks, but I made some typing errors in the April column and thus some of the SAC information was incorrect. W-103 is 6757 kHz; S-311 is 11494 kHz (Airborne Command Post Training); S-312 is 13211 kHz (Airborne Command Post Inter-Communication) and 3295 kHz is S-303.

Larry McMahan, GA sent in frequencies and schedule details for the retransmission of shuttle audio by the Goddard Amateur Radio Club (GARC). For changes in schedule, the Club advised that shuttle rebroadcasts be listened to.

kHz	Skeds
3860	Nights (6pm-10am)
7185	Days (8am-6pm)
14295	Whenever on the air
21395	Sometimes
28650	Sometimes

(all above SSB mode)

GARC transmits only when they have operators and when the astronauts are awake. If the flight is launched near 8 am EST the astronauts' sleep period is typically from 7pm EST-3am EST. If it is a Spacelab mission the astronauts are on a 24 hour rotating schedule. GARC does not transmit shuttle audio during DOD missions.

While on a trip in Argentina, Beale Riddle, Washington, DC was invited into the cockpit by the Argentine Airlines pilot during a Buenos Aires to Bariloche flight. When he told the pilot how easy it was to hear HF aeronautical ops from South America in Washington, DC he gave Beale the following info:

The Southern South American Aeradio "party line" primary frequency is 10024 kHz with secondary frequencies of 6649 and 4669 kHz for position reports and handoffs ("transferenicias") between Aeradio centers in the region. Centers in the region are Cordoba, Resistencia and Mendoza in Argentina; Santiago, Antofagasta, Puerto Montt and Punta Arenas in Chile; Lima and Iquitos in Peru; Guayaquil in Ecuador; La paz and Santa Cruz in Bolibia and Asuncion, Paraguay. Aerolineas Argentinas uses 11282 kHz as a primary and 2965/5547 for secondary frequencies between Buenos Aiires (Ezeiza) and Comodoro Rivadavia air zones.

Here are some comments by recent contributors: Phillip Cegieliski, CA says he mainly enjoys listening to SAC channels and does his monitoring with a Radio Shack DX-440 plus two SW antennas on the roof.

Greg Putrich, MN has a Sony 2010 and a 100' longwire for his antenna.

Kevin Tubbs, West Germany uses s NRD-525 with a RFP-40 Signal Intensfier and a 65' dipole.

Ken Schroeder, IL wrote that after a 22 year layoff he decided to resume the SWL hobby and monitored a numbers station with a 44 year year old Hallicrafters S038 receiver with a 12 foot wire strung across the kitchen.

From South Africa we heard from Dick Moon who uses an ICOM R71 receiver, Infotech M600 decoder and a 60 meter longwire. He mentioned he recently has been QSL'ing aircraft flights. So far he has QSL'd 12 aircraft from 8 airlines and has more in the pipeline. He added that most pilots seem surprised that their signals are heard so far away, and he has received some interesting letters, air navigation maps and brochures, etc.

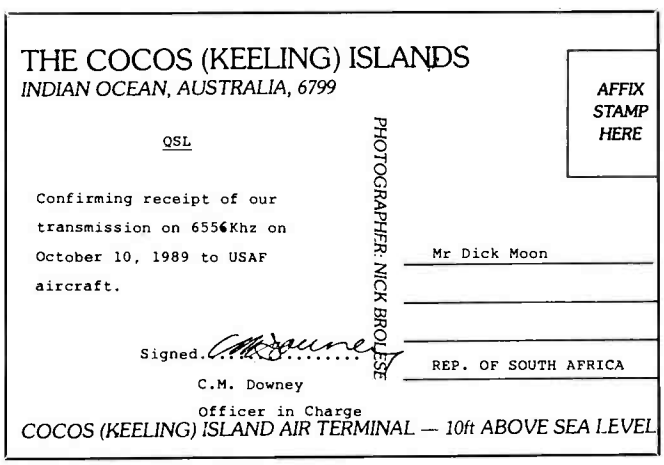
A monitor of one year standing is Dan Grote, IL whose letter stated "I am 14 years old and very much like to monitor utility stations, especially military communications. My receiver is a Realistic DX-440 used with a longwire antenna.

Errol Urbelis, NY listed his SW equipment as Hallicrafters SX-25/SX-43/SX-99 receivers, Hammarlund HQ-180 and a Sony ICF2010 plus a GE World Monitor. His SW antenna is a 100' longwire. He advised he has been SWL'ing for 33 years. Errol sent in an article from TIME magazine which outlined how the US Air Force OTH Radar system can be used to detect drug smuggling aircraft. When the Maine OTH system is joined by the other OTH installations in Alaska, California, and North Dakota, the combined systems will be able to cover millions of square kilometers from every part of the US coastline.

Based on his analysis of "numbers" transmissions during Jan-May 1990, Simon Mason, England prepared the following report:

YL/GG - DFC37, DFD21 & 2L stations Papa November, etc. Passing traffic as normal. Thought they winding down as the PN traffic in Feb showed a record low day with just four addresses. However in April there were 9 messages on one day.

YL EE/GG 3/2F 'Long count' stations - Same activity as last years but now suffering from QRM from suspected Iraqi jamming.



THE COCOS (KEELING) ISLANDS
INDIAN OCEAN, AUSTRALIA, 6799

AFFIX STAMP HERE

QSL

Confirming receipt of our transmission on 6556Khz on October 10, 1989 to USAF aircraft.

PHOTOGRAPHER: NICK BROLESE

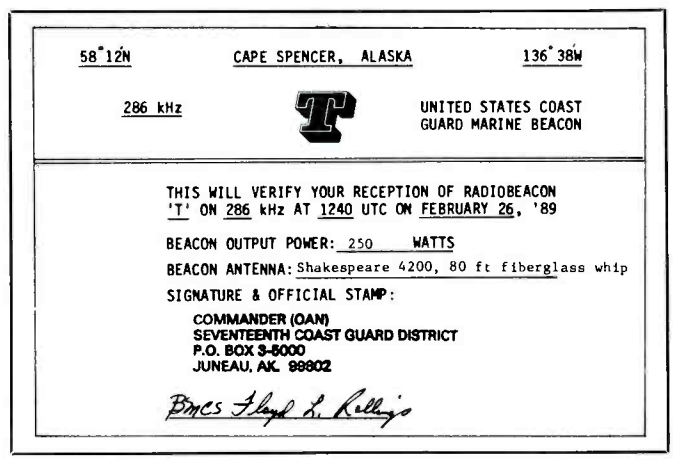
Mr Dick Moon

REP. OF SOUTH AFRICA

Signed. C.M. Downey
Officer in Charge

COCOS (KEELING) ISLAND AIR TERMINAL — 10ft ABOVE SEA LEVEL

This QSL from the Cocos Islands was sent in by Dick Moon, Rep. of South Africa.



58°12'N CAPE SPENCER, ALASKA 136°38W

286 kHz

UNITED STATES COAST GUARD MARINE BEACON

THIS WILL VERIFY YOUR RECEPTION OF RADIOBEACON 'T' ON 286 kHz AT 1240 UTC ON FEBRUARY 26, '89

BEACON OUTPUT POWER: 250 WATTS

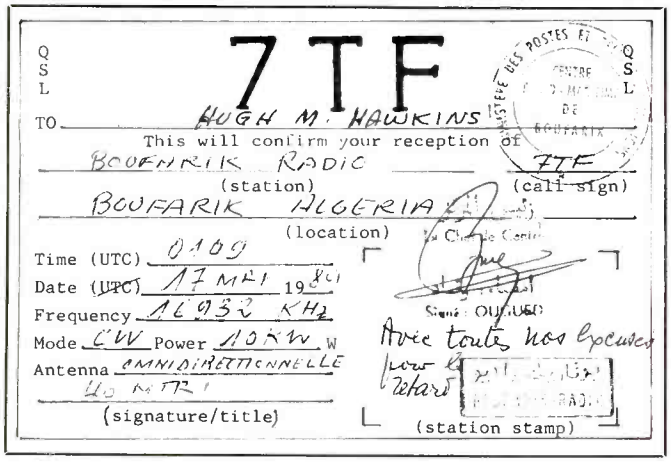
BEACON ANTENNA: Shakespeare 4200, 80 ft fiberglass whip

SIGNATURE & OFFICIAL STAMP:

COMMANDER (OAN)
SEVENTEENTH COAST GUARD DISTRICT
P.O. BOX 3-5000
JUNEAU, AK 99802

BMCS Floyd L. Kelly

Here is the PFC Steve McDonald, BC, Canada received from a CG Marine Beacon.



QSL

7TF

TO HUGH M. HAWKINS

This will confirm your reception of

BOUFARIK RADIO (station) 7TF (call sign)

BOUFARIK ALGERIA (location)

Time (UTC) 0109

Date (UTC) 17 MAI 1961

Frequency 16932 KHz

Mode CW Power 10KW W

Antenna OMNIDIRECTIONNELLE 40 METRES

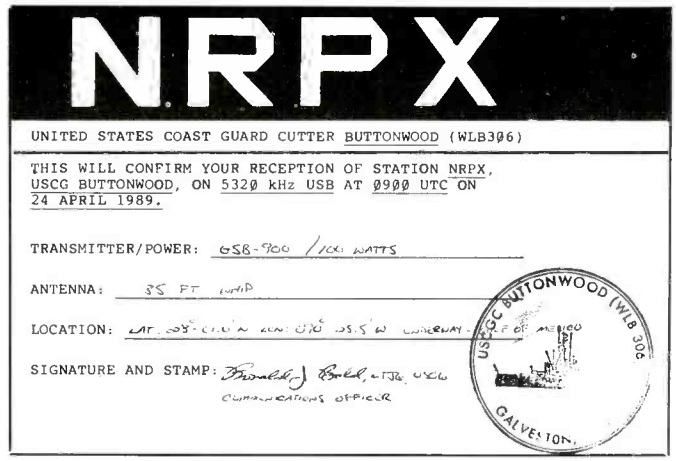
(signature/title)

Signé: OLIVARES

Avec toutes nos épreuves pour le retard

(station stamp)

Hugh Hawkins, MS said it took him two years and five reports before he had a PFC returned.



NRPX

UNITED STATES COAST GUARD CUTTER BUTTONWOOD (WLB306)

THIS WILL CONFIRM YOUR RECEPTION OF STATION NRPX, USCG BUTTONWOOD, ON 5320 kHz USB AT 0900 UTC ON 24 APRIL 1989.

TRANSMITTER/POWER: GS8-900 / 100 WATTS

ANTENNA: 35 FT WHIP

LOCATION: LAT. 29° 17.0' N LON. 094° 55.5' W GALVESTON BAY ENTRANCE

SIGNATURE AND STAMP: [signature] LTJG, USCG COMMUNICATIONS OFFICER

USCG BUTTONWOOD (WLB 306) GALVESTON

The CGC Buttonwood returned this PFC to Dave Sabo, CA.

YL/GG - 3258 kHz - 'Ship's bells' sign-on station. Same traffic as a year ago.

YL EE/GG/FF with CW 4F sign-on station. Reduced activity but still exists.

YL/GG - 3217/3820 Four-note rising scale sign-on station. Very nearly completely vanished. Used to be daily. Last heard 3820 kHz only in April. Traffic when sent is very short.

