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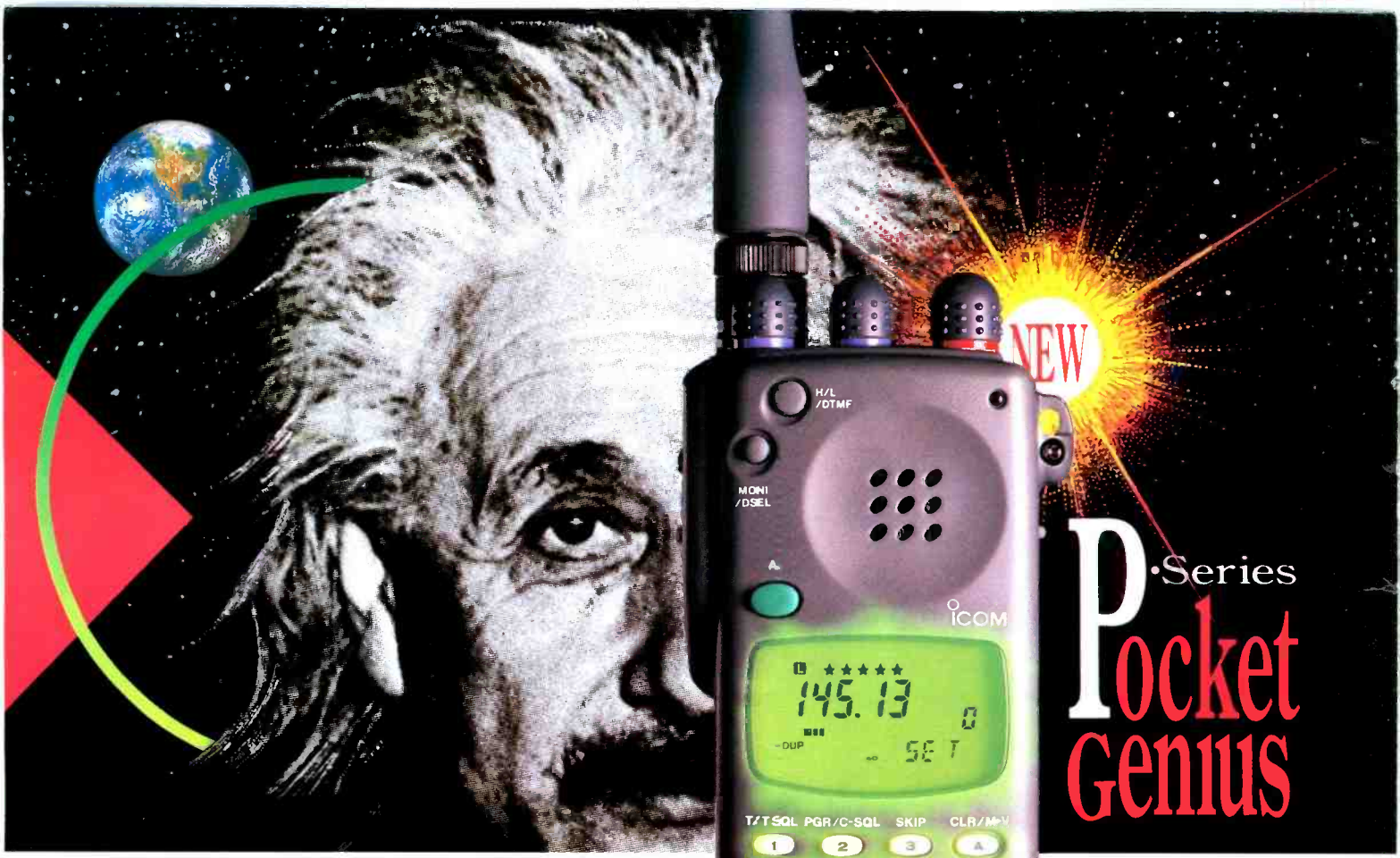

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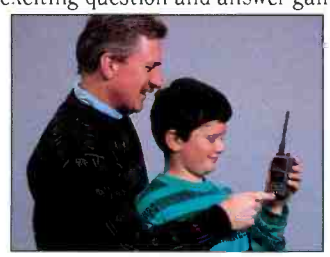

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MAY 1992 **VOLUME 10, NUMBER 9**

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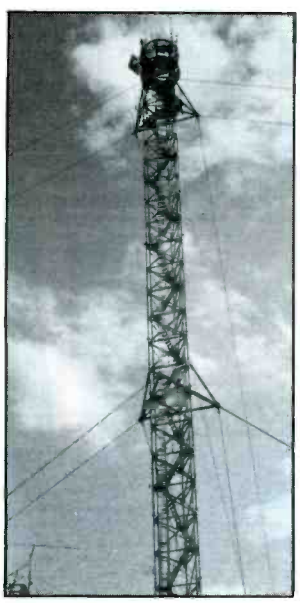

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FEATURES

COLUMNS

DEPARTMENTS

This month's cover: *FM Radio Station WKTK in Gainesville, FL. Photo by Larry Mulvehill.*

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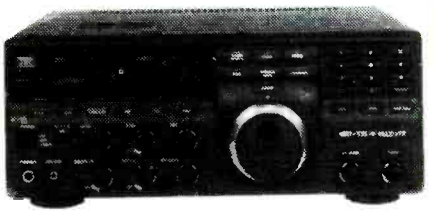

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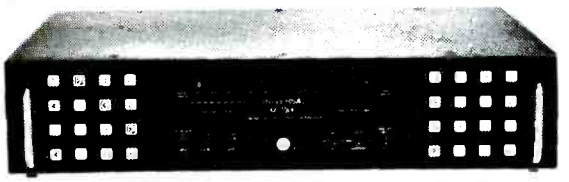

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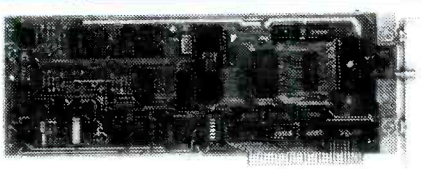

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BEAMING IN

AN EDITORIAL

BY TOM KNEITEL, K2AES

Vive La Difference!

During a radio call-in radio program I was on recently, we got to talking about the differences in getting started in the hobby now, as opposed to when I entered the hobby. A young caller was enthusiastically running through a list of the reasons the 1990's is the best time to be getting started in world band listening. He noted that things have been churning, what with the Berlin Wall, the Gulf War, independence for the Baltic and Eastern European nations, the breakup of the USSR and Yugoslavia, and ongoing tensions in the Mideast.

It's true that there hasn't been a dull day on the international bands in at least two years. If you're a person who finds that listening to the world in the process of evolving wins out over seven evenings a week of TV sitcoms, then you know what I mean. If it weren't for CNN, *The Simpsons*, and some films, I'd get little real enjoyment from from the tube.

My own involvement in shortwave listening went into high gear in 1947, when I entered my teen years. That youngster who called the radio talk show reminded me of myself, and how it seemed to me in 1947 that I was at the best of all possible places in time to have gotten started. The sunspot cycle then was at a good point. Being so soon after World War II, the nations of Europe, the Far East, and elsewhere were redefining and rebuilding themselves, both physically and politically. They were all getting on the air to tell everybody else about their plans and their ideologies.

Developments in radio technology had been hastened by the war. High powered transmitting equipment had become readily available around the world, and within the means of almost any nation, group, or individual having a message to propagate. Even those who couldn't afford new or powerful equipment could dig up something on the military surplus market, like an Army BC-610 or Navy TDH or TAB transmitters, to put between 300 and 3,000 watts on the air with a minimal cash outlay. Nations and individuals who would never had even dreamed of international broadcasting in 1937, had dial positions and their names in *White's Radio Log* only ten years later.

From the point of view of a newcomer armed with a shortwave receiver, it was like being the proverbial kid in the candy store. Tuning across the band, I easily snagged India, USSR, Argentina, Albania, England, Philippines, Bulgaria, Switzerland, Romania, Mexico, France, Venezuela, Hungary, Denmark, Turkey, Uruguay, and a seemingly endless parade of other nations.

Half the fun was sending off reception reports to these stations and anticipating the arrival of the prized verification card or letter in return. In those days, this enjoyable aspect of the hobby was not without its hassles, at least at my house.

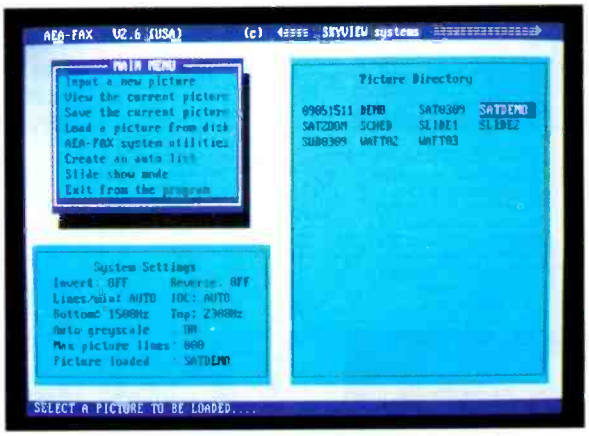
A goodly part of the problem was that in 1946, Winston Churchill proclaimed an "Iron Curtain" to exist between Eastern European (Communist) nations and the Western nations. From shortly after that announcement, and extending to just after Sen. Joe McCarthy's 1954 Senate investigation hearings of the U.S. Army, our country was engaged in a vigorous and hysterical effort to uncover Communists hidden in all walks of American life. This included also finding suspected and alleged Communists, Communist sympathizers, former Communists, friends of Communists, and anybody else who might even remotely fit along the outer edges of such descriptions. It was a bizarre period that lasted for more than eight years, pressing especially hard on those in the broadcasting and motion picture industries.

The passion with which this hunt was conducted was beyond belief. Any person whose name was casually dropped in any connection with an accused person, stood a good chance of also being branded a subversive, and consequently bearing the difficult burden of proving themselves "innocent." Careers were diminished or destroyed, lives almost ruined, on the basis of a person perceived by someone else of being a Communist or sympathizer ("fellow traveler"), or too closely tied to one.

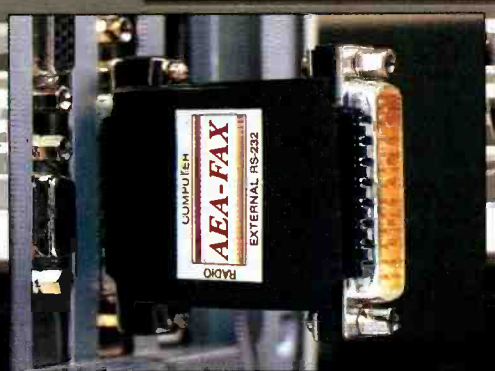
The year 1947 was particularly grisly in this respect. That's when an unofficial "Hollywood Black List" of 300 alleged Communists and sympathizers was compiled by the film industry. To a great extent, it was compiled on the basis of suspicion, whispers, hearsay, rumor, and finger pointing. It contained the names of writers, actors, directors, and others. Some of those named were sum-

(Continued on page 72)

Weather FAX



AEA-FAX is menu-driven and mouse compatible for ease of use.



The compact AEA-FAX hardware includes a "daisy-chain" RS-232 input.

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MAILBAG

LETTERS TO THE EDITOR

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Hearing Those Subs

It seems that many FM broadcast stations carry alternate programming (such as lectures and uninterrupted elevator music) on subcarriers. I have been told that these subcarriers can't be received on stock FM receivers because they are hidden in the main FM broadcast signal. Are there chips or circuits that can be added to FM receivers that knock out the main FM broadcast programming so that a person can hear the subcarriers?

Dan S. McInnes,
Providence, RI

Many (but not all) FM broadcasters have "SCA" capabilities, and lease out their station's 57, 67, or 92 kHz subcarriers to others for various special purposes. Although the audio fidelity is less than that of the main FM programming, it's adequate for voice, background music, and other uses, and the leases generate revenue for FM'casters. These SCA transmissions are proprietary transmissions not intended for reception by the general public, being directed towards specific receiving sites at certain stores, hospitals, offices, schools, etc., which lease the receiving equipment and pay for their use of the special programming. Several wire-in devices have long been on the market that purport to allow individuals to pick up SCA transmissions on standard home FM receivers. I tried one a couple of years ago but experienced considerable main-program bleedthrough, which was both annoying and apparently incurable in my receiver. Maybe others have had better luck than I did. —Editor.

Dialing For Dollars

One of the TV local TV stations used to have a telephone number that you could call to get the weather forecast. This was for the cost of a regular local phone call. Now the station has added a "900" call-in number for out-of-town weather information, and announces that the calls cost 95 cents per minute, with each call averaging 90 seconds. I tried it once and found it closer to two minutes. Sounds like a ripoff of their viewers.

E. P. Brundage, Sr.,
Brooklyn, NY

TV stations in many areas have discovered that "900" call-in numbers are an easy way to pump up their revenue. They offer stock reports, movie skeds, sports scores, weather, lottery results, and opportunities for viewers to "vote" in absurd and meaningless opinion polls. It may well be that some of these services are worth paying for, but you can get the weather for free on your scanner. By the way, a TV station earns about 60 cents from each 2 minute call received. —Editor.

Back in the Fold

Having gotten started in DX'ing in 1959, I was active in the hobby for more than ten years. Then I dropped out due to the pressures of attending to my family and my career. On my last birthday, my wife bought me a Sangean shortwave portable and it sparked my interest in DX'ing anew. I quickly headed for the nearest magazine rack and picked up my first copy of *Popular Communications*. I was surprised to learn that it's the only national newsstand magazine these days covering shortwave listening. Quite a difference from the 1960's! After a week back at the dials, it was like I hadn't been away from DX'ing for those twenty years.

W. N. Randazzo,
Tampa, FL

Welcome back to the fold. We hope that you contribute loggings to our columns in the months and years ahead. —Editor.

Zenith Help Requested

I'm entranced with my Zenith Trans Oceanic Model H500. Is there a reader with a manual to spare, info on where I get a battery, and what's this plug hanging off the chassis? Please someone, help!

Don Nelson,
1118 West 18,
Spokane, WA 99203

Likes What He Sees

I have been a *POP'COMM* subscriber for several years. Just wanted to drop you a quick note to thank your staff for a great magazine. My only suggestions would be to expand the *Mailbag* section, and also run more than one *How I Got Started* story per month.

Steve Ett,
New York, NY

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NITELOGGER™
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A permanent record even when you're not there!
"Before I installed NiteLogger I always seemed to miss the 'big stories'..." Now solve the biggest frustration of scanner enthusiasts: NiteLogger makes sure you'll hear it all, even if it happens at 3:47 a.m.!

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Buy with absolute confidence.
In 1980 BMI introduced the first commercially available military time format clock independent of power lines...now used in hospitals, airports, police and fire departments worldwide. BMI also designed and produced the Mission Time Clock used on the Space Shuttle and the contigency timer for Mission Control. You can purchase BMI-engineered products with confidence!

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If you're dissatisfied in any way with NiteLogger, just return it to us prepaid within 25 days for a prompt, courteous refund. For One Full Year NiteLogger is guaranteed to be free of defects in workmanship and materials. Simply send prepaid to BMI for warranty repair.

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BMI

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CIRCLE 46 ON READER SERVICE CARD

Listening For FM DX

We Are Entering the "FM DX" Time of the Year. Don't Let It Pass You By!

BY RANSOM STODDARD, KWA7MZ

Maybe you confine your DX listening only to the international shortwave bands. If so, you're overlooking the possibilities for DX'ing FM broadcasters, and we are now rolling straight into the top season for this area of the hobby.

You may not have ever stopped to think of the FM band as being anything more than a place to hear locally broadcast music. Think again! In the one hundred channels set aside for FM broadcasting in North America, there are approximately 8,000 FM'casters in the USA alone (taking into account educational stations, translators, and boosters, along with the commercial stations).

The FM band begins at 88.1 MHz, and a channel exists at each 200 kHz step (88.1, 88.3, 88.5, 88.7 MHz, etc.) all the way to 107.9 MHz. The channels between 88.1 and 91.9 MHz are reserved for the exclusive use of non-commercial educational (NCE) stations operated by high schools, colleges, universities, community organizations, religious groups, and certain other entities specified by the FCC. While some of the NCE stations run lots of power, others run as little as 10 watts. There are more than 1,500 NCE FM stations in the US, although some (like New York City's WBAI, Berkeley's KPFA, and others) are authorized on frequencies above 91.9 MHz.

The portion of the band beginning at 92.1 MHz is available to commercial stations, of which there are now roughly 5,000 in the US. The FCC licenses FM stations in certain specific classes (Class A, B, B-1, C, C-1, etc.) which bear upon the maximum allowable effective power radiated, antenna system, distance from certain TV or other FM stations, as well as other factors. A maximum power FM broadcaster would be categorized as Class C, which allows 100 kW effective radiated power (ERP) and an antenna more than 1,900 feet above the average surrounding terrain. A small local station would come under Class A, permitting 6 kW maximum ERP, and a maximum antenna height just over 300 ft. above the average surrounding terrain. Some stations are required to use directional antennas in order to avoid interference to other FM'casters, or to concentrate most of their available signal towards a particular community.

When the FM band opens for DX, you have a good shot at hearing distant stations pouring in as if they were locals, and most of what you're hearing is in stereo. And, unlike the AM or shortwave bands, the nature of FM makes it so that you hear only one station at a time, not a cacophony of several stations babbling simultaneously.

Typically, DX'ing on the FM band first shows up at the low frequency end of the band. This is well and good since it gives you a chance at hearing the (usually) lower powered NCE stations. Sometimes DX conditions improve and the frequencies at which DX

come in begin moving up the band. The frequency limit where the DX conditions stop is called the maximum usable frequency (MUF). Sporadic-E skip, tropospheric ducting, or other forms of DX propagation might first make itself known to you by bringing in DX on TV Channels 2 through 6 (54 to 88 MHz), then can move up into the lower FM frequencies, although it doesn't always go above 95 MHz. Sometimes it does, though.

When the 6 Meter ham band, or TV Channels 2 through 6, start showing signs of DX, that's a good time to see what's happening in the low end FM band. And if nothing is happening, try again in a half hour.

As you get into FM DX'ing, you'll find that it's often the case that the DX you're hearing at a particular time is being received from stations located in only one direction, if not completely in one very limited geographic area. These are just the normal peculiarities of DX'ing at these frequencies.

Signals that arrive from generally 300 to 600 miles away, are strong and steady, and hold up for hours or days, are likely to be due to tropospheric reception. DX at distances of more than 1,000 miles are rare, but have been recorded via tropo.

Sporadic-E, or E's, is the most common reason for FM band DX, and is good for 750 to 2,000 mile DX, primarily around noon during the summer months. This DX season is beginning now and will be regular for several months to come. With less regularity, it works the rest of the year, too. It's less directional than tropo, but also less steady, and it doesn't last too long. Signals come blasting in, but they sometimes are subject to deep fading, then they just leave as suddenly as they arrived.

Meteorites can reflect FM'cast signals, too. This effect may last only a few seconds or minutes, but can produce DX of better than 1,000 miles when it takes place. Problem is that it all happens so quickly that you seldom know what station it was that was being heard unless you were lucky enough to have it happen during a station break or a local commercial mentioning a city name.

If you have a good high-gain outside directional antenna mounted on a rotor, you can try your hand at groundwave or extended groundwave reception, which isn't seasonal. This means seeing how far you can pick up stations being received via their direct signals, rather than by reception of their skywave (skip) signals. FM channels are so crowded near metro areas, this may be a rough go unless you're in the boonies where every single channel isn't blasting away with a local station, or its splatter. A directional antenna that you can rotate will be of help in allowing distant stations in your region to override another station in your area, but it won't knock out a local on frequency.

You might wish to tape your FM DX reception, and also send reception reports to the stations you hear. FM stations have a rather good record as verifiers. We use the *FM Atlas and Station Guide*, by Bruce Elving, as our main reference in keeping track of which FM stations are operating where in the US and Canada. The current edition is available from leading suppliers of hobby books.

Another helpful aid to the FM DX enthusiast is membership in the Worldwide TV-FM DX Association, P.O. Box 514, Buffalo, NY 14205-0514. This club has been around for many years and puts out an excellent monthly publication called *VHF-UHF Digest* devoted to all aspects of FM and TV DX'ing, including tech tips, members' loggings, and DX'ing hints. Contact the club directly for membership information (they probably would appreciate a self-addressed, stamped, return envelope for their reply to you). Please tell them you learned about their group from *POP'COMM*.

The FM DX season is upon us. Maybe these are 5,000 stations you have never tried DX'ing. This is a terrific hobby, and many people just can't wait for this time of the year for that good FM DX to come rolling in. Why not join us? ■

Radio Remembered

We Check Out That Golden Era of Radio & Wireless

BY ALICE BRANNIGAN

One of the things about the Minneapolis-St. Paul "Twin Cities" area of Minnesota is that, being on the Mississippi River, the local radio stations get to be a mix of "K" and "W" prefixes. This continues a wonderful, old, and now totally pointless tradition of separating stations east and west off the great river with distinctive "W" and "K" prefixed call letters.

Another good thing about the Twin Cities is station KSTP, which is a real old-time powerhouse broadcaster that's been known to DX'ers for years. The station says it began operations in April of 1924, although we didn't try to check that claim. We could track the call letters KSTP back only to 1928. That's when the station was owned by the National Battery Broadcasting Co., of the St. Paul Hotel, St. Paul (Westcott), Minn. Any operations prior to 1928 were evidently under another owner, using other call letters, and possibly in another city.

KSTP, in 1928, used a powerful 5 kW transmitter on 1360 kHz, then moved to 1400 kHz later in 1928. Two short years later, KSTP was running 10 kW and had a signal that was easily heard from coast-to-coast. KSTP ran numerous late-night programs directed at DX'ers. Soon after, the station shifted over to 1460 kHz and again upped its power, this time to 25 kW.

The station kept its studios in the St. Paul Hotel for many years, with the transmitter site located at County Road "C" and Highway 61. In the 1930's, the antenna was a 163 ft. tower.

During the major early-1940's frequency shuffle in the US, KSTP changed its frequency to 1500 kHz and increased its power to 50 kW. Today, the station still operates on this frequency, using a talk-radio format. It is now owned by the Hubbard Broadcasting Co., 2792 Maplewood Drive, St. Paul, Minn.

Note that the government gave out some early "incorrect" call letter prefixes early-on before it had formulated its east/west "W/K" policy. Stations such as KYW and KDKA were east of the Mississippi River, while WBAP was one of those west of the river. Such stations ended up with call letters that really stood out after the geographic identifier policy went into effect.

In 1931, "Tiny" Stowe, the KTSP all-night DX-program emcee, shown in the studio with his XYL, Velma Dean Stowe, who sang on the station. Seated atop the Steinway is Velma, Jr., age four months.

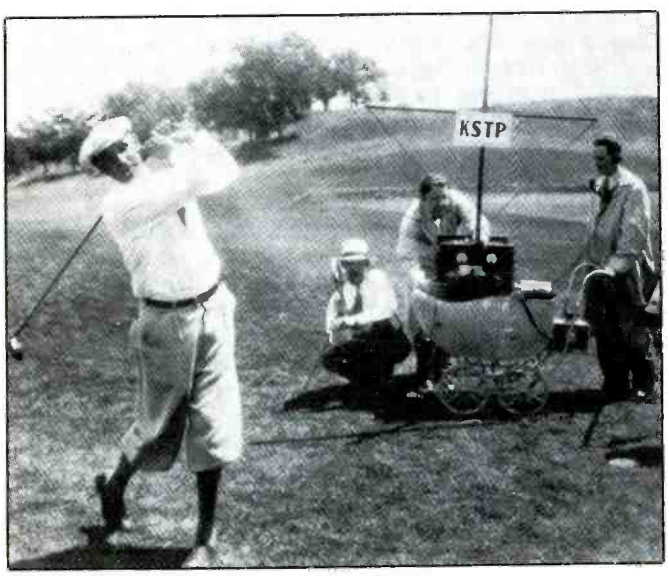
G.I. Broadcasters

Over the months, we have collected a healthy-sized stack of letters from readers asking us to direct our attention to those little remembered American Expeditionary Forces and Armed Forces Network (AFN) broadcast stations that were established by our forces at various bases during and right after World War II (1941-1945).

These stations weren't usually listed in contemporary broadcast station directories.

Some G.I. stations were little one-lung home-built operations with all-local talent, while others were very formidable operations with professional equipment and programs. There were those that were established at remote American bases, or at captured enemy bases, occupied cities, even several at American bases in Canada (well, including Newfoundland, which wasn't actually part of Canada then).

Some of the one-lungers and lower powered stations were KMTH/800, Midway Island, 5 watts; WVTV/1410, Johnston



An early sports remote from KSTP went right to the golf course.

The KSTP mobile news van, in days of yore.

NATIONAL BATTERY BROADCASTING CO.

KSTP

GENERAL OFFICES
ST PAUL HOTEL

ST. PAUL, MINN.

May 27, 1930

Mr. Jos. Hueter,

Dear Sir:

We thank you for your report of May 7, 1930.

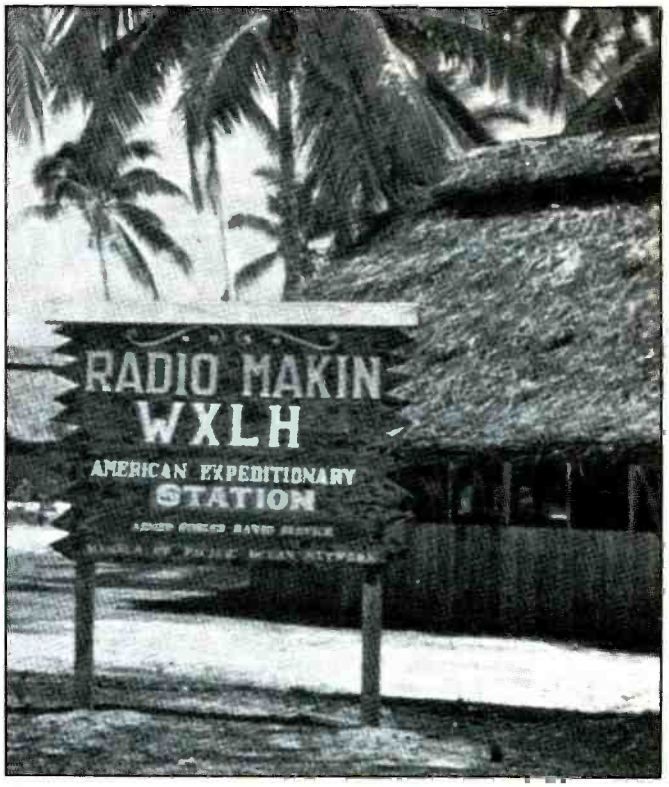
You, undoubtedly, received the program mentioned in your letter, and it is a pleasure, indeed, for us to send this v0rification.

Yours very truly,

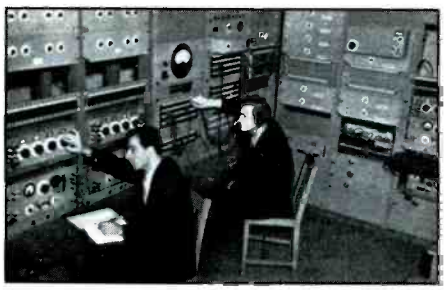
JJ

JEANNETTE JOHNSON
Corresponding Secretary

How KSTP was QSL'ing back in 1930. (Courtesy Joe Hueter, PA.)



The main studios at Radio Makin, WXLH, in the Gilbert Islands, during World War II.



AFN's programs were slick and professional sounding, but were mostly heard in the European Theatre of Operations. This is AFN's main control room in London during the war.

American G.I. station VU2ZY, a 50-watt broadcaster in New Delhi, India, that operated during WWII for entertaining Allied forces in the China-Burma-India Theatre. Note the record turntable on the desk. Shown is the Chief Engineer, Eskil, W6NNE.

Island, 5 watts; WGBY/1490, Guantanamo Bay, Cuba, 5 watts; WLKU/1480, Okayama, Japan, 10 watts; WXLJ/1400, Cold Bay, Alaska, 25 watts; WVUG/1450, Anchorage, Alaska, 50 watts; WXLA/800, Ft. Glenn, Aleutian Islands, 50 watts; XABU/1480, Tsingtso, China, 50 watts; WXLK/980, Amchitka, Aleutian Islands, 50 watts; WXLR/1110, Ascension Island, 50 watts; WBQN/780, Borinquen Field, Puerto Rico, 50 watts; WVTX/620, Iwo Jima, 100 watts; WVTW/1400, Peleliu, Palau Islands, 250 watts; WVTD/1480, Manus, Admiralty Islands, 300 watts; and XMAG/1540, Nanking, China, 250 watts.

Stations in (and near) Canada operated by US military forces included CHFN/1000, Ft Nelson, B.C., 40 watts; CRFC/1230, Ft. Churchill, Manitoba, 100 watts; VORG/1450, Gander, Newfoundland, 300 watts; and two stations at Harmon Field, Stephenville, Newfoundland, VOHF/1050 with 5 kW, also VOUS/1490 (measured 1485 kHz), with 250 to 300 watts.

Medium power stations included WVUB/790, Quarry Heights, Canal Zone, 5 kW; WXLS/850, Narssarssuk, Greenland, 1 kW; Okinawa had two 450 watters, WXIH/1060 and WLKH/1100; WVTC/1230, Nagoya Japan, 10 kW; WLKF/1400, Kumamoto, Japan, 3 kW; WVTP/1480, Seoul, Korea, 500 watts; WVTF/660, Saipan, Marianas, 1 kW; WVDI/950, Cocorite, Trinidad, 1 kW; and WXLG/1440, Kwajalein, Marshall Islands, 1 kW.

High powered stations included WVTR/870, Tokyo, Japan, 50 kW; AFN/1249, Munich and Stuttgart, West Germany, 100 kW; AFN/1411, Frankfort, West Germany, 60 kW; and WXLO/900, Shemya, Aleutian Islands, 20 kW. During the war in Europe, AFN produced its programs in conjunction with the BBC as well as the American commercial networks. These programs were sent via landline to low-powered transmitters at American bases in the European Theatre of Operations (ETO). After the war, AFN put its own high-powered transmitters on the air in Germany.

These are only a sampling of the stations, there were many others. This partial roster does, however, provide a basic idea of this far-flung mix of stations, their power ratings, locations, and the fact that they usually used American call letters regardless of where they were.

The low-powered locally operated stations were the most interesting of these. They were operated for and by the troops at individual bases, especially in the Pacific. Sometimes different bases were close enough to one another to permit G.I.'s to have a selection of several stations to hear for their entertainment. An example was in the Gilbert Islands, which were wrested from the Japanese in late 1943. Several American broadcasting stations were quickly put into operation for bolstering the morale of our forces stationed there. Makin had its station WXLH, while Tarawa was on the air as WXLF. Being

BUFFALO EVENING NEWS
Printed in Your Home by Radio Facsimile
Feb. 1, 1939

NOTED TENOR HERE

Tauber Says Anschluss Was Forced on Vienna by Hitler.

With memories of his native Austria aroused by Buffalo's heavy snow, Richard Tauber, famous lyric tenor, declared today in Hotel Statler, "The Austrian people are not for Hitler."

"When a gangster threatens a man with a knife behind his back, what does he do?" he asked. "That's what Austria did." Mr. Tauber, who left Austria two days before anschluss, has applied for British citizenship.

Council Group Approves Three Civil Service Jobs

Creation of three new positions in the Civil Service commission was approved this afternoon by the council's legislation committee. The jobs are:

Examiner, at $2250; investigator, $1800, and clerk at $1850 a year.

The committee approved state legislation under which the coun-

Lehman Asks 3 New Levies To Balance Record Budget

ALBANY, Feb. 1.—Three new taxes to raise $64,000,000 to balance the record-breaking 1939-40 budget of $411,682,122, in addition of making permanent the so-called "emergency levies" which cost taxpayers approximately $100,000,000 annually, were recommended to the Legislature by Governor Lehman in his executive budget message.

The new levies proposed by the governor and which brought an immediate storm of protest from business and real estate interests.

Governor Lehman told the lawmakers that the new taxes are needed because of unemployment relief and a sharp decline in existing revenues.

He estimated that the state's deficit at the end of the present fiscal year June 30, next, will be $33,147,272, compared to a surplus last June 30 of $6,469,322.

CUT IN SICK LEAVE PAY HINTED BY COUNCILMAN

A new policy of granting sick leaves to city employes was hinted at today by two members of the Common Council finance commit-

KENNEDY EXPECTS PEACE, BARRING SOME TRIVIALITY

"There will be no world war unless some triviality occurs which we have overlooked," said John B. Kennedy, NBC radio commenta-

TUGWELL'S VIEW IRKS WADSWORTH

WASHINGTON, Feb. 31.—Representative James W. Wadsworth, Republican of Geneseo, today replied sharply to the statement of former Undersecretary of Agriculture Rexford Guy Tugwell that the trend of the times in the United States is toward a fourth branch of the government, a directive planning branch to aid the legislative, judicial and executive branches. Prof. Tugwell, made his statement in a speech before the American Institute of Planners and the American Planning and Civic association.

Representative Wadsworth said, "this seems to me to lead to a super-government or totalitarian state and

A portion of an actual page from a radio-FAX newspaper dated February 1, 1939. (Courtesy Fred V. Gwyer, W9BIU, Conn.)

Stations in the "Mosquito Network" were often located at the sites of well-known WWII battles. This 20 by 40 ft. shed was the 1944 home of US Marine Corps station, "Radio Guadalcanal," in the Solomon Islands. The Program Director at the time was Spencer, W9GJL.

separated by only 140 miles of open water, and with no other stations to interfere, each station could be received at both bases.

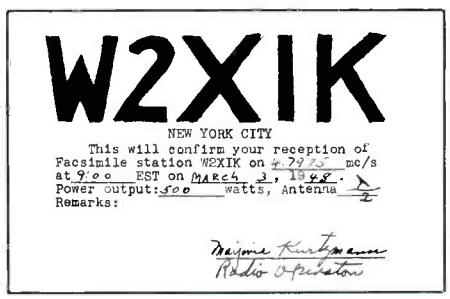
Such smaller war zone stations typically filled the air with pop and classical music recordings, gag commercials, parodies of stateside radio shows, sports scores, upbeat news from home, base activities, and lots of savage G.I. humor that poked at the enemy, the bad chow, the local landscape, the war, the rumors, military procedures, the weather, the insects, the slow mail service, and everything else they could think of. While some programs were recorded in the States and flown to these stations, the majority of material was written, produced, and put on by personnel at the individual bases.