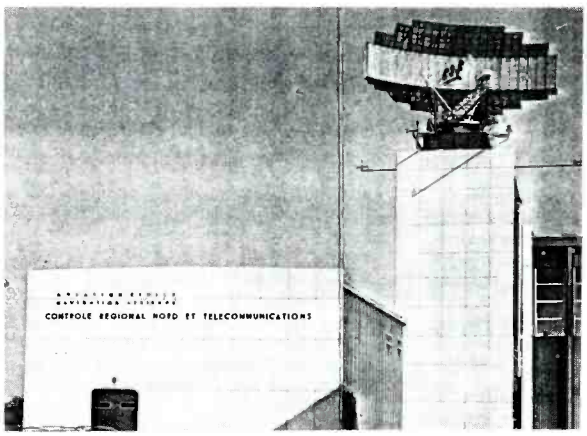
YL/CZ - 'Drum & trumpet' sign-on station. Very infrequent. Heard in April with 'Gruppi 19' message. Previously passed a message in January.

YL/GG - 'Swedish Rhapsody' musicbox station. Regular schedule still in force. e.g., Sat/Sun 9457 kHz at 1000 UTC, Sat/Sun 5340 kHz at 2100 UTC.

YL/RR/CZ/Serbo-Croat/Polish? - on 4030/4883 kHz etc is still very active.

OM/RR - Still very active on many frequencies from 5176 to 21862 kHz.

YL/GG - '3F Strich 00', YL/EE - '3F Oblique 00' and YL/RR - '3F Prunta 00'. Very odd station. GG and EE have never passed 5F messages but RR has. RR uses jezinta, dvonta, trunta, czdiri, peyonta, sesh, sedm, osem, prunka, zero for figures 1-0.



Dear Sir -
Thank you for your reception report.
I point out that we broadcast meteo-reports, two times per hour (from 55 to H+5 and from 25 to H+35) on other two frequencies, 10066 kcs and 2917 kcs. Simultaneously -
the frequency 5551 kcs is exact -
Yours faithfully -

CENTRE DE CONTROLE RÉGIONAL NORD
BUREAU CENTRAL DES TÉLÉCOMMUNICATIONS

C. C. R. — B. C. T. — NORD
B. P. — 108
AÉROPORT D'ORLY
FRANCE

Avec nos meilleurs vœux

Bob Combs, CA sent in this QSL.

RCA
Box 397
N. Chatham, Ma. 02650

Vincent Reh

Dear Mr. Reh: January 20, 1976

This is to acknowledge your report of 8586kHz signals on January 10, 1976 at 1719GMT.

Chatham Radio/WCC is the largest U. S. Coast Station in the marine service and we operate in all of the marine bands from "LF" through the 22mHz band.

Our power depending on the transmitter in use varies from 2.5Kw to 20Kw. For transmitting antennas we use doublets, H-over-2, Verticals, long wire and have a 300-foot tower for our 500/436kHz transmitter.

Our receiving antennas are Rhombic and dipoles.

The receivers presently in use are RCA Type AR-88, AR-91 and R6A, Marconi Type NS-702 and National HRO-500 (solid state).

Thank you for your report.

Very truly yours,

E. G. Hammons
Manager
Chatham Radio/WCC

EGH/mc

Another oldy from the collection of Vince Reh, NY.

OM/Rumanian - 'Skylark' heard in March with tune only. Last 5F message noted was in April 1989. Far cry from former near nightly appearances on 6825-6850 kHz.

YL/EE - 'Ready, Ready' station is still very active.

YL/GG - with five dashes after 3F, 1 sign-on. Still very active.

YL/EE - 'Lincoln Poacher' tune sign-on. Still regular nightly schedule on both 6485/5746 kHz.

Simon also provide these remarks concerning jamming he had noted apparently targeted against 'numbers' transmissions.

"The YL/EE 3/2F stations are regularly affected by the same warbling jammers used by the Iraqis to jam various clandestine stations and VOA, Israel, etc. The YL/EE 'Lincoln Poacher' station is always jammed. Originally when this station appeared in December 1989, it was not jammed. Then 6485 kHz was affected, but the paired frequency which was then 5422 kHz was in the clear. This was changed to 5746 kHz and was still not jammed. Now, however, both frequencies are jammed. I don't think that the 3/2F station and the 'Lincoln Poacher' station are related as their carriers are very distinctive. You can tell a 3/2F carrier even when there is no traffic. It is sort of hollow and 'tubey' sounding." Our thanks to Simon for another fine report.

Andy Gordon, CT advises there are four more USN ships soon to be decommissioned and they are USS Lexington, AVT16, MARS NNN0CYE; USS Midway, CV41, NNN0CQQ; USS Iowa, BB61, NNN0CMD; USS New Jersey, BB62, NNN0CNH.

Andy determined that the Charleston Test Control, also referred to as SESEF Charleston, has a primary frequency of 7485 kHz and a secondary of 9950 kHz. Ships out of Mayport and Charleston use this station in lieu of Norfolk SESEF who covers Norfolk, Little Creek, Newport, Groton and Philadelphia, including the shipyard at Bath, ME.

NAVCAMSLANT sometimes uses 7493 kHz to communicate with 'Lant area' ships.

USN small craft, like YP's and CT's use 2720 kHz.

New MARS station assigned to USCGC Escanaba WMEC907, NNN0CCP.

Before passing on to the loggings, I want to thank everyone who has sent in material in the past. The mail is steadily increasing and more first-time contributors are joining us each month.

301: Beacon AB, Cabo San Antonio LS, Cuba at 0437. (Crabill, VA)

305: Beacon UIS, Isabela, Cuba at 0429. (Crabill, VA)

332: Beacon BE, Bedford (Hanscom AFB, Loc/OM), MA. (Fernandez, MA)

348: Beacon UHA, Havana, Cuba at 0513. (Crabill, VA)

387: Beacon PV, Providenciales, BWI at 0338. (Crabill, VA)

400: Beacon BGA, Bucaramanga, Colombia at 0639. (Crabill, VA)

407: Beacon SWA, Islas del Cisne, Honduras (Swan Island) at 0230. (McMahan, GA)

415: Beacon CBC, Cayman Brac, BWI at 0245. (McMahan, GA)

419: VFN, Canadian CG in Montreal. CW wx bcast, off at 0032. (Grubbs, NY)

446: CLK, Nuevitas Radio, Cuba in CW at 0410 wkg UZXF, m/v Kapitan Meshchenyakow on duplex freq 454 kHz w/plaintext EE telex. (McMahan, GA)

515: Beacon RRQ, Rock Rapids Municipal, IA. (Putrich, MN)

520: Fax in LSB at 0443. (Putrich, MN)

521: Beacon ORC, Orange City Municipal, IA. (Putrich, MN)

2054: VAK, Victoria CG radio w/marine info bcst in USB at 0423-0427. (Sabo, CA)

2514: Halifax CG Radio in USB wkg vessel Andrea Gail w/pp to party on shore, hrd 0120. (Fernandez, MA)

2670: NODT, USCGC Sassafras (WLB-401) clg Commsta Kodiak in USB at 0521. (Sabo, CA)

2716: NWHI, USS Racine LST1191 wkg Long Beach Control 2 at 2253; NJST, USS Thatch FFG43 at 0315 wkg San Diego Control 1' NMMJ, USCGC Sherman WHEC720 wkg San Diego Control 1 at 0333. All USB. (Sabo, CA) NIDC, USS Valdez FF1096 clg New York Harbor Control at 1040; NJCN, USS Fletcher DD992 clg Long Beach Control 2 at 0855; NREB, USS Exploit MSO440 wkg Newport Port Control Secondary at 1005 w/request for wx & sea state in harbor, tug & pilot; Autec Operations (General Electric) vessel LC1647 wkg Snapper Base at 0330 w/position report; Range Rover, one of Autec Ops Research vessels clg Mayport Tug Control but Mayport doesn't guard HF, only VHF bridge to bridge; NUSC Ranger (pronounced NUSK-Ranger) wkg Autec Ops at 10000, NUSC stands for Naval Undersea Systems Center. Ranger is one of 3 boats used by Autec Ops, incl Range Rover and Range Master for ASW Research; USN Torpedo Retriever TWR682 wkg Kings Bay Harbor Control at 0140. This vessel is not a commissioned USN unit, but instead is a service craft; HMCS Fraser DDH233 wkg QHM Halifax at 0930. Fraser was among the Canadian warships HMCS Gatineau DD236, HMCS Terra Nova DD259 and HMCS Athabaskan DDH282, which were steaming towards Shearwater Jetty for Customs clearance, after NATO cruise to foreign ports; USNS Marshfield T-AK-282 using callsign "Inbound Naval Unit" clg Charleston Navy Tug Control at 1115. Marshfield is operated by the MSC & carries torpedos, spare parts, and various fuels, as well as Poseidon missiles. Marshfield supplies underway Submarine Tenders who in turn supply the subs; HMS Arrow F173 using classified callsign 7QA at 1130, Fisher (Cape Radio) relayed msg for Canaveral Control as their receive side not wkg properly & they couldn't hear Arrow. (Gordon, CT)

2720: USN small craft YP694 wkg Norfolk Harbor Control at 1040. It is one of 48 used for instruction in Seamanship & Navigation at USN Academy, Annapolis, MD and at Naval Officers Candidate School, and Surface Warfare Officers School at Newport, RI. The YP694 is from Annapolis and was enroute to Norfolk. (Gordon, CT)

3067: MAC59398: in USB mode at 0532 attempting patch thru McClellan to Norton CP, but told to QSY 6738. a/c was a C-141 transport located 200 miles due west of Kansas City. (Sabo, CA)

3180: SLFB "X" in CW at 2152. At 2154 sent 3118T 15763 7T467 81T49 X. This foll by 3 rpts of groups then 8 X's and back to X mkr. (Tubbs, W. Germany)

4031: YL/CZ in AM w/5F grps. (Charret, France)

4066.1: NHKG, USS Ranger CV61 wkg San Diego CSS1 at 1020 w/Autovon call to NAS North Island; NNWI, USS Wisconsin BB64 clg NAVCAMSLANT at 0830. (Gordon, CT)

4081.5: NFMK, USCGC Seneca WMEC906 w/pp thru Commsta Boston to Boston RCC in USB at 0539 re SAR ops. QSX 4376. (Sabo, CA)

4373: Giant Killer to 7WN and 3CH to keep clear of active SAR area 30 mile radius below 2000 feet about 500 miles off Norfolk, VA. CG Rescue 1490 in contact w/Portsmouth dropped off 2 pumps to 90 foot fishing vessel Rebecca w/4 POB that was taking on water. 7NO was standing by area if needed. Monitored CG on 5696 kHz. Hrd 0323. (Willmer, MI)

4395: YL/GG in AM w/3+2F groups. (Charret, France)

4445: YL/SS in AM at 0220 w/5F groups. (Schroeder, IL)

4545: Two CW stns at 0145, one passing 5L groups. Spanish Nyeh (MW) noted. (D.P., NC)

4594: YL/GG in SSB w/3+2F. (Charret, France)

4625: Time station VEB2 (u/i Canadian location?) with pips every 3½ secs. Used to be every 2½ secs. Hrd at 0139. (Fernandez, MA)

4630: YL/EE in AM at 0345 w/5F grps rptd x2. Eastern European accent. (Willmer, MI)