The equipment at many of these stations was put on the air and operated mostly by hams who cleverly improvised, jury rigged, salvaged, borrowed, and homebrewed from whatever they could find. They freely scrounged and incorporated components that the enemy had left behind. Seldom were there adequate spare parts. Some of these stations operated very tenuously. W6NJK, who operated 2.5 watt G.I. station *Rock Radio* (mentioned here previously) on American Samoa, once described the transmitter as "tired tubes, broken bed springs, and stripped Jeep gears."

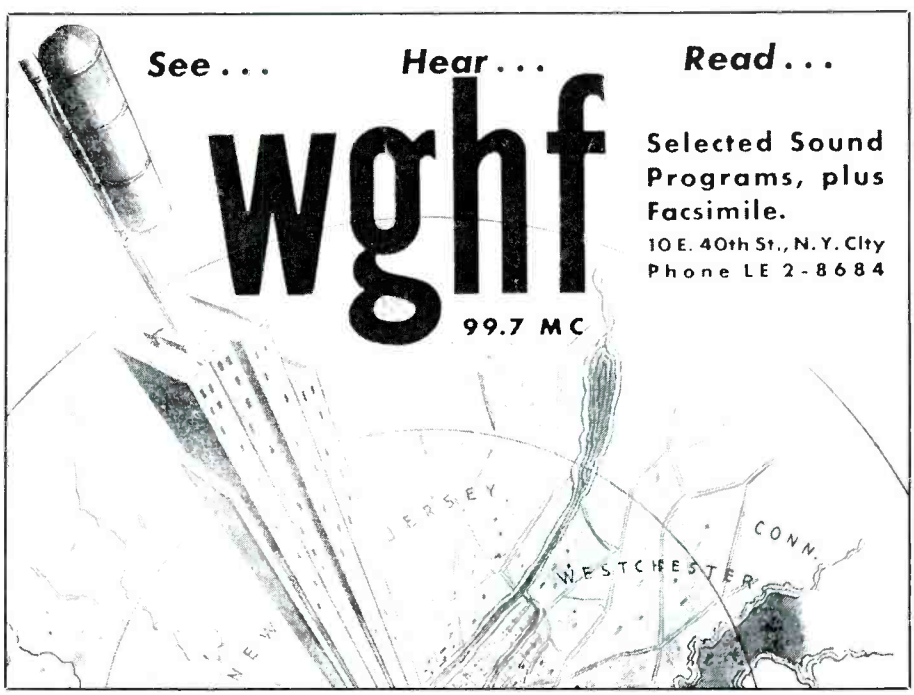
The transmitter that had once broadcast the 1937 solar eclipse from an atoll in the Pacific, in 1943 was used for some broadcasts from Naples, the first Allied transmission from continental Europe since Dunkirk. Nicknamed *The Relic*, the transmitter had been taken out of mothballs in 1942 and shipped to North Africa in time for the invasion of Sicily. It was set up in Syracuse. Then it was sent to Bari soon after the invasion of Italy. The 5-ton transmitter was shipped to Naples in November of 1943 for use there.

As soon as the War ended in Europe (May of '45), much more sophisticated equipment began arriving there. *SigCircus* was a 60 kW transmitter mounted in 17 trailers that was operating there by the June of 1945. It had all of the facilities of a broadcasting station and could be set up, or taken down, in less than a day, them moved somewhere else. In addition to an AFN studio and control room, it had full recording facilities, plus the ability to send/receive FAX and RTTY. The broadcast transmitter had a normal range of 25 to 30 miles.

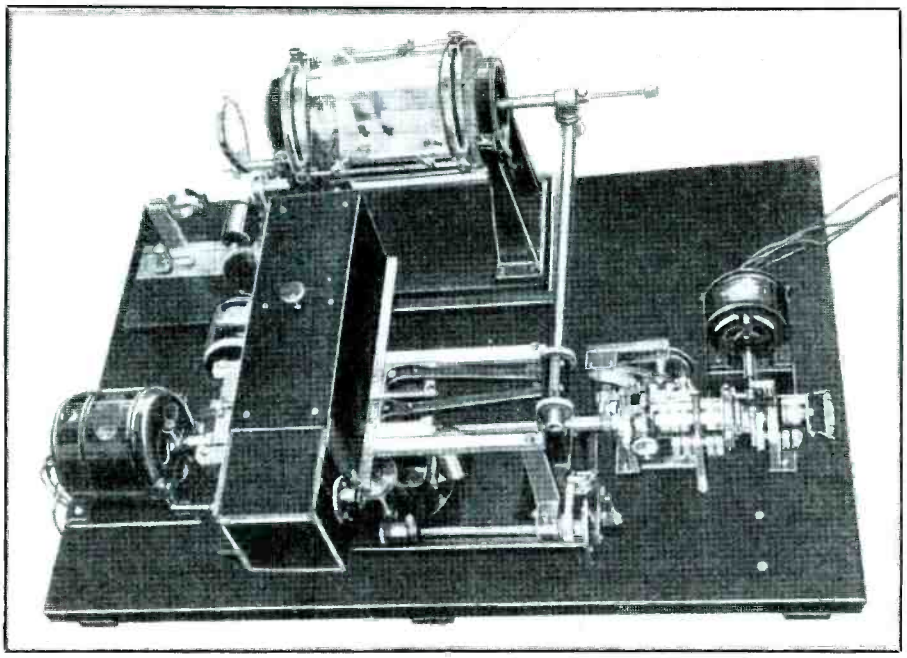
Although the idle time for individuals to hear G.I. programming was certainly limited in combat zones, the boost it provided to relieve the tension, or the monotony of sweat-


W2XIK
NEW YORK CITY
This will confirm your reception of Facsimile station W2XIK on 4.7975 mc/s at 9:00 EST on MARCH 3, 1948.
Power output: 500 watts, Antenna
Remarks:
Wayne Kurtzman
Radio Operator

This 1948 PFC from W2XIK represents some brief FAX tests the New York Times ran on 4.7975 MHz with 500 watts. (Courtesy Tom Kneitel, NY.)



New York City FM'caster WGHF was testing with FAX newspaper transmissions in 1946.

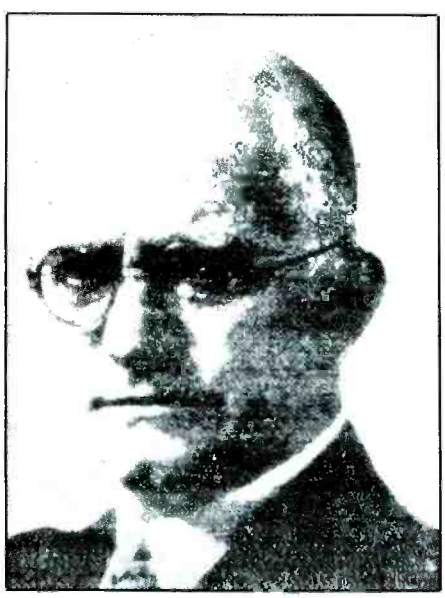


This is the RCA unit used for transmitting FAX photos back in 1926. Note the rotating photo-scanning drum at the top-center.

ing it out, and the homesickness, made such stations G.I. favorites. Although not as polished as the programming of the AFN, the programs of the *Mosquito Network*, as the Pacific stations were called, were no less welcomed by their audiences. The network in the Aleutians was known as the *Bridge to Victory*.

Interestingly, as the course of the war changed, so did the status of some stations. Radio Palau, in the Palau Islands, had originally been put on the air by the Japanese military forces and was used for that nation's purposes. When the U.S. Marines captured the Palau Islands, the station had somehow survived the devastating Leatherneck assault virtually unscathed. Was this by design? In short order, a group of American hams and professional radio personnel put the 250 watt station back on the air under the call letters, WVTW, adding it to our own broadcasting network.

Such was the course of broadcasting in the WWII *Mosquito Network*.



This is how a photo of George Eastman looked after being sent 5,000 miles by radio-FAX in 1926. Pretty good, we'd say!

Everything Old Is New Again

Recently, we read in the newspaper that a company has come up with a great new idea. They came to the conclusion that it would be wonderful to send newspapers by FAX, but that it would tie up telephone lines for a long time to send them into people's homes. The report said that the company convinced the FCC to allow them to try sending newspapers out by FAX, using radio as the medium of transmission.

What a great idea! It was even wonderful more than fifty years ago when many 50 kW clear channel broadcast stations across the nation experimented with sending out newspapers by FAX at night. The idea was that nobody listened to the radio in the middle of the night and those hours might best be devoted to transmitting newspapers via FAX to be picked up on special receivers in homes. When people got up in the morning, they would have their newspaper waiting for them right on their table. It would save the newspapers printing and delivery costs.

It was tried, and it worked. We have discussed it previously in these pages. Problem was that it was either too much of a novelty or nobody took it seriously enough to move the idea beyond the late 1930's. Or the war came along. Whatever happened, the idea never really went anywhere. After WWII, some minor interest continued as the *New York Times* briefly tested with FAX on shortwave. Bill Finch's FM station in New York City, WGHF/99.7, was also test transmitting FAX newspapers that could be received in homes on Finch FAX equipment. Nothing substantive came of the tests. Everything was forgotten until someone else came up with this idea to do it all over again in 1992, and for the very second time.

Recently, Fred V. Gwyer, W9BIU, of Niantic, Conn., provided us with an original page of one of the FAX newspapers from decades ago. It is page 3 of the *Buffalo (NY) Evening News*, dated February 1, 1939. Under the name of the newspaper is the legend "Printed in Your Home by Radio Facsimile." The FAX paper seems to be the same as that used in modern FAX machines.

Radio-sent FAX, of course, goes back much further than 1939. We know that it was then called a *photoradiogram*, and publicly demonstrated by RCA on January 19, 1926, for at least 20,000 people scattered in sixty-seven cities throughout the US, Canada, Cuba, England, and Hawaii.

One of the photos was that of inventor George Eastman. The FAX'es originated in Honolulu and went by landline to the transmitting station at Kahuka. The signal went eastward 2,370 miles to a receiving station at Marshall, Calif., then by landline to a transmitter at Bolinas, Calif. The Bolinas station transmitted them 2,640 miles to RCA's receiving station at Riverhead, New York. They were then sent by landline to New York City (more than 75 miles), where they were distributed by landline to different cities. The signals were also transmitted from Riverhead across the Atlantic where they were received in England. FAX'es were also sent from England, where they went the reverse route all the way to Hawaii.

Each photo took approximately a half hour from start to finish of a completed image. The quality was amazingly good, as can be seen from the photo here of George Eastman, which was one of those sent as an RCA photoradiogram sixty-six years ago.

Maybe if we wait long enough, someone will re-invent the spark gap transmitter, the cat's whisker, or the vacuum tube. Might not be such a bad idea, what?

Let's hope that you'll be with us next issue when we will again take a leisurely stroll through radio's memorable years. Thank you for submitting so many of the items we find so useful in the preparation of this column. This includes old QSL's (originals, if you can spare 'em; copies if you can't); station photos and postcards; station directories; newspaper clippings; questions; ideas; and anything else to do with old radio and wireless. ■

DONT GAMBLE
when you want the best

21 Reasons To Buy
OPTOELECTRONICS' MODEL 3000

1. RANGE- 10Hz to 3GHz.
2. Hi-Speed ASIC (Application Specific Integrated Circuit) State-Of-The-Art.
3. 256 Times Faster than other hand held counters.
4. 10 Digit LCD. Readability even in Bright Sunlight.
5. 6 Functions - Frequency, Period, Ratio, Time Interval, Average and Prescale
6. RF Signal Strength Bargraph - 16 Segment, Zero & Full Scale Adjust. Excellent for locating Hidden Transmitters.
7. Four extremely Fast Gate Times .01, .1, 1, 10 sec.
8. Dual High Impedance Amplifiers.
9. Maximized Sensitivity
10. Hold Switch - Locks in measurements FAST.
11. ± 1PPM Accuracy
12. Direct Count - 1Hz resolution to 220MHz
13. Sensitivity <1mv 10MHz - 200MHz, <5mv - 2GHz.
14. Single Shot Time Interval 100ns, .1ns averaged.
15. Push-button Input, Gate & Function selection.
16. Extruded Aluminum Enclosure.
17. NiCad & Charger Included.
18. Low Battery Indicator.
19. 1 Year Parts & Labor Warranty
20. 30 day Money Back Guarantee.
21. OPTOELECTRONICS backs this with our 18 Years of Dependability & Service.

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Selected English Language Broadcasts

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 every attempt is made at making the list as up-to-date as possible, stations often make changes in their broadcasting hours and/or frequencies with little or no advance notice. Some broadcasters air only a part of a 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 past the hour. All times are UTC.

Time	Country/Station	Frequencies
0000	R. Vilnius, Lithuania	7400, 9710, 9800, 15180, 17605, 17690
	Spanish Nat'l Radio	9530
	R. Havana Cuba	11950
	R. Moscow	6000, 6045, 7115, 7150, 9600, 9720, 9870, 11665, 11735, 11750, 11850, 12050, 15425, 17700, 17840
	R. Beijing	9770, 11715
	R. Pyongyang, N. Korea	11335, 13760, 15115
	VOIRI, Iran (30)	9022, 9720, 15230
	BBC	5965, 5975, 6005, 6175, 7325, 7325, 9570, 9580, 9915, 11750, 11945, 11955, 15260, 15360, 17830
	HCJB, Ecuador (30)	9745, 15115
	R. Norway (Sun/Mon)	9645, 11925
	R. Canada Int'l	5960, 9755
	R. Prague, Czechoslovakia	7345, 9540, 11990
	All India Radio	9910, 11715, 11745, 15110, 15135, 15145, 17830
	BRT, Belgium	13665, 13710
	R. Korea, S. Korea	15575
	R. Nacional, Ven. (40)	9540
0100	R. Kiev, Ukraine	7400, 9800, 15180, 17605, 17690
	V of Greece (30)	7430, 9420, 11745
	R. Australia Int'l	9870, 9875, 13730
	R. Yugoslavia (30)	9580
	R. Free Croatia via WHRI	7355 (part EE)
	RAE, Argentina	11710
	R. Prague, Czechoslovakia	5930, 7345, 9540
	RAI, Italy	9575, 11800
	R. Norway (Sun/Mon)	9605
	R. Sweden	9695, 11705
	Deutsche Welle, Germany	6085, 6145, 9515, 9565, 9610, 9640, 9770, 11865
0200	R. Philippinas, Philippines (30)	17760, 17840, 21580
	R. Portugal (30)	9555, 9600, 9705, 11840
	R. Tirana, Albania (30)	9760
	R. Havana Cuba	5965, 19950, 15140
	Swiss R. Int'l	6135, 9650, 9885, 12035, 17730
	Vatican Radio (50)	6150, 7305
	R. Yugoslavia	9580
	R. Romania Int'l	5990, 6155, 9510, 9570, 11830, 11940
	R. Cairo, Egypt	9475, 9675
	R. Norway (Sun/Mon)	9605
	R. Sweden	9695, 17705
	Deutsche Welle, Germany	6035, 7285, 9615, 9690, 11945
	V of Free China, Taiwan	5950, 9680, 9765, 11740, 11860, 15345
	R. Finland Int'l (30)	9560, 11755
0300	R. Tirana, Albania (30)	9760
	R. Beijing	9690, 9770, 11715
	V of Greece (40)	7430, 9420, 11645
	R. Japan	15325, 17825, 21610
	TWR, Bonaire	9535, 11930
	R. Yerevan, Armenia (50)	7400, 15180, 17605, 17690
	R. Botswana	7255
	R. Prague, Czechoslovakia	5930, 7345, 9540

Time	Country/Station	Frequencies
	Deutsche Welle, Germany	6085, 6120, 9535, 9545, 9605, 9640, 9705, 9770
	R. Cultural, Guatemala	3300
	R. Budapest, Hungary	6110, 9885, 11910
	R. Austria Int'l (30)	9870, 13730
	R. Netherlands	9590, 11720
0400	R. Havana Cuba	5965, 11760, 11950
	R. Beijing	11685
	Swiss Radio Int'l	6135, 9885, 12035, 13635
	R. RSA, South Africa	7270, 11900, 15230
	R. Sofia, Bulgaria	11720, 11765
	R. Prague, Czechoslovakia	5930, 7345, 9540
	R. Romania Int'l	5990, 6155, 9510, 9570, 11830, 11940
	R. Canada Int'l	6150, 9505, 9670, 11925
	UAE Radio (30)	11945, 13675, 15400, 15435
0500	HCJB, Ecuador	9745, 15155
	CRTV, Cameroon	4750, 4795, 4850, 5010
	Kol Israel	11588
	Radio Austria Int'l (30)	6015
	V of Nigeria	7255
	Deutsche Welle, Germany	5960, 6045, 6055, 6120, 9535, 9670, 9690
	Spanish Nat'l Radio	9630
0600	BBC	5975, 6180, 6190, 6195, 7120, 7150, 7230, 9410, 9600, 9640, 11760, 11940, 11955, 12095, 15070, 15280, 15310, 15360, 15400, 15420, 15575, 17790, 17830, 17885
	Christian Science Monitor	9455, 9870, 17555, 17780
	GBC, Ghana	4915
	R. Havana Cuba	11760
	R. New Zealand	17770
	V of Mediterranean, Malta	9765
	R. Polonia	72170, 9675
	Vatican Radio	6245, 7250
	R. Canada Int'l	9740, 11905
	R. Austria Int'l (30)	6015
0700	HCJB, Ecuador	9585, 11730, 21455
	TWR, Monaco (40)	9480
	CFRX, Canada	6070
	GBC, Ghana	6130
	R. Luxembourg	15345
	BRT, Belgium (30)	5910, 11695, 13675
	V of Free China, Taiwan	5950
	R. Netherlands (30)	11895
0800	KTWR, Guam	15200
	AWR, Italy (30)	7230
	KNLS, Alaska	6095
	SIBC, Solomon Is.	5020, 9545
	V of Guyana, Guyana	5950
	V of Indonesia	11755, 11785
0900	NBC, Papua New Guinea	4890
	FEBC, Philippines	11690
	R. New Zealand	9700
	R. Australia	9580, 11800
	R. Japan	11840, 15270, 17890
	R. Ulan Bator, Mongolia	11850, 12010

Time	Country/Station	Frequencies
	R. Netherlands (30)	11895
1000	TWR, Bonaire (55)	11815, 15345
	R. RSA, So. Africa	15250
	R. Korea, S. Korea (30)	11715
	R. Beijing	11755, 15440, 17710
	V of Vietnam	9840, 12020, 15010
	V of Greece (40)	15625, 17535
1100	VOIRI, Iran (30)	7215, 9575, 9695, 11790, 11930
	R. Japan	6120
	AWR, Italy (30)	7230
	Kol Israel	17545
	R. Australia	6080, 7140, 7240, 9580, 9710, 11930, 13605
	R. Pyongyang, N. Korea	6576, 9977, 11335
	AWR, Costa Rica	9725, 11870
	V of Asia, Taiwan	7445
	R. Nacional, Ven. (40)	9540
1200	R. Beijing	9665, 15225
	R. Tashkent, Uzbekistan	9545, 9540, 15470, 17745
	R. France Int'l (30)	9805, 11670, 15155, 15195, 21635, 21645
	BBC	5965, 5975, 6190, 6195, 9410, 9515, 9660, 9740, 9750, 9760, 11750, 11760, 11940, 12095, 15070, 15220, 15310, 17640, 17705, 17790, 17885
	V of People of Kampuchea	11938
	R. Jordan	9560
	R. Yugoslavia	17710, 17740, 21605
	R. Korea, S. Korea (15)	9570
	R. Polonia	9525, 11815
	Radiobras, Brazil	11745
	BRT, Belgium	21810
1300	R. Beijing	11855
	KNLS, Alaska	7355
	All India Radio (30)	11760, 15120
	R. Pyongyang, N. Korea	9325, 9345, 9640, 13650, 15230
	R. For Peace, Costa Rica	15030, 21465
	R. Finland (30)	15400, 21550
	V of Vietnam (30)	9840, 12020, 15010
1400	R. Beijing	7405
	R. France Int'l	11910, 17650, 21765
	R. Japan	9505
	FEBA, Seychelles	9810
	Kol Israel	11588, 11605, 15640
	R. Korea, S. Korea	9570
	V of Mediterranean, Malta	11925
	R. Finland (30)	15400, 21550
1500	KTWR, Guam	11650
	RTM, Morocco	17595
	R. Jordan	9560
	R. Norway (Sat/Sun)	11870
	R. Sweden (30)	17870, 21500
	R. Canada Int'l	9655, 11915, 11935, 13650, 15315, 15325, 17820
	V of Greece (30)	11645, 15650, 17535
1600	R. France Int'l	6175, 11705, 12015, 15330, 17620, 17795, 17850
	R. RSA, So. Africa	7230, 11880, 15160
	R. Pakistan	11570, 13665, 15060,

Time	Country/Station	Frequencies
		17555
	R. Australia	6080, 7240, 9580, 11910, 12000, 13605, 13755
	BSKSA, Saudia Arabia	9705, 9720
	UAE Radio	11795, 13675, 15320, 21605
1700	R. Pakistan	11570, 15550
	R. Canada Int'l	5995, 7235, 13650, 15325, 17820, 21545
	R. Japan	7140, 9505, 11815, 15345
	R. Moscow	11840, 17655, 17650, 12845
	HCJB, Ecuador	15270, 21455, 21480
1800	BBC	5975, 6180, 6190, 6195, 7160, 7325, 9410, 9740, 11955, 12095, 15070, 15310, 15400, 17880, 21660
	R. Afghanistan	6145, 7215, 9645
	R. Baghdad	11740
	RAE, Argentina	15345
	R. Sofia, Bulgaria (30)	6035, 9560, 9700, 11680, 11720, 11735
	Radiobras, Brazil	15265
	R. For Peace, Costa Rica	13630, 15030, 21465
1900	VOIRI, Iran (30)	6030, 9022, 15260
	HCJB, Ecuador	15270, 17790
	Wings of Hope, Lebanon	11530
	R. Havana Cuba	17705
	R. Algiers, Algeria	9640, 9685, 15215
	R. Norway (Sat/Sun)	15220, 17730
	V of Greece (20)	9395, 11645

Time	Country/Station	Frequencies
2000	Christian Science Monitor	9455, 13770, 15665, 17555
	Vatican Radio	11625, 15090
	R. Portugal	11740
	R. Damascus, Syria (05)	10085, 15095
	R. Norway (Sat/Sun)	17730
	Kol Israel	11587, 11605, 11675, 15640, 17575, 17630
2100	R. Portugal	15250
	V of Black Cockerel (Angolan cland.)(10)	7100
	All India Radio	7412, 9910, 9950, 11620, 11715, 15265
	V of Turkey	9445
	R. Nacional, Ven. (35)	9540
	R. Norway (Sat/Sun)	9590
2200	V of UAE	7215, 9600, 11965
	R. Yugoslavia	6100, 9505
	R. Sofia, Bulgaria (45)	9595, 9700, 11660, 11680, 11720, 11950
	BRT, Belgium	5910, 9905, 15515
	R. Canada Int'l	9710
	BBC	5975, 7325, 9590, 9915
	Kol Israel (30)	9435, 11587, 11605, 15100, 15640, 17575
2300	R. Baghdad	11830
	R. New Zealand	17770
	V of Turkey	7185, 11710
	R. Norway (Sat/Sun)	11925
	R. Sweden (30)	9695, 11705
	V of Greece (35)	9425, 11595, 11645
	All India Radio (15)	9535, 9910, 11715, 11745, 15110

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Radio Monitors Newsletter
Of Maryland

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Function	Freq, Period Ratio, Interval	Freq. Period Ratio,Interval	Frequency	Frequency	Frequency	Frequency	Frequency
Range	10Hz-3.0GHz	10Hz-3.0GHz	1MHz-3.0GHz	10Hz-3.0GHz	1MHz-3.0GHz	10Hz-2.4GHz	1MHz-2.4GHz
Display	10 Digit LCD w/Function Annunciators	10 Digit LCD w/Function Annunciators	10 Digit LCD	10 Digit LCD	10 Digit LCD	8 Digit LED	8 Digit LED
RF Signal Strength Indicator	16 Segment Adjustable Bargraph	16 Segment Adjustable Bargraph	16 Segment Adjustable Bargraph	•	•	•	•
Hold Switch	Yes	Yes	Yes	Yes	Yes	No	Yes
Price	$579.	$375.	$325.	$259.	$225.	$179.	*$99.

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A Look At Radio New Zealand International

The Little Station That Grew Up

BY GERRY L. DEXTER

Maybe you were listening; tuned to 17680 at 0400 January 24, 1990 when a new era dawned for Radio New Zealand. You heard the prayer in the Maori language which passed "the spirit of the old transmitter to the new" as the station made first use of its just-installed 100 kilowatt unit and added "International" to its name.

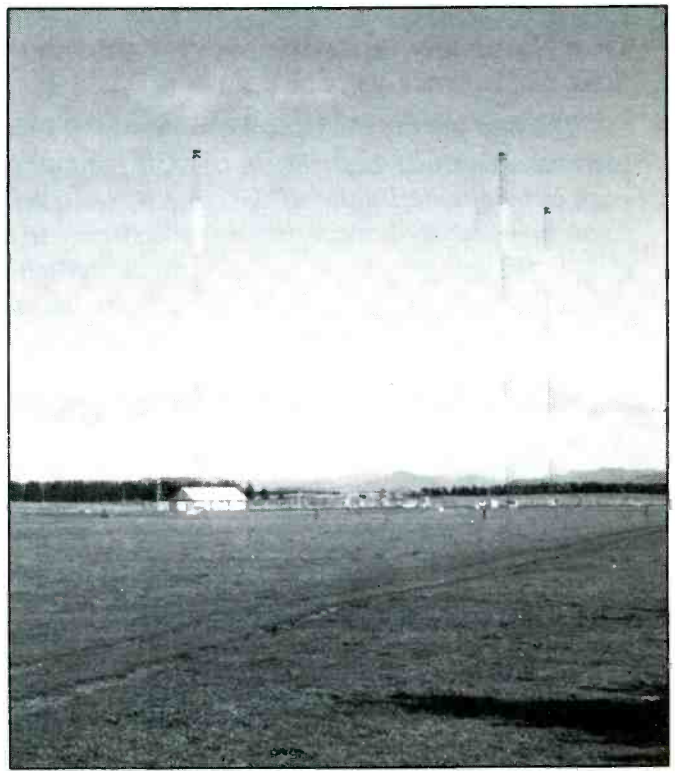
It was a long time in coming and it almost didn't happen at all. At least twice over the last decade or so the government came close to closing down New Zealand's shortwave service, and each time the hue and cry raised by the station's listeners and friends around the world saved the station. The New Zealand government finally decided the nation should not only have a shortwave service but it should be expanded becoming a significant voice in the Pacific. To do that, though, meant spending money to replace small tired transmitters and to create original programming oriented to a Pacific audience, rather than simply relaying domestic broadcasts as had been (mostly) the case for many years. Now Radio New Zealand International serves listeners throughout the Pacific region and many of its programs are relayed by island stations. Pacific islanders who have relatives living and working in New Zealand now have a regular "voice link" with the country and vice versa.

The first year of the new Radio New Zealand was a learning experience for much of the staff because, though the majority had broadcasting experience, most were unfamiliar with shortwave. Listener Services Director Tony King, a DX'er for 35 years, found himself assisting with their shortwave education as the weeks and months went by.

As the staff got comfortable with this different kind of broadcasting, the station suffered technical problems. In hindsight, says King,

Radio New Zealand International operates out of a "Broadcasting House" in Wellington, located right next to the "Beehive"—the offices of the ministers of the New Zealand Government.

The site of RNZI's 100 kW transmitter at Rangataiki in the center of New Zealand's North Island.



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the installation was too rushed. The goal was to get Radio New Zealand International on the air by the time the British Commonwealth Games began in Wellington. They made the deadline and paid the price later. There were a number of bugs which still hadn't been chased out of the system. Engineers were plagued with breakdowns over the first eight months of the operation. Finally, the manufacturer, Thompson-CSF of France, had to send an engineer to get everything straight.

There were pleasant surprises offsetting these problems, though. The staff hadn't fully anticipated the coverage the new 100 kilowatt transmitter would give so it was an eye opener to start receiving listener mail from around the world—90 countries so far. At first the large response was written off as a "new kid on the block" kind of thing but it has held up. King notes the mail has now reached such a level that the station can say it has a very regular audience base in the United States. A lot of mail also comes froom Germany and Scandinavia. In all, the station is receiving about 8,500 letters a year, all of them ("more or less") processed by King.

Radio New Zealand International's shortwave mission is to be "a friendly, trusted voice talking with listeners in neighboring South Pacific countries and elsewhere about life in our country and region, the things we can offer and the parts we can play in Pacific and world affairs." RNZI takes care to insure honest and impartial treatment to listeners and contributors, works to advance overseas appreciation of the "mana" of New Zealand and the value the country places on democracy, equality and freedom. The station is charged with reflecting the diverse cultures, activities and achievements of New Zealanders, providing accurate and objective news and information concentrating on matters relevant to the Pacific. It also promotes the attractions of New Zealand and the quality of its products and services, encourages links between New Zealand and her South Pacific neighbors as well as the rest of the world. Wherever possible the station airs the words, songs and music of New Zealanders.

New Zealand broadcasting has undergone a number of changes in recent years, including mediumwave and FM frequencies being put up for tender. One national network has been closed down and a number of new local stations have come on the air. Radio New Zealand International hasn't been affected by this since, though it is a part of the government-supported national radio service it is independently funded. The government's domestic radio operations include commercial stations in metro areas, community stations in regional areas, the national network and a classical music FM network.

Radio New Zealand International operates for 18 hours a day. The current shortwave schedule is: 1800-2206 Sunday through Friday on 15120; 2206-0730 daily on 17770 and 0730 to 1210 on 9700. The 1800-2206 period contains informational program for Pacific listeners. Native language segments

Most of the staff made a trek from Wellington to the transmitter site. From left: Tony King (Mailbox & Listener Services), Andreas Ehling (news), Rhys Richards (producer/presenter), Alma Maua (news), Myra Oh (producer/presenter), Greg Tatere (senior studio operator), Linden Clark (producer/presenter, Moira Tuileapa (studio operator) and Ian Johnstone (station manager).

(Cook Islands Maori, Samoan, Niuean, Tongan, Fijian, Bislama and others-as well as French) are included within this period and repeats are aired as "the day dawns" across the region. Between 2206 and 0430 the airtime is filled with a relay of the Radio New Zealand domestic service, which the station has found appeals to expatriate New Zealanders overseas. From 0430 on weekdays there are "specialist programs" such as the popular *Mailbox*, and *Travel Pacific*. At 0900 the national service is joined again and continues until closedown at 1210. The schedule lists any number of intriguing programs which, unfortunately, are not always easily heard in North America: *Air/Sea Travel Bulletin, Pacific Press Review, Calling Pitcairn and Norfolk, Calling Fiji, Pacific Island News Magazine* and more. *Mailbox*, mentioned above, airs on alternate Mondays at 0430, featuring King and internationally known DX'er Arthur Cushen. Incidentally, if your letter is read on the show you can get a cassette tape of that broadcast if you order within six weeks. The cost is six International Reply Coupons.

King notes that some flexibility is kept in the schedule so major sporting events can be broadcast from time to time.

Like nearly all broadcasters these days, Radio New Zealand International has limited funds with which to work. All technical and operating expenses have to be kept within the $1.1 million (New Zealand dollars) allocated to it by the Ministry of External Relations and Trade. That places a very definite limit on the size of the staff. King describes it as "lean." In fact, there are only ten permanent, fulltime staffers. Three serve as producers/presenters, there are two studio operators, three news reporters and two in administration. In addition, there are about a dozen stringers responsible for airing the programs in the Pacific languages.

Budget constraints also prevent the station from expanding into other areas, specifically targeting audiences in the US, Europe, Asia or Japan, although there does not seem to be much enthusiasm for a Japanese service. King says the mail from Japan amounts to only about 6% of the total the station receives.

The new 100 kilowatt transmitter is located at Rangataiki, which is in the North Island, near Taupo. Programs are fed to the transmitter via microwave link from the studios in Wellington. The transmitter has recently been "repackaged" so that it is now contained in a single cabinet and now includes the latest in control and telemetry systems, operating through a standard RS232 computer port. The transmitter is capable of broadcasting in single sideband mode and can be automatically tuned to any frequency in the shortwave bands. The entire transmitter operation is done by remote control from Wellington so the transmitter building is unmanned.

Another feature of the transmitter is an ability to use Dynamic Amplitude Carrier Modulation-a relatively new system designed to reduce power consumption by reducing the level of the transmitted carrier to a point where it can still be demodulated by the receiver.

Radio New Zealand's old transmitters originally belonged to the US Army and had been in operation at Titahi Bay, near Wellington, since 1947! The two 7.5kW units served the station long and well but finally lost the hearability game to the onslaught of a quarter and half million watt transmitters filling the air with signals. The old equipment has since been dismantled. Even the antennas are gone now.

Two new antennas serve the new transmit-

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Monday	at 0430 UTC on 17770 kHz
Thursday	at 0830 UTC on 9700 kHz
Friday	at 1930 UTC on 13785 kHz

We hope you're able to tune in !
A cassette copy of the programme will be available to you up to six weeks after the broadcast, for 6 IRC's.

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Mailbox is a popular program, well heard in North America.

ter, both designed for use between 9 and 18 MHz. One is beamed at 35 degrees true and is in use for the first four hours of the broadcast day, covering the Southeastern Pacific, North America and Europe. The second antenna, beamed at 325 degrees true is in use for the last five hours of the day and serves the Southwestern Pacific, Australia, Japan and China-and was used for special transmissions to Saudi Arabia during the Gulf War. The two antennas can be used simultaneously, and are for the mid part of the schedule, in combo covering virtually all of the Pacific Basin.