4779: Msg of 3 character grps (alphanumerics) in CW at 0236. Each msg rptd several times. FEMA transmission. (Margolis, IL)

5015: YL/GG in AM at 0642 w/5F grps each grp rptd x2. (Fernandez, MA)

5060: CG Cutter Northland wkg Cape Radio at 1025 w/rdo check. Cutter on station & standing by on 5060/10780 kHz. (Cigielski, CA)

5091: Mossad YL at 2028 w/ULX2 on wrong freq. At 2030 JSR here as usual. (Mason, England)

5182: YL/SS in AM w/5F grps. (Charret, France)

5190: XOF DE XVI (u/i stns) in CW at 2345. Clg but hvy WRM & no answer. (D.P., NC)

5230: YL/EE rpts MIQ2 in AM at 0031. Mossad. (D.P., NC); Mossad YL w/unusual mkr of MIW14B17Z1100 at 1800 in USB. (Mason, England)

5320: USCG Group Corpus Christi and Group Galveston both wkg NBRM, USCGC Point Monroe WPB82353 in USB at 0624. Cutter was enroute SAR ops for downed a/c, included sev ref's to an oil rig. (Sabo, CA)

5330: YL/EE w1-0 count and 348 at 2305. Warblers here & also on parallel freq of 7740 kHz. (Mason, England)

5340: YL/GG in AM w/music box sign-on w/5F grps. (Charret, France)

5349: Simplex CW net at 0000 w/control trying to send 5F/L grps but outstations IGK & MAF keep asking for rpts. Spanish Nyeh (MW) noted but no other special characters seen. Dropped in tfc 0020. (D.P., NC)

5498MYD DE XZD (u/i stns) in CW at 0025. No answer. (D.P., NC)

5591: Two OM/EE in USB at 0153 w/comms re fishing trawler ops in Gulf of Mexico. Similar group on 5604 kHz also in Gulf area. On 5604 a female opr came on and asked boats to shift freq but they ignored her. She gave id as Rainbow Radio which is an International Flight Support Service station operated by Sea Link Ltd., St. Johns, Nfld, Canada. The fishing boats were operating inside the World Wide aero bands. (Fernandez, MA)

5688: Tester 25 (RAAF call for a/c on test flight or from the Aircraft Research & Development Unit) in USB at 0648 wkg Airforce Sydney re rdo check & ETA infor. (Toms, Australia)

5695: YL/EE in AM rptng 15261 then at 2124 'Ready, Ready' and into 5F grps. (Willmer, MI)

5696: Rescue 1475 (helo) in USB wkg Boston/Cape Cod Air Stn at 1721 re 1475 being diverted to vessel for medivac of patient to Falmouth, MA for transport to hospital via ambulance; Rescue 2130 w/pp thru Boston re locating and ELT 200 miles off NJ coast but no vessel responding w/rdo or flares so will return in morning to resume search. (Fernandez, MA) CG 1469 wkg Commsta Miami requesting helo help from Bridgeport. Rafts in water but unable provide ample support. 1469 told to standby. 1469 then told by Commsta Miami that Bridgeport not launching a 2nd helo and has contraband been spotted. 1469 reported 2 large white bundles and some long and short cylinders in the water. 1469 advised he

Abbreviations Used For Intercepts

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

could stay on station for 1¼ hours. 1469 then advised Miami he would pick up the 7 persons in the rafts but not the contraband. At 0800 all 7 survivors on board 1469 and it departing for Nassau. Requested a fixed wing a/c on scene until CG Cutter could pick up the contraband. Hrd at 0715. (Cigielski, CA)

5700: SAC channel P-381. USB activity at 0253. (Putrich, MN)

5800: Card Table at 0432 clg Farm Boy for signal check on W-101; Appointee at 0451 w/alpha tfc, foll by Umbrella at 0453 w/same, then Umbrella to Appointee and Protrude. All USB mode. (Sabo, AC)

6200: USS Impervious MSO449 wkg USCG Commsta Portsmouth at 0045; NZXF, USS Sampson DDG10 wkg USCG Commsta Portsmouth at 0100. Sampson requested covered RTTY freq & QSY'd to 5346 kHz. 6200 kHz (ships) and 6506.4 kHz (NMN) are Systems Control net freqs; AAEC, US Army vessel General Frank S. Besson Jr. LSV1 clg USCG Commsta Portsmouth at 2300. NMN on 6506.4 kHz. The US Army maintains 4 of these Landing Ships (Vehicle) RORO (Roll on/Roll off) logistic support ships. The Besson passed an Amver msg to NMS for transmission to Fort Eustis, VA. (Gordon, CT)

6485/5786: YL/EE rptng 08430 w/Lincolnshire Poacher tune as interval signal. At 1810 a 200 group 5F message was sent. Warbler jammers were affecting both freqs all night until final msg at 2300. (Mason, England)

6507.1: YL/Yiddish in USB at 0524 w/5F grps, each x2. (Sabo, CA)

6522: Several OM/EE talking about barges, etc in USB at 0130. (Putrich, MN)

6667: OAVA DE KOAO (u/i) stns in CW at 0108. Clg stn cld rptdly w/no contact. Faint sig/hvy QRM. (D.P., NC)

6675: YL/CZ w/Norma 17, Gruppi 19 after 'drums & trumpets' and into 5F grps. (Mason, England)

6730: WAR 46/Brow Beater in USB at 0207 w/signal checks on primary/secondary freqs. This freq ref'd as Xray-93. Other freq was Papa-380. Then WAR 46 had Line Pole check rdo on Papa-380. (USAF ch. - poss another Shares freq.?) (Fernandez, MA)

6734.5: SLFHB "X" at 0134. (Putrich, MN)

6738: Huff 31 asked by Norton via McClellan if something fell off an a/c, reported by a civilan. Huff 31 said they knew nothing was amiss but would check. (Cigielski, CA)

6753: CHR in USB at 0130 w/wx tfc. (D.P., NC)

6756: Andrews AFB w/signal check from 201 (a/c?) at 2255 in USB. (Grote, IL) AF1 in Toronto wkg Andrews AFB & Crown w/series of rdo checks, some tfc incl departure & ETA in USB 0221 to 0300. (Hill, MI)

6761: Titanium wkg Eyetooth requesting wkg freqs for Billboard and Dilligent at 0350. At 0356 Eyetooth responded w/W-109 & X-904. (Hill, MI) Molecule to Railman for a line check (Railman airborne) told Molecule he was monitoring S-391 (6761) & S-395 (17975). (Cigielski, CA)

6763: U/i mil a/c in LSB w/pp to Griffith AFB re travel time and talk of Homeplate at 0127. (Warrington, OH)

6812: AF2 wkg Andrews w/tfc & sig check in USB at 2255. (Hill, MI)

6840: YL/SS in AM w/4F grps on top of YL/EE w/5L text in background (Mossad). The Mossad stn left air at 0236 while SS #s continued. (Fernandez, MA)

6876: YL/SS in AM w/5F grps. (Charret, France)

6965: SLHFB "E" w/vy strong sig at 1233. (Toms, Australia)

6997.8: U/i stn in CW at 0119 clg EIM4. Latter is Irish alloc. (Ed.)

7375: YL/GG in AM w/3+2F grps. (Charret, France)

7410: U/e sta in CW w/454 (x6) T86 T86. Off at 0240. (Warrington, OH)

7445: Mixing error has YL rptng KPA2 w/MIW2 on top at 2115 in USB. (Mason, England)

7485: NLOH, USS Preble DDG46 attempting raise SESEF Charleston on this freq and on 9950 kHz; NTCH, USS Thomas C. Hart FF1092 wkg NAVELEX Portsmouth (Naval Electronics Systems Engineering Center) at 2700 with request NAVELEX contact SESEF Charleston and tell them to come up on 9950 kHz for all mode tests for 4 emitters; NAVELEX Portsmouth wkg SESEF Charleston at 1900 re request for NAVELEX to shift to 4515 kHz and then 2150 kHz (Gordon, CT)

7493: NDVW, USS Nashville LPD13 wkg NAVCAMSLANT at 1640 w/covered voice comms. NAVCAMSLANT also wkg NZDN, USS Fairfax County LST 1193 at 1720. Nashville & Fairfax County made several rdo checks, shifting to 7495 kHz, some comms in clear and some in the green. (Gordon, CT)

7514: YL/Czech in AM w/5F grps. (Charret, France)

7527: Homeplate wkg u/i a/c w/instructions re landing at his stn. USB at 0657, DEA channel F. (Sabo, CA)

7535: NACK, USS Concord AFS5 wkg NAVELEX Portsmouth and Norfolk SESEF at 1930; NUTA, USS Sunbird ASR15 clg Norfolk SESEF at 1750 w/request for testing but SESEF involved in tests on another circuit so couldn't service Sunbird at this time; NZRM, USNS Albert J. Meyer T-ARC-6 making rdo check w/Norfolk SESEF. The Meyer is a cable repair ship formerly owned by US Army, now operated for US Navy by Military Sealift Command; NJFV, Uss Forrestal CV59 clg Norfolk SESEF at 1940. Forrestal requested SESEF to call Charleston Test Control via landline to ask them to bring up their 7 MHz freq for equipment test. (Gordon, CT)

7680: YL/EE in AM w/5F grps ending at 0240. (Fernandez, MA)

7740: YL/EE w/1-0 count and 260. In background, but not same xmtr was YL/GG w/Foxtrot Sierra & msgs for 099 and 361. EE stn was parellel w/5330 kHz. Hrd 2300. (Mason, England)

7745: OM/SS on USB at 0328 mentions "Commandante" and "inteligencia" in dictation of a msg. (Margolis, IL)

7780: OM/SS dictates lengthy msg to 2nd OM who gives brief whistled tone every time he wants other guy to continue with msg. USB at 0335. (Margolis, IL) This practice seen often in LA comms. (Ed.)