Both antennas are horizontally polarized with four stacked, broadband dipoles. The gain amounts to 17db at 9 MHz, ranging to 20db at 18MHz, producing an effective radiated power (in broad terms) of one megawatt. New antennas are expected to be added in a few years when the propagation situation will no longer support high band operations as well as is now the case.

It doesn't take many minutes of listening to Radio New Zealand International to realize that this one is different. There's a special flavor here, an undefinable something that retains the romance of shortwave radio. Maybe it's the bellbird interval signal, maybe it's New Zealand and traditional music, maybe it's hearing all those islands mentioned. Whatever it is, it's there and it may well be one of the reasons why Radio New Zealand has been so appreciated for so long by so many—even in the days when North American listeners weren't getting the good reception that we are now.

Incidentally, Radio New Zealand International has a marketing arm, through which you can order cassette tapes of the music of New Zealand and the Pacific Islands, even a Radio New Zealand International t-shirt. A catalog is available by request from Radio New Zealand International, P.O. Box 2092, Wellington.

Radio New Zealand International welcomes reception reports, and, of course, comments on the programming. Use the address above and please include three International Reply Coupons for QSL replies. One IRC will get you a copy of the current program schedule. Recorded reception reports are not wanted. ■

BOOKS YOU'LL LIKE

BY R. L. SLATTERY

Getting Used

At some point, 'most everyone in communications ends up buying one or more used communications receivers. Whether it's your first "getting started" receiver, or one to be used as a spare or back-up, or just an attractive old set that catches the eye at a hamfest, a pre-owned receiver or two is part of your life and mine. Fact is, when you're shopping for a new receiver at a communications shop, they usually display a couple of shelves of used receivers offered at very attractive prices.

But, what are you really getting for your money at a hamfest or a communications shop, or a classified ad in a publication, when you opt for a used receiver? Sure, the price is less than a new receiver, but is it still overpriced for a used receiver? What happens if the non-current receiver needs a repair? How do you know if the receiver was one that had earned a good reputation "in its day," or was regarded as a real dog? There are as many disadvantages to ponder as there are advantages.

Obviously, there are factors involved in the purchase of a used communications receiver that should be considered before the deal is made.

Fred Osterman's book, *Buying A Used Shortwave Receiver*, addresses the situation, providing lots of information for the person considering the purchase of a used receiver. A six-point receiver checklist is included to allow quick and accurate evaluation of the receiver offered for sale.

There are suggested fair prices for purchasing many specific models in used condition at hamfests, and also in stores. Tech specs and photos, as well as performance ratings, are given for the top 25 models that were recently (or are currently) made by leading companies such as Yaesu, Sony, Realistic, Panasonic, Kenwood, JRC, Drake, ICOM, and others. Additional used-condition pricing and rating information data is provided for many additional receivers of recent vintage.

After having experienced the best and worst of buying used receivers, including a real lemon I paid too much for two years ago at a Phoenix hamfest, my feeling is that Fred's book is worth having. Being the Manager at Universal Radio, a major equipment dealer, Fred does know his topic well.

The 20-page book is $4.95, plus $1 shipping, from Universal Radio, 6830 Americana Parkway, Reynoldsburg, OH 43068.

Terms for Understanding

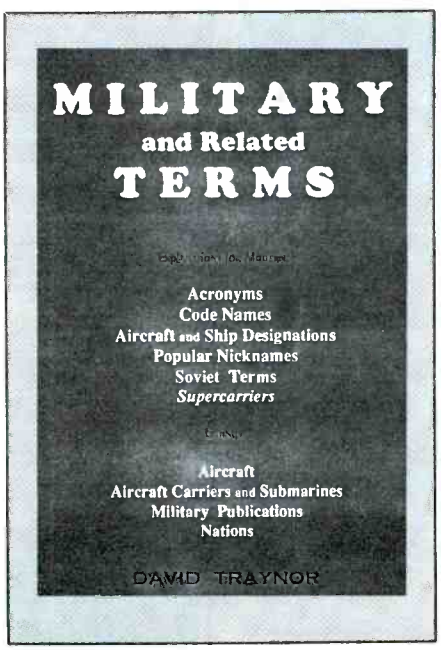
A book entitled *Military and Related Terms*, by David Traynor, contains explanations for acronyms, code names, many ship and aircraft designations, and military abbreviations.

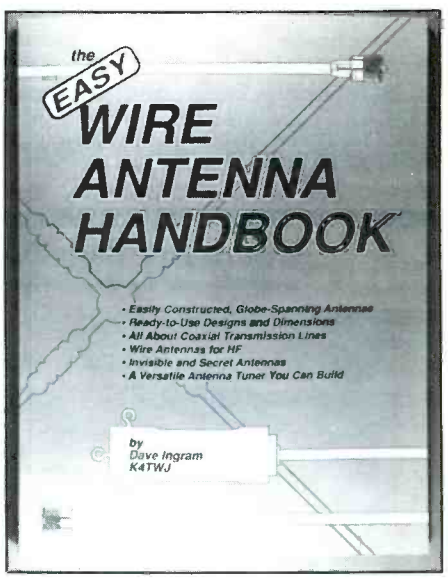
This is a small-sized 254-page publication offering a wide smattering of information that should be interesting and come in handy for the casual observer and generally curious. We'd add, however, that it is really too diversified in its scope to focus in sharply enough on any single topic to offer information of enough substance to be of great use to the serious or more advanced observer, researcher, or student.

Actually, too much space is taken up with information you could find in the *World Almanac* or a decent encyclopedia.

Still, it's a handy little book that many people will find to be a well-done one-volume reference to a lot of the terminology normally encountered in the news media, plus some rarely used terms that, once they started showing up in the news media, would surely herald the imminent end of civilization.

Military and Related Terms is $9.95, and is available from Dot Publishing, P.O. Box 19263, Seattle, WA 98109-1263.



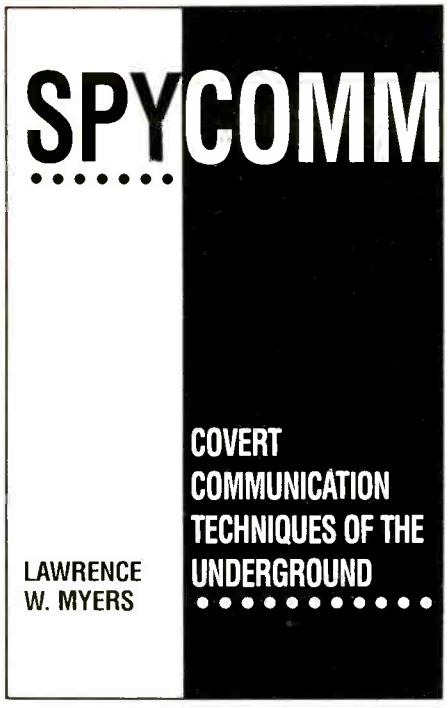


Wired For Action

You can't come up with any homebrewed antennas that are less expensive than those constructed of wire. Moreover, they are rugged, easy to build, and do a good job. Still, effectively utilizing wire antennas definitely means more than attaching one end of any handy piece of wire to your receiver, then dangling the rest of the wire out of the nearest window.

There are things to think about. What kind of wire— copper or steel, stranded or solid, insulated or bare, and what gauge? What length is best? What feedline to use? What are the directional characteristics for receiving and transmitting? Does it need insulators? Should it be mounted vertically or horizontally? Does it need a ground connection? There are other considerations, too.

Dave Ingram, K4TWJ, has come up with



The Easy Wire Antenna Handbook that makes all of this as clear, concise, and simple as possible. This 112-page illustrated book stays clear of the complicated antenna theory and formulas. It just tells you the correct length to cut the antennas for best performance on specific ham bands. Saves a lot of time and trouble. This is a practical handbook for constructing a couple of dozen wire antennas, including "invisible" and secret ones to hide you from the landlord, the CIA, and whomever. If want a fancy book on antenna theory and math formulas, this isn't that book.

There are plenty of diagrams showing how the completed antennas are supposed to look. The text is very easy to understand, and includes all dimensions, plus many helpful construction hints, as well as information on installation and tuning.

The Easy Wire Antenna Handbook, by Dave Ingram, is $9.95, plus $3 for shipping, from Universal Electronics, Inc., 4555 Groves Road, Columbus, OH 43232.

Inside Communications Information

Mercenaries, renegade spies, drug smugglers, guerrillas, freedom fighters, fugitives, terrorists, organized crime members, paramilitary groups, wiseguys, and other members of what might be considered to be the "underground" need to securely communicate among themselves. They have developed techniques for stealing long-distance telephone service, for running bootleg radiopaging and communications systems, for utilizing innovative communications techniques and codes, and operating with unorthodox equipment and frequencies. There are no rules or protocols in the conduct of these communications, most of which are illegal. And there is seldom any margin for error or failure.

This is called *Spycomm*, which is the art and technology of exchanging information secretly in a hostile environment. *Spycomm* is also the title of a fascinating and controversial new 243-page illustrated book by covert comms expert Lawrence W. Myers, revealing the way all of these things are accomplished, including frequency data.

Myers' book is a comprehensive field manual explaining how the existing "communications infrastructure" is being penetrated and exploited by those who feel the need to communicate anonymously, at no cost, and with minimal risk of getting caught.

Included in the book's coverage are things like how rogue espionage agents steal long-distance phone service; how to catch a phone phreak; how to create a virtually unbreakable one-time code with a personal computer; setting up phone taps; pirate broadcasting; bootleg two-way radio comms and beepers; telephone security; pay phones; and much, much more. It's pure "operation hardball," with no rules, no expensive equipment, everything simple and off the shelf.

It's a hands-on guide with dozens of practical approaches some have used to solve their covert communications problems. Persons who expect to go underground, or plan on snooping on those already there, or who are simply interested in being astounded at learning about the operational dirty tricks of the trade, will get a lot from *Spycomm*. We always find Myers' books informative, revealing, and provocative. He's a communications hobbyist who speaks our language (and he's a regular *POP'COMM* reader).

Spycomm, by Lawrence W. Myers, is $19.95, plus $3.50 for UPS shipping (sent by 1st Class Mail to Canada, AK, HI, GU, VI, and military addresses) is available from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Residents of NY State, please add $1.88 sales tax.

In addition . . .

How To Etch Your Own Printed Circuits is a step-by-step manual that will be useful to anyone interested in learning this process. A 16-page publication illustrated with CAD drawings, the book leads the reader through the entire process from analyzing and laying out the circuit to assembling the components. The manual also offers a list of readily available equipment that keeps everything in the lower price brackets. *How To Etch Your Own Printed Circuits* is available at $9.95 from Etching Info, Dept. PC, P.O. Box 8064, Westfield, MA 01086-8064.

Two new publications of interest have been written by Robert Ing, VE3XMD. One is *12 Scanner Radio Projects* (35 pages), and the other is *Skyfoot's Ontario Scanner Glossary* (20 pages). The projects book includes an antenna selector, a solar battery charger, an active scanner antenna, a broadband amplifier, plus other similar projects. Schematics and parts lists are included.

The glossary contains the police 10-Code used in Ontario, plus many of the words relating to communications that scanner owners often encounter. Ing is the scanner columnist for ODXA and well versed in his topics, so these are worthwhile publications. The projects book is $8.51, while the glossary is $6.35 (these prices include shipping and sales tax) from Joe Skyfoot Word and Music Creations, P.O. Box 37 Station N, Etobicoke, Ontario, Canada M8V 3S4. Allow 4 to 6 weeks for delivery. ■

BY GORDON WEST, WB6NOA

Advantages Of Little Loops

The compact loop antenna for either high-frequency worldwide skip communications, or for the VHF and UHF bands, compares quite closely to an unloaded halfwave dipole. Up on VHF and UHF frequencies, the horizontal loop antenna is compact enough to hide inside the fiberglass roof in your emergency communications van. At last you can get under low overhangs without wiping off all of those antennas you may have sticking out of the roof.

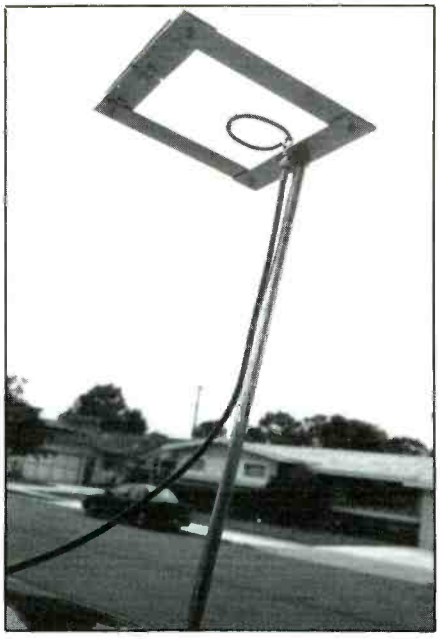
The compact loop antenna for high frequency or VHF/UHF bands also does not require any further ground plane for proper operation. This is good news for those fiberglass command posts that have little or no horizontal ground planes for the proper placement of taller mobile whips. With the compact loop, you get a powerful signal equaling the capabilities of much larger resonant dipoles. And while the dipole is bi-directional, the loop antenna is omnidirectional.

When the loop antenna is mounted horizontally with respect to the surface of the earth, the radio waves propagate in the horizontal plane. On worldwide frequencies, polarization is not all that important because the skywave signals will tend to roll as they come back down. Most worldwide loops are mounted horizontally mainly because it gives them a lower profile, and polarization to skywave stations is not that important. Horizontal polarization also minimizes manmade noise.

On VHF and UHF land mobile and emergency frequencies, polarization is usually vertical. The loop is simply mounted perpendicular to the ground, and it will perform well with a bi-directional pattern featuring vertical polarization. For radio amateurs operating on VHF and UHF weak-signal paths, horizontal polarization is employed. In this case, the loop is mounted horizontally with respect to the surface of the earth.

Most loops are classified as "DDRR", directional discontinuity ring radiator. Others may call the loop a "electromagnetic antenna". Whatever you call it, its scaled-down size is sometimes misleading as to its performance capabilities. Even on worldwide bands, a loop the size of your kid's hula hoop can give you the performance of a dipole 16 feet on either side of the balun!

The loop antenna uses no loading coils. It is tuned for multi-band operation using series or parallel variable capacitors, rated for some very high voltage. Many times there is an adjustable tuning capacitor element that helps match the entire set-up for a specific frequency. And on fixed frequency loops, such as those found in the VHF and UHF service, the capacitor is fixed and the matching network is squeezed or pulled away from the loop for the proper match.

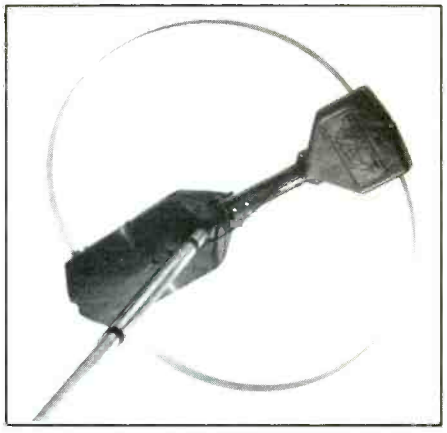


Two-meter loop retuned to 155.160 MHz special emergency frequency.

Unlike mobile antennas that might develop a couple of amps along the shaft, the electromagnetic loop antenna could develop as many as 30 or 40 amps flowing "skin effect" on the outside radiator. This is why the loop antenna usually uses a loop assembly that offers maximum surface area with minimum resistance. Anything that gets warm on a loop antenna is power lost—and a good loop runs cool.

When Advanced Electronic Applications (AEA, Lynnwood, Washington) developed the IsoLoop, hams around the country couldn't believe that a small loop like this could actually get frequencies between 14 MHz to 30 MHz out into the ionosphere, and back to other stations with almost the same signal strength as a mobile whip or a horizontal dipole. The first version of the AEA IsoLoop was a real eye-opener—it came with a rudimentary remote controller for the giant variable capacitor up inside the loop assembly, and boy oh boy, was tuning ever tight.

The resonate point on any loop antenna—especially those for high frequency—is so narrow that it takes a little while to get the hang of manipulating the loop controller to bring things into minimum SWR. Listening to background noise will certainly help reduce the amount of transmitting you must do to find the low SWR point. But, don't be surprised if you don't hear a lot of noise--the loop antenna is one of the quietest antennas there is in minimizing natural background hiss. You cannot compare the loop antenna to a dipole simply by measuring the amount of recovered noise. Rather, tune into a weak signal, adjust the loop controller for its very tight peak, and then do your comparison. You will be pleasantly surprised that a little tiny loop is working just as well as your much longer and bi-directional dipole.

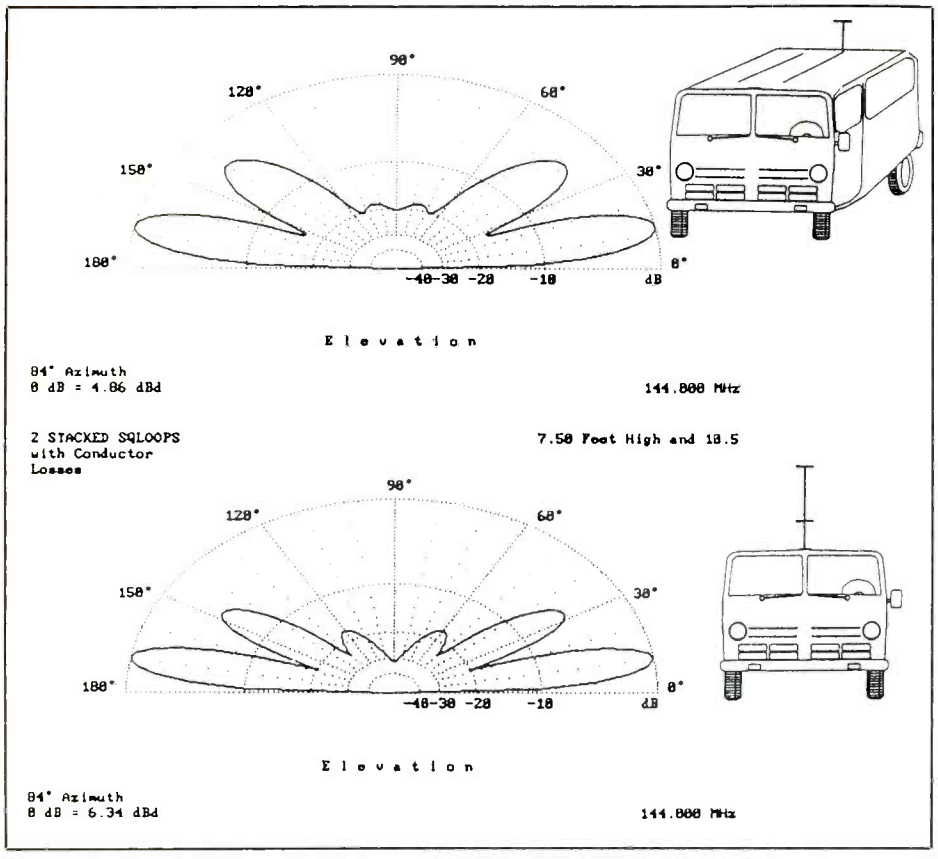


The high frequency loop will work on any frequency from 10 MHz to 50 MHz.

The VHF loop offers equal performance to longer mobile whips.

"I have analyzed the AEA type loop on its MININEC, and found it to perform at least as good as a dipole. That's pretty good for such a small antenna," comments the editor of a leading West Coast VHF/UHF newsletter. Amateur radio operator W6IOW ran an SWR check of the older IsoLoop antenna, and found the SWR between 1.5:1 to 1.8:1 on all of the ham bands he tested on.

And since the loop is infinitely variable



Stacking 2 loops increases gain on ground waves by reducing higher angle radiation.

The small quad may be easily mounted by a tripod in an emergency.

within the frequency bands that it has been designed for, it's an ideal antenna for special emergency communications that might fall outside of normal ham band ranges. This would include emergency communications for the Civil Air Patrol, the U.S. Coast Guard, MARS, and FEMA. Simply dial up the frequency that you need to transmit on, energize the loop controller and listen for the noise peak, then go on low power AM, and tune for a minimum SWR. If you're going to permanently operate on a specific frequency, you can also do some fine-tuning up in the loop assembly itself for a perfect match and an SWR of 1.1:1.

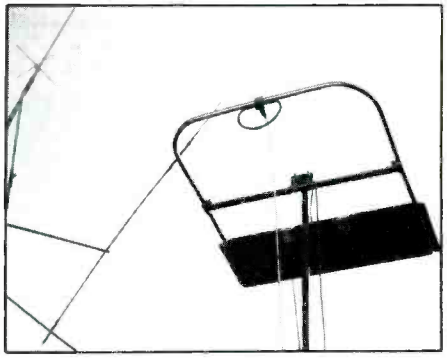
"We redesigned the AEA IsoLoop for lower SWR, and extended frequency coverage," comments John Gates, N7BTI, of AEA. Their new IsoLoop works all the way down from 30 MHz to 10 MHz. The AEA IsoLoop continues to amaze radio experts by the amount of "snap" it has out on the airwaves. Ham KA7MCX, John Pollock, worked 116 countries on an IsoLoop during the Fall CQ worldwide SSB DX contest. His loop was mounted just 15 feet above his flat roof, 25 feet above the ground. The AEA IsoLoop was developed by Dr. Reynolds, K7DBA, noted antenna authority.

For VHF and UHF work, you can even stack your loops for more gain and a lower angle of radiation.

"Our SQLOOP is a VHF or UHF omnidirectional, horizontally polarized antenna, designed for mobile and base—and they stack nicely using 50-ohm phasing lines and conventional 2-port and 4-port power dividers," comments Mike Stall of M2 Enterprises (Fresno, California; 209/432-8873). "Stacking our antennas may allow operators to pick up an additional 2 dB to 3 dB of gain. Horizontal loop antennas can realize additional gain from the ground because a superb ground yields higher gains and slightly higher radiation angles," comments Mike, the "M" originally found in "KLM" antennas. He knows his stuff.

For worldwide communications, you could tailor your angle of radiation by elevating or lowering the antenna above a good ground surface. During an emergency, you might need to talk skywave to another station 500 miles away, or skywave to a station 3,000 miles away. You can literally hear the difference in how close or how far away you are communicating as you elevate or lower the loop antenna.

Some important points to consider when working with the high frequency or VHF/UHF loop antenna: (1) Make sure no one can touch the antenna when you are transmitting. Several thousand volts may be found on the loop element. (2) Make sure that the loop element is secured tightly to the matching networks. Any loose connection could develop a slight amount of resistance, and on loop antennas, any resistance instantly builds up heat and reduces transmit efficiency. (3) The loop antenna must never come in contact with foliage. Because of the high voltage, it will instantly set anything on it ablaze. (4) The internal tuning network must never be operated in extremely damp environments. This could cause the variable capacitor to arc over, ruining it permanently. The variable capacitors inside loop antennas are extremely sensitive to arc-overs, and are very expensive to replace.



The high frequency quad, mounted flat, offers omni-directional capabilities (The beam antenna in the background has gain in only one direction.)

Is the loop going to perform as well as a small beam antenna? I doubt it. But it certainly will perform as well as a loaded whip, and even perform as well as much longer dipoles.

So next time you look over a loop, think of some of the many advantages it has over conventional dipoles or loaded whips. It's an amazing performer. ■

CIRCLE 99 ON READER SERVICE CARD

NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS

Self-Tuning Radio Finds, Demodulates Signals

Optoelectronics, Inc., announced a self-tuning radio for testing voice and signal-tone FM transmitters.

New model R-10 Communications Test Receiver is used to test the modulation quality of mobile voice transmitters, and to verify the accuracy of audio signalling tones such as DTMF (dual tone multi-frequency) and CTCSS (continuous tone-coded squelch systems). R-10 is quick and easy to use; it provides a simple, inexpensive alternative to modulation meters costing 300% more.

R-10 automatically determines and locks into whatever carrier signal is the strongest within a 100 foot range. Once it's locked in, it demodulates whatever FM audio is present on the carrier, and outputs that audio to an internal power amplifier/speaker and the BNC output jack.

For DTMF and CTCSS testing, the audio output is evaluated on a frequency counter or 'scope. For counter-surveillance applications, you just listen to the demodulated audio to determine if a surreptitious transmitter is nearby.

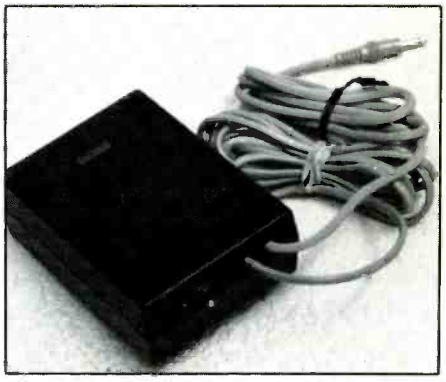
R-10 features two modes of operation. In the search mode, a swept comb-generator serves as the Local Oscillator. When the LO mixes with a carrier that produces a 10.7 MHz Intermediate Frequency, it stops sweeping, locks onto the carrier with an Automatic Frequency Control feature, and indicates LOCK. Audio demodulation is then by conventional FM discriminator.

Other R-10 features include a SQUELCH capability that serves as a sensitivity control, AUDIO GAIN, POWER and LOW BATT indicators. Antenna input impedance is 50 ohms. Rear connector provides output to external frequency counters and various other instruments. Power is supplied by an internal 9V battery.

"During the second quarter of 1992, R-10 will be offered in a special counter-surveillance package," notes Ms. Hufft. "This will be a light-weight, belt-worn instrument with integral ear plug for discreet bug-listening." For lab use, R-10 is now being introduced in a benchtop version, 3.5 inches (8.9 cm) high x 7.3 in (18.5 cm) wide x 6.8 in (17.3 cm) deep.

Opto's Model R-10 Communications Test Receiver is priced at $359 each. Delivery is quoted stock to 4 weeks ARO, beginning 2Q92. Available options include rechargeable NiCad battery pack for $75, and a telescoping whip antenna with swivel base for bench and field use for $14.

For more information, contact: Optoelectronics, Inc., 5821 NE 14th Ave, Ft. Lauderdale, FL 3334. USA telephone 800-327-5912 or 305-771-2050, or circle 101 on our Readers' Service.



HT Range Extension And Personal Repeaters Made Easy With "No-Frills" Interface!

Electron Processing introduced the means for individuals and small groups to put a repeater on the air quickly and without excessive expense. Ease for use and low cost make the PERSONAL REPEATER INTERFACE BRI-2 ideal for HT range extension, "starter" or mobile/portable repeater operation. No internal modification of your equipment is needed as it connects to the external speaker output of your receiver and the mic jack of your transmitter. Enjoy great HT coverage into the local repeater by using the BRI-2 and your base transceiver (and scanner) to relay your HT signal to the repeater for "cordless" hamming from home!

All the basic necessities of repeater or relay operation are provided. Audio isolation and "PTT" transmitter keying using a VOX circuit makes connection to your equipment simple, just wire your microphone plug! A five second "hang" time, and a three minute "timeout" timer are both provided (and can disabled). Powered by a 9 volt battery (12vdc available) the BRI-2 is also ideal for emergency communications and temporary relays.

The BRI-2 sells for $50. There is a $5 shipping/handling charge. For additional information, contact Electron Processing, Inc., at PO Box 68, Cedar, MI 49621 or call 49621 or circle 102 on our Readers' Service.

COMMUNICATIONS ELECTRONICS INC.

Emergency Operations Center has expanded to our new two acre facility and World Headquarters. Because of our growth, CEI is now your one stop source for emergency response equipment. When you have a command, control or communications need, essential emergency supplies can be rushed to you by CEI. As always, for over twenty three years, we're ready, willing and able to help. For 1992, we're introducing new products from Uniden, Shinwa, ICOM, Ranger Communications Inc., Grundig, Sangean, Magnavox and RELM.

NEW! Shinwa SR001-B

List price $799.95/CE price $479.95/SPECIAL

Continuous coverage from 25.000 through 999.995 MHz.

If you're looking for an excellent synthesized scanner designed for mobile surveillance use, the new Shinwa SR001 scanner offers features never before offered at such a low price. When you purchase the wide band scanner from CEI, you'll get a free infrared wireless remote control that allows you to control your scanner from over 20 feet away. Selectable frequency steps of 5.0/10.0/12.5/20.0/25.0/50.0 or 100.0 KHz. are available. Dual antenna inputs terminating in an "N-type" and "BNC" connectors are included. Other features include 200 memory channels grouped in 10 banks of 20 channels, easy to read multi color LCD display, lithium battery for memory back-up, 35 channel per second high speed scanning. priority, timer and even an alarm to alert you to transmissions on your choice of one special frequency. We even include a mobile mounting bracket. The SR001 can be used for base station use with the purchase of the ACS-B 12 volt DC power supply for only $34.95 each. A great sounding external speaker #SPE-B is available for only $24.95.

SHINWA POCKET PAGERS

The fire department hazardous materials response teams and police department SWAT crews who need a reliable radio alerting system stake their lives on Shinwa. We offer a two-tone pocket pager with monitor feature and even a voice storage option at an affordable price. To order, we need your paging frequency as well as tone reed frequencies. For other configurations or two-way radio information, please fax us your specifications to 313-663-8888 or phone 313-996-8888.

ICOM ICR1-B

List price $799.95/CE price $529.95/SPECIAL

Continuous coverage from 100 kHz through 1.300 GHz.

The ICOM ICR1 keeps you in touch with the world when you're on the go. The palm-size ICR1 is equipped with AM, FM and wide-FM modes to fully answer your monitoring needs. With 100 memory channels and a dual frequency selection system, you get a top-class communications receiver. Not only can you program scan searches only for signals within a specified frequency range, it's also possible to write frequencies of received stations automatically into memory. In addition, unwanted frequencies can be skipped. Order ICBC72-B battery rapid charger for $99.95 and a BP84 1,000 ma. battery pack for $74.95.

ICOM ICR100-B

List price $799.95/CE price $579.95/SPECIAL

Continuous coverage from 100 kHz. through 1856 Mhz.

Now you can bring a wider world of broadcasting, VHF air and marine bands, emergency services and many more communicatons into your vehicle. Icom's advanced ICR100 fully covers all the stations worth hearing with up to 100 memory channels and a multitude of features.

SCANNERS/CB/RADAR

UNIDEN

PRO310E-B Uniden 40 Ch. Portable/Mobile CB $72.95
PRO330E-B Uniden 40 Ch. Remote mount CB $99.95
GRANT-B Uniden 40 channel SSB CB mobile $152.95
WASHINGTON-B Uniden 40 Ch. SSB CB base $229.95
PC122-B Uniden 40 channel SSB CB mobile $113.95
PC66A-B Uniden 40 channel CB Mobile $78.95
PRO510XL-B Uniden 40 channel CB Mobile $39.95
PRO520XL-B Uniden 40 channel CB Mobile $54.95
PRO535E-B Uniden 40 channel CB Mobile $69.95
PRO538W-B Uniden 40 ch. weather CB Mobile $78.95
PRO810E-B Uniden 40 channel SSB CB Base $174.95

UNIDEN RADAR DETECTORS

RD3000ZX-B Uniden 3 band suction mount radar $129.95
RD2400ZX-B Uniden 3 band radar detector $109.95
RD80-B Uniden 2 band radar detector $64.95
CARD-B 3 band credit card size radar detector $99.95
RD3XL-B Uniden 3 band radar detector $109.95
RD9XL-B Uniden "micro" size radar detector $69.95
RD27-B Uniden visor mount radar detector $39.95

Cobra®

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18RV-B Cobra CB radio $54.95
41PLUS-B Cobra CB radio $72.95
70LTD-B Cobra remote mount CB radio $99.95
19LTD-B Cobra Classic series CB radio $44.95
21LTD-B Cobra Classic series CB radio $54.95
25LTD-B Cobra Classic series CB radio $89.95
29LTD-B Cobra Classic series CB radio $109.95
146GTL-B Cobra AM/SSB CB radio $129.95
148GTL-B Cobra AM/SSB CB radio $149.95
90LTD-B Cobra Base station $89.95
142GTL-B Cobra AM/SSB Base station $199.95
2000GTL-B Cobra Deluxe AM/SSB Base station $379.95

COBRA RADAR DETECTORS

RD3163-B Cobra 3 band radar detector $109.95
RD3175-B Cobra 3 band radar detector $129.95
RD3173-B Cobra 3 band radar detector $139.95
RD3183-B Cobra 3 band radar detector $139.95

Bearcat 200XLT-B

List price $509.95/CE price $239.95/SPECIAL

12 Band, 200 Channel, 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 BC100XLT-B for only $179.95. Includes antenna, carrying case belt loop, ni-cad battery pack, AC adapter and earphone. Order your scanner from CEI today.

Bearcat 800XLT-B

List price $549.95/CE price $239.95/SPECIAL

12-band, 40 Channel, Nothing excluded in the 800 MHz. band.

Bands: 29-54, 116-174, 406-512, 806-956 Mhz.

If you do not need the 800 MHz. band, order the Bearcat 210XLT-B for only $178.95.

Magnavox® Satellite Phone

CE price $48,880.00/Special order - allow 45 days for delivery. When war broke out in Iraq, you heard all the action because CNN had a satellite telephone. When a disaster such as an earthquake or a hurricane strikes your community and communications are disrupted, you can depend on instant reliable communications, just like CNN did using your Magnavox MagnaPhone. Inmarsat communication satellites are in geostationary orbit along the equator. They beam two-way voice and data transmissions between your satellite phone and fixed earth stations. In most instances, telephone calls are dialed directly once you have selected the satellite serving your location. No matter where you are on the planet, the MagnaPhone automatically selects the Land Earth Station (LES) nearest the destination called. This makes placing a call as easy as using a standard telephone. Dual ID numbers permit a separate Inmarsat telephone number to be used to route calls to one of the external telephone ports which could be used for a fax machine or a computer data line. For telephone, telex, fax and data communications anywhere in the world, the new MX2020P MagnaPhone is the most compact Inmarsat-A, Class 1 terminal available today. Like a cellular phone, airtime will be billed to your account. The new MagnaPhone weighs just 47 lbs (21 kg), including the antenna. Add the optional ruggedized case (only $950.00) and it can travel as airline baggage on commercial carriers. When you arrive at your destination, installation can be done in less than 5 minutes. For more information call our Emergency Operations Center at 313-996-8888.