7831: Club Dues and Shark Kill in USB at 0344 re maintaining this freq as secondary. SAC channel W-105. (Sabo, CA)

8000: JJY, Tokyo time signal at 1505. (Moon, S. Africa)

8100: U/i Flight Service net operating in Miami, FL stns in Bahamas. Wkg Freeport, Marsh Harbor, Governor's Harbor, Georgetown, many others w/ETA of a/c's passenger reservations and connecting flights in Miami, etc. Noted only during daylight weekend hours in USB until about 2330 & then net closes shop. Miami id's as Control, a/c carry only a few persons and don't seem to operate on any regular schedule. (McMahan, GA)

8161: Dodger (RAN Patrol boat) wkg Darwin control re "Target contact, proceeding full ahead, target does not acknowledge 2 flares & small arms fire, request main armament procedure and clearance." USB at 0140. Lost contact as both stns moved to 'Tango' which is freq not known to me. Next day on news was report of Vietnamese fishing vessel caught fishing illegally in Australian waters and chose to try and outrun a RAN Patrol boat, surrending after the Patrol boat started removed the plugs and storm covers on the main armaments. (Toms, Australia)

8241.5: NNGP, USCGC Cherokee WMEC-165 at 0553 in USB w/calls to Commsta Portsmouth; NYWL, USCGC Thetis WMEC-910 at 0645 wkg NMN; USCGC Anacapa WPB-1335 at 0650 wkg NMG. (Sabo, CA)

8291.1: WYX4288, Explorer wkg WPE, Jacksonville, FL w/wx info in USB at 0051. (Grubbs, NY)

8465: Mossad YL rptng Sierra Yankee November 88 at 1805 in USB. (Mason, England)

8496: CLA20, Havana, Cuba w/SS tfc at 0337. (Moon, S. Africa)

8719: USS Defender MCM2 wkg COMSUPRON-8 at 1720 re msg from Defender to be relayed to Surflant. (Gordon, CT)

8731.3: Cape Town wkg m/v Aghulas in Antarctic at 0535. (Moon, S. Africa)

8765.4: Portishead, England in USB w/SAR bcst. Search was off Northern Spain. Nimrod a/c now searching area. Helicopters returning to RAF Argus till further sightings. All ships to keep lookout for flares & small radar targets. Hrd at 2150. (Willmer, MI)

8912: Omaha-050 to Slingshot for rdo check in USB at 0347 on DEA channel YC. (Sabo, CA)

8928: U/i stn w/5F grps in CW at 0340. (Hill, MI)

8975: Rescue 161 (RAAF Orion) w/AF Sydney/Hobart in USB at 0548 re final leg of search patter & another plane had located wreckage. This ref'd search for missing boat Bass Strait which was lost during local Yacht Race a few months past. Search resumed after life jacket and sand shoe with a foot still in it was found on a Melbourne beach. (Toms, Australia)

8976: KMN2, Lockheed Corp., Palmdale, CA wkg Lockheed 5823 in USB at 2130. Ref's to UHF 314.6 MHz. (Sabo, CA)

8984: CG Rescue 2115 to CAMMSPAC San Diego declaring an inflight emergency. Smoke in cockpit but dissipating. Gave position/altitude. A/c then went on to San Diego Lindburgh field & landed w/o incident. Hrd 0031. (Cigielski, CA)

8993: MAC 90002 wkg MacDill w/pp to Reserve Command Post at Kelly AFB. USB at 2337. (Hill, MI)

9027: Windsor 1198 wkg AF Sydney in USB at 0000 w/Ops normal, gives ETA Melbourne & says will call agn in one hour. This is Prime Minister's plane and PM was on election campaign trail. (Toms, Australia)

9057: OM/EE, no call used, sends practice Alpha tfc in USB at 0551 and then agn at 0558. SAC channel P. (Sabo, CA)

9120: Coded CW msgs using alphanumerics in grps of 3's w/each msg given numerous rpts. Another FEMA freq. (Margolis, IL)

10000: Andrews AFB YL opr in USB at 0435 wkg a/c 563 setting up pp on to p WWV. OM/SS came on with a transmission. Bad QRM on freq. (Fernandez, MA)

10024: Antofagasta, Chile Aeradio clg Lima, Peru Aeradio w/handoff of LADECO (Chilean) airlines Flt 330 enroute Santiago to Miami. USB at 0215; Eastern 985 reporting postion to Asuncion, Paraguay Aeradio while enroute La Paz - Asuncion. USB at 0332; LAN Chile 148 wkg Lime, Peru Aeradio reporting postion. USB at 0338; PanAm 454 reporting position to Resistencia, Argentina in USB at 0301. (Riddle, Argentina)

10126: YL/SS in AM at 0111 w/5F grps. (Grubbs, NY)

10242: Omaha 66 clg Crown City. No contact. USB at 2116. (Putrich, MN) Black Sheep, Ghostrider, Ping Pong, Slingshot, Longhorn, and Omaha 81 and 94 w/anti-smuggling activity. Morning Star 256 in comms w/Moon Walker 319. Hrd 0210. (Willmer, MI)

10262: Wallops Island, Dhalgren & Monterey in USB net at 02207. Talk re air events cancelled due wx.

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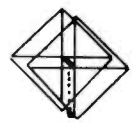

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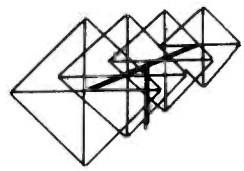

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Also track PU 50 id'ing as a LHA 141 miles from Dhalgren was foll playground all day. Don't know how he getting data. Not supposed to be in net. Dhalgren said let them play along not hurting anything. (Willmer, MI)

10323.7: U9G in CW at 1908 w/5L grps. Emitting vy strong spurs on 10312.5 and 10323.7 kHz xmsn. Xmsn ended at 1911. Returns at 1919 w/QRA DE U9G and another 5L grp msg. (Margolis, IL)

10565: CLP8, Cuban Embassy, Conakry, Guinea, s/oo in CW at 0825 after RTTY xmsn. (Margolis, IL)

10665: YL/SS in AM at 2218 w/5F grps. (Grubbs, NY)

10780: ARIA A/C Agar25 wkg Cape Radio requesting pp to Ridley Mission Control at 0130. Agar23 requested down time for Agar27, which had to return to base after developing landing gear problem in flight. Ridley Control told Agar25 of Agar27's problem. 25 told Ridley to contact 27 and have them bring up 13218 kHz USB for a/c to a/c comms. 25 & 27 then hrd on that freq discussing 27's problem. A/c are EC-135's. (Gordon, CT)

10810: OM hrd in an East Asian lang on USB at 0934. Might be via PTT, Pyongyang, North Korea. (Margolis, IL)

10970: YL/EE in AM w/callup VLB25 (Mossad). (Charret, France)

11176: MAC 160 wkg Ascension & reporting one ambulatory patient on board. Hrd 0456. (Moon, S. Africa)

11200: British Volmet in USB at 0334. (Putrich, MN)

11226: Card Table w/calls to Rich Fox, Choke Rod, and Handiwork in USB at 0433 on SAC channel X-905. (Sabo, CA)

11321: SLHFB "W" hrd in CW at 1301. (Margolis, IL)

11387: Sydney Volmet, Australia w/OM giving current wx conds. Hrd USB at 1303. (Margolis, IL)

11408: SAC channel P-383. USB at 1230. (Putrich, MN)

11466: Concord 188 in USB advising Andrews AFB re msg passed via VHF to the President who was aboard AF1 at the time. Hrd 2000. (Willmer, MI)

11476.5: 5F grps in CW w/zero cut as T. Hrd 1340. (Margolis, IL)

12210: KWL90, US Embassy, Manila, Philippines w/QRA/QSX mkr in CW at 1600. (Margolis, IL)

12333.1: WUT7195, New Venture in USB at 2156 clg KMI, Dixon (San Francisco), CA for ship/shore call. (Webb, CA)

13119.4: Vancouver Coast Guard in USB at 0018 wkg merchant ship Odyssey w/medical advice & info re rescue attempt. Ship was on 12348.6 kHz & told CG that three seamen had been injured when the sea came over the bow of the ship. (Webb, CA)

13133: National wx svc, San Francisco at 2239 in USB. (Grote, IL)

13247: Black Ant wkg Pettibone in USB at 1941, then into Alpha tfc. Under all of this, several u'i stns weak sigs w/talk re data & pp freqs. SAC channel W-109. (Sabo, CA)

13312: Slingshot wkg u/i stn in USB at 0358 on DEA YE channel. (Sabo, CA)

13385: YL/GG w/458 x3, 1, in USB at 0358 on DEA YE channel. (Sabo, CA)

13588.8: U/i CW stn at 1600 w/cyrillic text characters. (Ed.)

13826: NNN0CMT clg NNN0PKH, contact made then lost. PKH made several unsuccessful attempts to re-establish contact on 14441.5 kHz. USB at 2341. (Hill, MI)

13950: AHF4, Albrook AFB, Panama in comms w/u/i stn on LSB at 1557. (Margolis, IL)

13974: NNN0EWL wkg NNN0NPA (Palmer Station, Anartica) w/pp in USB at 0026; NNN0AZT wkg patches for NNN0NZX (USCGC Polar Star, WAGB-10). (Sabo, CA)

14290.5: AGA7RM, USAF MARS, 21st Replacement Battalion, Rhein Main AB, Frankfurt, FRG in loud/clear comms on USB at 2217 w/AFA2BB in Southeastern USA. (Margolis, IL)

14408: USAF MARS stns AFB4GE and AFA4JK trying work AGAOSS (San Salvador) w/pp in USB at 0053. AFAOCH was also on freq. (Sabo, CA)

14441.5: NNAS, USCGC Escanaba WMEC907 (NNN0CCP) wkg NNN0PRQ at 0100. (Gordon, CT)

14826.4: U/i CW stn at 0304 w/5L grps (cut nbrs ADGIMNRTUW). (Margolis, IL)

14927.9: 8BY (Indonesian, alloc) in CW at 1349 w/V's 545/792/557/276/014 AR. (Ed.)

14944: CLP65 DE CLP1 (MFA, Havana, Cuba to EmbaCuba, Managua, Nicaragua) in CW at 1758 w/lots of tfc in SS. (Margolis, IL)

15867: Storm Cloud wkg Gill Fish in USB at 0002 on DEA channel ZE. (Sabo, CA)

15964: Slingshot wkg Hickory 06, w/vectors to u/i a/c's. USB from 1900-2150, on Anti-Smuggler channel Victor Delta. Also here at 1910, Portishead Air wkg Speedbird 611. Ref'ng this, Hickory 06 asked Slingshot who this was on their freq. Slingshot replied he did not know but they weren't involved with their ops. Portishead QSY'd to 10291 kHz at 1914 and Anti-Smuggler ops continued. (McMahan, GA)

16276.2: U/i stn in CW at 1347. Passing tfc w/2L, 3L, 4L grps e.g. WEJ KKU KUW . . . JUM WT WD KVX etc. (Margolis, IL) Blvd be Vietnamese Diplomatic. The various length code grps also seen in opr chatter. Similar activity noted 4193, 4204, 13420, 13428, 13251, 13279. 13281, 13870, 13909, 13965.5, 16447, 16457, 18947, 18950 kHz. When sending F's usually uses letter O in place of zero. QRX sent as FFRFF where R separates hour from minutes. (Ed.)

16298.5: NNN0NIM, USN MARS, Gulfport, MS wkg NNN0NRI on USB at 1647. (Margolis, IL)

16590.2: Two OM in USB at 2121 in what sounded like pidgin EE w/one saying "Investigation ordered by President Aquino. A word before investigation was unreadable. (Putrich, MN)

16859: LNR DE P5 (also FO) in CW at 0030. FO (vy faint) passed 2 msgs to P5, then P5 sent QRX 1400. FO seemed be giving coordinates. Silent at 0045. (D.P., NC)

16869.5: CWA, Cerritos/Punta Arenas, Uruguay in CW at 0045 passing warnings for high seas as "Servicio Hidrografico Oceanografico de la Uruguay" then into CQ mkr. Seems be bit low of assigned freq. (D.P., NC)

17021.5: WLO, Movile, AL w/CW wx bcst at 1432. Announcement made re new 25 MHz autotelex channel operating from 1200 to 2300 UTC w/ship rcvng on 25222.5 kHz & ship tx on 25075.8 kHz. (Grubbs, NY)

17410: OM/RR in AM w/5F grps. (Charret, France)

17449.8: YL/u-i lang w/poss figure grps in AM at 1425 w/parallel xmsn on 18099.8 kHz, both off at 1425. On another day CW dits at 1241 prior to 631 631 T86 T86 sent for 5 min then off. Later hrd 225 225 011 011 at 1330. (Grubbs, NY)

17952: Slingshot, Coffee Table, and Ranch House w/info on various flight tracks. Hrd 1510. (Willmer, MI)

18005: Abandon in contact w/Honest Face in USB requesting a preset 21 conference. DCA-Pac (Defense Communications Agency-Pacific) in conference. Sombrero, Noble Man, Portable, Estimate, China Ware, Brass Fox, Palm Date, and Press Car were called & responded. Hrd 2110. Hopalong requesting a preset 19 conference from Endorsement. Rasputin, Night Owl, Belt Loop, Splendor, Antiquity, Iron Works, Bar Candy, Hibernate, Improper, Abduction, and Downtown were cld & responded. Hrd 0125. Also noted comms concerning injection of EAM's. Identified freq as Tango. (Willmer, MI)

18027: Focus Mike (NCS) in USB on net w/Dark Star November, Binder, and Guardian w/data link on D5 exchanging tracking data. hrd 2042. (Willmer, MI)

18417: Indonesian Embassy, Teheran, Iran w/OM on LSB at 1533 speaking in Indonesian after ending a RTTY xmsn. (Margolis, IL)

19637: OM/SS in AM at 1025 w/DOS DOS DOS x2 then off. 35 min later up came standard type 5F grp stn w/Atencion x3 ID grp x3, text of 5F grps, ends w/final x1. (Toms, Australia)

19658: OM/EE in SSB w/648 000 rptd. (Charret, France)

20175: U/i stn w/several CW msgs at 1807, 5L grps (cut nbrs ADGIMNRTUW). Some SS words also noted. Poss Cuban judging from SS text. (Margolis, IL)

21862: OM/RR here at 1530 rptng 283 x3, 000 in AM. This is the highest freq I've hrd for numbers bcst. (Mason, England)

21988: Berna LDOC stn, Berna, Switzerland in USB at 1908 wkg Trans America 204 enroute San Juan, PR. A/c had just lift Barbados & was giving posit report & ETA. (McMahan, GA)

22485: VIX, Sydney, Australia in CW at 0149 w/VVV VIX 3/4/5/6/7 mkr. (Webb, CA)

22539: KLB, Seattle, WA in CW at 1729 w/CQ DE KLB QXS 4 6 12 16 AND 22 MHZ QRU IMI. (Webb, CA)

22832: YL/EE in USB at 1603 w/721 721 721 1-0 rptd; at 1620 ten beeps, Count 162 Count 162 and into 3/2F grps. (Margolis, IL)

23402.5: Atlas in USB at 2320 wkg 520 w/pp to u/i location on DEA channel R. (Sabo, CA)

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BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Controversy Continues. All sorts of plans have been set forth to prop up the sagging AM broadcasting industry. These plans have come from the government and from broadcasters, and all appear to be controversial. Still, something does need to be done because the numbers tell the story.

In 1978, the average revenue for an AM radio station was $380,000 per year. Today its $360,000. Compare that with FM. In 1978, the annual revenues for the average FM station were $340,000. Today that amount is $1,400,000. FM stations now have cornered three quarters of the listeners and 77% of the advertising dollars. In 1978, AM had 80% of the audience.

The most expensive AM stations are selling for $26 million, which sounds like a lot until you learn that a top rated FM station sells for almost four times that amount. Even the least expensive FM stations these days sell for $1.5 million, which is a king's ransom when compared to the $100,000 an inexpensive AM station now sells for.

The FCC plans for helping AM involve the utilization of the new 1605 to 1705 kHz portion of the band, although details of how this will be done have not been finalized as of this writing. Several plans have been discussed, none being entirely satisfactory to all concerned.

Another FCC idea relates to the agency's policy on AM/FM simulcasting. Four years ago, the FCC canceled its ban on 100% simulcasting. Now they want to reimpose the ban. What with more than 40% of the nation's co-owned AM/FM stations simulcasting, the suggestion has brought a considerable howl of protest from broadcasters in general. The National Association of Broadcasters doesn't like the idea, either.

Broadcasters' objections, among other things, include the economic strain that will be imposed on AM stations forced to originate programming instead of simply duplicating the FM programming. The FCC speaks of this idea as forcing the AM stations to establish their own distinct identity, separate and apart from their FM affiliates. Cynics see it with a somewhat different twist. They say the economic crush will run many AM stations into bankruptcy and off the air, claiming that the FCC's true motivation is just to thin out the ranks of AM stations.

Twenty-five years ago the FCC was in favor of simulcasting when FM was standing on the outside of broadcasting, looking in with its nose pressed up against the window. At that time, the FCC told AM stations that they could spice up audience interest in their mostly ignored FM outlets by letting the FM stations simulcast the popular AM programming.

All that accomplished was to lure away the AM audience to the FM band. Perhaps the FCC feels it taught the lesson that if the two services are presented to the public, side by side, in a simulcast situation, AM cannot win the day.

Those of us who love AM radio hope that some workable solution is found to the dilemma of finding the right approach for AM broadcasting in the 1990's and beyond. New formats, new technologies, enthusiastic broadcasters, and creative regulation are going to have to be combined to come up with some answers.

Better Ideas Department. Among the ways being used to reach new audiences there are AM formats being tried that FM doesn't offer. And they work! New York City's all-news WINS will earn a $4-million profit this year. They have been running all-news for years and inspired other stations to use this format.

WPRD, Orlando, FL dropped their big band music format and is now programming exclusively for children with the Kids Choice Programming Network. In Boca Raton, FL new owners took over WSBR last year and scrapped the station's losing oldies format. It was replaced with an all-business talk format, and the station is now running in the black.

Digital Broadcasting. Two proposals for Digital Audio Broadcasting (DAB) appear to be being developed for the near future, although which (if any) of them is eventually used is still open to speculation.

The Radio Satellite Corp. (RSC) plan is for signals to be uplinked in the Ku band (14 to 14.5 GHz), then downlinked in the L-band (1.545 to 1.559 GHz and 1.6465 to 1.6605 GHz) for direct reception by receivers in vehicles.

The CD Radio Inc. plan utilizes the 1.470 to 1.530 GHz band.

Applications For New FM Station

AL	Chatom	106.1 MHz
AL	Fruithurst	102.7 MHz
AL	Georgiana	107.7 MHz
AL	Moulton	103.1 MHz
AZ	Prescott	90.9 MHz
CA	Indio	89.3 MHz
CA	Magalia	88.3 MHz
CA	Victorville	89.5 MHz
FL	St. Augustine	91.9 MHz
GA	Cedartown	88.3 MHz
GA	Coosa	95.3 MHz
GA	Gray	96.5 MHz
GA	Nartinez	107.7 MHz
GA	Zebulon	92.5 MHz
HI	Volcano	107.7 MHz
ID	American Falls	104.1 MHz
IN	Bloomington	91.3 MHz
IN	Howe	89.7 MHz
KY	Madisonville	106.9 MHz
KY	Marion	102.7 MHz
KY	Russell Springs	92.7 MHz
LA	Buras	91.9 MHz
MI	Kalamazoo	88.3 MHz
MI	Lexington	96.9 MHz
MI	Manistee	107.9 MHz
MN	Cloquet	96.5 MHz
MO	Lutesville	105.1 MHz
MS	Ebeneezer	103.9 MHz
MT	Columbia Falls	95.9 MHz
NH	Hanover	91.3 MHz
NJ	Cape May C. H.	90.3 MHz
NY	Potsdam	91.9 MHz
NY	Southampton	89.9 MHz
NY	Warsaw	88.3 MHz
SC	Blackville	97.9 MHz
TN	Colonial Hts.	105.9 MHz
TN	Newport	92.9 MHz
TX	Levelland	91.7 MHz
UT	Salt Lake City	95.3 MHz

Permits Granted For New FM Stations

AR	Beebe	101.5 MHz
AR	Lowell	101.9 MHz
AZ	Globe	97.3 MHz
AZ	Green Valley	97.1 MHz
CA	Merced	107.7 MHz
DE	Lewes	105.9 MHz
GA	Omega	107.5 MHz
GA	Richmond Hill	105.1 MHz
IA	Sioux Rapids	102.9 MHz
IL	Bethalto	95.5 MHz
IN	Nappanee	96.7 MHz
KS	N. Ft. Riley	102.5 MHz
ME	Milbridge	93.7 MHz
MI	Grand Rapids	98.9 MHz
MI	Oscoda	95.7 MHz
TX	Littlefield	95.5 MHz
WV	Bluefield	90.9 MHz
VA	Farmville	101.3 MHz
VA	Galax	91.1 MHz
VA	Salem	91.3 MHz

Applications For New AM Stations

DE	Christiana	870 kHz
FL	Golden Gate	840 kHz
HI	Haiku	1570 kHz
NY	Lansing	1270 kHz
PA	Brockway	800 kHz
TX	Giddings	1600 kHz

Permit Granted For New AM Station

HI	Princeville	630 kHz

Applications For AM Facility Changes

KBEC	Waxahachie, TX	1390 kHz	Add 270 w. nights.
KCOL	Ft. Collins, CO	1410 kHz	Increase to 5 kW.
KFRS	Sumner, WA	1560 kHz	Add 1 kW nights.
KGDP	Orcutt, CA	660 kHz	Increase to 20/10 kW.
KIPA	Hilo, HI	620 kHz	Increase to 10 kW.
KITH	Apple Valley, CA	1550 kHz	Increase to 5 kW days.
KKAR	Bellevue, NE	1180 kHz	Increase to 2.5 kW days.
KKGZ	Brush, CO	1010 kHz	Increase to 10/5 kW.
KMDY	Thousand Oaks, CA	850 kHz	Increase to 50/1 kW.
KPUP	Carmel Valley, CA	540 kHz	Increase to 50 kW days.
KQCV	Oklahoma City, OK	800 kHz	Increase to 2.5 kW/500 w.
KSUR	Soledad, CA	700 kHz	Increase to 2.5 kW/700 w.
KTCJ	Minneapolis, MN	690 kHz	Increase to 1.5 kW/500 w.
KTSJ	Pomona, CA	1220 kHz	Increase to 930 w. days.
KUET	Black Canyon, AZ	710 kHz	Add 4.2 kW nights.
KWAL	Wallace, ID	620 kHz	Increase to 5 kW days.
WADO	New York, NY	1280 kHz	Increase to 50 kW.
WAMN	Green Valley, WV	1040 kHz	Move to 1050 kHz, 1.43 kW/250 w.
WBMX	Zeeland, MI	640 kHz	Move to Merrillville, IN
WBUX	Doylestown, PA	1570 kHz	Increase to 950 w. nights
WCDN	Chardon, OH	1560 kHz	Move to 870 kHz, add 250 w. nights.
WCEG	Middleborough Ctr., MA	1530 kHz	Increase to 1 kW.
WCHP	Champlain, NY	760 kHz	Add 230 w. nights.
WCMG	Lawrenceburg, TN	1520 kHz	Move to Columbia, TN.
WCPT	Alexandria, LA	730 kHz	Increase to 380 w.
WCRM	Ft. Myers, FL	1350 kHz	Increase to 5 kW days.
WCRV	Collierville, TN	640 kHz	Increase to 50 kW days.
WEDE	Eden, NC	830 kHz	Increase to 5 kW/250 w.
WEZI	Germantown, TN	1430 kHz	Increase to 2.8 kW days.
WFGW	Black Mtn., NC	1010 kHz	Increase to 500 w. nights.
WHBG	Bridgewater, WA	1360 kHz	Drop to 2 kW days.
WIAC	San Juan, PR	740 kHz	Drop to 3 kW nights.
WJWF	Columbus, MS	1400 kHz	Move to 860 kHz.
WLIB	New York, NY	1190 kHz	Night use of 1200 kHz, 5 kW.
WMCA	New York, NY	570 kHz	Increase to 50/30 kW.
WMLX	Florence, KY	1180 kHz	Increase to 10 kW.
WNJO	Seaside Pk., NJ	1550 kHz	Move to Toms River, NJ, 6/3 kW.
WNOG	Naples, FL	1270 kHz	Drop to 1.9 kW nights.
WNTK	Newport, NH	1020 kHz	Increase to 10 kW.
WODY	Bassett, VA	900 kHz	Increase to 2 kW days.
WOND	Pleasantville, NJ	1400 kHz	Increase to 1 kW days.
WPDJ	Huntington, IN	1300 kHz	Drop to 250 w.
WPGC	Morningside, MD	1580 kHz	Drop to 270 w. nights.
WPIE	Trumansburg, NY	1160 kHz	Increase to 5 kW/310 w.
WVNE	Leicester, MA	760 kHz	Increase to 10 kW days.
WWBZ	Vineland, NJ	1360 kHz	Move to Washington Twp., 5 kW days.