RELM UC202-B 2 Watt transceiver on 154.57 MHz. $114.95
RELM RH256NB-B 25 Watt VHF transceiver $299.95
RCI2950-B Ranger Comm. 25 Watt 10 Meter xcevr. $229.95
MR8100-B Uniden surveillance scanner .CALL FOR PRICE
BC55XLT-B Bearcat 10 channel scanner $114.95
AD100-B Plug in wall charger for BC55XLT 14.95
PS001-B Cigarette lighter cable for BC55XLT $14.95
VC001-B Carrying case for BC55XLT $14.95
BC70XLT-B Bearcat 20 channel scanner $159.95
BP70-B Ni-Cad battery pack for BC70XLT scanner .. $39.95
BC142XL-B Bearcat 10 channel 10 band scanner $84.95
BC147XLT-B Bearcat 16 channel 10 band scanner .. $94.95
BC172XL-B Bearcat 20 channel 11 band scanner .. $124.95
BC177XLT-B Bearcat 16 channel 11 band scanner $129.95
BC590XLT-B Bearcat 100 channel 11 band scanner $194.95
BC760XLT-B Bearcat 100 channel 12 band scanner $254.95
BC002-B CTCSS tone board for BC590/760XLT $54.95
BC003-B Switch assembly for BC590/760XLT $22.95
BC855XLT-B Bearcat 50 channel 12 band scanner $199.95
BC560XLT-B Bearcat 16 channel 10 band scanner .. $94.95
BP205-B Ni-Cad battery pack for BC200/100XLT $39.95
TRAVELLER2-B Grundig shortwave receiver $84.95
COSMOPOLIT-B Grundig shortwave receiver $179.95
SATELLIT500-B Grundig shortwave receiver $499.95
SATELLIT650-B Grundig shortwave receiver $849.95
ATS800-B Sangean shortwave receiver $89.95
ATS803-B Sangean shortwave receiver $159.95
74102-B Midland emergency weather receiver $34.95
77116-B Midland CB with VHF weather & antenna ... $66.95
77118-B Midland CB mobile with VHF weather $62.95
77913-B Midland CB portable with VHF weather $79.95
76300-B Midland CB base station $92.95
NPD-B Uniden National Police Directory $19.95
FBE-B Frequency Directory for Eastern U.S.A. $14.95
FBW-B Frequency Directory for Western U.S.A. $14.95
RFD1-B MI, IL, IN, KY, OH, WI Frequency Directory . $14.95
RFD2-B CT, ME, MA, NH, RI, VT Directory $14.95
RFD3-B DE, DC, MD, NJ, NY, PA, VA, WV Directory $14.95
RFD4 AL, AR, FL, GA, LA, MS, NC, PR, SC, TN, VI . $14.95
RFD5 AK, ID, IA, MN, MT, NE, ND, OR, SD, WA, WY $14.95
RFD6 CA, NV, UT, AZ, HI, GU Frequency Directory . $14.95
RFD7-B CO, KS, MO, NM, OK, TX Freq. Directory ... $14.95
PWB-B Passport to World Band Radio $16.95
ASD-B Airplane Scanner Directory $14.95
TSG-B "Top Secret" Registry of U.S. Govt. Freq. $16.95
TTC-B Tune in on Telephone Calls $14.95
CBH-B Big CB Handbook/AM/FM/Freeband $14.95
TIC-B Techniques for Intercepting Communicatons .. $14.95
EEC-B Embassy & Espionage Communications $14.95
SMHV1-B Scanner Modification Handbook/Volume 1 $18.95
SMHV2-B Scanner Modification Handbook/Volume 2 $18.95
LIN-B Latest Intelligence by James E. Tunnell $17.95
A60-B Magnet mount mobile scanner antenna $39.95
A70-B Base station scanner antenna $39.95
USAMM-B Mag mount VHF ant. w/ 12' cable $39.95
USAK-B 3/4" hole mount VHF antenna w/ 12' cable .. $34.95

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LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

The breakup of the USSR is bringing about numerous changes on the shortwave bands. Radio Moscow has experienced several cutbacks, many of which began even before the collapse. We are still waiting for all of the dust to settle. Shortwave transmitters were scattered throughout the former USSR and Radio Moscow and the other services made use of all of them so that one never knew for certain just which republic a particular transmission was coming from. Will this continue or will Radio Moscow only be carried by transmitters in Russia? How much longer will the Radio Moscow/Radio Havana relay exchange continue? For that matter, will Radio Moscow even continue to use that name? On the reverse side of the coin, will stations such as Radio Kiev, Radio Yerevan etc., continue to have their foreign services carried on transmitters within their republics? Will new foreign services begin from some or all the new independent states that don't have them? Look for lots of changes in the coming months!

You'll note we now list Radio Moscow under Russia (even though actual transmitter sites aren't usually known). Loggings from other former Soviet republics are now listed by their respective names.

The Voice of America's new Botswana relay station is now in service, running 4 100 kW transmitters. The initial schedule was 0300-0500 on 7265, 0300-0430 on 11940, 0430-0500 in PP on 15370, 1600-2200 on 15445, 1630-2300 on 17705 in Swahili, PP, FF and Hausa.

Radio Nacional Arcangel San Gabriel in Argentina Antartica has returned to the air. Spanish language broadcasts run until shortly past 2300 on 15474. There's an EE ID around sign off.

Radio Miskut in Puerto Cabezas, Nicaragua is being heard by a few DX'ers. It operates on 5970, and thus is subject to a lot of QRM from powerful international broadcasters. Broadcasts usually run until 0400 close. When if first appeared it was using 4560 so you might check there, too.

Radio Miami International has been granted a construction permit by the FCC and might well be on the air before the year is out. The 50 kilowatt station will specialize in serving the Caribbean. Meantime, RMI's second station, Radio Copan International in Tegucigalpa, Honduras should be on with regular programming by now. Check 9950.

China is reported to have a privately owned commercial station operating on shortwave (in addition to mediumwave and FM) with broadcasts intended for both a domestic and foreign audience. The shortwave frequency is reported to be on 6185.

Well, guess who's back with an English language service to North America? Your old friends at Radio Baghdad. Broadcasts to North America are from 2300-0100 on 11830 and in English to Europe at 1800-2300 on 11740.

Trans World Radio plans to resume their broadcasts from Sri Lanka sometime this year, using the new 300 kW installation at Ekala and, later on, their own 100 kW transmitter which is being installed at Puttalam.

THE MAIL: P.A. Kimball of Chicago wonders about the practice of submitting logs. The hows, whys and history. As to the history,

Here's the on-air staff of Radio Budapest.

BUDAPEST INTERNATIONAL

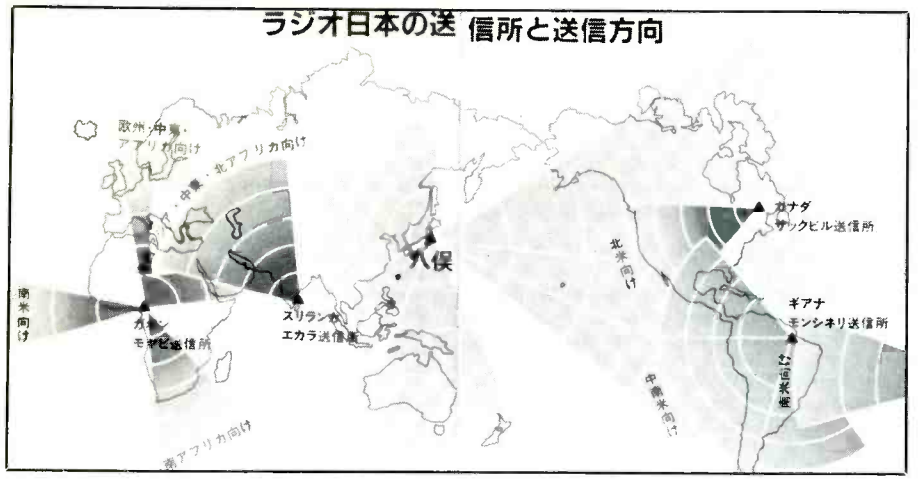
A HAPPY NEW YEAR TO ONE AND ALL FROM THE STAFF AT RADIO BUDAPEST ENGLISH LANGUAGE BROADCASTS

We thought hard about how to give all readers of Budapest International a gift to start the New Year. Then we remembered the many, many requests for pics to match the voices you hear in our broadcasts.

We called in the photographer. Not everyone was satisfied with the result of the group photo, so we had individual pics as well. Not everyone was satisfied with that either, but all agreed that perhaps you may decide that they are either "wanted" notices or the results of an all night party to sing out the old and ring in the new.

It has been a great year for Radio Budapest. Started in the depths of despair about the future of shortwave broadcasting. Ending in a confident mood about Hungary's place in Europe and the United Nations, and our ability to communicate the thoughts of government; opposition and society at large to an increasing circle of listeners.

Adventist World Radio is currently sending out this set of stickers to mark their 20th anniversary.



Radio Japan's transmission patterns.

P.A., we expect goes back to the very first DX publication and the enjoyment received from telling others what you've been hearing as well as a desire to help someone else hear something new. No one person can possibly hear it all but, by sharing reception information, everyone gets a better picture of what's happening on the bands. You are right when you say we don't really need each reporter to send in every log taken on Caracol, SRI, etc. By the same token, we avoid laying on too many restrictions, so just submit what you feel is going to interest others. We can't use every item sent in by every person because there are a lot of same station, same frequency, same time frame loggings, but we make every effort to see that everyone who sends in items is represented.

Bill Moser in New Cumberland, Pennsylvania has been keeping an ear on Radio Moscow and noted the change in address from "Moscow, USSR" to "Moscow, USSR" to "Moscow, Russia". He notes that reception on 11840 hasn't been very good. That's one of the Havana relays and, though strong, it's been very distorted of late. Thanks for your kind words about the column, Bill.

Robert E. Tucker, Jr. of Savannah, GA says he got into SWL'ing in 1970, then had a lull of several years but is now back at it, using a Sangean ATS-803A.

Marie Lamb spotted the change in name and ownership ar Radio Zaracay, a longtime Ecuadorian on 3395. It's now Radio Catolica, though Zaracay continues on the FM channel.

If you live in the northeast Ohio area you are invited to attend the regular meetings of the NE Ohio SWL group which are held monthly at the Cuyahoga County Library in Brecksville. Upcoming dates are April 21, May 19 and June 16 at 7pm, apparently the meetings are always scheduled for the third Tuesday of the month. If you have questions or need more info, call Mike at (216) 661-2443. Or you can send an SASE to Mike Fanderys, 5618 Velma Ave, Parma, OH 44129. There's no cost to join. Incidentally, we're glad to promote local clubs and regional get togethers. Just send in the info well ahead of any event.

We continue to seek photos of your shack, preferably with you in the picture, too. Also extra QSL cards we can use as illustrations, schedules, station info, questions, comments, clippings and such related to shortwave broadcast listening. And, of course, your logs. Please list by country, leave space between each item and include your last name and state abbreviation after each.

Here are this month's logs. Broadcast language is assumed to be English unless otherwise noted as SS-Spanish, FF-French, GG-German, etc. All times are UTC.

SWBC Loggings

Alaska: KNLS, 9870 at 1209 with religious program in CC. (Roseboro, NC) 11715 at 0800, music, commentary, ID, address. (Garcia, OH)

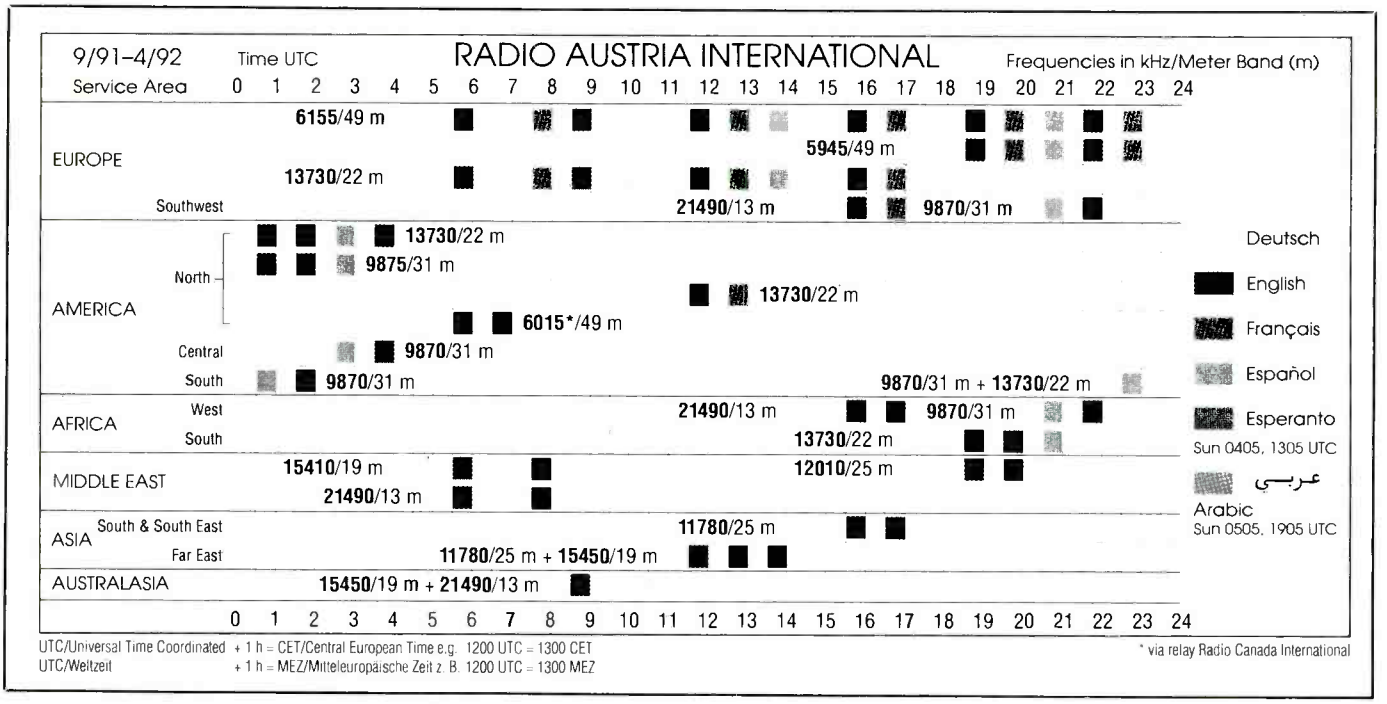
Albania: 0231 sign on, 9760. (Moser, PA) 0230. (Scheurell, PA)

Antartica: Radio Nacional Arcangel San Gabriel, 15475.7 from 2215-2230 in SS and EE with pops, requests for reports, ID after each record. Best in LSB. (Kurrasch, NY)

Antigua: Deutsche Welle relay, 6040 at 0124 and 9545 at 0310. (Moser, PA)

Argentina: RAE, ending EE at 0055 with ID, frequency. (Gasque, SC) 0130 in SS. (Scheurell, PA) 15345 in SS at 2257, sign off with frequencies, IS, ID in FF and EE at 2302. (Lamb, NY)

Australia: ABC, VLQ9, Brisbane 9660 at 0952, news at 1000. (Lamb, NY)



The current Radio Austria International schedule.

VLW6, ABC-Perth, 6140 at 1200 with ABC news, reception reports, pops, TV & movie reviews. (Kurrasch, NY) News, weather, rock from 1410 tune. (Carson, OK)

Radio Australia, 6080 at 1215. (Kimball, IL) 7140 at 0929. (Gasque, NC) 7240 at 0927 and 13705 at 2104. (Lamb, NY) 9580 at 1250. 9770 at 1300 sign on & into VV (Wirsing, MI) 9710 at 0824. (Foss, AK) 11720 at 1300. (Garcia, OH) 15240 at 0730. (Rocker, NY)

Austria: Radio Austria Int'l, 8545 at 2118, 9870 at 0200 and 21505 at 1607, all in GG. (Scheurell, PA) 9875 at 0130. (Wirsing, MI) 13730 at 0829. (Carson, OK) 15160 at 0848. (Moser, PA)

Belgium: BRT, 17750 at 1750 in FF and 21815 at 1626. (Scheurell, PA) 21810 at 1400 with news. (Wirsing, MI)

Benin: ORTB, 4870 at 2217 with high life music. (Maywoods, KY)

Bolivia: Radio Perla del Acre, 3600 (you mean 4600?, ed) at 1051 with Latin pops, station music jingle similar to NBC-TV, news 1100 with references to Cobija. (Gasque, SC)

Botswana: Radio Botswana, 7255 at 0245 with IS to sign on. (Moser, PA) 0355 with religious program. (Carson, OK) 0815, mostly talk. (Gasque, SC)

Brazil: Radiodifusora Roraima, 4875 in PP at 0830, Latin pops and commercials, ID at 0901. (Gasque, SC)

Difusora Amazonas, 4805 at 0941 in PP. (Lamb, NY)

Radio Nacional Amazonia, 6180 at 0800 sign on, PP ID. (Lamb, NY) 0840. (Kimball, NY)

Radio Brazil Central, 4985 at 0608 in PP with pops, ID, commercials. (Lamb, NY)

Radio Brazil Tropical, 5015 at 0858 in PP with jingles, frequent "Brazil" drop-ins, pops. (Lamb, NY)

Radio Atalaia Corumba, 4835 at 0011 in PP, periods of marimba music. (Carson, OK)

Radio Globo, 6030 at 2350 in PP. (Scheurell, PA)

Radio Universo, 11800 in PP at 2345. (Henderson, TX)

Bulgaria: Radio Sofia, 9700 at 2330. (Rocker, NY) 11600//11680 at 0200 ending SS and into another language. (Caballero, Mexico) 11765 at 0401. (Moser, PA)

Burkino Faso: RTV Burkina, 4815 in FF at 0636. (Lamb, NY)

Cameroon: RTV Cameroon, Garoua, 5010 in FF at 0550 with African music. (Lamb, NY)

RTV Cameroon, Yaounde, 4850 in FF at 2208. (Maywoods, KY)

Canada: CFRX, 6070, relay CFRB at 0635. (Lamb, NY). 1215. (Moser, PA)

CKZN, 6160 at 1200 with news, weather, sports. (Gasque, SC)

Radio Austria International relay, 6015 at 0535. (Carson, OK)

CBC Northern Quebec Service, 9625 at 1202. (Moser, PA)

Radio Canada International, 9755 at 2230. (Moser, PA) 11855 at 1313. (Wirsing, MI) 15325 at 2018. (Lamb, NY)

Central African Republic: RTVC, 5034.4, nominal 5035 at 0427 with piano IS, anthem, music. (Moser, PA)

China: Xizang PBS, Lhasa, 5950 at 0651 in CC. (Foss, AK)

Voice of Jinling, 4875 at 1218 in CC. (Lamb, NY)

Central People's Bc Station, 12120 in CC at 1310. (Northrup, NY) 9770 (via Mali) at 0300. (Scheurell, PA) 11715 (via Mali) at 0338. (Roseboro, NC) 11755 at 1056. (Moser, PA)

Radio Beijing, 3985, via Switzerland at 2207. (Lamb, NY) 9770 (via Mali) at 0300. (Scheurell, PA) 11715 (via Mali) at 0338. (Roseboro, NC) 11755 at 1056. (Moser, PA)

Colombia: Radio Nacional, 11822 at 2125 in SS. (Henderson, TX) 0100 in SS. (Johns, TX) 17864 at 0224 in SS. (Lamb, NY)

La Voz de Yopal, 5050 in SS at 0955 with folk music, ID, frequencies, possible national anthem, commercials. (Lamb, NY)

Caracol Bogota, 6075 at 0000 in SS. (Scheurell, PA) 0725. (Kimball, IL) 6150 at 0325. (Moser, PA)

La Voz del Llano, 6115 at 0911. SS. (Kimball, IL)

La Voz del Rio Aruca, 4895 at 0140 in SS and Latin music. (Maywoods, KY)

La Voz del Cinaruco, 4865 at 0900 in SS. (Johns, TX)

Costa Rica: Faro del Caribe, 5055 at 0308 in EE. (Lamb, NY) 1000 in SS. (Johns, TX)

Adventist World Radio, 9725 at 2305. (Henderson, TX) 0230. (Scheurell, PA)

Radio For Peace Int'l, 7375 at 0520. (Maywoods, KY) 15030 at 0442. (Carson, OK)

Cuba: Radio Havana Cuba, 5965//11760//11950 at 0428. (Moser, PA) 11760 at 1328 in SS. (Wirsing, MI) 11920 at 0307. (Moser, PA) 15140 at 0700. (Garcia, OH) 17705 at 119156. (Rocker, NY)

Radio Rebelde, 3365 at 0900 and 5025 at 1000, both SS. (Johns, TX)

Cyprus: BBC relay, 15575 at 0452. (Lamb, NY)

Czechoslovakia: Radio Prague Int'l, 5930 at 0303. (Roseboro, NC) 7345 at 0014. (Rocker, NY) 9605 at 2012 in SS. (Scheurell, PA)

Denmark: Radio Denmark via Norway, 9615 in DD at 0130. (Scheurell, PA)

Dominican Republic: La N-103, 4800 at 0537 with ID, jingles, salsa, all SS. (Lamb, NY)

Ecuador: Escuelas Radiofonicas Populares, 5010 in SS and Quechua at 1015, Latin pops. (Gasque, SC)

Radio Centro, 3290 in SS with Latin pops at 0950, ID at 0955 news at 1000. (Gasque, SC)

Radio Catolica Nacional, 5030 at 1100 in Ss. (Johns, TX) Quechua from 1040 tune in to 1053. (Gasque, SC)

Radio Nacional Progresso, 5062 in SS at 1009, numerous IDs. (Gasque, SC)

Radio Nacional, 11910 at 1310 in SS. (Northrup, MO) (This is via HCJB, editor)

Radio Jesus del Gran Poder, 5050 in SS at 0030 with religious program. (Kurrasch, NY) 1000. (Johns, TX)

La Voz del Napo, tentative, 3280 at 0306 in SS, EZL music, possible ID, national anthem and off at 0310. (Lamb, NY) 1010 in SS with religion, several IDs at 1030. (Kurrasch, NY)

Radio Catalica, Santo Domingo, 3395 at 1051, (ex-Radio Zaracay) with talk about families, frequent IDs. (Lamb, NY)

Radio Centinela del Sur, 4899 in SS at 1126 with commercials, many IDs. (Gasque, SC)

HD2IOA time station, 3810 with SS time announcements 0934. (Lamb, NY)

Radio Quito, 4920 in SS at 0413. (Roseboro, NC)

HCJB 0n 6090 at 0915 in presumed Quecha. (Kimball, IL) 9585//11730 at 0733 and 9745 at 0130. (Carson, OK) 9600 at in GG (Lamb, NY) 11775 at 0208 in GG. 11835 at 0730, 11960 in SS at 1340, 15115 at 0115. (Garcia, OH) 11925 at 0550. (Henderson, TX) 15145 at 1746 in SS. (Scheurell, PA) 15270 at 1446. (Carson, OK) 17890 at 1215. (Moser, PA)

Egypt: Radio Cairo, 9475 at 0227. 9900 at 2120. (Moser, PA) 12050 in AA at 0330. (Scheurell, PA)

England: BBC, 7150 at 0640 and 15070//17885 at 1935. (Carson, OK) 7180 in CC at 1153. (Gasque, SC) 9410 at 0511, 9590 (via Canada) at 2201. (Moser, PA) 9660, via Cyprus, 1514. (Rocker, NY) 11690 at 1236. (Roseboro, NC) 15360 at 0847. (Foss, AK)

British Forces Broadcasting Service, via BBC Cyprus relay, 15670 at 1303 for Gulf troops. (Wirsing, MI)

Equatorial Guinea: Radio Nacional, 5003//6250 at 2109 in SS. Mention of Radio Bata at 2126. Into separate programming at 2127. (Price, PA)

Finland: Radio Finland Int'l, 15400 at 1430. (Borsch, IL) 21550 at 1450. (Wirsing, MI)

France: Radio France Int'l. 11705 at 1610. (Zamora, CA) 0358. (Moser, PA) 17620 at 1608. (Rocker, NY) 21635 at 1245. (Wirsing, MI) 21770 at 1430. (Borsch, IL)

French Guiana: RFI relay, 11670 in FF at 0244. (Moser, PA)

RFO, 5055 at 0900 in FF. (Johns, TX)

Gabon: Africa Number One, 9580 at 0605 in FF. (Moser, PA) 15475 at 1820 in FF. (Scheurell, PA) 17630 at 0827 in FF. (Roseboro, NC)

Germany: Radio Liberty, 7195 at 2148 in Ukrainian. (Kimball, IL)

Bayerischer Rundfunk, 6085, GG at 2051. (Schurell, PA) 2308, Hyden choral music. (Lamb, NY)

Suddeutscher Rundfunk, 6030 in GG with commercials, news, pops, feature on Duke Ellington. "SDR Eins" ID. (Lamb, NY)

RIAS, 6005 at 0721 in GG with interview, ID, news, pop call-in show. (Lamb, NY)

Sudwestfunk, 7265 in GG with western pop 0748, commercials, news, frequencies 0805, music 0808. (Gasque, SC)

Sender Freies Berlin, 61190 at 0822 in GG with pops, ID, news. (Lamb, NY)

Deutsche Welle, 6145 at 0120. (Moser, PA) 15410 at 2300. (Zamora, CA)

Ghana: Ghana Bc. Corp., 3366 at 2217 with "The Family Doctor," ID, reggae music. (Lamb, NY) 4915 at 2227. (Maywoods, KY) 0600, ID and news. (Wirsing, MI) 6130 at 0702 with African music. (Moser, PA)

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**

Greece: Voice of Greece, 7430 at 0148 with bouzouki music. (Kimball, IL) 9420 at 0135 with news, 15650//17525 at 1244. (Moser, PA)

VOA Kavala relay, 15205 at 0609. (Lamb, NY)

Guam: KSDA at 2307 with "Music Scrapbook." (Lamb, NY)

Guatemala: TGNA, Radio Cultural, 330 at 0123. (Maywoods, KY) 0328 in EE, religious program, request for reports. (Roseboro, NC)

Radio Buenas Nuevas, 4800 at 0200 in SS. (Gasque, SC)

Radio Tezulutlan, 3370 at 0231, religion SS or indian. (Maywoods, KY) 4835 at 0230. (Kurrasch, NY) 1050. (Johns, TX)

Radio Chortis, 3380 at 0224 in SS with music, ID. (Lamb, NY) 0228. (Maywoods, KY)

La Voz de Nahuala, 3360 at 0208, slow vocals with marimba, SS. (Maywoods, KY)

AWR Union Radio, 5990 at 1206. (Kimball, IL)

Guyana: Voice of Guyana, 5950 at 0914 with pops and calypso, "Word From Unity," commercials, IDs as "Voice of Guyana" and "GBC Radio." (Lamb, NY)

Hawaii: WWVH on 5000 at 1010, woman with time signals. (Moser, PA)

Honduras: La Voz Evangelica, 4820 in SS at 0135-0200 with religion. (Kurrasch, NY) 0332 in EE with "Back to God Hour." (Lamb, NY)

Hong Kong: BBC relay, 7180 at 0921, 15280 at 0618 and 17830 at 2316. (Lamb, NY) 11820 at 1314 with news. (Wirsing, MI)

Hungary: Radio Budapest, 9835 at 0313. (Moser, PA)

India: All India Radio, 7412. 11620 at 2221 with news, ID. 17785 at 0421 in presumed Farsi. (Lamb, NY) 11620 at 2200 with ID, news, commentary. 15110 at 2320. (Wirsing, MI)

Iran: VOIRI, 9022 at 0918 with music, AA. (Rocker, NY) 9720 at 0035 with ID after news, comment. Frequent signal cut-out. (Moser, PA) 15260 at 0531 sign on with anthem, frequencies, into SS. (Lamb, NY)

Israel: Kol Israel, 7465 at 2230 and 11588 at 1931. (Scheurell, PA) 9435 at 0000. (Henderson, TX) Reshet Bet home service, 17545 at 0623 in Hebrew. (Lamb, NY)

Italy: RAI, 11800//15245 in Italian with classical music, ID at 0050. (Lamb, NY) 17784 at 1700 in Italian. (Scheurell, PA)

Japan: Radio Japan, 5960, via Canada, 1715. (Garcia, Ohio) 6120 via Canada at 1116. (Moser, PA) 11735, via Gabon, 2328. (Henderson, TX) 11810 in AA at 2050. (Scheurell, PA)

Jordan: Radio Jordan, 9560 at 1530. (Borsch, IL) In AA at 2052. (Henderson, TX)

Lebanon: Voice of Lebanon, 6560 (nominal 6550) at 0338 in AA with local music, chimes, ID 0400, presumed news. (Lamb, NY)

King of Hope, 11530 at 2040. (Rocker, NY) 0701 with news, ID at 0710. (Lamb, NY)

Libya: Voice of the Great Homeland, 15450 in AA at 0358 with middle east music, ID 0400, news. (Lamb, NY)

Radio Jamahiriya, 17725 in AA at 1757, 1905. (Scheurell, PA)

Lithuania: Radio Vilnius, 15180//17690 at 2353. Later in month on 7400//15180//17690 at 0000. (Moser, PA) 15180 at 0020. (Wirsing, MI) 17605//17690 at 0000. (Borsch, IL)

Luxembourg: Radio Luxembourg, 6090 at 2240 in GG with religious program, into pops at 2244 with "Hier ist Radio Luxembourg." (Lamb, NY) 0021. (Moser, PA) 0820,. (Rocker, NY)

Madagascar: Radio Netherlands relay, 15570 at 1730 sign on in Dutch to Africa. 1833. (Rocker, NY) (Zamora, CA) 21480 at 1606 in Dutch. (Scheurell, PA) 21685 at 1844. (Moser, PA)

Mali: Radio Beijing relay, 9770//11715 at 0049. (Zamora, CA)

Malta: Voice of Mediterranean, 9765 at 0600 sign on. (Lamb, NY) 0650. (Johns, TX)

Deutsche Welle relay, 9565 at 0119. (Moser, PA)

Mauritania: ORT Mauritanie, 4845 at 2212 in AA. (Maywoods, KY)

Mexico: Radio Mil, 6010 at 0100 in SS. (Johns, TX)

Radio Educacion, 6185 at 0200 in SS. (Johns, TX)

Radio Huayacocotla, "la voz de los campesinos," 2390 at 0040 in SS with music and news. Sign off 0304. (Cabellero, Mexico)

Monaco: Trans World Radio, 9480 at 0800. (Rocker, NY) 0830. (Borsch, IL)

Mongolia: Radio Ulan Bator, 12105 at 1305, unidentified language. Also 12050 at 1320 in oriental language. No IDs heard. (Northrup, MO)

Morocco: Radio Medi Un, 9575 at 0807 in FF with commercials, pops, ID, news in AA and FF. (Lamb, NY)

RTV Morocaine, 15335 at 1515 mideast music. (Maywoods, KY) 15340 at 1719 in FF, Moroccan music. (Scheurell, PA)

Netherlands: Radio Netherlands, 6165 at 0050, 17605 at 1835. (Wirsing, MI) 11720 at 0354. (Moser, PA) 13700 at 2027. (Carson, OK) 21685 at 1910. (Henderson, TX)

Netherlands Antilles: Radio Netherlands relay, 9580 at 0356. (Moser, PA) 11895 at 0750. (Carson, OK)

Trans World Radio, 9535 at 0930 with ID. (Zamora, CA) Here and 11930 at 0310. (Carson, OK) 11815//15345 at 1154. (Moser, PA)

New Zealand: Radio New Zealand, 9700 at 0834. (Foss, AK) 1039 with "Night Cap" show. (Roseboro, NC) 17770 at 0303. (Lamb, NY)

Nigeria: Voice of Nigeria, 7255 at 0457 sign on, "News About Nigeria" at 0543. (Henderson, TX) 0502 with "Morning Flight." (Lamb, NY)

Radio Nigeria, 4990 at 2210 with music. (Lamb, NY)

North Korea: Radio Pyongyang, 6576 at 0945, ID, frequencies anthem and close. (Gasque, SC) 9640 at 1513 with news, ID. (Zamora, CA) 9977 at 1128. (Tucker, GA) Here and 11335 at 1121. (Moser, PA) 11700 and 13650 at 2300. (Wirsing, MI) 15115 at 0002 with anthem, news. (Lamb, NY)

Northern Marianas: KHBI, 13625 at 1959 with IS, ID, opening announcement. 17780 at 0415 with news. (Lamb, NY)

Norway: Radio Norway Int'l, 9615 at 0200 in Norwegian. (Scheurell, PA) 11870 at 1500. (Rocker, NY) 15220 at 1909, //17730. (Moser, PA)

Oman: BBC Eastern Relay, 9580 at 0148. (Scheurell, PA) 15235 at 0259 in AA. (Lamb, NY) 15310 at 1555. (Zamora, CA)

Pakistan: Radio Pakistan, 13665//17555 at 1555 at IS, "Typewriter Song," news in slow English. 17555 at 0437 in presumed Urdu. (Lamb, NY)

Paraguay: Radio Nacional, 9735 at 0002 in SS. (Moser, PA) 0930 in SS. (Johns, TX)

Peru: Radio Cora, 4915 in SS at 0122; 0430; 1100. (Lamb, NY; Kurrasch, NY; John, TX)

Radio Andina, 4996 at 0935 in SS with ID. WWV QRM. (Kurrasch, NY)

Radio Atlantida, 4790 at 0905 in SS with folk music, freqent IDs, rooster crew and baby cry sound effects. (Lamb, NY)

Radio Union, 6115 at 0546 in SS. (Cabellero, Mexico)

Radio Altura, 3340 in SS at 1015. huanyo music. talk ID. (Gasque, SC)

Philippines: VOA relay, 9760 at 1320 with news. (Wirsing, MI) 15115 at 1213. (Moser, PA) 17735 at 0030. (Lamb, NY)

Radio Veritas Asia, 9520 at 1158 with sign on, ID, news in unidentified language at 1220. (Roseboro, NC) 9615 at 1450 repeating music segment with IDs, into CC at 1500. (Wirsing, MI)

FEBC, 11820 at 1515 in CC. (Northrup, MO) 11995 at 0828 with IS, IDs, into listed Japanese broadcast at 0830. (Lamb, NY)