Applications For FM Frequency Changes

KCWD	Harrison, AR	96.7 MHz	Seeks 96.1 MHz
WCOZ	Paris, KY	96.7 MHz	Seeks 96.9 MHz
WHUB-FM	Cookeville, TN	98.3 MHz	Seeks 98.5 MHz
WKUB	Blackbear, GA	104.9 MHz	Seeks 105.5 MHz

FM Frequency Changes Approved

KGMN	Kingman, AZ	100.1 MHz	To 99.9 MHz
KMZU	Carrollton, MO	101.1 MHz	To 100.7 MHz
KPLE	Temple, TX	104.9 MHz	To 104.3 MHz
KSKB	Brooklyn, IA	99.3 MHz	To 99.1 MHz
WLKC	St. Marys, GA	93.5 MHz	To 93.3 MHz

AM Facility Changes Approved

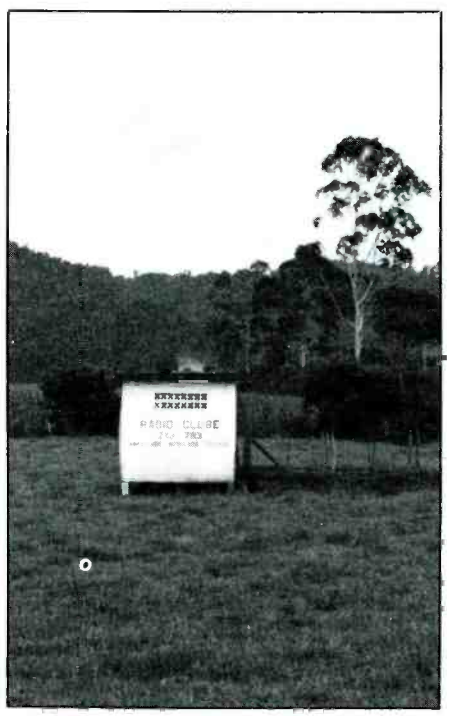
KAGE	Winona, MN	1380 kHz	Increase to 4 kW days.
KELP	El Paso, TX	1590 kHz	Add 900 w. nights.
KSSA	Plano, TX	1600 kHz	Drop to 215 w. nights.
KZIZ	Sumner, WA	1560 kHz	Increase to 5 kW days.
WEKO	Cabo Rojo, PR	930 kHz	Increase to 4.4 kW days.
WORD	Spartanburg, SC	910 kHz	Drop to 3.6 kW/890 w.
WWHN	Joliet, IL	1510 kHz	Increase to 1 kW.

Probably nothing will really firm up in the area of DAB at least until after the next World Administrative Radio Conference (WARC) in Spain (1992) when a world frequency allocation for DAB is expected to be agreed upon.

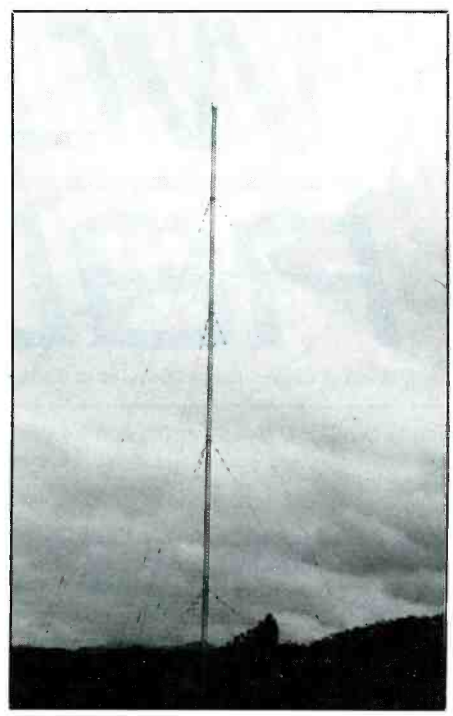
Rocking In Arkansas. Kelly Bailey, of Midland, AR tells us that KZKZ/106.3, of Fort Smith, AR has been on the air since the summer of 1989. The station is running a classic rock format, playing hits of the 1960's and 1970's by artists like Bob Seeger, Led Zeppelin, and others. The KZKZ target audience is 25 to 44 years of age. Kelly tells us that KZKZ is extremely active in raising money for charitable organizations and has collected more than $178,000 for groups such as the United Way, March of Dimes, the Arkansas Childrens' Hospital, and several others.

Word From Maryland. Walt Barcus, KA3KZA, Massey, MD wrote to tell us that WSMD/1560 in LaPlata, MD and WDLE-FM in Federalsburg, MD both went dark recently. Walt knows, because he worked at WDLE-FM as the Program Director. The two stations were owned by the same licensee.

WDLE-FM was ex-WCTD and changed call letters in March of 1989 when it modi-



The transmitter building of the Radio Clube de Sao Joao Batista in Brazil. (Courtesy Helio Soares, Brazil.)



The single transmitting tower at Brazil's Radio Clube de Sao Joao Batista. (Courtesy Helio Soares, Brazil.)

AM Call Letter Changes Requested

Present	Seeking	
WKOS	WZNN	Rochester, NH
WNCR	WKKE	Pauls, NC
WSPZ	WDCY	Douglasville, GA

FM Call Letter Changes Requested

Present	Seeking	
KGRX	KZEW	Globe, AZ
KHAT-FM	KMXA	Lincoln, NE
KSKT	KHCA	Wamego, KS
KSLD	KRCA	Riverside, CA
WKOS-FM	WWEM	Rochester, NH
WOSE	WXKR	Port Clinton, OH
WXTY	WANC	Ticonderoga, NY
WZMX	WSHK	Russellville, AL

Changed AM Call Letters

New	Former	
KAMJ	KPMX	Phoenix, NY
KDON	KZXR	Salinas, CA
KWWB	KGTN	Georgetown, TX
WABH	WVIN	Bath, NY
WCZR	WXIT	Charleston, WV
WDCY	WSPZ	Douglasville, GA
WGRD	WKTH	Grand Rapids, MI
WGTR	WJEH	Gallipolis, OH
WJCO	WHBT	Jackson, MI
WPOG	WALD	Waterboro, SC
WRTH	WBYB	Brewer, ME
WTRR	WNSI	Sanford, FL

Requests Withdrawn For Changed FM Call Letters

Present	Wanted	
WOSE	WXOF	Port Clinton, OH

New FM Call Letters Assigned

KBZQ	Lawton, OK
KGMS	Green Valley, AZ
KPIK	Beebe, AR
KQRX	Midland, TX
KRXS	Globe, AZ
KSDA-FM	Agat, GU
KSDJ	Charleston, MO
KTFG	Sioux Rapids, IA
KUHA	Seward, AK
KUHD	Holdenville, OK
KUHG	Hastings, NE
KUHK	Soldotna, AK
KXLC	La Crescent, MN
WDHT	Brantley, AL
WDOX	Wildwood Crest, NJ
WKJQ-FM	Parson, TN
WPGB	Blountville, TN
WPIB	Salem, VA
WPRH	Galax, VA
WSAA	Warrenton, GA
WSAB	Pentwater, MI
WSAC	Louisa, KY
WSAD	Vandalia, MI

New AM Call Letters Assigned

WSAG	Poquonock, CT

Changed FM Call Letters

New	Former	
KBKK	KBZD	Johnson City, TX
KDON-FM	KDON	Salinas, CA
KEMX	KWOJ	Locust Grove, OK
KHUL	KRNB	Memphis, TN
KHXT	KAVS	Mojave, CA
KIZN	KIYS	Meridian, MS
KLCO	KGZD	Newport, OR
KLCQ	KYLO	Davis, CA
KMJC	KMJC-FM	Clinton, IA
KMXX	KAMJ-FM	Phoenix, AZ
KPMX	KMXX	Sterling, CO
KUBZ	KKUC	La Grande, OR
KWKZ	KSDJ	Charleston, MO
KWWB	KGTN	Georgetown, TX
KWYI	KTDH	Kswaihae, HI
KXLR	KINQ	Fairbanks, AK
KYRX	KZRX	Chaffee, MO
WAGR-FM	WDLG	Lexington, KY
WDLJ	WZXR	Indianola, MS
WFMI	WUIF	Bay Minette, AL
WGTR-FM	WYPC	Gallipolis, OH
WKDL	WUIB	Dwight, IL
WKUE	WPBJ	Elizabethtown, KY
WLRR	WPWS	Milledgeville, AL
WPKX	WJAI	Enfield, CT
WPLC	WGTR	Miami, FL
WRAU	WECL	Elkhorn City, KY
WROT	WAEM-FM	Marseilles, IL
WRUT	WVNH	Rutland, VT
WTLT	WLRO	Circleville, OH
WVES	WKIY	Accomac, VA

Randy Bradford, Bellevue, NE earned this QSL from powerhouse WCCO/830 in Minneapolis, MN.

fied its format from Country to Easy Contemporary. That format then evolved into a Soft Adult Contemporary format last October. Walt tells us that there have been rumors that someone who had been an employee of the station when it went dark is interested in purchasing the station.

However, not long after WDLE-FM went off the air, WSUX-AM/FM, located only nine miles away, changed their call letters to WECY-AM/FM, raised their antenna up from 200 ft. to 328 ft., and picked up a satellite Soft Adult Contemporary format. It remains to be seen what impact this has on the possible future of WDLE-FM, formerly *Delmarva's Lite & Easy 107*.

Bulletin From Brazil. We received a letter from Helio Soares, of Sao Paulo, Brazil. He tells us that there are plenty of mediumwave broadcasters in Brazil, but except for those located in state capitals and large cities, most run 1 kW or less. FM is gaining in popularity and in some major cities there are more FM stations than AM broadcasters.

In Sao Paulo, there are 13 AM stations, but the number of FM stations is now up to 18.

Helio sent us two photos he took of a small broadcaster located in the south of Brazil in Santa Catarina State. This is the station known as Radio Clube de Sao Joao Batista, which is on 1190 kHz with 1 kW days, 250 watts at night. The call letters are ZYJ783.

FM Reading. Those of our readers who are really into FM listening in a big way might want to know about a monthly newsletter of fact and opinion about FM broadcasting. It's called *FM Media*, and it's put out by Bruce Elving, who compiles the FM Atlas. *FM Media* is a monthly publication that runs about 8 pages. It's chock full of information on new stations, format changes, stations that went dark, new rules that affect FM'casters, and other related items like that, plus Elving's usually incisive observations on the passing FM scene.

A single copy is $4.50. A one year (12 issue) subscription is $45. To order, or for more information, contact Bruce Elving, Ph.D., 241 Anderson Road, Esko, MN 55733-9413.

We are interested in hearing from our readers with AM/FM station photos, bumper stickers, decals, news clippings, current QSL's, station news, and anything else related to AM/FM'casting. Let's hear from you!

BY GERRY L. DEXTER

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

It looks as though some anti-Castro groups are feeling a need to speak for themselves, rather than leave all the propagandizing to Radio Marti and it's video counterpart, TV Marti. In last month's column we reported on the return and subsequent demise of Radio Antorcha Martiana which made a brief appearance from a location in the Miami area.

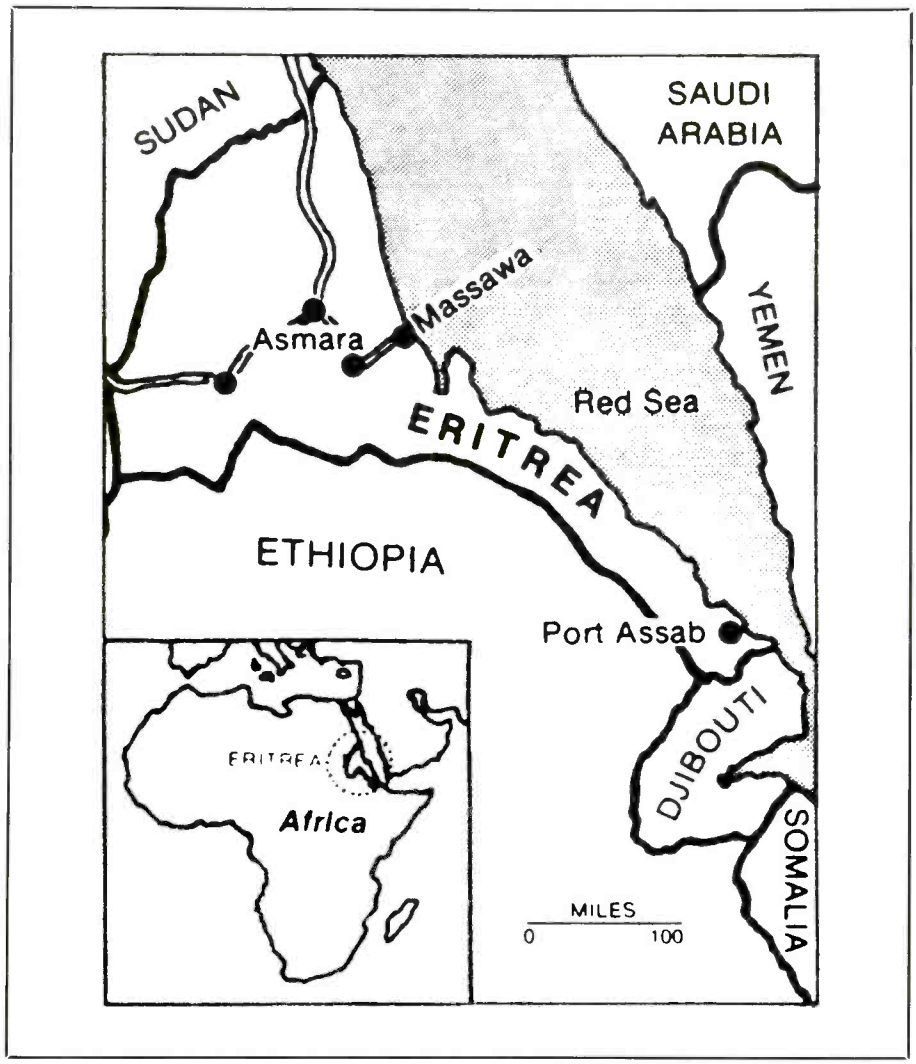
Then, a couple of weeks ago, we were contacted by someone speaking for a group calling itself the Partido Independentista Cubano with information that this group was making hourly broadcasts over its own station, Voz de Partido Independentista Cubano. This was only on May 22 (and apparently there had been periodic activity for a month or so prior to that date). The broadcasts, which our contact said would be on 14.325 or 14.350 and 28.450, were being directed to the Cuban Armed Forces and called on the Cuban military to overthrow Castro. Despite several checks that day we were unable to hear the station. We did, however, receive an English transcript of the broadcast. The broadcast noted that the group was being represented in the "Brotherhood Flotilla" (the seagoing protest in which about 34 boats sailed to just outside Cuban waters) and at a hunger strike outside Cuba's UN delegation.

The group apparently used ham radio equipment for the broadcast. At this point we don't know whether this station will make additional appearances or perhaps even develop a regular broadast schedule. We did recommend that the group pick frequencies outside of the amateur radio bands for any future broadcasts it may make.

The U.S. government's TV Marti is being labelled a failure, at least by well-known columnist Jack Anderson who, in a May 9 column, says Cuba has "successfully blocked" the TV Marti signal. Anderson calls the effort a "$7 million bust" and cites the influence of the Cuban American National Foundation and its leader Jorge Mas Canosa as the main instrument behind getting Congress to fund TV Marti. TV Marti's broadcasts continue, at least as of this writing.

Speaking of the CANF, clandestine fan Robert Ross, in Ontario, reports getting two full data QSL cards for CANF's La Voz de Fundacion program aired over WHRI, Nobelsville, Indiana. He also received a magazine called *The Cuban Monitor*.

Ross also reports catching one of the rare appearances of the Voice of Tomorrow. We still can't decide whether this one is a clandestine or a pirate or half and half. At any rate, Ross had them on 6239.9 at 0248 tune in with a guest speaker identified as "Mr. Luther," said to be an NRA instructor and marksman. The broadcast included the usual "Tomorrow Belongs to Me" theme and howling interval signal.



The war of liberation in Ethiopia has brought another clandestine to the shortwave bands.

Things aren't looking very bright for the Goddess of Democracy ship and the Voice of Democracy radio station which was supposed to beam broadcasts to China. The ship received the cold shoulder at every port. Hong Kong refused to let it dock. So did Japan. Taiwan allowed the Goddess to dock in Taipai, but wouldn't let the radio transmitter be installed (it had been shipped from France). The Taiwan government said that such broadcasts would be illegal. Since the group cannot get the radio equipment installed they've postponed the project indefinitely. They've also accused the US of pressuring Asian countries against aiding the project.

A new Burmese (officially, Myanmar) clandestine—the Voice of the People of Wa State—began broadcasts in late April, using 5110. Broadcasts are in the Wa language, with a segment in Burmese. 5110 is a frequency once used by the communist-run Voice of the People of Burma.

Another Burmese clandestine is the Voice of the Democratic Alliance of Burma, currently on 7135 between 0130-0330 in Burmese.

At last report the Nicaraguan clandestine Radio Miskut was still in operation, using 5560 and running to sign off at 2300 some days but as late as 2345 on others. We're not sure what the current tone of this station is, since it was originally anti-Sandinista. At last report the contras' Radio Quince de Septiembre was also continuing its operation, using 6214 variable and noted around 1130 and 0000.

Press reports indicate that the situation gets more and more desperate for the marxist government of Ethiopia, as rebel forces take more and more territory. Now there's a

(Continued on page 79)

Beaming In *(from page 4)*

Still, when Allan Weiner applied for a license to operate a shortwave broadcasting station in Maine, even though he has never been convicted of any felony or misdemeanor, an FCC hearing was designated to determine "whether Weiner. . . possesses the requisite character qualifications to be a Commission licensee." Allan Weiner will be recalled as one of the participants in the broadcasting ship *Sarah* from which *Radio New York International* operated (on vacant frequencies) for a total of eight days in a two year period, several years ago.

Weiner contended that RNI didn't require an FCC license since the *M/V Sarah* flew a foreign flag and was located outside the claimed territorial limits of the U.S. Therefore, it was beyond the FCC's jurisdiction. The agency disagreed, claiming RNI was causing interference (to stations the FCC never specified). They brought charges against RNI, raided the ship, and physically wrecked much of the station's equipment. That done, FCC then dropped all charges brought against RNI and Weiner, commenting that they proved their point and got RNI off the air.

Now, I wonder if Weiner is facing the possibilities of being eternally harassed and chastised for these events, and possibly denied an FCC license now and forever because RNI had briefly (and possibly incorrectly) been charged with running RNI without an FCC license and causing interference. Only a governmental agency could cook up a no-win scenario like that. Sounds like a plot for either a bad TV sitcom or a great Kafka novel, or both.

Incidentally, I have known Allan Weiner for a long time. We have spoken at considerable length. Weiner is responsible, industrious, innovative, intelligent, and he happens to be a broadcast engineer. He is as suitable as anybody is to be a licensed broadcaster. If Weiner is typical of the type of broadcast applicant they are attempting to keep silent, then these character standards are as valid as a $3 bill.

A commercial broadcaster has a large capital investment in the radio or TV station and seeks to show a profit. Regardless of alleged personal character flaws, especially those manifested in years past, it doesn't necessarily mean that they are either unable or unwilling to operate responsible broadcasting stations that follow FCC regulations, as well as inform, entertain, and operate in a state of financial solvency. Nor should the applicants be required to bare, discuss, justify or pay for their pasts if the legal system has no further quarrel with them. I'd be more inclined to be concerned about any business failures and bankruptcies in their past due to honest but totally inept management.

Fact is, the character of a station's owner may be far less reflected in the station's day-to-day operation than that of its administrative employees and air personalities. Does the FCC intend screening all broadcast station employees regarding their character standards? If so, some stations owned by flawless licensees could face major personnel problems.

And what about stations owned by large corporations? Does the FCC intend rattling all of the skeletons in the closets of those companies and the individuals on their respective Boards of Directors? Many large corporations have been on the wrong end of antitrust, felony, and all sorts of charges many times over the years.

How far back will the FCC go in their zeal to guard the airwaves from persons and companies with undesirable character traits? Will some dumb incident in college twenty or thirty years earlier jeopardize a person's chances of getting a broadcasting license when today that same incident is usually ignored by the law? What about 1960's anti-war protests, or civil disobedience connected with political or civil rights activities or other things in a person's past that are misdemeanors, like shoplifting or selling fireworks?

If a person has satisfied the justice system and paid their debt to society, it doesn't seem right to expect them to pay forever by being denied the right to broadcast. Should an FCC employee really have the authority to rummage through the lives of citizens and then assign penalties? Persons who have committed an antisocial act and are subsequently restored to society can usually get a driver's license. Being allowed to direct 4,000 lbs. of high-horsepowered rolling steel down the street gives a person at least as much responsibility to the community as having a broadcasting license.