Poland: Radio Polonia, 9675 at 0630. (Borsch, IL)

Portugal: Radio Portugal, 9555 at 2200 in PP. (Roseboro, NC) Here and 9705 at 0234, EE. (Moser, PA) 9750 at 0230-0300 to North America. (Henderson, TX) 11740 at 2017, 15240 at 1847 in PP. (Scheurell, PA)

Romania: Radio Romania Int'l, 5990//9570//11940 at 0235. (Moser, PA) 17805 at 0648 with news, ID. (Lamb, NY)

Russia: Radio Moscow, 6045 at 3210. (Wirsing, MI) 7115//7150//7240 at 0313. (Moser, PA) 7160 at 0908. 7245 at 1130. (Gasque, SC) 9182 USB feeder at 0623 in RR. (Lamb, NY) 9675//9705 at 1528. (Zamora, CA) 9520//9685//11840//15400 at 1959. (Henderson, TX) 11840 at 2230. (Garcia, OH) 11845 at 2005, 17595 at 1539. (Roseboro, NC) 15480 at 1301. (Moser, PA) 17790 at 1503. (Carson, OK)

Radio Ala, 5040 at 0335 in RR, folk music, guitar IS, ID at 0400 and 0415. (Lamb, NY)

Khabarovsk Radio, 4610 at 0655 in RR with opera. (Foss, AK)

Kamchatka Radio, Petropavlovsk, 4485 at 0700 in RR. (Foss, AK)

Yakut Radio, 4940 at 0514, presumed in RR with IS, ID of "Yakut Radio, Yakutsk." (Lamb, NY)

Rwanda: Deutsche Welle Kagili relay, 7225 at 0425 and Rwanda site ID. (Moser, PA) 17860 at 1823 in GG. (Scheurell, PA)

Saudi Arabia: BSKSA, 9870 at 1738, AA. (May-

woods, KY) 21505 in AA at 1605. (Scheurell, PA)

Senegal: ORTS, Dakar, 4890 at 2252. (Maywoods, KY) (AA or FF? editor)

Seychelles: FEBA 11860 at 1715. (Maywoods, KY) 15200 at 0311 in Farsi. Off with "Inja Radio FEBA" ID and IS. (Lamb, NY)

Singapore: BBC Far Eastern Relay, 1026 on 9740. (Lamb, NY) 1535. (Zamora, CA) 11750 at 1318. (Wirsing, MI)

Solomon Islands: SIBC, 9545 at 0731, news. (Carson, OK)

South Africa: Radio RSA, 7270 at 0358 with bird IS. (Moser, PA) 11920 at 0449 in PP. (Roseboro, NC) 15365//17815 at 0520 in FF. (Lamb, NY)

South Korea: Radio Korea, 7275 at 1040 in KK, news at 1100. (Gasque, SC) 9750 at 1214 with anthem, ID, frequencies. (Moser, PA) 15575 at 0025. (Wirsing, MI)

Spain: Spanish National Radio, 6140 at 2231, 17775 in SS at 1920. 17830 in Italian at 1700 close. 21555 in SS at 1615 and 21630 at 1621 in FF. (Scheurell, PA) 9530 at 0130. (Rocker, NY)

Sri Lanka: Radio Japan relay, 11840 at 0126 in EE. (Lamb, NY)

SLBC on 15425 at 0117 with "Morning Show." (Kurrasch, NY)

Swaziland: Trans World Radio, 9655 at 0256 sign on with IS, repeated IDs in EE, into religious program in unidentified language. (Kurrasch, NY)

Sweden: Radio Sweden, 9695//11705 at 0159 with IS, EE sign on. (Moser, PA) 17875 at 1545-1600 close. (Henderson, TX)

Switzerland: Swiss Radio Int'l, 6135 at 0400. (Moser, PA) 21695 at 1332 news beamed to SE Asia. (Wirsing, MI)

Red Cross Broadcasting Service, 6135 at 0309 with news. (Lamb, NY)

Syria: Radio Damascus, 12085 at 2045 with ID by woman. (Maywoods, KY) 15095 at 2054. AA music, news in EE. (Tucker, GA)

Tahiti: Radio Tahiti, 6135//11827 at 0700 in Tahitian. (Johns, TX) 11827 at 0320. (Maywoods, KY)

Taiwan: Voice of Free China, 5950 at 0305 via WYFR. (Henderson, TX) 9680 (via WYFR) at 0150. (Scheurell, PA) 11740 (via WYFR) at 0250. (Moser, PA)

WYFR via Taiwan, 9280 in CC at 1305. (Lamb, NY)

Voice of Asia, 9280 in Mandarin Chinese at 0957, EE ID at 1000. (Lamb, NY)

Togo: Radio Kara, 6155 at 2318 in FF with pops, ID, IS. (Lamb, NY)

RTT, Lome, 5047 at 0527 with chimes IS to FF sign on. (Moser, PA)

Tunisia: RT Tunisienne, 11550 in AA at 0645. (Rocker, NY)

Turkey: Voice of Turkey, 9685 in Turkish at 0150. (Scheurell, PA)

Turkmenistan (ex-Turkmenia): Turkmen Radio, 4825 at 0535 in RR with music, ID'd at 0544, 0559. (Kurrasch, NY)

Ukraine: Radio Kiev, 7400 at 2100. (Maywoods, KY) 15180//17690 at 0020. (Moser, PA) 17605//17690 at 0100. (Borsch, IL) 17690 at 0129. (Henderson, TX)

United Arab Emirates: UAE Radio, Dubai, 9600 at 2206, 11795 at 1600, 11795 at 2030, 15400 at 1730, all AA. (Scheurell, PA) 13675//15400//15435 in EE at 0330. (Borsch, IL) 21605 at 1330. (Wirsing, MI)

Voice of the UAE, Abu Dhabi, 11985 at 1320 and 13675 at 1315 in AA. (Northrup, MO) 17855 at 0657 in AA. (Lamb, NY)

United States: Croatian Radio via WHRI at 0404 with news and interviews about the war, into Croatian at 0413. (Tucker, GA)

Uzbekistan: Radio Tashkent, 9545 at 1210 with news. (Carson, OK) 15470 at 1330 with news. (Wirsing, MI)

Vatican: Vatican Radio, 6245 in FF with ID, IS. Into EE 0600. (Lamb, NY) 7305 at 0258. (Henderson, TX) 9605 at 0300. ID in EE & SS. (Scheurell, PA) 11625 at 0650 to Africa. (Rocker, NY) 15090 and 17730 at 1730. (Borsch, IL)

Venezuela: Ecos del Torbes, 4980 in SS at 0210. (Cabellero, Mexico) 0917. (Garcia, OH) Here and 9640 at 0900. (Johns, TX)

Radio Rumbos, 0144 in SS. (Maywoods, KY) 1000. (Johns, TX)

Radio Tachira, 4830 in SS at 0230. (Scheurell, PA) 1000. (Johns, TX)

Radio Continental, 4939 at 0351 in SS. ID 0353 and anthem. (Maywoods, KY)

Radio Nacional, 9540, EE at 0035-0048. (Kurrasch, NY) 1105 in SS. (Johns, TX)

Vietnam: Voice of Vietnam, 7416 in EE at 1115. (Gasque, SC)

Yemen: Republic of Yemen Radio, 9780 at 0510 in AA, mideast music, ID 0515, presumed news. (Lamb, NY)

Yugoslavia: Radio Yugoslavia, 6100//9505 at 2210 with local news, frequencies. (Moser, PA) 9505 at 2200. (Borsch, IL) 11885 at 0230. (Johns, IL) 17740 at 1255. (Wirsing, MI)

Many thanks to those who did the work: Marie Lamb, Brewerton, NY; Steven Price, Conemaugh, PA; A. Schon Garcia, Tiffin, OH; John Spenser Carson, Jr., Norman, OK; The Maywoods DXpedition (Loy W. Lee, Wayne Gregory, Eric Petty, Chuck Everman and Dr. Joel Roitman, KY); Larry R. Zamora, Highland, CA; David Henderson, Ft. Worth, TX; Ken Wirsing, Wyoming MI; David A. Gasque, Orangeburg, SC; Andreas M. Scheurell, Pittsburg, PA; William Moser, New Cumberland, PA; Mark A. Northrup, Gladstone, MO; Marty Foss, Pitkas Point, AK; Robert E. Tucker, Jr., Savannah, GA; Daryl E. Rocker, Frankfort, NY; Bill Kurrasch, Ontario, NY; P.A. Kimball, Chicago, IL; Manual F. Caballero, Monterray, Mexico; Andy Johns, Mansfield, TX and Todd Borsch, Princeton, IL.

Thanks to all and til next month, good listening. ■

BY GERRY L. DEXTER

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

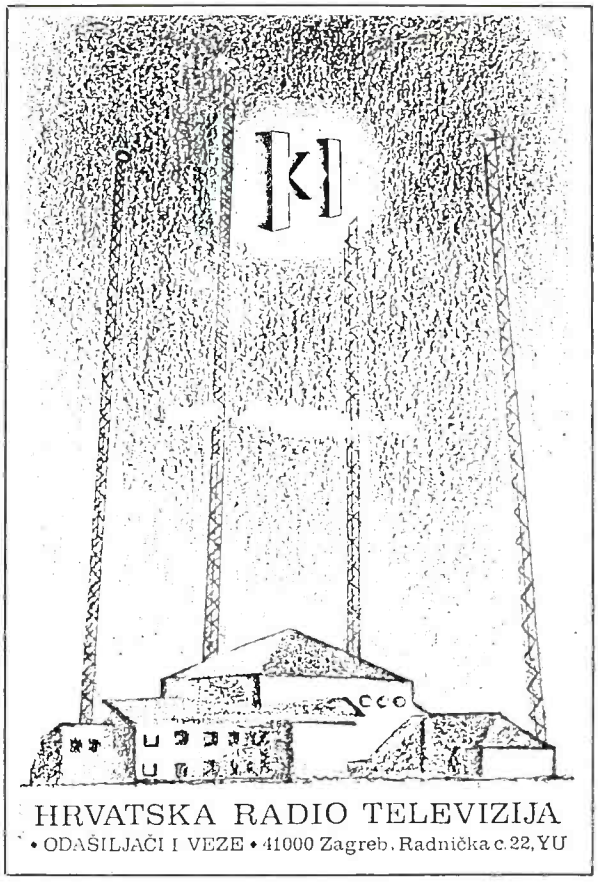
Here's an updated list of the several anti-Castro broadcasters being carried on WHRI, WRNO, and WWCR brokered by Radio Miami International. Monday through Friday local days (UTC times). 2300 to 0000 - Lo Nuestro on WRNO-7355; 0005-0059 Esperanza, from Municipios de Cuba en el Exilo or Municipalities of Cuba in Exile) on WWCR-7435; 0100-0200 Radio Conciencia (Cuban National Commission), WRNO-7355; 0200-0300 - Rumbo a la Libertad (2056 Brigade - the veterans of the 1961 Bay of Pigs invasion), WRNO-7355.

Local Sundays: 2315-2330 alternativa (Cuban Democratic Revolutionary Directorate) (live) on WWCR-15690; 2330-0059 Pueblo Libre (Junta Patriotica Cubana), WWCR-15690; 0100-0200 La Voz de Tribuna Libre (Cuban Alliance), WWCR-15690; 0200-0259, Radio Voluntad Democratica, (Partido Revolucionario Cubano Autentico) on WRNO-7355; 0300-0400 Radio Periodico Panamericano (Cuban Infopress) on WRNO-7355 and 0400-0459 Un Solo Pueblo (Social Democratic Coordinating Committee) on WRNO-7355.

Reception reports on these programs will be verified by Radio Miami International. Mail your letters to RMI at PO Box 526852, Miami, FL 33152. Thanks to Jeff White of Radio Miami International for sending the summary and for arranging to QSL these broadcasts through RMI.

Via Robert Ross in Ontario comes word of what may well be one of the rarest clandestine station loggings ever—at least as far as listeners in North America are concerned. Ross reorts that Canadian DX'ers Dan Hanington and Gary Heraldi logged what is almost certainly The Voice of Independent Kashmir from 0252 to 0257 sign off. Under WWV on 5000 back in December. The broadcast was in an unfamiliar language. There was a mention of something sounding like "Azad-ka" just as the station left the air. The station is listed to operate on 5000 at 0230, though the last schedule we say indicated a 45 minute broadcast. Ross sent us a tape of the logging (provided by Hanington and Heraldi) and it seems very likely that this was, indeed, the Kashmiri clandestine. These two very lucky DX'ers found a rare combination of extremely favorable conditions coupled with depressed signals from WWV. Congratulations, guys! You get our "Green With Envy" award!

We've been keeping an eye on the Radio Venceremos situation of late and a couple of different sources indicate that the absence of the station on shortwave may be due to technical problems and difficulty in obtaining spare parts. At this writing the FMLN and El Salvador government seem more serious than ever about ending the civil war and bringing the FMLN back into society. We can only wait and see whether Venceremos will continue if and when that happens.



Though not a clandestine station, Hrvatska Radio of Zagreb, Croatia is in the thick of the Croatian-Yugoslavian war and is being broadcast daily via WHRI. The station sent this QSL to R.C. Watts in KY.

Here's more info on the Voice of Taiwan, mentioned last month. It operates on 9990 with programs in Japanese, English, standard Chinese and another Chinese dialect, possibly Amoy. A full schedule has not yet been determined but it is known to be active around 1300 and 1400. The station opposes the current (Kuomintang) government in Taipei and may be operated by the Democratic Progressive Party. The station makes no secret of its Taiwan location, and even gives its fax number. That kind of approach is likely to get them shut down fairly quickly! No reports of this in North America yet. The frequency and time combination is workable here but perhaps we're dealing with very low power.

Radio SPLA of the Sudan People's Liberation Army is back on the air, active on its old 11710 frequency at 1300-1400. Shortly after Ethiopian rebel forces entered Addis Ababa Radio SPLA went off the air. Whether its return means it has moved to a new location or the new Ethiopian government has allowed it to reactivate, we don't know,. But we've still no clues as to an address for this!

Radio Liberty is the new name of the former Radio Iran and is being logged quite often on 125650, in Farsi between 0100-0300.

Another longtime Iranian clandestine, Iran's Flag of Freedom now operates at 0330-0525 using 9045, 9250, 11470 and 15565. Also 0645-0730 on 11470 and 15105, 1400-1445 on those same two frequencies and 1630 to 1825 on 9355, 11470, 15100 and 15565. This one is also fairly well heard in North America. The 0645 time slot is the only one not likely to be heard too well.

Here's the usual reminder that your input to his column is much sought and much appreciated! Your loggings of clandestine stations, QSL's and QSL notes, information received from stations and their backers, news clippings and so on are most welcome. Thanks for your continued support.

Until next month, good hunting! ■

YOU SHOULD KNOW

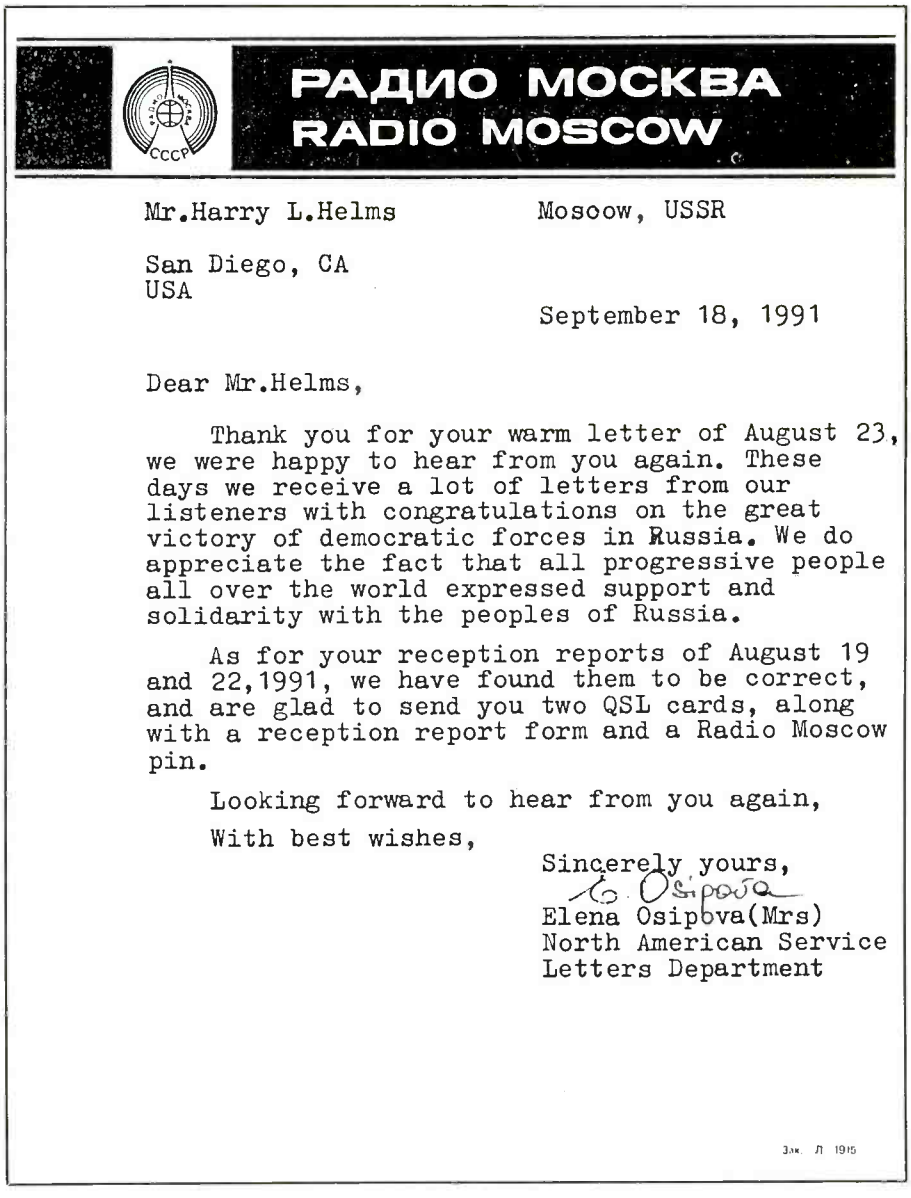
BY HARRY HELMS, AA6FW

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Phantom Signals of the Ether

There's a certain type of letter that I seem to get every couple of months, and it goes like this: "Last night I was tuning around on 90 meters and found some stations from the AM broadcast band there. Are these pirates? Does the FCC know about this?"

Hearing isn't always believing. Those readers are indeed hearing signals from AM band stations on 90 meters. However, those station aren't really transmitting on 90 meters—they're right where they're supposed to be on the AM broadcast band! The answer lies in the receivers used by those listeners. Even well-regarded communications receivers can produce some phantom signals which can trip up many experienced listeners. This month we'll take a look at these signals and how to recognize them.



РАДИО МОСКВА
RADIO MOSCOW

Mr.Harry L.Helms
San Diego, CA
USA

Mosoow, USSR

September 18, 1991

Dear Mr.Helms,

Thank you for your warm letter of August 23, we were happy to hear from you again. These days we receive a lot of letters from our listeners with congratulations on the great victory of democratic forces in Russia. We do appreciate the fact that all progressive people all over the world expressed support and solidarity with the peoples of Russia.

As for your reception reports of August 19 and 22,1991, we have found them to be correct, and are glad to send you two QSL cards, along with a reception report form and a Radio Moscow pin.

Looking forward to hear from you again,

With best wishes,

Sincerely yours,
E. Osipova
Elena Osipova(Mrs)
North American Service
Letters Department

Зак. Л 1915

How's Your Image?

All shortwave receivers today are *superheterodyne* types, meaning all received signals are converted to one or more intermediate frequencies such as 455 kHz. Intermediate frequencies are used because a receiver's signal amplification and selectivity functions can be done more easily and effectively at one frequency than across the wide range of frequencies a shortwave radio tunes.

However, by-products of superheterodyne frequency conversion process are often *images*. An image is a false signal that appears above as well as below the actual signal frequency. Let's suppose a receiver uses an intermediate frequency of 455 kHz and you're tuned to a loud station on 9600 kHz. If you hear the same station on 8690 and 10510 kHz, then you're hearing images. Images are more common with stronger signals and receivers which use only a single intermediate frequency. These receivers are known as *single conversion* types.

What's the solution? Unfortunately, there isn't one. Images are often the by-product of poor receiver design, and there isn't a great deal that can be done to correct the problem. If you're using an older receiver, particularly a vacuum tube type, then alignment of the receiver's intermediate frequency circuitry may help. However, usually the best you can do is be aware of the problem so you don't get fooled by an image into thinking you've discovered a new frequency for a station.

Your Radio Gets Overpowered

A lot of less expensive receivers do a lousy job of rejecting powerful local AM broadcast band stations. These signals can be so strong that they literally "overload" such receivers, and show up in places where they shouldn't, like the shortwave bands. Matter of fact, even a premium quality shortwave receiver can wilt if you're within a couple of miles of a 50 kilowatt AM station.

Unlike images, phantom signals due to overloading can show up anywhere in the tuning range of your receiver and at random frequency intervals. These signals can also have some audio distortion.,

You might also experience phantom signals due to overloading if you're using an active antenna. The high gain of the amplifiers used with these antennas make them particularly susceptible to overloading by AM stations, especially since many SWL's use them with the gain cranked up to maximum. In such cases, the solution is to reduce the gain to the point where the phantom signals vanish even if this costs you sensitivity.

But what happens if you're not using an active antenna? If you're using an inexpensive receiver—especially one with just a built-in

telescoping or ferrite rod antenna—then there's not much you really can do other than upgrade to a better receiver. If possible, reduce the sensitivity of the receiver (although this also means you won't hear much DX).

Signals + Signals = Crud

Other phantom signals are due to *mixing* problems. Some mixing takes place intentionally in every modern receiver, since this is how we produce the intermediate frequency of a receiver. The signals received by the antenna are applied to a mixer stage, where they are combined with the signal from a local oscillator stage. The two signals "beat" against each other, producing an output signal that's always at the intermediate frequency. But sometimes two signals can beat against each other unintentionally if you have two or more strong signals present in your receiver's radio frequency amplifier or mixer stages. The result can be all sorts of wacky signals present where they're not supposed to be, or the audio from one station superimposed atop another.

All communications receivers are subject to mixing problems, espeically if you're tuning a crowded band loaded with strong signals (like 49 and 31 meters at night). Many receivers have an attenuator switch that will reduce the gain of the receiver by a fixed amount, such as 10 or 20 dB, to reduce the strength of signals and lower the odds of a mixing problem. A receiver with a continuously variable RF gain control can also be used to set the sensitivity just to the point where the mixing problem disappears.

Hear the Birdies!

Modern receivers using synthesized or PLL tuning schemes are terrific! But they do have a downside—all such tuning circuits will produce some unwanted signals, called *birdies*, at various spots throughout their tuning range.

The exact birdies any receiver produces will vary from model to model. To discover which ones your receiver has, disconnect all antennas from your receiver and tune through all its ranges. Even the kilobuck receiver that I use for my main radio has some birdies. Most are fortunately weak (S3 or less) but they are there and could easily be mistaken for a weak carrier during some early morning DX session when I'm not thinking too clearly.

The only real solution here is to get as familiar as possible with your receiver by listening to it without an antenna and noting where the spurious signals are. I know my receivers well enough so I can quickly tell if a signal is a birdie or actual transmission. One big hint is that birdies are at a constant signal level, while actual signals will have some propagation flutter or change. While sometimes annoying (especially if I spend a lot of time trying to identify a signal that turns out to be a birdie), these usually aren't as bothersome as images or mixing problems.

Other Trouble Spots

Antenna preamplifiers are big trouble spots for mixing problems, as they are in essence an outboard radio frequency amplifier stage. Too many SWL's crank the gain on these units up to the max, and the end result is wall-to-wall spurious signals. Use only as much sensitivity as you really need!

Some types of noise limiter and noise blanker circuits can also generate signal mixing problems if they are set too high. The usual symptom of this is one strong signal superimposed on many weaker signals across a wide frequency range. Backing off the noise limiter slightly is usually enough to cure the problem.

So if you hear a signal where it's not supposed to be, don't automatically assume that it's the station's fault or that you're hearing a pirate. Your best defense against getting taken in by a receiver-produced spurious signal is to get to know your receiver and the circumstances under which it's likely to produce a phantom signal. No receiver, regardless of cost, is immune to these problems (although more expensive sets are less likely to be affected). And despite your best efforts, you're going to get fooled by one of these phony signals sometimes. It happens to me more often than I'd like to admit!

POP'COMM'S World Band Tuning Tips

May – 1992

Freq.	Station/Country	UTC	Notes
2390	La Voz de Atitland, Guatemala	0230	
2345	VL8K, Katherine, Australia	1045	
3200	Trans World Radio, Swaziland	0300	
3215	Radio Oranje, South Africa	0300	Afrikaans
3220	HCJB, Ecuador	0500	SS
3235	R. Clube Marila, Brazil	0200	PP
3240	Trans World Radio, Swaziland	0345	close
3250	R. Luz y Vida, Honduras	0230	SS
3260	R. Madang, Papua New Guinea	1030	
3270	Ecos del Oriente, Ecuador	1030	SS
3280	La Voz del Napo, Ecuador	0300	SS
3285	La Voz del Rio Tarqui, Ecuador	1000	SS
3315	R. Manaus, Papua New Guinea	1200	
3320	R. Orion, South Africa	0245	
3325	R. Maya, Guatemala	1030	SS
3365	R. Rebelde, Cuba	1030	SS
3377	R. Nacional, Angola	0430	PP
3380	R. Chortis, Guatemala	1130	local lang.
3395	R. Catolica, Ecuador (ex-Zaracay)	0130	SS
3905	R. New Ireland, P. New Guinea	1100	SS
3940	Hubei PBS, China	1200	CC
3970	CRTV, Buea, Cameroon	0500	
4238	R. Inca, Peru	0400	SS
4485	Kamchatka R., USSR	1300	RR
4560	R. Miskut, Nicaragua	0300	
4745v	R. Popular, Ecuador	0130	SS
4760	R. Frontera, Venezuela	1030	SS
4770	R. Nigeria, Kaduna	0500	
4775	R. Congohas, Brazil	2300	PP
4800	La N, Domincan Republic	0530	SS
4809	Rdf. Libertad, Bolivia	1030	SS
4810	R. San Martin, Peru	0930	SS
4815	RTV Burkina, Burkina Faso	0600	FF
4815	Rdf. Londrina, Brazil	0130	PP
4825	R. Kiev, Ukraine	0300	
4850	CRTV, Cameroon	0430	FF/EE
4855	R. Centenario, Bolivia	0000	SS
4865	La Voz del Cinaruco, Colombia	0300	SS
4865	Gansu PBS, China	1130	CC
4870	ORTB, Benin	0457	sign on, FF
4875	Rdf. Roralma, Brazil	0500	PP
4885	Ondas del Meta, Colombia	1000	SS
4890	ORTS, Senegal	2345	FF
4895	LV del Rio Arauca, Colombia	0430	SS
4900	La Voz de Saquisili, Ecuador	0230	SS
4904.5	R. National, Chad	0427	sign on, FF
4910	Radio One, Zambia	0300	
4918	R. Relogio Federal, Brazil	2330	ex-4905
4934	R. Tropical, Peru	1000	SS
4939	R. Continental, Venezuela	1000	SS
4955	R. Marajoara, Brazil	0900	PP
4965	R. Santa Fe, Colombia	0400	SS
4980	Ecos del Torbes, Venezuela	0200	SS
4990	Hunan PBS, China	1230	CC
5011	Escuelas R/fonicas, Ecuador	0225	sign off, SS
5015	R. Pioneira, Brazil	0230	PP
5020	SIBC, Solomon Islands	0800	
5025	ORTB, Benin	0600	FF
5030	R. Catolica, Ecuador	0200	SS
5035	R. Aparecida, Brazil	0030	FF
5035	RTVC, Central African Rep.	0428	sign on, FF
5040	R. Ala, Russia	0330	s/on
5044	R. Rebelde, Cuba	0000	irr.SS
5047	RTV Togolaise, Togo	0600	FF
5260	R. Alma Ata, Kazakhistan	2230	RR
5275	WYFR, Florida	1500	via Taiwan
5535	Ecos Celestiales, Colombia	1000	SS
5935	R. Riga Int'l, Latvia	0700	
5970	R. Miskut, Nicaragua	0200	SS
5905	R. Kiev, Ukraine	0300	EE
5995	R. Melodia, Peru	1000	SS
6005	CKFX, Canada (relay CICQ)	0600	
6008	R. Reloj, Costa Rica	0700	SS
6010	R. Mil, Mexico	0300	SS
6010	R. Mil Cuarenta, Venezuela	0830	SS
6010	R. America, Peru	0145	SS
6015	R. Austria Int'l	0530	via Canada
6020	R. Gaucha, Brazil	0800	PP
6040	Deutsche Welle, Germany	0130	via Antigua
6050	Caracol, Colombia	0100	SS
6050	R. Nigeria, Ibadan	2230	
6055	Spanish National Radio, Spain	0430	SS
6060	Voice of America via Germany	0500	
6075	Caracol, Colombia	0800	SS
6105	Su Pantera, Mexico	1130	SS
6115	R. Union, Peru	0500	SS
6120	R. Globo, Brazil	0900	PP
5040	R. Ala, Russia	0330	s/on
5044	R. Rebelde, Cuba	0000	irr. SS
5047	RTV Togolaise, Togo	0600	FF
5260	R. Alma Ata, Kazakhstan	2230	RR
5275	WYFR, Florida	1500	via Taiwan
5535	Ecos Celestiales, Colombia	1000	SS
5935	R. Riga Int'l, Latvia	0700	
5970	R. Miskut, Nicaragua	0200	SS
5905	R. Kiev, Ukraine	0300	EE
5995	R. Melodia, Peru	1000	SS
6005	CKFX, Canada (relay CICQ)	0600	
6006	R. Reloj, Costa Rica	0700	SS
6010	R. Mil, Mexico	0330	SS
6010	R. Mil Cuarenta, Venezuela	0830	SS
6015	R. America, Peru	0145	
6015	R. Austria Int'l	0530	via Canada
6020	R. Gaucha, Brazil	0800	PP
6040	Deutsche Welle, Germany	0130	via Antigua
6050	Caracol, Colombia	0100	SS
6050	R. Nigeria, Ibadan	2230	
6055	Spanish National Radio, Spain	0430	SS
6060	Voice of America via Germany	0500	
6075	Caracol, Colombia	0800	SS
6105	Su Pantera, Mexico	1130	SS
6115	R. Union, Peru	0500	SS
6120	R. Globo, Brazil	0900	PP
6130	R. Portugal	0700	sign off
6135	R. Aparecida, Brazil	0930	PP
6135	Swiss Radio Int'l	0230	
6150	R. Canada Int'l	0630	
6165	Swiss R. Int'l	0630	
6175	Faro del Caribe, Costa Rica	1000	SS
6190	Sender Freis Berlin, Germany	0430	GG
6120	Croatian Radio	0000	Croatian/EE
6250	R. Nacional, Eq. Guinea	0500	SS
6261	R. Juanjui, Peru	0030	SS
6540	R. Baghdad, Iraq	0400	AA
6515	Tadzhik Radio, Tajikistan	0100	
6550	V of Lebanon	0400	AA
6670	R. Santa Monica, Peru	1100	sign on, SS
6910	R. Russia (feeder)	0230	RR
7125	IRRS, Italy	0500	
7145	R. Algiers, Algeria	2200	FF
7160	RT Malaysia, Sarawak	1300	CC
7185	RTM, Mali	2130	FF
7190	Rep of Yemen Radio, Aden	0300	sign on, AA
7200	Somali Bc. Service, Somalia	0259	sign on
7203	R. Lubumbashi, Zaire	0430	FF
7205	Adventist World Radio, Italy	0530	
7215	Voice of UAE	2300	
7235	Deutsche Welle, Germany	0400	AA, via Malta
7240	Croatian Radio, Croatia	0300	
7265	Voice of America, Botswana relay	0258	s/on
7270	R. Polonia, Poland	2330	
7275	ELBC, Liberia	0650	sign on
7315	Croatian Radio	0000	via WHRI
7345	R. Prague Int'l, Czechoslovakia	0100	
7355	KNLS, Alaska	1300	
7390	Deutsche Welle	1200	via USSR
7445	Voice of Asia, Taiwan	1100	
7475	RTV Tunisienne, Tunisia	0400	AA
7500	R. Baghdad, Iraq	0400	AA
7570	Armed Forces R/TV, USA	0400	LSB feeder
9022	VOIRI, Iran	0030	EE
9265	Icelandic Ntl Bc Svc	0730	EE
9325	R. Pyongyang, N. Korea	1100	
9388	Israel Radio	1330	home service
9395	V of Greece	1900	GG
9420	R. Europe Int'l, Italy	1000	II
9455	WCSN, Maine	0200	