To get answers, I contacted the FCC in Washington and spoke to one of the attorneys in the General Council's office. His position was that the recent changes were nothing radically new, just a sharpening of the focus of the criteria established in 1986. He assured me that the main intent of all of this was to disqualify the hard-core, career, or habitual criminal; the racketeer or member of organized crime; the person who continually dealt in fraud, or the perpetrator of crimes of a heinous nature.

He said that persons who had committed offenses in the past might still be able to obtain a license upon pleading their situation to the FCC. Depending on the nature of what they had done, their age at the time it happened, how long ago it had taken place, how well they had rehabilitated, etc., the FCC might consider the factors as mitigating and approve the application.

Yes, I know they mean well, and I appre-

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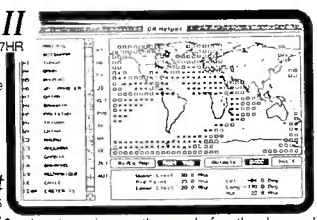

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ciate that the government is willing to take great pains to see to it that you and I have our pliable little minds protected from being broadcast to by persons it has decided don't meet its high standards. But, I always thought that radio receivers were made with tuning knobs and on/off switches so we could decide for ourselves whom to listen to and whom to shut off. There isn't the slightest indication that Americans want or need this good service performed for us in advance by our government.

That the ball got rolling on all of this stepped up character scrutiny at the behest of a politician is hilarious! At any point in time, there are usually at least a couple of Washington clowns being reprimanded, forced to resign, sent to jail, or who are in the midst of tabloid headlines, scandals, investigations, and hearings into their shady dealings and questionable conduct. But isn't it ironic that when election time rolls around, they rely primarily upon the broadcast media to tell us about their good deeds, honesty, and how they're all for the little guy? If the FCC screened the character standards of these windbags, at election time we'd hear a lot more music and much less in the way of hollow campaign promises and rhetoric.

Just think that those of us with shortwave receivers and who DX on mediumwave are able to hear hundreds of broadcasts from beyond our borders coming from stations owned by who knows what kinds of scoundrels! The owners of those stations might not even come near to meeting the FCC's character standards! Makes a good case for electronic jamming or other appropriate FCC action.

And, will the FCC again be inspired by suggestions from other influential Congressional types? Maybe next month or year one will want the agency to begin dictating which kinds of music you and I shouldn't hear? Then comes the pressure to ban certain ideas or religious views some joker thinks are propagated by persons with substandard character.

Does this latest policy open the way for concocting more meaningless but high-sounding reasons to keep off (or remove from) the air various persons, or political, ethnic, or religious groups that influential persons would rather you didn't hear from or about? That would let the government easily skew broadcast licensees to include only those whose views it wants you to hear.

Does it allow and even encourage the FCC to drag out of its old files long-standing grudges the agency seems to have against applicants whose past alleged FCC rule transgressions seem to have forever branded them with the mark of Cain? These are definite potentials for government control and manipulation of free speech.

Will such policies spread to other federal agencies, then trickle down to state, county, and municipal bureaus that provide licenses and permits?

Wouldn't you think that the FCC already had enough of a job tending to the technical aspects of broadcasting, resolving interference complaints, and the myriad of complex problems concerned with making prospective broadcasters prove that they can sustain the financial burdens involved in starting and operating a station? In these areas, the agency does a good job, especially considering the fact that it's making do with half the budget and personnel it needs.

Let's leave the analysis of character standards to the courts, parole boards, astrologers, probation officers, ink blot test givers, headshrinkers, personnel directors, polygraph operators, supermarket tabloids, and those perceptive and discriminating residents of the communities in which these folks live.

This is a counterproductive and even dangerous thing for Uncle Sam to now add to his list of services and duties. If we sit back quietly and let this continue to progress, inch by inch, before we know it, American broadcasting could easily become 100% innocuous, homogenized, pap brought to us by licensees all cut from the same sterile, government-preferred social, economic, racial, ideological, educational, religious, ethnic, and political pattern.

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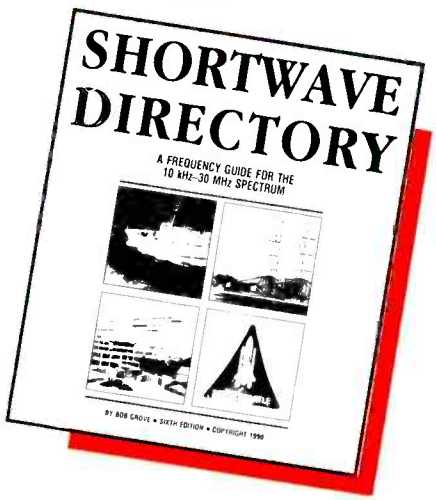

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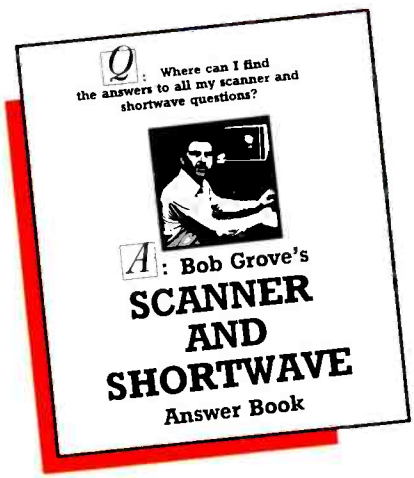

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WORLD Class Multi-band Alpha Delta Slooper Antenna $35.00. New desktop wideband active antenna Plus-1 $65. Page 27 April 1990 POP'COMM.

HELP: I need donations of any CBs, scanners, etc., to give to inner city schools' radio clubs. Your donation may help to keep a kid off the streets. Send to: T Queen, 8177 Hascall, Omaha, NE 68124.

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Clandestine Communique

(from page 73)

new clandestine on the air—The Voice of the Ethiopian People for Peace, Democracy and Freedom. Broadcasts are scheduled at 0400-0500, 1500-1600 and 1900-2000 on 7885 and probably other frequencies as well. All programs are in Amharic. Seemingly, this is a cooperative effort by the two main opposition groups—The Eritrean People's Liberation Front (EPLF) and Tigre People's Liberation Front (TPLF). 7885 is one of the newer frequencies put into use by the EPLF for its Voice of the Broad Masses of Eritrea and is also used by the TPLF for its program so it would appear the new station is being aired over the EPLF's facilities.

We've seen an interesting item to the effect that one of the rebel commanders in Afghanistan plans to open a clandestine station which would beam into Tadzhik SSR in the Soviet Union (which contains a mostly Muslim population). We don't know if the rebel commander has medium wave or shortwave in mind, however.

That does it for this month. Remember, we need any infromation you can forward regarding clandestine radio, whether in the form of reception logs, news clippings, QSLs or information received from stations or the groups which back them. We can keep your identity confidential if you wish. Thanks for your support.

Until next month—good hunting! PC

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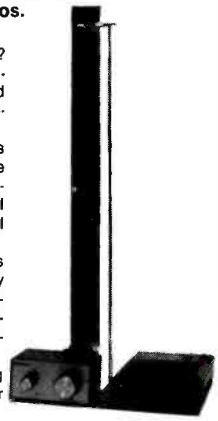

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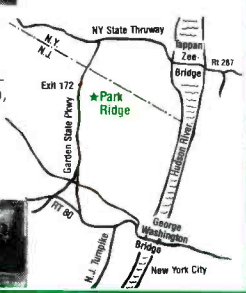

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- Manual tuning knob.
- Earphone jack, 3.5mm.
- AM, FM and wide band FM tuning modes.
- Backlighted LCD display.
- 10 Scan Banks, 10 Search Banks.
- Selectable Priority Channel.
- Delay, Hold Features.
- Selectable Search Increments, 5-955KHz.
- Permanent memory backup.
- 4 AA Ni Cad batteries included.
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- Carry Case.
- Cigarette Lighter Charger.
- Belt Clip.
- Earphone.

Options:

External Speaker. Mobile Mount.	MS190	$19.50
Extended Warranty. 2/3 yrs		$45/$55

Specifications:

Coverage:	8-600, 805,1300MHz
Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0AM
Speed:	20 ch/sec. scan. 40 ch/sec. search
IF:	561.225, 58.075, 455KHz or 10.7MHz
Increments:	5 to 955KHz selectable/ 5 or 12.5 steps.
Audio:	.4 Watts
Power:	Input 9 - 13.8 V. DC
Antenna:	BNC
Display:	LCD
Dimensions:	6 7/8H x 1 3/4D x 2 1/2W. 12oz wt.

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100 Channels. Low, Air, High, UHF & 800MHz.

Standard Features:

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Cigarette Lighter power adaptor.	CP100	$4.00
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Extended Warranty. 2/3 yrs		$40/$55

Specifications:

Coverage:	27-54, 108-174, 406-512, 830-950MHz
Sensitivity:	.4uV Lo,Hi. .8uV Air. .5uV UHF. 1.0uV 800
Scan Speed:	15 ch/sec.
IF:	21.4MHz, 455KHz
Increments:	10,12.5,25,30
Audio:	1W
Power:	12.8VDC, 200MA
Antenna:	BNC
Display:	LCD w/backlight
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- AM, FM wide and narrow modes.
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- 62 Scan Banks, 16 Search Banks.
- Telescopic antenna w/ BNC connector for >25MHz.
- AC & DC Power.
- One Year Limited Warranty.

Options:

RS232 cable to DB25 connector.	BW-1.	$24.95
RS232 cable & software for MS DOS.	EG-1.	$39.95
BFO for SSB listening.	BFO-1.	$159.00
Base type antenna 25 to 1000MHz w 50'coax.	AS300	$59.95
Mag Mnt Mobile Antenna. 15' coax.	MA100	$25.00
Cigarette Lighter power adaptor.	CP100	$4.00
External Speaker with mobile mount.	MS100	$19.50
Extended Warranty. 2/3 yrs		$30/$45
Mobile Mtng Bracket.	MM1	$14.90
Cigarette Lighter power adaptor.	CP100	$4.00

Specifications:

Coverage:	5 - 1500MHz
Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0uV AM >3.0uV SW AM
Scan Speed:	<=36 ch/sec.
IF:	750MHz, 45.03MHz, 5.5MHz, 455MHz.
Increments:	5,12.5,25KHz
Audio:	1W
Power:	12VDC, 200MA
Antenna:	BNC
Display:	LCD, backlighted
Dimensions:	3 1/7H x 7 7/8D x 5 2/5W. 2lb 10oz wt.

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400 Channels. 100KHz to 2036MHz.

Standard Features:

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Mobile Mounting Bracket.	MM1	$14.90
RS232 Control Package (software & cable) offers spectrum display and database.	SCS3	$295.00

Specifications:

Coverage:	100KHz - 2036MHz
Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0AM/SSB/CW
Speed:	20 ch/sec. scan. 20ch/sec. search
IF:	736.23, (352.23) (198.63) 45.0275, 455KHz
Increments:	50Hz and greater
Selectivity:	2.4Khz/-6db (SSB) 12KHz/-6db (NFM/AM)
Audio:	1.2 Watts at 4 ohms
Power:	Input 13.8 V. DC 500mA
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R-2000
High performance receivers.

Scan the world bands 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.

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

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

Specifications, features, and prices are subject to change without notice or obligation

KENWOOD

CIRCLE 10 ON READER SERVICE CARD

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