Freq.	Station/Country	UTC	Notes
9465	WMLK, Pennsylvania	0400	
9480	TWR, Monaco	0645	
9486	R. Tacna, Peru	0400	SS
9505	R. Yugoslavia	2230	to Europe
9520	R. Veritas Asia, Philippines	1200	
9530	Spanish National Radio	0500	
9540	R. Tashkent, Uzbekistan	1200	
9540	R. Nacional, Venezuela	1100	SS
9545	R. Tirana, Albania	0530	sign on
9546	LV de Veracruz, Mexico	1200	SS
9550	R. Veritas Asia	1400	Bengali
9560	R. Stn. Altantika, Russia	0000	RR
9560	R. Jordan	1200	
9570	R. Romania Int'l	0300	
9580	R. Tirana, Albania	0230	
9580	Africa No. One, Gabon	1900	FF
9590	FEBA, Philippines	0130	QRM'd
9600	V of UAE, Abu Dhabi	2200	EE
9605	Vatican Radio	0300	
9615	R. Veritas Asia, Philippines	1500	CC
9625	CBC No. Quebec Service, Canada	2100	
9635	R. Portugal	2200	PP
9635	R. Afghanistan	1230	
9645	R. Norway Int'l	0300	
9660	KNLS, Alaska	1500	sign on
9660	R. Rumbos, Venezuela	1100	SS
9665	R. Marumby, Brazil	2300	PP
9690	R. Beijing, China	0330	via Spain
9695	R. Sweden	0330	
9700	R. New Zealand Int'l	0830	
9710	R. Centras, Lithuania	0600	(last Sat/Mo)
9700	R. New Zealand	1100	
9720	Sri Lanka Bc. Corp	1230	
9725	Adventist World R., Costa Rica	1250	
9735	R. Nacional, Paraguay	0000	SS
9735	Cyprus Bc. Corp	2230	wknds, Greek
9740	BBC via Singapore	1100	
9745	Spanish Ntl Radio, Spain	2200	SS
9746	R. Bahrain	2000	AA, QRM-HCJB
9750	R. Korea, S. Korea	1245	EE
9755	R. Monte Carlo Middle East	0400	via Canada
9765	V of Mediterranean, Malta	0600	
9765	VOIRI, Iran	0100	EE
9800	R. Kiev, Ukraine	0100	
9800	FEBC, Philippines	0900	s/on, EE
9830	Croatian Radio	0600	
9870	R. Austria Int'l	2230	SS
9875	Spanish National Radio	1900	
9885	BSKSA, Saudi Arabia	2200	AA
9905	BRT, Belgium	2100	
9910	All India Radio	0115	s/off
9942	La Voz del CID (clandestine)	1330	SS
9950	All India Radio	2200	
10058	V of Vietnam	2300	sign on, VV
11335	R. Pyongyang, N. Korea	0900	KK
11455	R. Kisangani, Zaire	0400	s/on, FF
11530	V of Hope, Lebanon	0500	AA
11588	Kol Israel	0500	
11595	RS Macedonias, Greece	0500	Greek
11600	R. Beijing, China	1330	
11620	All India Radio	2000	
11625	Vatican Radio	0250	sign on
11650	KTWR, Guam	1500	EE
11685	R. Prague Int'l, Czechoslovakia	0100	EE
11695	BRT, Belgium	0600	Dutch
11705	R. France Int'l	1600	EE
11705	R. France Int'l	1600	EE
11710	RAE, Argentina	0100	
11715	R. Beijing, China	0330	via Mali
11715	KNLS, Alaska	0800	sign on
11715	R. Korea, S. Korea	1030	via Canada
11720	R. Sofia, Bulgaria	0300	
11730	BBC	0300	via Seychelles
11734	R. Tanzania, Zanzibar	1730	
11735	R. Japan, via Gabon	2300	
11760	R. Tbilisi, Georgian SSR	2000	
11760	R. Vedo, Russia	1600	RR
11780	R. Nac. Amazonas, Brazil	2200	PP
11790	R. Kiev, Ukraine	0000	
11790	R. Vilnius, Lithuania	2300	
11795	UAE Radio	1600	
11795	Cyprus Bc. Corp.	2213	s/on, weekends
11805	R. Globo, Brazil	2300	PP
11810	Deutsche Welle, Germany	0035	SS via Brazil
11810	R. Jordan	1400	AA
11825	R. Tirana, Albania	0330	EE
11830	R. Baghdad, Iraq	2300	EE/NA
11830	Vatican Radio	2300	
11835	R. El Espectador, Uruguay	0100	SS
11840	R. Japan	1500	
11855	R. Beijing, China	1300	
11865	R. Denmark	0430	DD, via Norway
11900	R. RSA, So. Africa	0400	
11910	R. Australia	1600	
11925	R. Bandeirantes, Brazil	2330	PP
11935	R. Encarnacion, Paraguay	2300	SS
11940	R. Romania Int'l	0200	
11940	VOA Botswana relay	0300	
11950	R. Havana Cuba	0000	
11955	Voice of Turkey	0400	TT
11960	R. Sweden	1130	
11975	R. Tashkent, Uzbekistan	0100	EE
12000	R. Australia	1400	
12018	V of Vietnam	2330	EE
12055	Deutsche Welle, via tx in ex-USSR	0156	s/on
12070	R. Georgia, Georgia	1700	GG
12085	R. Damascus, Syria	2110	
12160	WWCR, Tennessee	2330	
13605	Capital Radio, via Voice of UAE	2230	
13605	R. Australia	1600	
13630	R. For Peace Int'l, Costa Rica	0200	
13635	Swiss Radio Int'l	2130	
13650	R. Pyongyang, N. Korea	2300	EE
13655	BRT, Belgium	2330	
13670	R. Canada Int'l	0245	
13675	UAE Radio, Dubai	2000	AA
13685	Swiss R. Int'l	0700	
13710	BRT, Belgium	2330	
13710	Voice of Europe, Italy	24hrs	
13770	WCSN, Christian Science Monitor	2000	
15020	All India Radio	1300	
15080	All India Radio	1630	Hindi
15084	VOIRI, Iran	0430	Farsi
15095	R. Damascus, Syria	2110	
15100	Kol Israel	2130	EE
15110	Spanish National Radio	2000	SS
15115	R. Rep. of Armenia	2345	
15170	R. Beijing, via Mali	1600	
15180	R. Vilnius, Lithuania	2300	
15185	R. Finland Int'l	2300	
15195	R. Japan	0500	
15200	R. Bangladesh	1230	EE
15205	V of Palestine via R. Algiers	1700	AA
15208	R. Bangladesh	1230	
15215	V du Sahara Libre (clandestine)	2200	via R. Algiers
15230	R. RSA, S. Africa	0355	s/on
15260	VOIRI, Iran	0230	sign on
15265	RadioBras, Brazil	1800	EE
15320	UAE Radio, Dubai	2300	
15325	R. Japan	1500	via Fr. Guiana
15325	Spanish National Radio	2230	SS
15330	R. Sofia, Bulgaria	2330	
15345	Trans World Radio, Bulgaria	1230	
15345	RTM, Morocco	1400	Berber
15350	R. Luxembourg	1900	EE
15365	R. RSA, S. Africa	0300	sign on
15425	R. Portugal	1500	
15430	R. Austria Int'l	1330	
15440	R. RSA, South Africa	0400	sign on
15460	R. France Int'l	1600	via Hungary
15474	R. Nac. Arcangel, Arg. Antartica	2307	s/off, SS
15485	R. Vilnius, Lithuania	2300	
15510	R. Afghanistan	1730	GG, via USSR
15525	R. Kiev, Ukraine	0000	
15530	R. France Int'l, via Hungary	0630	FF
15550	R. Korea, N. Korea	0245	
15610	KSDA, Guam	2330	
15650	V of Greece	1235	EE
15750	R. Russia	1800	RR
17555	R. Beijing, China	0100	sign on
17605	R. Vilnius, Lithuania	0000	
17620	R. France Int'l, via Fr. Guiana	0000	SS
17665	R. Kiev, Ukraine	0000	
17705	R. Havana Cuba	2000	
17710	R. Norway Int'l	1200	NN/EE
17730	Swiss Radio Int'l, via Brazil	0200	
17740	R. Yugoslavia	1200	
17740	R. Jamahiriya, Libya	2200	AA
17745	RTV Algerienne, Algeria	2000	AA
17800	R. Audizione, Italy	1400	II, home svc
17810	R. Japan	2330	
17840	R. RSA, S. Africa	1630	EE
17860	Qatar Bc Service	1300	AA
17865	Vatican Radio	1550	
17880	V of Turkey	2230	
17890	Spanish National Raido	1200	
17950	V of Free Iraq (clandestine)	2245	AA
21485	Spanish National Radio	0000	SS
21510	V of UAE, Un. Arab Emirates	0630	AA
21555	Qatar Bc Service	1330	AA
21580	R. Pilipinas, Philippines	0230	
21690	R. Moscow	0800	RR
21705	R. Norway Int'l	2200	NN
25730	R. Denmark, via Norway	1255	s/on, DD

BROADCAST DX'ING

BY ROGER STERCKX, KVT1JH

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

By request: In the January issue, we discussed how many listeners complain that they can no longer call in to get their music requests played because so many stations merely rebroadcast satellite feeds and have no control over the music they play. This is especially true at night, and therefore annoying to DX'ers who try to call requests in to distant stations.

Our mention of this brought in some thoughts from Tony ("Hitman") Mitchell, who works the 7-to-midnight shift at WYHT-FM ("Y-105"), a 50 kW contemporary hit station in Mansfield, Ohio.

"Y-105" is how you might know WYHT-FM, Mansfield, Ohio. (Courtesy Tony Mitchell, of the Y-105 staff.)

Tony laments that so many station owners and GM's have forgotten that radio was meant to primarily provide programming to local communities. In the Mansfield metro area, Tony counts eight stations, with only three of them having live local deejays and air personalities. These include Tony's station, and its talk/news sister station, WMAN. The other five are either automated or fed from satellites, which Tony feels is somewhat of a waste.

Another reason why stations don't play requests is because of computer-printout music logs, such as are used at Y-105. Tony notes that his station receives between 100 and 300 calls every night during his shift. He can't play these requests because of the music log. He says that many stations do this due to increased competition in their markets. In other words, to avoid the station personnel playing their own favorites and ignoring those they don't personally like. It also avoids any possible confusion caused by one deejay coming on duty and not realizing that he's playing the same music that the previous jock played only fifteen minutes earlier.

In short, Tony feels that listener requests are no more than a poll for most stations to find out what the audience wants to hear.

But Do They QSL?: As if broadcasters aren't having enough of an uphill battle trying to hang in there, along comes something called "cable radio" (CR). The Chicago area is now setting up for this under the name of Digital Music Express (DMX), which will cost $5 a month and pump out thirty channels of stereo music all day and night—minus news, weather, time announcements, commercials, contests, witty comments, community announcements, discussions, sports scores, traffic reports, or any other type of chatter. This will all come to homes via the regular TV cable.

Listeners will initially need to shell out around $200 to buy a special DMX converter that will enable the signals to be processed by their existing stereo receiver. CD-quality sound is promised.

Specific channels will be devoted to Top-40, folk rock, traditional country, classical, Latin, blues, rap, reggae, modern country, soul, religious, oldies, and other specialties.

An extra optional accessory can be purchased that will read out (via LCD display) the name of the selection being played, artist's and album's name, plus additional data. This gadget will run about $50.

If it catches on, CR will probably be set up in other areas in jiffy time. Of course, it doesn't reach listeners in cars or those with portables. Also, it won't appeal to people who believe that radio should be more than unrelenting canned music, and is best when it includes the sound of a human voice at more or less regular intervals.

We appreciate Elmer Wallesein, of La-Grange Park, Illinois, letting us know about the arrival of CR. And we hope that you're back in top shape after having been temporarily sidelined recently, Elmer.

On The Flip Side: Getting away from the realm of automated and robotic radio stations, a place of honor must go to CKTB/610, a 10 kW station in St. Catharines, Ontario, Canada.

One of the most popular programs on CKTB is aimed at listeners over the age of 50. Inasmuch as 47% of the nation's population is older than 50, it seemed like a good idea to see what radio would sound like if it weren't always directed at kid audiences, as preferred by so many ad agencies.

In early 1989, CKTB, which is a rock station, gave over four hours on Sunday mornings to experiment with this concept. Admittedly, this was hardly prime air time. Don Hildebrand, 60, and his wife, Meegan, and Arthur Jolley, 80, used the opportunity to create the four-hour program known as the Super Seniors Network. The programming consists of pop music from the 1920's to 1940's, brain teasers, corny jokes, riddles, and general patter. Apparently it's what audiences liked, because the program took off and quickly attracted a goodly audience in southeastern Ontario, despite the odd time slot.

Hildebrand, who had retired from broadcasting after a career that lasted more than forty years, expanded the concept to include replays of classic old time radio comedy programs, plus several hours of big band music. Time on Saturdays has now also been added to the SSN sked, and there is enough material to provide a full weekend of programming, or 40-hours of SSN programming each week. The Hildebrands would like to see the SSN on other stations, too.

We applaud CKTB for trying this concept, which we think is a good approach for an AM station looking for something different.

Thanks to Keith Short, of Columbus, Ohio, for passing this along to us.

Let's point out that there may be many other stations trying this type of programming concept. We know that WICC/600, in

New FM Call Letters Issued

KACS	Chehalis, WA
KCRU	Oxnard, CA
KKLC	Susanville, CA
KMZL	Cloquet, MN
KMZM	Larose, TX
KMZN	Farwell, TX
KSPO	Spokane, WA
WFXZ	Jacksonville, NC
WIXY	Champaign, IL
WJSZ	Ashley, MI
WJZR	Rochester, NY
WKYD	Centre, AL
WLBI	Warrior, AL
WNYO	Oswego, NY
WOHC	Chillicothe, OH
WOKN	Southport, NY
WQEG	Russell Springs, KY
WQLV	Millersburg, PA
WRDQ	Greer, SC
WSRM	Coosa, GA
WWRQ	Valdosta, GA
WXLD	North Creek, NY
WYCY	Hawley, PA
WYHA	Beaver Springs, PA
WYHB	Westport, IN
WYHC	Charlotte, NC
WYHD	Fort Gaines, GA
WYHE	Hillman, MI
WYHF	Ripley, TN
WYHG	Hagerstown, MD
WYHH	Smyrna, DE

Applied For New FM Stations

CA	Calistoga	100.9 MHz	
CA	Chico	92.7 MHz	
CA	Joshua Tree	92.1 MHz	3 kW
CA	Morro Bay	94.1 MHz	
CA	Santa Ynez	105.9 MHz	3 kW
CA	Windsor	104.1 MHz	
GA	Bowdon	105.5 MHz	
IL	Bartonville	99.9 MHz	3 kW
IL	Decatur	88.1 MHz	1.5 kW
IN	New Albany	94.7 MHz	
KY	Louisville	105.5 MHz	6 kW
MA	Boston	94.5 MHz	8.8 kW
MI	Lansing	89.7 MHz	100 kW
MN	Ortonville	106.3 MHz	6 kW
MT	Colombia Falls	95.9 MHz	6 kW
MT	Kalispell	106.3 MHz	
NC	Asheboro	89.3 MHz	2.5 kW
NE	Crete	91.9 MHz	200 watts
NH	New London	99.7 MHz	
OH	Whitehall	91.5 MHz	200 watts
PA	Laporte	103.9 MHz	3 kW
PA	Mill Hall	98.7 MHz	1.9 kW
PR	Culebra	106.5 MHz	6 kW
SD	Sisseton	89.3 MHz	3 kW
TX	Amarillo	88.3 MHz	20 kW
TX	Bryan	89.9 MHz	100 kW
TX	Lometa	101.9 MHz	6 kW
VA	Dillwyn	93.7 MHz	6 kW
VA	Lynchburg	89.9 MHz	100 watts
WI	Chetek	106.7 MHz	50 kW
WV	Ripley	90.7 MHz	3 kW

Permits Granted For New FM Stations

CA	Kings Beach	89.9 MHz	2.7 kW
CA	Lenwood	103.7 MHz	440 watts
CO	Fountain	96.1 MHz	140 watts
GA	Brunswick	89.1 MHz	7 kW
IA	Rock Valley	106.9 MHz	3 kW
IL	Elmwood	97.3 MHz	25 kW
IN	Berne	93.9 MHz	3 kW
IN	Bloomington	91.3 MHz	1.2 kW
IN	Brownsburg	101.9 MHz	2.5 kW
IN	Wabash	105.9 MHz	3 kW
KS	Great Bend	90.9 MHz	50 kW
KY	Flemingburg	106.3 MHz	1.6 kW
MI	Ashley	92.5 MHz	3 kW
MN	Ely	92.1 MHz	6 kW
MN	Winona	101.1 MHz	2.3 kW
NY	North Creek	89.9 MHz	200 watts
NY	Southport	99.5 MHz	1.3 kW
OH	Portsmouth	88.3 MHz	1 kW
TX	Amarillo	105.7 MHz	6 kW
TX	New Braunfels	89.9 MHz	7 kW
VA	Martinsville	90.5 MHz	3.5 kW

Applied To Change AM Facilities

KIEV	Glendale, CA	870 kHz	Increase days to 15 kW.
KRDG	Redding, CA	1330 kHz	Become non-commercial.
WCIN	Cincinnati, OH	1480 kHz	Drop to 409 watts/47 watts.
WHGR	Houghton, MI	1290 kHz	Operate daytime only.
WOGR	Charlotte, NC	1540 kHz	Drop to 2.5 kW.

Changed AM Facilities

KCBR	Monument, CO	1040 kHz	Drop to 1.9 kW.
KJTT	Oak Harbor, WA	1110 kHz	Moved to 1520 kHz, 1 kW
WJPF	Herrin, IL	1340 kHz	Drop to 770 watts day/night.
WNZQ	St. Cloud, FL	1500 kHz	Moved to 830 kHz, 400/250 watts.
WPNT	Chicago, IL	820 kHz	Operate daytime only.
WREF	Ridgefield Ctr., FL	850 kHz	Moved to Ridgefield, 5 kW.
WWJZ	Mt. Holly, NJ	640 kHz	Increase to 50 kW.

Applied To Change FM Facilities

KOLL-FM	Pine Bluff, AR	94.9 MHz	Seeks move to Maumelle.
WDGE-FM	Saranac Lake, NY	101.7 MHz	Move to 106.3 MHz.
WLGC	Greenup, KY	105.5 MHz	Move to 105.7 MHz.
WMJW	Cleveland, MS	106.9 MHz	Seeks move to Rosedale.
WZOE-FM	Princeton, IL	98.3 MHz	Move to 98.1 MHz.

Changed FM Facilities

KLKM	Llano, TX	104.9 MHz	Moved to 104.7 MHz, 11 kW
WWRT	Scotland Neck, NC	102.7 MHz	Moved to 95.5 MHz.
WZNJ	Demopolis, IN	106.3 MHz	Moved to 106.5 MHz.

Permits Cancelled & Call Letters Deleted

KMVC	Wishek, ND	100.3 MHz
WHGG	Knoxville, TN	88.3 MHz
WTHV	Hancock, MI	98.7 MHz

Requests for Changed FM Call Letters

Now	Seeks	
KNAV	KMBV	Navasota, TX
WAYP	WISP	Holmes Beach, FL
WOMA	WBDK	Algoma, WI
WUBU	WFAT	Portage, WI

Changed FM Calls

New	Was	
KAOE	KHHI	Hilo, HI
KCHT	KEQG	Great Bend, KS
KCNQ	KKRV	Lake Isabella, CA
KDET-FM	KLCR	Center, TX
KFGE	KXGH	Lincoln, NE
KNDK-FM	KVLR	Langdon, ND
KQBR	KCLQ	Davis, CA
KQMG-FM	KOUR-FM	Independence, IA
KQMT	KWLI	Eagle, CO
KSAM-FM	KHUN	Huntsville, TX
KTJN	KBOR-FM	Mercedes, TX
WEZS	WYGF	Carterville, IL
WFMB-FM	WFMB	Springfield, IL
WHPT	WHVE	Sarasota, FL
WIKX	WBMH	Birmingham, AL
WJJS	WXYU	Lynchburg, VA
WKAB	WZWB	Berwick, PA
WKMF-FM	WGMZ-FM	Tuscola, MI
WLTA	WYEZ	Elkhart, IN
WOUH	WVZF	Chillicothe, OH
WQDW-FM	WKCP	Kinston, NC
WROO	WCRJ-FM	Jacksonville, NC
WUNA	WVCF	Ocoee, FL

AM Call Letter Changes Requested

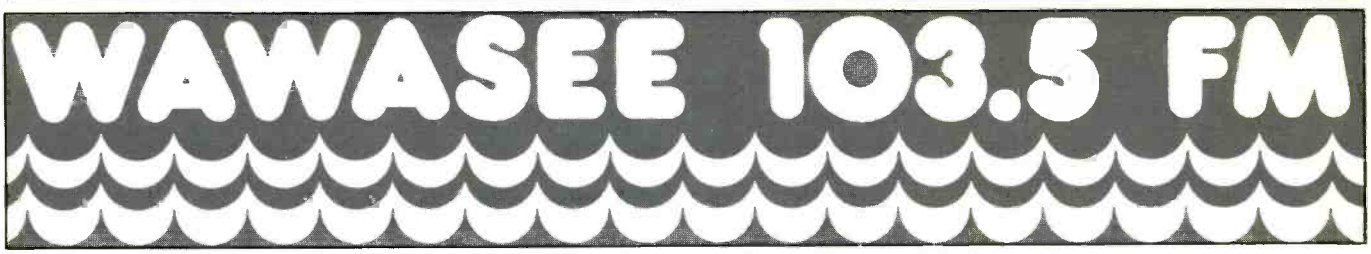
Now	Seeks	
KUCL	KBSU	Boise, ID
WJGC	WJFL	Jacksonville, FL

Changed AM Call Letters

New	Was	
KASP	KGLD	St. Louis, MO
KHTX	KRQC	Salinas, CA
KLFD	KQIV	Litchfield, MN
KMMZ	KCHL	San Antonio, TX
KQMG	KOUR	Independence, IA
KXEQ	KRCV	Reno, NV
WHNZ	WTKN	Pinellas Park, FL
WNTA	WKKN	Rockford, IL
WQDW	WISP	Kinston, NC
WTNW	WRLX	Tuscaloosa, AL
WXYU	WJJS	Lynchburg, VA

Requests Withdrawn For Call Letter Changes

Now	Sought	
WSTH	WMRY	Colombus, GA
WWCS	WKJS	Cannonsburg, PA



A great sticker designed by WAWC/103.5, of Syracuse, Indiana. (Courtesy F.R. Butt, of Syracuse, Ind.)

A UFO adorns the sticker from "Cosmos 94" (WOYE) in western Puerto Rico. (Courtesy Fernando Ramirez Ferrer, Guanua, P.R.)

Bridgeport, Conn., has Jim Buchanan's *Cavalcade of Hits* program on Sunday afternoons with platters from the 1930's and 1940's.

Towers Exposed!: The FCC did a study to investigate exposure to radiofrequency (RF) fields experienced by individuals who must climb transmitting AM broadcast towers to perform maintenance such as changing tower light bulbs, or doing the painting. The FCC said this data should help broadcasters of the transmitting power levels that would allow maintenance tasks to be performed while still preventing tower climbers from exposure to RF fields beyond those within guidelines for safety.

Research indicated that significant absorption of RF energy can result from currents induced in the body by RF fields. This is particularly true at frequencies used for AM broadcasting. In the FCC study, measurements were made of currents induced in the body of an individual climbing each of two 1 kW AM broadcast towers, each of differing electrical length. A theoretical analysis of the electric fields near the towers showed that the induced currents were correlated with the radial component of the electrical field. The result is consistent with an earlier study performed by the EPA and the FCC, and it should allow the prediction of exposure due to induced currents for towers of various sizes by analyzing the electric fields near the towers.

Copies of the study are available through the Downtown Copy Center, in Washington, DC. Their phone number is (202) 452-1422. Contact them for information on pricing of the report, which is entitled, "Induced Body Currents and Hot AM Tower Climbing: Assessing Human Exposure in Relation to the ANSI Radiofrequency Protection Guide" (FCC reference number: FCC/OET RTA 91-01).

By the way, there is apparently no truth to the rumor that, Shemp, the hapless FCC employee who volunteered to climb the towers for the test has now had a 100 watt light bulb wired into his mouth and been reassigned to stand-by duty at the FCC offices in case of electrical blackout.

From Bonaire: Trans World Radio, running 500 kW on 800 kHz from Bonaire, Netherlands Antilles, advises that they are operating on this frequency from 2158 to 1330 UTC. Programs are are in Spanish, English, and Portuguese. Listen daily for English beamed north at 0200 to 0400 UTC, and on the omni-directional antenna from

1100 to 1300 UTC (to 1330 on weekends).

They look forward to listener reports from *POP'COMM* readers.

Stubblefield Back in The News: In the *POP'COMM* issue for last August, there was a feature story on Nathan B. Stubblefield. He was the controversial and eccentric inventor from Murray, Kentucky, who some insist first demonstrated a practical method of radio transmission. That was in 1892, years ahead of Marconi, Tesla, and the others. The local radio station in his home town uses the call letters, WNBS, which honors him through the use of his initials.

Controversy still lingers regarding old Nathan's contributions to the invention of radio. What's even worse, controversy has touched the modern-day station that carries his initials, WNBS.

The station was purchased by Troy Cory, a singer from California, who claims that his real name is Keith Stubblefield, and that he his old Nathan's grandson. Troy says he grew up as Keith Whitenack, his stepfather's name, and that Troy Cory is his stage name.

Early last December, WNBS and WNBS-TV both went dark because virtually all of the staff members quit or were fired after disputes with Cory, according to press reports. These disputes were related to the terms of their employment; the employees declined to sign contracts that would have caused them to be independent contractors rather than station employees. Employees claimed that Cory refused to pay wages they were owed until they agreed to sign the new contracts.

Around Christmas, someone used a key to enter the station facilities in the middle of the night. Apparently thousands of dollars worth of equipment was stolen.

Meanwhile, in early January, Troy Cory was arrested on theft of service charges connected with the pay dispute. He was still insisting the stations would return to the air, but said he was waiting for a promise from the town's mayor that the town square be renamed in honor of Nathan B. Stubblefield.

While all of this was going on, although totally unrelated, Murray State University had constructed a working replica of Nathan's early invention, much to the annoyance of Troy Cory, who was threatening to sue them unless they had his permission to build the device.

First tests (at a 40 ft. distance) of the replica device were unimpressive, although a more accurate replica was being built for a later test in Louisville this year.

Nevertheless, despite everything, the town of Murray is still celebrating this year as the 100th anniversary of old Nathan's 1892 invention.

Thanks to Alan E. Lamb, of Wilmore, Kentucky, and to Keith Short, Columbus, Ohio, for keeping us posted on these doings!

We would like to hear from you, too, with news clippings about AM/FM broadcasters, bumper stickers, decals, comments, station photos, recent QSL's, format change info, and other relevant items. ■

SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

More and more public safety agencies are switching to the new 800-MHz band. In fact, most cities or counties that switch to the new band employ trunking to get the most out their frequencies.

Eric E. Olseen, W4BNQ, of Merritt Island, FL says Brevard County in FL has switched over to the new 866-869 MHz public safety band and is using a trunked system. He says he's interested in learning more about how it works and wants to know when scanner manufacturers will come out with radios signals capable of operating in this band.

Actually, all scanners with 800 MHz capability can tune in this new public safety band. Not all scanners have the 800 MHz band, however, since it is used primarily in metropolitan areas. Scanner users in rural areas that may not have any 800 MHz users have no need for this band on their scanners; at least that's what the scanner manufacturers seem to believe.

Most counties and cities that switch over to trunked 800 MHz agencies will employ the system for all their agencies, if not most of them. Thus, if a city or county is licensed for a 20 channel trunked system, the system may support the police and fire departments as well as street crews, parks and recreation, schools, animal control, utilities and more.

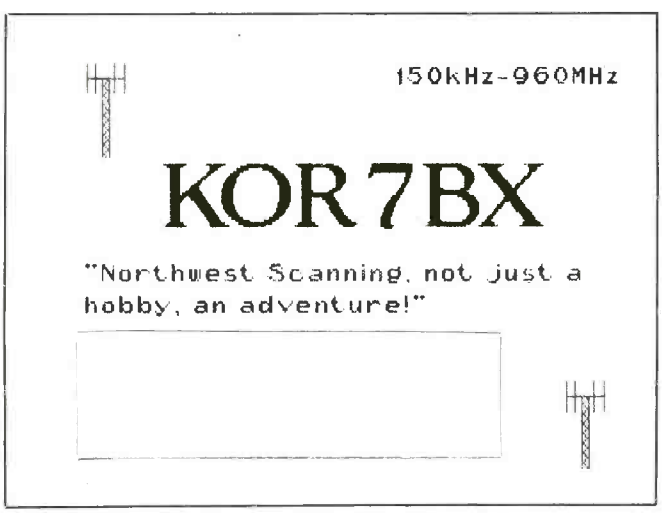
Eric says that when he tries monitoring the new Brevard County on his Uniden Bearcat 800XLT, he receives some transmissions but not a complete dispatch and reply. That's because of the trunking. In order to get maximum use of the system's frequencies, each frequency is not reserved for a specific use, much like VHF and UHF systems are. For instance, your police department may use 460.075, while the street crews use 156.195. In trunking, each time a mobile transmits, it grabs an available frequency in the group and sends out a coded signal instructing all other units in the same fleet to tune in the same frequency. Thus, if a police officer transmits from his car radio, it sends out a coded signal to all the other patrol radios in his fleet or district to receive the same frequency while he or she is transmitting. The dispatcher locks onto the same channel and each of the other patrol units can hear the exchange because their mobile radios are automatically tuned into the frequency in use.

The same applies for other fleets using the trunked system. The animal control units only hear each other, fire department units only hear fire communications, while street crews can talk among themselves. There may even be a common fleet within the trunked group that would allow, for instance, a street department supervisors to call the police dispatcher for help at a job site.

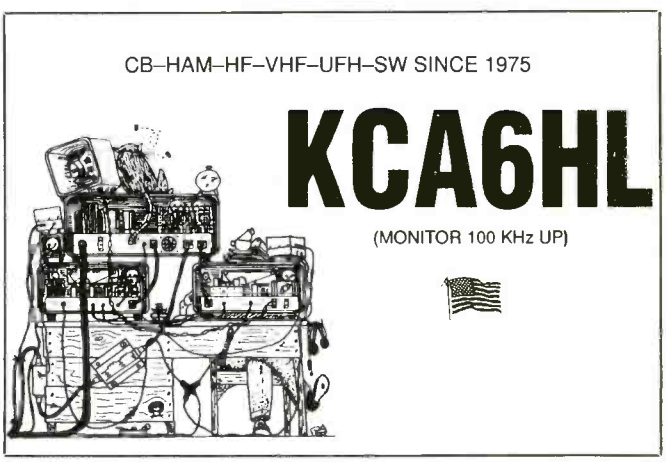
In some trunked systems, each time a radio transmits, it switches the communications to a different frequency within the trunked group's available frequencies. For instance, when a police officer calls in a motor vehicle stop, it may come out over 866.2125; when the dispatcher acknowledge the officer, it may come out on 867.450; when the dispatcher relays motor vehicle registration information to the officer, it may come out on 866,9125; when the officer replies to the dispatcher he or she is back in service after the car stop, the message may go out on 866.750. The point is that you may miss the entire exchange of communications unless you are tuned in to all the frequencies within a trunked group. One tip should be noted: disable any "delay" features on your scanners when listening to trunked systems. If the frequency changes each time someone transmits, you need your scanner to go into the "scan" mode immediately to lock on the next frequency that the conversation may be resuming on.

It also should be noted that some trunked systems lock onto a given frequency for the entire length of a communication. You'll have to check and see how your local trunked systems work in order to monitor them effectively.

Douglas Babiak of Fort Walton Beach, FL says he's a high school student who enjoys scanning the public service, marine and air frequencies. He has a Realistic PRO-34 and a Cobra SR900 with a homemade antenna cut to length for use in the 154 MHz range. Douglas asks what equipment would be recommended to scan long ranges. Actually, Douglas, when the skip comes rolling in, even the cheapest scanner will log the signals. Long-range skip is predominant on VHF low band (30-50 MHz) and at various times through the year, you can hear long-distance signals during the day. It's possible to hear signals thousands of miles away. Of course, you'll be able to hear more or better signals if you spent the money for more elaborate radios and antennas, but you certainly won't miss out on skip when it comes in, even if you have just a telescoping antenna on the back of your scanner. One inexpensive way to increase your low-band catches is to use a base antenna cut specifically for the VHF low band. You may want to buy a CB or ham 10-meter or 6-meter antenna and use that, even if you trim the CB antenna a bit for the higher frequencies you'll be tuning in. You also



Here's the simple computer-generated QSL card from Registered Monitor, KOR7BX, Mike Smith of Sherwood, OR.



Here's the more elaborate QSL card from Registered Monitor, KCA6HL, George Wight of Groveland, CA. George even uses this card to QSL anyone who might hear him using 154.570 MHz on the job.

could spend the money on a professional two-way VHF low-band antenna, but a CB or ham antenna is cheaper and will do the trick.

Douglas also asks about where he could obtain an FCC allocations chart. You might want to purchase the FCC's rules and regulations which would detail a list of frequencies. Such a guide is available from most frequency coordinators such as NABER (800-759-0300). You also could purchase the Code of Federal Regulations that includes Part 90 for land mobile services from most federal bookstores.

Richard Schaefer of Walsh College in North Canton, OH says he's seen mention of "skip," but he's new to scanning and wonders what it's all about. Skip, or low-band skip, is when scanners tune in long-distance signals on the VHF low band (30-50 MHz). The signals bounce of the ionosphere and travel hundreds and thousands of miles. For instance, listeners on the East Coast might hear California Highway Patrol units on the 42-MHz band while listeners in the Midwest might hear fire dispatchers from the East Coast in the 33 MHz band. You also frequently can hear signals out of Central and South America as they traveled north. In fact, it's not too unusual for a police car to be transmitting on its own frequency, in the Pacific Northwest, for instance, and be heard retransmitted by a repeater in South America. It sure can get confusing.

Richard, when the skip comes rolling in, you'll be able to hear it on your Uniden Bearcat 70XLT. The best bet is to tune in each day across the 30-50 MHz band and see if you hear long-distance signals coming in. If the dialects seem different, the times seem to be off by a couple of hours or foreign language is heard, you can bet you're hearing low-band skip. Some listeners are devoted low-band DX'ers and tune in signals from places even as far away as Russia, Europe and more. Chuck Robertson, our resident low-band skip expert, writes about his catches frequently in *POP'COMM*. Watch for his stories about things you might hear!

From Walker Spring, AL, Cliff Powell writes in to ask what channel spacing should be set when searching for frequencies in various bands. That's good question and we'll take a look at the various bands and explore what setting you should search your "step" button on. If you don't have 10, 15 or 20 or 30 kHz step spacing as listed below, use 5-kHz step spacing. If you don't have 25 kHz step spacing, 12.5 kHz step spacing will work, too.

- 29-29.7 MHz ham band — use 10 kHz steps.
- 30-50 MHz, often 20 kHz steps are satisfactory for tuning in police, fire and business frequencies, however, cordless phones and U.S. government agencies don't follow the same plan because their frequencies could be offset by 5 or 10 kHz steps.
- 50-54 mHz ham band — try going through in 10 kHz steps.
- 72-76 MHz band — 20 kHz steps.
- 108-137 MHz aero band — use 25 kHz spacing.
- 137-144 MHz military land mobile band — it's best to use the 5 kHz spacing for this band because some frequencies can be spaced that closely, even within a given military facility.
- 144-148 MHz ham band — the channel for spacing for this band can vary from region to region across the United States, from 10 to 15 to 20 kHz spacing. You'll be safe tuning in 5 kHz steps trying to log hams.
- 148-150.8 MHz military band — the same goes here as for 137-144 MHz.
- 150.8-174 MHz — all kinds of users and channel spacing can be found here as one plan stops in mid-band and another picks up. You'll generally be safe tuning in 5 kHz steps. For the most part, frequencies are spaced 15 kHz apart, but unless you start on an actual used frequency, you may be off the channel plan. In addition, the offset doesn't hold across the entire band.
- 216-220 MHz marine phone band—use the 12.5 kHz spacing for steps. Most marine traffic can be heard in the 217-218 MHz band along the Mississippi River. Vessels transmit in the 219-220 MHz band.
- 222-225 MHz ham band—try tuning through in 10 kHz steps.
- 225-400 military aviation and satellites — usually 25 kHz spacing will be sufficient, however, 50 or even 100 kHz spacing will help you find military aircraft.
- 406-420 MHz federal government band—most agencies using this band have stuck to the 25 kHz channel plan.
- 420-450 MHz ham band — most FM activity can be heard in 25 kHz steps.
- 450-512 MHz land mobile band—use the 12.5 kHz step spacing for UHF and you may hear some low power users between the full-power channels.
- 851-866 MHz business and public safety band—frequencies are 25 kHz apart, however, unless you start on a frequency such as 851.0125, you'll miss going through in 25 kHz steps. You're better off going through this band in 12.5 kHz steps unless you start off on the right frequency.
- 866-869 MHz public safety band—channels are 12.5 kHz, but unless you start off on a valid cellular channel, you'll wind up tuning between the actual frequencies. You'd be better off tuning through in 5 or 10 kHz steps.
- 869-894 MHz cellular phone band—channels are spaced 6 kHz apart, so 1 kHz step spacing works best (but that's available on only top-of-the-line receivers). Otherwise it will be hit and miss logging in-flight phone calls.
- 929-930 MHz and 931-932 MHz paging bands—channels are 25 kHz apart, but again, you need to start on a frequency such as 929.0125. Otherwise, search through in 12.5 kHz steps.
- 935-940 trunked business band—channels are 12.5 kHz apart.

What questions do you have? We welcome your frequency lists, photos of your listening posts and more. Write to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 North Broadway, Hicksville, NY 11801. ■

BY DON SCHIMMEL

COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

We have another mystery communication installation to identify so we are calling upon readers who might know something regarding it. (See photos).

Patrick Griffith, CO provided the photos and he wrote: "These photos are of an old communication site that I remembered when I lived in the area over 10 years ago. During a recent vacation I had the opportunity to visit the area and was surprised to find it 'FOR RENT.'

"I always thought this to be part of some kind of government defense operation when I lived in the area. Note the large non-rotating antenna aimed generally south. I do know that several local government agencies were allowed to use space on the large vertical tower. I believe it was built during the 60's or 70's.

The site is located about 10 miles south of Pecatonica, Illinois and about 20 miles west of Rockford, IL. It is positioned in a very rural area on Kelley Road."

OK readers, let's hear from you!

From Simon Mason, England we learned that he had written to the British Forces Broadcasting Service to ask if their 6840 kHz frequency was affected by the various number stations that also use it. Their reply was that they had received no complaints from their listeners and this was probably due to the transmitter being on Cyprus and the audience being in the Persian Gulf. Simon pointed out that this is odd because 'EZI' is supposed to be a MOSSAD station in Israel. Another user of this frequency is the Rumanian 'Skylark' station.

Dwight Brown, Jr, LA indicated he and others had again heard the re-transmitted signals from 40 meters to 8880 kHz. There is about a ⅕ second delay in the signal so the transponder is suspected of being located quite a distance away.

Dwight and Virgil Holobaugh conducted some experiments and determined that when Dwight transmitted on 7015 kHz he could be heard on 8882 kHz, 7014—8881, 7013—8880. Outside that 3 kHz segment his signal was not being retransmitted.

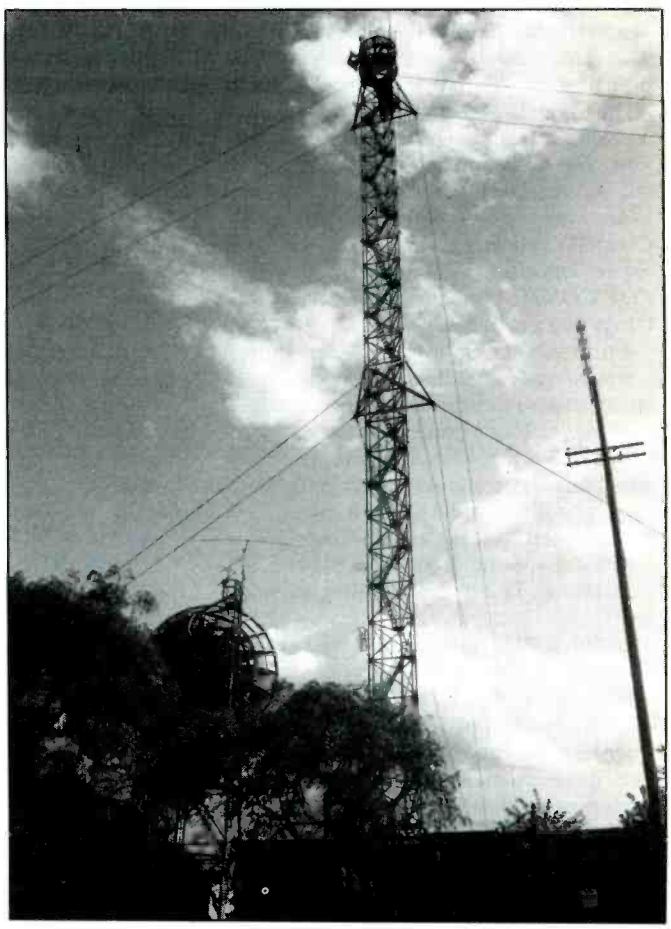
Dwight said he had logged UB5GBQ, YV4AU, OK3TBJ and several others but he only recorded the real loud stations.

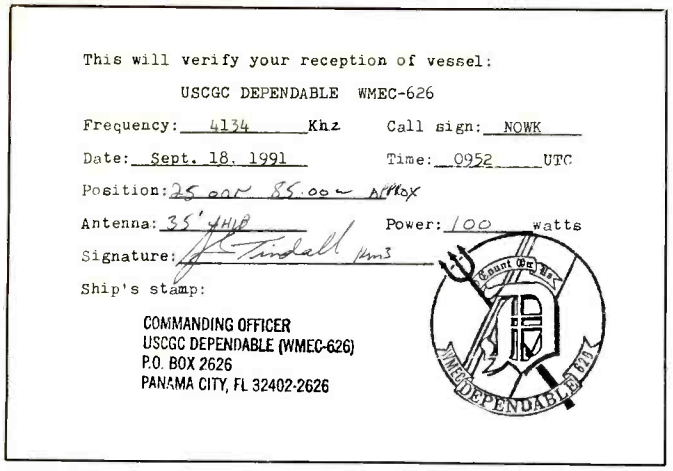
Terry Atwood, LA also participated in the experiments and he added that Dwight had talked with the FCC monitoring station at Powder Hill. The chief engineer there confirmed they had heard the signals also but they had no idea what was transponding. Terry also explained that the signals usually heard were CW signals with European callsigns.

Perhaps other readers may have noted this transponder activity. If anyone has identified the source/location of the transponder their comments will be most welcome.

Here are some excerpts from a letter received from Michael Wilmer, MI. "A recent Atlantic storm caused the most intense SAR activity I have monitored since Hurricane Hugo. While there was a plethora of news stories on the damage done to the President's summer home I could find no stories on the countless rescues performed by the Coast Guard. From my point of view the storm was full of stories, such as, the professionalism and

Patrick Griffith, CO sent in these photos of a mystery communications installation in Illinois.





This will verify your reception of vessel:

USCGC DEPENDABLE WMEC-626

Frequency: 4134 Khz Call sign: NOWK

Date: Sept. 18, 1991 Time: 0952 UTC

Position: 25 00N 85.00W Approx

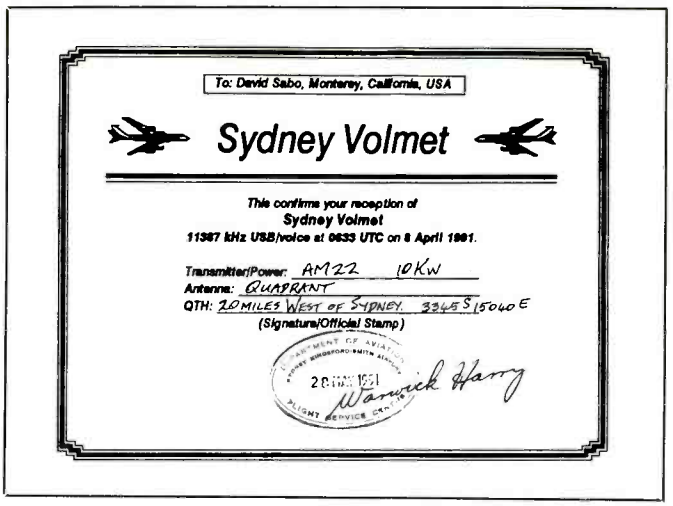
Antenna: 35' WHIP Power: 100 watts

Signature: [signature]

Ship's stamp:

COMMANDING OFFICER
USCGC DEPENDABLE (WMEC-626)
P.O. BOX 2626
PANAMA CITY, FL 32402-2626

This PFC was from Russ Hill, MI



To: David Sabo, Monterey, California, USA

Sydney Volmet

This confirms your reception of
Sydney Volmet
11387 kHz USB/voice at 0633 UTC on 8 April 1991.

Transmitter/Power: AM22 10KW
Antenna: QUADRANT
QTH: 20 MILES WEST OF SYDNEY. 33°45'S 150°40'E
(Signature/Official Stamp)

28 MAR 1991

Warwick Harry

PFC returned to Dave Sabo, CA

personal bravery of those involved with the SAR missions and the advantages of using V-22 Ospreys vs. helicopters in future SAR activity. Mr. Wilmer also suggests that perhaps the continuing deterioration of our weather satellites affected reliable forecasting of the storm. Time will tell.

An omission from the Dec '91 column was the frequency for a YL/SS number broadcast. The frequency was 18920 kHz.

A reader reported in the Nov '90 column that the term 'Black Box' refers to radar. From what I have been able to discern, the term 'Black Box' refers to an encryption unit while the term 'gadget' refers to radar. Recently I have also noted the term 'covered' to be used to refer to encrypted material.

Lastly I believe the limited nuclear exchange exercise I monitored was a NORAD exercise because they had QSY'ed from 14894 kHz (though SAC/FEMA may also have been involved)."

Thanks Michael for the above information.

In Italy, Henry Chinaski reports he heard a most unusual time signal transmission. "The transmissions were focused on slots of phased time pips. I could clearly hear a pip every second with a wide (8 kHz) bandwidth. I tuned to 19116.5 kHz and was able to hear the 'complete' broadcast which took place simultaneously phased on 19114 and 19119 kHz. If I listened only on 19114 or 19119 I was able to hear a pip only every two seconds. A longer pip was not noted at 00 but rather at 30 seconds, and the starting time was not at 00 but instead was at 08 seconds. I listened closely on these frequencies some minutes before and some minutes after the broadcast took place, but nothing was sent to establish from where the signals came. Perhaps this is an experimental broadcast. Possibly this is a periodical transmission, appearing the 10th, 11th and 12th of each month?"

Henry also pointed out that he had observed an increase in the jamming of broadcasts of the Middle East "Western" bloc. In months past, the jammers had only QRM'd local clandestine stations (especially Iranian and Iraqi stations) but the jammers had then started to hit public utility services such as Coastal Radio Stations and Commercial Broadcasting Services.

"I just bought a Sangean ATS-803A and my first logging contributions consist mostly of beacons." This from Jeannette Johnson, NY. She continued, "I made my own 'Beacon Directory' by copying the listings in *Communications Confidential* Column (I have every issue of *POP'COMM*). Still, I was unable to identify a few. Is there an up-to-date book on the market that lists beacons?"

Jeannette, this is a question asked frequently. The one I use as a reference is the "Aero/Marine Beacon Guide" which can be ordered from Ken Stryker, 2856-G West Touhy Avenue, Chicago, IL 60645. The cost is US $15 postpaid in North America.

Ernie Rice, OH said he just got back his Uniden CR2021 from the repair shop . It is the only receiver he has that tunes LW so he put it to work immediately. He also has a GE World Monitor. His antenna is a 100' longwire with a Grove mini-tuner 3 and a Flexi-box.

A query from Roger Caldicott, MA concerned the correct location for station FUX on 12692 kHz. Roger, this station is located at LE Port Naval, Reunion Island. The Bizerte, Tunisia entry you spoke of in the ITU was in error.

A note from Merville Thorne-Booth, CA indicated he uses a Kenwood R600 to listen to the BBC World Service for news from his

XMSN SKED OF AN U/I SF/TS STATION

MIN & SECS					FREQUENCIES 1400-1500 (UTC)	FREQUENCIES 1500-1600 (UTC)	NOTES
00'08" to 00'59"					19115	15705	Normal period; 0.2sec pips w/double pips for DUT1 corrections. Sec 30th longer to 0.5sec pip. Secs. 56 to 59 omitted.
SLOTS (each slot is 720sec. segment)							
first	second	third	fourth	fifth			
01'00"	13'00"	25'00"	37'00"	49'00"	19114-19115	15704-15705	Alternate phased 1 sec. pips between the two freq.s (each pip 0.5sec (each freq. sends a pip every 2 secs.)
04'20"	16'20"	28'20"	40'20"	52'20"	19114-19119	15704-15709	As above.
07'40"	19'40"	31'40"	43'40"	55'40"	19114-19126	15704-15714	As above.
11'00"	23'00"	35'00"	47'00"	59'00"	19114	15704	Normal period; 0.2sec pips w/double pips for DUT1 corrections. Sec 30 longer to 0.5 sec pip. Secs 56 to 02 omitted. on 19119 (150709 at 1500 UTC segment): - 12'01" - 24'01" - 36'01" - 48'01"

Last pip at 59'56". Then off without ID.

native Britain but now and then he discovers other shortwave pleasures.

In closing I want to wish a speedy recovery to my counterpart of the British *Shortwave Magazine*, Peter Rouse. Peter has been receiving treatment for leukemia. I hope we can reschedule our get-together for the very near future.

Ute Intercepts. All Times Are UTC.

60: WWVB, Ft. Collins, CO. Time standard station at 1233. (Arens, BC, Canada)

100: LORAN Navigational station at 1032. (Arens, BC, Canada)

200: Beacon UAB, Anahim Lake, BC, Canada at 1252. (Arens, BC, Canada)

203: Beacon ZKI, Terrace, BC, Canada at 1334. (Arens, BC, Canada)

212: Beacon AWW, Winchester, IN at 1400. (Rice, OH)

221: Beacon QU, Grand Prairie, AB, Canada at 1145. (Arens, BC, Canada)

226: Beacon EZE, Cleveland, Oh at 2150. (Mazanec, OH)

230: Beacon PD, Pendleton, OR at 1003; Beacon YD, Smithers, BC, Canada at 1050. (Arens, BC, Canada)

233: Beacon PPK, Palisades, NJ at 2218. (Johnson, NY)

239: Beacon HKF, Middletown, OH at 1430. (Rice, OH)

245: Beacon PWF, Batavia, OH at 1410. (Rice, OH)

248: Beacon HZP, Zionsville, IN at 1300. (Rice, OH); Beacon BF, Cleveland, OH at 2151. (Mazanec, OH)

257: Beacon ME, Maxton/Laurinburg, NC at 1024; Beacon PEA, Pella, IA at 1138; Beacon PLD, Portland, IN at 1152. (Crabill, VA)

260: Beacon HAO, Hamilton, OH at 1445. (Rice, OH)

263: Beacon LQL, Willoughby, OH at 1252. (Mazanec, OH)

268: Beacon RT, JFK Airport, NYC at 2030. (Johnson, NY)

272: Beacon AIZ, Kaiser, MO at 1159; Beacon MUT, Muscatine, IA at 1203. (Crabill, VA)

275: Beacon CEV, Connersville, IN at 1400. (Rice, OH)

278: Beacon OZL, Ft. Bragg, NC at 0912; Beacon XWY, West Union, IA at 1208. (Crabill, VA)

281: Beacon HP, White Plains, NY at 2132. (Johnson, NY)

282: Beacon OXD, Oxford, OH at 1415. (Rice, OH)

283: Beacon JZI, Charleston, SC at 0506; Beacon RQY, Elkins, WV at 1047. (Crabill, VA)

285: Beacon EUD, York, PA at 0142. (Ed.)

287: Beacon MKP, Mckeesport, PA at 0144. (Ed.)

297: Beacon C, Cleveland, OH at 2154. (Mazanec, OH)

302: Beacon ER, East Rockaway Inlet, NY at 2259. (Johnson, NY)

316: Beacon XR, Execution Rocks Light, NY at 2144. (Johnson, NY)

319: Beacon JI, Jones Inlet, NY at 0447. (Johnson, NY)

323: Beacon FP, Fairport Harbor, OH at 2155. (Mazanec, OH)

326: Beacon PKZ, Pensacola, FL at 0204; Beacon CI, Cedar Rapids, IA at 0205. (Ed.)

328: Beacon BZJ, Indian Town Gap, PA at 0158. (Ed.)

335: Beacon LUK, Cincinnati, OH at 1430. (Rice, OH)

347: Beacon PNJ, Paterson, NJ at 1819. (Johnson, NY)

353: Beacon MG, Montgomery, NY at 1826. (Johnson, NY)

356: Beacon VES, Versalles, OH at 1445. (Rice, OH)

362: Beacon AK, Akron, OH at 2155. (Mazanec, OH); Beacon OX, Oxford, CT at 0451. (Johnson, NY)

366: Beacon YMW, Maniwaki, PQ, Canada at 0440. (Johnson, NY)

373: Beacon JF, JFK Airport, NY at 0519. (Johnson, NY)

379: Beacon MB (poss MDE), Cincinnati, OH at 0130. (Rice, OH); Beacon GKQ, Newark, NJ at 2054. (Johnson, NY)

385: Beacon UWL, Newcastle, IN at 1500. (Rice, OH); Beacon UR, La Guardia Airport, NY at 2239. (Johnson, NY)

388: Beacon NXX, Willow Grove NAS, PA at 1158; Beacon U7, Pembroke, Ont, Canada at 1056. (Crabill, VA)

391: Beacon DDP, Dorado, PR at 0515. (Johnson, NY)

392: Beacon CF, Chesterfield, VA at 1201. (Crabill, VA)

395: Beacon XEN, Xenia, OH at 1400. (Rice, OH)

396: Beacon ZBB, South Bimini, Bahamas at 0230. (Johnson, NY)

403: Beacon PO, Poughkeepsie, NY at 0505. (Johnson, NY)

407: Beacon IL, Wilmington, OH at 0200. (Rice, OH); Beacon FXV, Appleton, WI at 1127; Beacon RXW, Watersmeet, MI at 1140. (Crabill, VA)

408: Beacon LQK, Pickens, SC at 1046. (Crabill, VA)

410: Beacon XBR, Ozark, AL at 1049. (Crabill, VA)

414: Beacon LYI, Libby, MT at 1226. (Arens, BC, Canada); Beacon OGY, Rockaway, NY at 2057. (Johnson, NY)

416: Beacon BKL, Cleveland, OH at 2153. (Mazanec, OH)

417: Beacon HHG, Huntington, IN at 1415. (Rice, OH)

421: PCH, Scheveningen Radio, Holland w/tfc list at 1850 in CW. (Boender, Netherlands)

422: Beacon UNE, Creston, IA at 0153. New ID, ex-CSQ. (Crabill, VA)

H2ST, MV Esther Schulte at 0804 in CW re eta Weser Pilot. (Boender, Netherlands)

429: OXB, Blaavand Radio, Denmark in CW at 0930 w/wx. Boender, Netherlands)

435: OST, Oostende, Belgium in CW at 0820 w/wx. (Boender, Netherlands)

436: WCC, Chatham, MA at 1301 w/wx. (Johnson, NY)

444: C6JY, MV The Hooker in CW at 0935 w/Norddeich Radio; 5ALU, MV Elgordabiah in CW at 0757 w/Norddeich Radio. (Boender, Netherlands)

450: FFB, Boulogne-Sur-Mer, France in CW at 1930 w/navigational warning. (Boender, Netherlands)

454: GCVW, MV Telnes in CW at 1825 clg PCH. (Boender, Netherlands)

GKR, Wick, England in CW at 0845 w/wx. (Boender, Netherlands)

474: DAN, Norddeich, Germany in CW at 1932 w/tfc list. At 0800 DAN hrd w/wx. (Boender, Netherlands)

512: P3LX, MV Fisher in CW at 0907 clg GLD, Lands End, England; UZVD, MV Capetan Skorniakov in CW at 1137 clg LGQ, Rogaland, Norway; VROR, MV Andes clg DAN, Norddeich, Germany in CW at 1725. (Boender, Netherlands)

515: Beacon PKV, Port Lavaca, TX at 1019. (Crabill, VA)

520: Beacon BF, Boeing Field, Seattle, WA at 1312. (Arens, BC, Canada)

521: Beacon GF, Cleveland, OH at 2155. (Mazanec, OH); Beacon INE, Missoula, MT at 1229. Arens, BC, Canada)

523: Beacon JJH, Johnstown, NY at 1112. New freq, ex-224 kHz. (Crabill, VA)

530: JFK, NY Airport TIS-info on terminals, parking, bus stops. Hrd at 057. (Johnson, NY); KUAZ390, Washington State Dept of Transportation, Seattle w/traffic and construction advisories at 0624. (Dubee, WA)

662: Beacon KD, unindentified. ID rptd 5 times at 2232. Checked 2202, 2302 and 2332 but nil hrd. (Chinaski, Italy)

1600: KRD773, Olympic Park, WA at 0045. TIS station. (Arens, 1 BC, Canada)

1725: LORAN, navigational station at 1200. (Arens, BC, Canada)

1921: LORAN, navigational station at 1205. (Arens, BC, Canada)

3228: YL/GG rptng Oscar Kilo w/tones from 2000-2005. Then 5F grps for 319 and 812. (Mason, England)

3262: YL/GG rptng Delta Tango w/tones from 2100-2105. Then YL announced 809 809 59 Gruppen and 41 Gruppen and 26 Gruppen. Achtung and into 5F grps. Very unusual to have 3 separate messages from the same addressee. (Mason, England)

3412.7: OM/EE (British accent), Shanan VOLMET w/aero wx for European locations. USB at 0050. (Ed.)

3860: Goddard Space Center (WA3NAN) Greenbelt, MD w/retransmission of live pick-up of Space Shuttle Atlantis whereby astronauts communicated w/NASA Houston re landing instructions at Edward AFB. Hrd 2120-2256. (Caldicott, MA)

4029: YL/SS in AM at 0505 (Tuesday) w/5F grps. (Mazanec, OH)

4191: ICZE, Ferry Palladio, Italian flag, CW at 1640. Bound Trieste-Durres carrying mail, materials & 6 trucks for Italian Army Mission in Albania. Hrd next day at 2100 same freq. Leaving Durres w/263 pasengers (4 US citizens among them) enroute Trieste. See 10352 kHz logging. (Chinaski, Italy)

4255: CFH, Halifax, NS, Canada in CW at 0545 w/high seas wx. (Caldicott, MA)

4270: YL/EE rptng 44021 from 1920-1924 then Ready Ready 36 36 and into 5F grps. AM mode. (Mason, England)

4310: WLO41, AT&T Station, Inverness, CA w/CW tfc list at 0500. (Caldicott, MA)

4640: YL/EE in AM at 0023 w/3 + 2F grps. (Margolis, IL)

4780: WGY, FEMA, in CW at 0100 w/6 grps of 3-alphanumeric characters sent them rptd until 0112. At 0113 new msg, rptd until 0127. New sequence at 0130. etc. Wirsing, MI)

5239: YL/SS in AM at 0400 w/callup 743 x3 then counts 1-0. Sends 64 4F groups. This is Friday sked, parallel w/6934 kHz. (Mazanec, OH)

5270: IARM, Italian Warship San Marco (visual L9893) in USB at 1340 wkg ICE Navcommsta Brindisi for Helo tfc. RANDA 736 (SH3D Helo based at NAS Grottaglie) conducted patrol in Otranto channel to id refugee boats. Helo tracked & shadowed a suspect boat & was also hrd on 5685 kHz (National SAR primary freq). At 1250 emergency ended as boat was checked & determined not to be "boat people." Also hrd ICt Navcommsta Taranto and Comgrupnav 22 (see 8400 kHz logging). This is primary daytime Helo control chnl for NAS. The San Marco was later deployed in evacuation of Croatians in Zadar. (Chinaski, Italy)

5284: YL/GG rptng Whisky Lima w/elec. tones from 0400-0405. Then 5F grps for addee 522. (Mason, England)

5412: YL/EE in AM at 0500. Sunday sked. Callup of 253. At 0505 into 5F grps, each grp sent twice. (Mazanec, OH)

5419: YL/SS in AM at 0308. Friday sked. Callup hrd at 0304 148 01 148 01 etc. Final Final at 0318. (Mazanec, OH)

5440: YL/GG at 0300 w/3 + 2F. At same time YL/GG on 4022 w/diff 3/2F grps. Two days later at 0300 YL/GG on 5750 kHz. w/3 + 2F grps. Unusual times for these stations. (Mason, England)

5547: KMA7, San Francisco ATC wkg Quantas 012 w/position report and selcal at 0628. (Dubee, WA)

5660: Two u/i stns conversing re fish processing ops off Alaska at 0615. Also hrd next night at same time. (Dubee, WA)

5696: NOJ, USCG Comsta, Kodiak, AK wkg USCG Rescue 1480 and 1706 from 0715 to 0810 during mission. Comms related to pos. reports, mechanical problems for 1480 and reports from scene; USCG Cape Cod wkg USCG Rescue 1493 at 0716 re 1493 going to POrtland, ME for fuel. At 0720 NMF, USCG Comsta Boston wkg 1493 relaying that the fuel is waiting. Also NMF wkg 1493 at 0746 and 0755. (Dubee, WA); Rescue

Abbreviations Used For Intercepts

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

1501 in p/p via CamsLant to Elizabeth City about a helio lift of survivors from M/V Pearl. Hrd at 2205. Rescue 2116 via Portsmouth to Cape Cod Air that S/V Satori advising they may need assistance. They were not in any immediate danger but were pretty battered up USCGC Tamoroa (WMEC 166) (on scene commander) in SAR for crew of CG helio that went down. Other units involved in search incl CG Rescue 1718 & 1719, Slug 600 (an E-2) that handled Command and Control), AF Rescue 988 and 66. USCGC Spencer (WMEC 905) took Tamaroa's place when Tamaroa returned to port w/three survivors. Various times over many days. (Willmer, MI)

5715: U/i signal. 100 clicks per minute. Hrd in evenings. (Mazanec, OH)

5930: YL/SS in AM at 0210 w/callup 294. Sends 4F grps. (Mazanec, OH)

YL/SS w/5F grps at 0610. Thursday sked. Each grp sent twice. Ends w/46 00000. Diff voice than other SS 5F stns. (Mazanec, OH)

6270: YL w/Uniform Lima Xray at 1900. Also on 4880 kHz. This reportedly a MOSSAD stn. (Mason, England)' ULX2 in AM at 1800 (YL/EE opr). Slight bubble jamming in background. Off at 1803. Jamming continued til 1808. (Chinaski, Italy)

6293: XYEB, M/B Seahorse (Burma flag) in CW at 2210. Six msgs to WCC, Chatham, MA. Vessel was in St. Lawrence river bound Escoumins Pilot (final port call Detroit). (Chinaski, Italy)

6340: FUG, Algers, ALgeria at 2350 w/mkr in CW. (Caldicott, MA)

6354: UIWN, MV Walter Ulbricht, blvd clg URD, Leningrad in CW at 1920. (Boender, Netherlands)

6355: Every Saturday at 0700 YL/GG w/205 x3, 41611, 043. After 5 tones into 5F grps. Also parallel w/7357 kHz. (Mason, England)

6750: AFE8, McDill AFB, FL w/aero wx at 0444. (Dubee, WA)

6753: CHR, Canadian Forces, Trenton, Ont, n USB at 0530 w/aero wx given by OM opr. Also hrd at 0730. (Margolis, IL)

6796: YL/SS in AM at 0500 on Fridays w/Atencion 978 04. Down w/Final Final at 0516. (Mazanec, OH)

6805: YL/SS at 0321 w/4F grps. About 10 mins later stopped and YL announced Grupo uno seis cuatro and into 4F grps and down at 0338. (Thorne-Booth, CA)

6825: CW count 1-0 in full (not cut) nbrs from 2200-2210. Then 60 rapid dots then off. Another night hrd on 8174 kHz at 2000 & also off after 2010 w/no msgs. (Mason, England); Rumanian 'Skylark' in AM at 2106 hrd this freq twice. Off at 2110 w/'Terminat' 3 times. (Chinaski, Italy)

6867: YL/SS in AM at 0541 w/5F grps. (Margolis, IL)

6870: KLD70 (Boston ARTCC) in contact w/KCD73 (Islip, NY ARTCC) and KEM80 (FAA, Hqs, Wash DC) at 0232 during a major long distance telephone outage. KLD 70 discussing w/Central Flor (probably at KEM80) rerouting tfc via Kennedy and that Cleveland was running normally. (Willmer, MI)

6906: Eight tones sent twice per minute in AM at 0630. At 0700 noted chirping signal. (Mazanec, OH)

6933.5: YL/EE in RCS at 0010 w/313 callup and into 225 3/2F grps. (Willmer, MI)

7079: Two OMs in Croatian exchanging short msgs & telephone nbrs of citizens during period of lack of phone lines in Croatia. Mentioned locations Titograd and Durbovnik. LSB at 1328. (Chinaski, Italy)

7390: Quirino, u/i OM in Italian clg IDR (NavRad Rome) in USB at 1520. Cld various time w/o success. (Chinaski, Italy)

7416: SXA, Navy Athens, Greece in CW at 1500 w/Vs and callup of SXC, Thessaloniki Navcomsta; SXH, Souda Bay; SXK, Corfu (Kerkyra); SXG, Poros, Calls SXT & SXP were u/i. (Chinaski, Italy)

7536: Chiefton in USB at 0100 in contact w/Division re higher Hqs reported enemy Air Assault Regiment heading West. Friendly air had engaged and shot down 6 Hips and 4 Hinds. (Willmer, MI)

7740: YL/GG rptng Gold Charlie w/tones from 2100-2105. Then 5F grps for 628. Also being sent on 7404 kHz but w/diff machine as there was two sec lag between the two bcsts. (Mason, England)

7785: Callsigns Sea Horse, Santa Fee, Invader, Night Stalker, and Thor w/rdo cks at 2323. (Willmer, MI)

7800: Marconi in USB at 2315 w/pp via WAR46 to Ring Dove w/rdo ck. (Willmer, MI)

7847: YL/SS in AM at 0402 (Sun sked) w/5F grps. Down w/Final Final. Also has Fri sked at 0700. (Mazanec, OH)

7864: YL/SS in AM at 0304 (Sat sked) w/5F grps. Two Finals at 0316. (Mazanec, OH)

YL/SS w/Attencion 866 09 rptd 3 mins then 120 09 & into 5F grps. In background YL/EE announcing nbrs interspersed w/tones. (Mazanec, OH)

7898: Rasper at 0830 w/9 dots, 1 dash. (Mazanec, OH)

7918: YL/EE in USB at 0415 w/lengthy msg of 5L grps. (Margolis, IL)

8088: YL/SS w/5F grps at 0802. Sunday sked. (Mazanec, OH)

8173: YL/GG rptng Kilo Romeo fm 1400-1405 w/elec tones then 5F grps for 737 and 171. Rptd another day on 7404 kHz at 0730 and 1430. (Mason, England)

8312: YL/GG in RCS at 0310 w/adee callup of 276 & into 197 3/2F grps. Willmer, MI)

8347: YPIB, M/V Tecuci, Rumanian River Company, sending msg to YPF, DVS Galatzi (National Dunau River Co.). Ship at KM 1335 northbound to Hungary & just passed Vukovar & experienced blasts & artillery fire. No damage to ship & convoy but Master indicated they've no guarantees of protection by Yugoslavian authorities. This chnl is usually very interesting as it's the wrkng freq for river vessels on Danube. DVS stns answer on 8666 kHz w/YPF, Galatzi; YPO, Giurgiu, and YPI, u/i. This activity also hrd on 4189 kHz for ships and 4985.7 kHz for shore stns. (Chinaski, Italy)

8400: NAVALBA, Italian Navy Mission Office in Bridisi in USB at 0948 w/Senior Officers talking to EOBU COMGRUPNAV 22 (22nd Naval Group Command in Durres, Albania). Very busy chnl for daytime tfc. Also hrd CG vessels and Bari CG & Ports Authorities plus Rome Navy stn. (Chinski, Italy)

8484: HZG, Daman, Saudi Arabia at 0030 in CW w/QSX mkr. (Caldicott, MA)

8498: SAG4, Goteborg, Sweden in CW at 0650 w/tfc list. (Boender, Netherlands)

8562: PCH40, Scheveningen, Holland in CW at 0657 w/callsign mkr. (Boender, Netherlands)

8569: XFM, Manzanillo De Coloma, Mexico in CW at 0044 w/QSX mkr. (Caldicott, MA)

8682: EAD3, Madrid, Spain in CW at 0705 w/call mkr. (Boender, Netherlands)

8875: YL/SS at 0612 w/5F grps. Final Final at 0624

& off at 0625. (Dubee, WA)

8879: Dynasty 092 (China Air 747SP, ALEF) fm Johannesburg to Taipei wkg Mauritius rdo at 1545. (Fellows, WA)

8906: KEA5, New York rdo wkg Alitalia 554 w/flt clearance at 0612; wkg Iberian 9261 w/pos report at 0622; wkg Iberian 948 w/pos report at 0623 and wkg Avianca 011 w/pos report at 0627. (Dubee, WA)

8942: MK741 (Air Mauritius 747SP) Hong Kong to Mauritius talking w/Singapore at 1505; KYA102 (707 fm London Gatwick to Nairobi) wkg Kartaum at 1508. (Fellows, WA) Wonder if this shud by KQA, Kenya Airways Limited? (Ed.)

8972: U/i stns (USN?) using tactical & fixed callsigns fm 0515-0530. Stns hrd incl Viper, Lobo, Bang Charlie. Closeout 03, P1K, HO3 and Delta. Mentioned fuel for a/c w/amounts per a/c given. (Dubee, WA)

8984: Multiple SAR ops due severe Atlantic hurricane. CG Rescue 1718 and 1503 in SAR for S/V Saorsa w/2 POB. A/c advised Atlantic Rescue of dropping DMB (240.6 MHz). NY RCC advised that M/V Able? wud attempt assist. USCGC Harriett Lane (WMEC 903) en route w/20 hour eta. Cruise ship Nordic Prince in area and may be able to help. Suggested contacting them on Ch 16. This failed so NY RCC wud attempt contact via RTTY or Inmarsat. Rescue 6008 in contact w/Boston QSY'ed to 8980 kHz for uninterrupted comms. (Willmer, MI)

9131: OM/RR rptng 931 x3 00000 fm 2000-2005 then off. (Mason, England)

9170.4: YL/SS in LSB at 0233 w/5F grps ending w/Final Final Cinco. New nbrs bcst. First time I hrd nbrs bcst in LSB. Caused some initial tuning problems. (Willmer, MI)

9183: U/i stn in CW at 0022 w/SS text. (Margolis, IL)

9240: YL/SS w/4F grps at 0509. Final x2 at 0516. Atencion at 0520 then off at 0521. (Dubee, WA)

9325: YL/GG rptng Sierra Bravo w/elec tones from 0300-0305 & then into 5F grps for 962 and 527. (Mason, England)

10018: Aeroflot 550 (Tupolov 154) Moscow to Abu Dhabi, UAE wkg Bombay at 1532. (Fellows, WA)

10078: Air Pacific 9145 wkg Qantas control, Sydney w/eta at 0646. (Dubee, WA)

10177: YL rptng Charlie Delta w/elec tones fm 0000-0005. Then 5F GG msgs for 432 and 059. (Mason, England)

10352: Alpha, Truck Control Ops of Italian Army Mission in Durres, Albania w/truck to Base comms. USB at 1500 in II language. Trucks id as Alpha + nbrs. Used to carry food to stores in main towns. Locations mentioned incl Korce, Puke, Gramsh, Kukes, etc. Hrd comment by soldier re Palladio's Master who described as gentle blond lady. This is primary daytime chnl, secondary is 10380.5 kHz. (Chinaski, Italy)

10470: YL/EE w/callup at 0600. Rptd 872 many times. At 0605 alert to 654 and 109 both rptd x2. Then into 110 grp msg of 5F grps, each rptd twice. Ended w/654 & 109 x2 foll by 00000 at 0623 and off at 0624. (Dubee, WA)

10675: Italian Army Helo base in Viterbo (central Italy) c/s VTG wkg Army Helo base in Durres (c/s Ale) and Army Helo field in Vlore, c/s ZAE Valona. Army Helo Airborne consists of CH-47 (Chinook) Helos deployed to carry logistic materials to Army bases in Albania. ZAE means Zona Atterraggio Elicotteri (Helo landing zone) and was a small field not yet reachable by trucks or cars. Also hrd Helo I-467 carrying high rank officers for recon SE of Albania in a mountain region to see landing conditions for future deliveries of food to small mountain villages. This is channel Bravo. Alpha channel is 5675 kHz. (Chinaski, Italy)

10715: Red Roof Tech Control is LSB at 2251 in contact w/Shammy Tech Control w/talk of STU's (secure telephone units), patching up to the switchboard, ands the TDM (time division multiplex) had eliminated most problems w/crypto. (Willmer, MI)

11108: YL rptng Papa November w/musical tones at 0600. At 0605 tfc list for 448/318/799/794/690 & 115. Then into GG 5F grps for 448 foll by msgs for each of other stns. All msgs started w/Achtung & ended w/Ende. Noted that 2's were pronounced as ZWO not ZWEI. (Dubee, WA)

11124: YL/EE at 1700 rptd 495 x3 then 1-0 count. At 1710 ten beeps and into 3/2F grps. (Mazanec, OH)

11201: Rescue 6008 returning from a SAR declared an in-flight-emergency (IFE) and was safely escorted in by Rescue 6007. Hrd at 1438. (Willmer, MI)

11300: LAA206 (Libyan Air 727) Benghazi to Cairo wkg Tripoli approx 1600; Sudan Air 225, A-310, fm Abu Dhabi to Kartaum clg Khartaum at 1612; Tunis 813, A-320 fm Tunis to Cairo wkg Tripoli at 1615. (Fellows, WA)

11306: ET650 (Ethiopien Air B-727, ET-AHM, EJDF) fm Addis to Bombay wkg Karachi around 1500; HZ-M511, a DC-8 wkg Rockwell rdo. Over U.S. and asking for Minneapolis wx. Hrd approx 1500. (Fellows, WA)

11607: YL/EE in AM at 1600 (Tuesday sked) callup of 214 and 1-0. Then Count 220 and into 3/2F grps. (Mazanec, OH)

12020: KKN50, Dept of State, Wash, DC at 1530 w/mkr in CW. (Rice OH)

12690: UJY, Kaliningrad in CW at 1920 w/call & freq mkr. (Boender, Netherlands)

12696: CNP, Casablanca, Morocco in CW at 1445 w/mkr. (Caldicott, MA)

12840: VTP4/6/7/8, Indian Naval stn at Viswakhapatnam in CWS at 1200. (Caldicott, MA)

13033: At conclusion of CW tfc list, VPS3, Cape D'Aguilar sent rarely heard warning code to mariners. Three sets of OOO DE VPS Cyclone warning off coast of Hong King. VPS gave coordinates of area at 1310. (Caldicott, MA)

13635: SLHFB "S" hrd during local daylight hours. (Mazanec, OH)

13775: YL rptng Foxtrot Kilo fm 2100-2105 then tones. Then 'Message for 207, 63 groups-Attention' then into 5F grps in EE. Rare EE version. (Mason, England)

13974: USN MARS NNN0CBE (Leyte Gulf, CG55) wkg NNN0STN w/pp. USB at 2245. (Chinaski, Italy)

14394: U/i in CW at 1345 sending msg in poss Vietnamese lang. Sloppy xmsn. List of visa authorizations w/names, birthdates, and birthplaces. Mentioned HaiPhong, Kuala Lumpur & Saigon for individual born in 1954. Poss Vietnamese Dipl link. Off at 1353. Also hrd on 13254 daytimes. (Chinaski, Italy)

14487: YL/EE in USB daily at 1400 w/5F grps rptd after a 16 tone chime rptd 12 times. A regular group 52776 is rptd 10 times. Xmsn is parallel w/16475 kHz and is jammed w/bubble sound. At 1410 double synthesized Xylophone note rptd 3 times and msg w/o heading. Msg is rptd twice (5F grps.) Ends at 1445 w/same double synth note. Same xmsn at 1500. A similar jamming activity noted on 9950 on top of Radio Cairo freq at 1730. (Chinaski, Italy)

14495: Stn in MCW at 1910, 2010, 2105 w/5L grps on Wednesdays. (Mazanec, OH)

14650: Lovejob in USB at 1323 wkg Fire Works 41 during Battlefield Air Interdiction training. Callsign Lovejoy also uses 13204 kHz. (Willmer, MI)

14810: OM/RR between 1400-1405 rptng 765 in AM mode. Then 209 x2, 37 x2 and into 5F grps. Ended w/00000. (Mason, England)

14897: Two OM/SS in USB at 1456. Calls were 32 and 33. Mexico & Colombia frequently mentioned. At 1755 "33" gives drilling/survey report & helio flite hrs to 32. This freq is hrd daily w/SS comms. (Margolis, IL)

14900: E8A59 is LSB at 1618 in contact w/L8H w/authorization enter net. Tried pass packet but freq too noisy. E8A advised he wud try another LQA (link quality analysis) for better freq. (Willmer, MI)

15715: Various ARTCC's in USB in contact w/Dandelion passing Glass Ivy reports (nuclear weapon damage assessments) during exercise "Vigilant Overview." Glass Ivy reports contained position of warhead impact, level of damage observed, and any movement noted. Reports also contained two other u/i entries. Other comms incl Quencher requesting status of Dandelion's Meteor Burst comm system, and the passing of various alpha/numeric grps. Other calls hrd incl Gallant Hawk, Iron Lung & Fire Brat. (Willmer, MI)

15851: Numerous FAA stns in USB at 1715 w/comms for several hours. KDM52, Memphis, TN, and KLD70, Nassau, NH also on 15853.3 kHz using 75 baud ASCII RTTY for exercise msg. (Margolis, IL)

15970.5: KKN50, DOS, Wash DC in CW at 1531 w/QRA/WSX mkr. New freq. (Margolis, IL)

16138.2: U/i in CW at 1635 w/ETINTEF3DASEEES rptd. Strong sig. Did not appear have faulty keying. Off at 1636. (Margolis, IL)

16414: YL/GG rptng Kilo Whisky fm 1430-1435 w/elec tones then 5F grps to 844 and 032. GG phone patch also on same freq. (Mason, England)

16432.1: NPLM, USCGC Chase (WHEC-718) in USB at 1913 w/pp to USCG CAMPAC, San Francisco, CA. (Margolis, IL)

16922: 4LS, u/i cld by UQA4, Murmansk and told to QSX 16678 -JAA YYUI (??). CW at 1601. (Ed.)

17464: PACOM 01 w/pp thru Black Spider to Hickham AFB re VIP visit. Hrd at 2153. (Dubee, WA)

17555: Experimental stn KK2XCE Base in LSB at 1838 in comms w/Portable One. KK2XCE is at Sunair Electronics, Inc., Fort Lauderdale, FL. Appeared by testing modem connected to FAX machine. Portable One was sent pix of mechanical drawing depicting block & pulley. Xmtd at 2400 baud. Portable One said his 1102 failed to respond to xmsn. Base claimed at end of comms that the xmsn was no worse than what you experience on the telephone. (Margolis, IL)

18022.5: Airlift Ops, SAM Command Post, Andrews AFB, MD, wkg SAM 29000 re airlift request of Amb. Carla Hills from the Hague to Rome. USB at 1957. (Margolis, IL)

18037: YL/SS in AM at 2008. Sat sked. 5F grps & off at 2016. Down w/Final Final. (Mazanec, OH)

18275: IEX22, Italian Army Mission at Zarko, Kurdestani, Iraq. USB at 1315 running duplex pp w/IEY21 MOD Rome. This is part of the Multinational Observations Forces in Kurdestan. (Chinaski, Italy)

19105: YL/EE w/1-0 count and 383 callup fm 1200-1210. Then off suddenly w/no ten tones. Hrd on many freqs over past 5 years w/no msgs. (Mason, England)

19707: UXN, Arkhangelsk in CW at 1731 w/call mkr. (Margolis, IL)

19755: YL w/Hotel Kilo fm 1600-1605 then 101 grp msg in 5F grps GG lang for addee 393. (Mason, England)

19771.2: "0", MOD Dublin in USB at 1423 running simplex pp w/37 (Irish Batt. UNIFIL Camp at Tibnine, Southern Lebanon occupied territories). This is an old chn1 for MOD Dublin used since 1988. (Chinaski, Italy)

19835: OM/RR rptng 615 fm 1200-1205 in AM mode. Then 31 31 and into 5F grps. End w/00000. (Mason, England)

22222: YL/EE in AM on weekends. 22222 kHz at 1600 and 18880 at 1700. Passes 5F grps, each grp twice. (Mazanec, OH)

22243.2: U/i in CW at 1923 w/coded msgs using digits, and msgs in SS that included word "legajos" (dossiers). S/off 1930 w/AR NW NIL TU K 73 SK. (Margolis, IL)

22596: A9M, Bahrain clg CQ in CW at 1445. (Caldicott, MA)

25719: CLA, Havana, Cuba in CW at 1841 w/CQ/QSX mkr. (Margolis, IL) ■

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

The happy condition of being swamped with reports continues so I'd better get right to them.

WKSY was heard by several. Larry R. Goering in Kansas had them on 7414 at 0223, requesting reports to this column (that's a no-no!) Walter Talbot of Pennsylvania had them on 7415 at 0225, ID'ing as "Whiskey Radio" with DJ Mike Richards. John Quasarano in MI had them at 0300 with slogan "this is the station that Jack built." Pat Murphy in Virginia found them at 0240 and, a week later, 0153. Claims 75 watts. Mark Denner in Texas had them from 0350-0406 with a mention that the station would have a maildrop soon. Joshua Wilkes had them at 0137 through 0402. Terry Murphy, North Carolina found them at 0310 saying the transmitter is an "old Johnson" with 550 watts PEP but TVI problems forced a drop down to 50 watts. Chief engineer is Doug Barley.

Wilkes had Radio USA on 7416 at 0452 carrying the "Great Atlantic Radio Conspiracy" with environmental talks. The Wellsville address was given after the show. Murphy had them at 0120 with Mr. Blue Sky and lots of talk and discussion.

Robert Ross in Ontario had WLR - Live Wire Radio on 7415 at 0314 with rock, ID, address as Box 109, Blue Ridge Summit, PA (17214) and transmitter problems. Murphy had them at 0012 with DJ Lewis and "Eurorock."

Goering found the East Coast Beer Drinker on 7414 at 0435 with rock and the Blue Ridge Summit address. Talbot had them operating on top of WSKY with announcer saying he was doing so because the WSKY DJ was rambling. Hard rock and mentioned 100 watts. Denner had them at 0454 with KXKBI on at the same time. Murphy logged them at 0501 with a relay of Radio Gemini "who had a relay of Radio Caroline." Pat notes "the usual burps and slurs heard on this one."

KXKBI—Interplanetary Radio from Outer Space was noted by Goering on 7415 at 0432 to sign off at 0556. Denner found them at 0431 with mostly new age music and special effects.

Murphy had the Voice of Bono on 7413 at 0210 with DJ Gary Daniels, rock and talk.

Walter Talbot had an unidentified on 6240 USB at 0046-0109, giving the Blue Ridge address and saying they were using this frequency due to too much clutter on 7415. Walt heard the same station again at 0225 with a tentative ID as "Topotongo Radio."

Murphy had long active Hope Radio International on 7386 at 2255-2336 with Phil Musik of KNBS hosting hard rock. Send music requests to the Wellsville, NY address and QSL reports to Blue Ridge Summit.

Here's the QSL of KMCR—Magic Carpet Radio, which uses the Blue Ridge Summit address. KMCR is usually on a minimum of once a month. Likely frequencies are 7310, 7390, 7415, 7420, 7425.

Charles Horen in California heard something calling itself the 10 Meter Pirate on 28.300 USB at 1950 with Elvis and other old rock.

He also heard Radio Freeman on 7416 at 0031 to 0118 sign off, playing mostly blues and closing with "congratulations, you found Radio Freedom."

The 1992 edition of the *Pirate Radio Directory*, by George Zeller (Tiare Publications, PO Box 493, Lake Geneva, WI 53147), is available. This is the 4th edition, reviewing all the pirate stations known to have been active on shortwave during 1991. It lists about 170 station, giving notes on formats, frequencies, times, QSL address and so on. There's a section on DX'ing pirates, too. It carries a $9.95 tag. Should be available at some hobby suppliers or you can order it from the publisher (add $2 shipping).

Thanks to those of you who've noted how much you enjoy the column! I enjoy doing it and am glad to know that it is helping you log more pirate stations. That, my friends, is the general idea!

But it only works because you folks keep sending in your pirate station loggings, as well as other notes and observations on the subject. As usual, I'm also glad to hear from station operators about your facilities, formats, plans, etc. Station photos are very welcome, too.

That'll do it for now. ■

CB SCENE

27 MHz COMMUNICATIONS ACTIVITIES

BY BILL SANDERS, SSB-295

Here's a handful of chatter. It's the Realistic TRC-221 full-power 27 MHz handheld transceiver. This is Realistic's top-of-the line handheld CB, offering a high/low power output switch, ANL, an LCD display that includes a battery and RF meter. The receiver has a ceramic filter to increase selectivity.

The TRC-221 can be used with its own center-loaded whip, or can be connected to an external antenna. You can also add an external mike, if you want. Power is supplied by ten "AA" size batteries (it will take rechargeables), or a DC adapter. This unit might be a good candidate for using in a car, truck, or RV, offering the potential of being carried out of the vehicle for field comms. It sells for $139.95, and sometimes less if you can catch the unit when it's included in a special sale.

Rig From The Past

Old timers will recall the name Hammarlund as that of one of the leading manufacturers of communications receivers during the vacuum tube era. Receivers such as the HQ-129X, Super Pro SP-600, HQ-180, and many others from Hammarlund were highly regarded by hams and SWL's, and several models served in the military during WWII.

A lesser-known, and less successful, aspect of the company's operations came as their position in the receiver market was on the wane and they were seeking other markets. In the early 1960's, just after they moved to Mars Hill, North Carolina from New York City, Hammarlund flirted with the CB market and put a few sets out in an attempt to get additional mileage out of its company name.

Of the several CB sets that Hammarlund produced, probably the last was the CB-212, which was being sold during 1964. This rig had 6 channels, 0.5 uV sensitivity, 8 tuned circuits for selectivity, electronic switching, and a small S-meter. It sold for $129.95, including the two crystals required for it to operate on one channel.

Like other earlier Hammarlund CB units, it was serviceable though lackluster, boxy-looking, and devoid of any hint of charisma. It failed to fire up the imagination of CB'ers, as has the units from International Crystal, E. F. Johnson, Globe, and several other companies. A tunable receiver all-channel receiver might possibly have helped the CB-212, but maybe not. By the time the CB-212 came along, Hammarlund apparently got the idea that their wares didn't appeal to the CB crowd, and the company soon gave up on the notion of trying.

Speaking of old time CB, one of our readers tells us he has been CB'ing since 1958 and at one time held the early CB callsign 2W2633. He's been a *POP'COMM* reader since the magazine started, and hopes that one of our readers can help him out. He needs an owner's manual and schematic for a Lafayette Telsat SSB-140 rig, and would gladly pay the copying costs for this material. If you can help him out, he is Robert Langdon, 6 Sussex Place, Deer Park, NY 11729.

Musings

Last August, we mentioned that some folks interested in low-power 49 MHz hobby communications were attempting to start a club for those who wish to pursue this hobby, which is somewhat of an offshoot of CB. We provided an address, and now we heard from the group that they are off and running with a good head of steam. They even sent us a copy of their informative newsletter in which they thanked us for our help (but gave our address incorrectly).

Persons seeking information on the group should contact Mike Goetsch, The Association to Promote 49 MHz, P.O. Box 626, Lakewood, OH 44107-0926. A self-addressed, stamped, return envelope (SASE) would probably be appreciated.

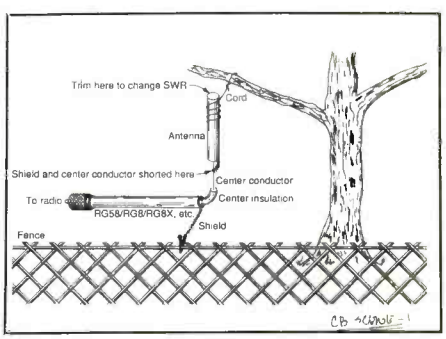
Stephen McDermott, of Chico, Calif., tells us that he's been out of CB for a long time for a variety of reasons, and now he ready to get back into the hobby. He hopes we can let him know how and where to get in touch with the SSB Network. Contact the group at: SSB Network, P.O. Box 908, Smithtown, NY 11787. Be sure to enclose a self-addressed, stamped (US 29 cents) return envelope.

Jeff Davis, *Lightning Bolt*, of Savannah, Georgia, asks if there are any all-CB national magazines currently being published in North America. In the late 1970's, there were a couple of dozen that had started up in conjunction with the 1975 CB "boom." To the best of our knowledge, Jeff, the last two to survive were *S9 Magazine* and its competitor, *CB Magazine*, both of which started in the early 1960's, long before the others came along. In 1982, the owner of *CB Magazine*, in Norman, Oklahoma, claimed that he had purchased *S9 Magazine* with the announced intention of combining the two publications into one. But *CB Magazine* does not appear to have survived after that announcement, and that was ten years ago. We have long since given up waiting, and haven't seen any other all-CB national magazines since then, except for the publication *REACT* sends to its members.

So far as we know, Jeff, *POP'COMM* is the

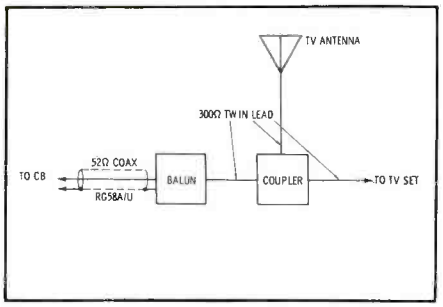
Realistic's handful of talk-power, the TRC-221.

Nice try, but the Hammarlund CB-212 just didn't have what it took to be a success back in 1964. Even the good name of Hammarlund didn't impress the old time CB'ers.

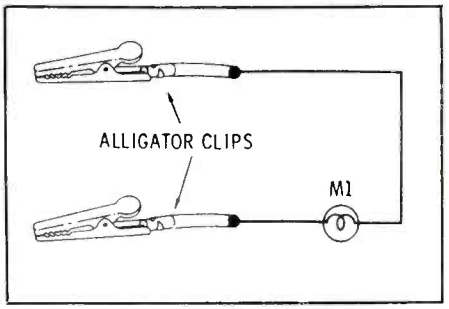


Paul tells us this fence/tree antenna really works!

Scott, in New Hampshire, is 17 years old, and stands by on Channel 19. His handle is "King," and his QSL was made up on his computer.



This arrangement shows a CB and a TV connected to a TV antenna.



A mobile antenna indicator.

only national publication that covers CB radio at all.

Impromptu Antenna Dept.

Some ideas for a portable or temporary CB antenna arrived from Paul M. Lalli, 2-AR-769 (ham AA5AN), of McAlester, Oklahoma. If you have a chain link fence and a tree handy, this looks like a good deal. Paul uses it regularly at his saltmines. Basically, you use the fence as the groundplane for a quarter-wavelength wire suspended from a tree.

What you will need in addition to the fence and tree is a length of cord or twine (Nylon fishing line is excellent) long enough to reach the fence, over one of the tree limbs, then back to the fence again. You'll need a rock, or pliers, or something like that to help toss the line over the tree.

Find the correct length for the vertical element by starting out with 9 feet, then pruning it down, a little at a time, until the SWR is reasonable either at mid-band (Channel 19), or on your favorite channel.

By using one continuous length of coaxial cable and cutting the shield at the correct distance from one end, the antenna and feedline can be made easier to put up and take down. Where the shield is cut (about 9 feet from one end), strip back an inch or two of the center insulation of the *shorter* length (the antenna). Twist the shield around the center conductor at this point. The length will probably need to be adjusted, and this can be done by trimming a small amount from the shorter antenna length of the coaxial cable.

At the place where the coax's shield was cut, put an alligator clip on the shield of the *long* section of the coax. This is your ground connection to be connected to the fence.

Tie the cord to the end of the antenna. Toss the cord over the tree limb, connect one side of the system to the fence. The far end of the coaxial cable hooks to your CB rig as with any antenna.

Wrap the antenna/feedline junction with tape, or seal with something like silicone or heat-shrink tubing, to protect it from the weather. When you don't need the antenna there, pull the cord down from the tree, unhook the fence connection, wrap up the whole mess, and store it into your car's trunk. Paul tells us that the antenna works better than many mobile whips, probably because of the good groundplane provided by the fence.

TV or Not TV?

Several people have asked about using a TV antenna for CB operation. Let's say that it isn't going to be as good as an antenna intended for CB use, but you can adapt a TV antenna for CB providing you don't intend using it for TV any longer.

For starters, unless you live in the UK or someplace else where TV signals are polarized vertically, you will want to remount your TV/CB antenna for vertical polarization (elements pointing up and down).

Next, you'll need a 300-to-50 ohm balun in order to match your coaxial feedline to the 300-ohm TV antenna. Commercial baluns that can do this include Merit TV-170, Stancor RTC-9223, or Meissner 15-1073, although I can't attest to the current availability of these units. Then, you connect one end of the balun to the CB, and the other to the antenna, and have a go.

If you are in a strong TV signal area, or aren't fussy about your TV picture quality, you can can get a two-set coupler and actually use the CB set and the TV set on the same antenna. Do *not* try transmitting on your CB rig while the TV set is in use because anything that happens as a result of such efforts certainly will not be good.

Making Light of CB

One of the hardest parts to tune up in a CB system is the mobile unit. In most instances, the rig is mounted under the dash, and the antenna is on the trunk lid in the rear.

With the cheap and handy mobile antenna indicator gizmo shown here, you can save yourself a lot of frustration. Merely clip it to the antenna, and watch in the rear view mirror for lamp brilliance as you key up the mike.

Clip both sides of the gadget to the antenna. M1 is a No. 49 bulb. If it doesn't light when you transmit, try hooking one of the clips to an unpainted ground point on the vehicle. From the point where the bulb lights, the relative brightness of the bulb lets you know how well you're getting out.

We're Out of Here

We will return next month. We appreciate your CB QSL's, photos, questions, comments, ideas, news clippings, and related materials.

SATELLITE VIEW

BY DONALD E. DICKERSON, N9CUE

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

Update

You can take part in a shuttle experiment by simply sitting in front of your receiver. You heard me right. You can take part in an exciting experiment that involves a study of the ionosphere and magnetosphere. The experiment is called INSPIRE (Interactive Space Physics Ionosphere Radio Experiment). During ten shuttle flights an 8 kW electronic beam modulated at VLF with audio tones between 50 Hz and 7 kHz will be transmitted from the spacecraft to stations in the US. Because there are so few ground stations in the NASA network, Amateur Radio Operators, Shortwave Listeners, Radio clubs and schools are being asked to take part. The only equipment you need is a $40.00 receiver kit and a cassette recorder. For more information send an SASE with two first class stamps to: Jim Ericson, KG6EK, 226 Charles St., Sunnyvale, CA 94086-6063. Schools interested in this project should write: Bill Pine, Science Dept., Chaffey High school, 1245 N. Euclid Ave., Ontario, CA 91762. Be sure to tell them *POP'COMM* sent you!

1992 is the International Space Year (ISY). Various activities have been planned around the world to commemorate space exploration. America's contribution will be an International Aerospace Convention to be held in Huntsville, AL, July 16-20 1992. Anyone who is anyone in the Soviet Space program will be there in force. Alexei Leonov, Deputy Director of Cosmonaut training (and the first man to walk in space), Vladimir Pivnyuk, Staff Director of Space Affairs for Council of Ministers, the designer of the Energia and the first women in space are just a few on a long list of Soviet visitors. They will bring with them all the latest space hardware you could ever want to see. This will include their space shuttle Buran which will be flown to Alabama on the world's largest aircraft the Mria (An-225). During the Convention the 10 finalists in the Educators in Space Program will be announced. The finalist will become the first American to fly on the Soviet's MIR space station.

For more information about the convention contact Debbie Roderick at 1-800-SPACE4U or 205-551-2230.

The FCC has allocated the frequency bands of 137-138, 148-150.05, 399.9-400.5 and 400.15-401 MHz for Low Earth Orbit (LEO) satellite operations. Orbital Communications Corp, Starsys Inc., and Volunteers in Technical Assistance (VISTA) are organizations that will be using radiodetermination, search and rescue, data messaging and other unique services on these bands. Starysys plans to use Spread Spectrum modulation techniques.

All Times Eastern	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6:30 am	Radio Korea						
7:00 am	Radio Japan						
8:00 am	Open House (Canada)	As It Happens Canadian Broadcasting Corporation				Classical Music and Schedule Information	
9:00 am	Classical Music and Schedule Information or Historic Speeches Programs					Paris Rendezvous Sweden Today Israel Magazine	Sunday Morning (Canada)
10:00 am -2:00 pm							
3:00 pm							
4:00 pm							
5:00 pm		Radio Australia in America	Israel Press Review	Paris Rendezvous	Israel Magazine		
6.00 pm	World Service of the Christian Science Monitor						
7:00 pm							
8:00 pm	Radio Havana Cuba						
9:00 pm	Radio Japan						
10:00 pm	Voice of Free China (Taiwan)						
11:00 pm	Deutsche Welle (Germany)						
Midnight	Radio Beijing						
1:00 am	Classical Music Radio Austria International						
2:00 am	Voice of America						
3:00 am	Voice of Free China						
4:00 am	Classical Music and Schedule Information	Radio Australia in America	Israel Press Review	Paris Rendezvous	Israel Magazine	Classical Music and Schedule Information	
5-6:30 am		Classical Music and Schedule Information					

Live Programs | Taped Programs

C-Span Audio 1 Schedule

There are 5 companies fighting for space in the new Mobile satellite systems. These proposed systems include radiolocation and data messaging services as well as voice communications for a variety of services from ships to trucks and personal automobiles.

The American Mobile Satellite Corp., has proposed a geo-stationary system which would use frequencies in the L-band (1545-1559 and 1646.5-1660.6 MHz). Their system would use two satellites. One at 139 °W, the other at 62 °W. Constellation Communi-

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cations, Inc., has applied for a LEO satellite system consisting of forty-eight microsats organized into four polar planes of 12 satellites each. The uplink will be 1624-1626 MHz. The downlink 2483-2500 MHz. Feeder links would operate in the 5100 and 6500 MHz range. They want to have two way telephone, dispatch voice, data and facsimile modes, as well as lifeline telephone, data and collections services, and the usual radiodetermination (or radiolocation) which is just what it says it is, a method of locating any radio equipped vehicle to within yards of its exact location.

Ellipsat Corp. wants to launch 18 satellites into an elliptical orbit and provide the same services as the other companies. Its proposed uplink is on 1610-1626 and a downlink on 2483-2500 MHz. Loral Cellular and TRW have proposed similar systems.

GOES: No Go is the status of the US' latest attempt to produce a weather satellite. Two new satellites are needed and none are ready for launch. As noted last year, the spacecraft are suffering from many of the same problems the Hubble has, bad mirrors, etc. According to Sean Holton of the Orlando Sentinel ITT and Ford had been working on a new satellite since 1985. The first satellites sounder and imager, provided by ITT, were plagued with shoddy workmanship. In fact, the workers assigned to this high tech project had less than 3 years experience each. They may well have been graduates of ITT's Electronic school. So the US has gone, hat-in-hand to the European Space Agency (ESA) and leased one of their weather satellites.

A new air-to-ground service has been proposed by Motorola. They want to provide public telephone service for aircraft flying near the North and South poles. When aircraft are in these areas they are out of range of the usual geo-stationary satellites provided by Inmarsat and AMSC. A fleet of 77 satellites, 11 in each of 7 orbital planes, would be placed in a polar orbit with an altitude of 500 miles. Since this is a unique service proposal with no allocated frequencies for such a service, Motorola has proposed using current Radiodetermination frequencies (2483-2500 MHz). The satellites will have to relay signals to other satellites in the same orbital plane and to satellites not in the same orbital plane. This cross-link will be done on 20 GHz. Each satellite will have a phased array antenna for air-to-ground operations and four separate antennas for crosslink. RF output will be 8 watts. The GPS or Transit navigation satellite system will also be used to coordinate communications in this proposed system. In order to locate specific parties and route the signal through the proper satellites, often more than one, the handsets will have to have a GPS type receiver to record its exact location.

Europe has a direct broadcast TV satellite system in place. The French, which operate two high power satellites, TDF 1&2 are currently working on TDF-3. It will differ from its predecessors, according to *Aviation Week and Space Technology*. It will be Europe's first low-power satellite. Advanced receiver technology has made this move possible. The European TV system is high definition.

The Galileo space probe, on its way to Jupiter, is having mechanical problems. One of its antennas is stuck and cannot be opened. Propellant for the mission is being depleted faster than expected as engineers try to maneuver the spacecraft in order to free the antenna.

Letters

I recently received an interesting letter from Zack Schindler, N8FNR, of Ferndale, MI. Zack has come up with what I think is an outstanding idea. You will have noticed that we periodically run information on what is called NASA Select TV. This is simply a commercial satellite link between Kennedy Space Center and Johnson Space Center. This service can be found on SatCom F2R, transponder 13 (C-band) at 72 °W on a frequency of 3995.4 MHz, vertical polarization with an audio on 6.8 MHz. Zack has had some success in getting his local cable company to begin carrying NASA Select TV. This allows those that are not TVRO equipped to enjoy NASA broadcasts. And if you are not aware of what this service is, it broadcasts live shuttle launches, NASA documentaries etc.

Zack suggests if you are interested in getting your cable company to carry the NASA service, you should first write NASA and request an information packet. Then write or personally contact the cable company manager or program director. Emphasize that the service is educational, a lot of viewers would enjoy it being made available to them and best of all IT'S FREE! Simply write: NASA Select, Public Affairs Office, Code P-2, NASA Headquarters, Washington, DC 20546 or phone (202) 453-8425.

On a different note Zack points out that C-Span Audio 1 carries such programs as, Radio Havana, Deutsche Welle, Radio Japan, Radio Korea and many others. Zack, you have put together some very interesting information, thanks.

Kevin P. Kubarycz of Salt Lake City writes to ask for more articles on satellite (TV) radio reception. I hope to do another article soon on the subject, Kevin. I would also refer you to the Feb. '91 issue.

Kirby Payne, a long time *POP'COMM* fan, writes to ask for information and recommendations on TVRO equipment. I suggest you look at some of our advertisers and check your local dealers.

Robert Adams, another long time *POP'COMM* reader, dropped me a note. It seems he has collected virtually every Space Shuttle mission patch ever issued, or very nearly so. Well Robert, while I am a collector I don't have your persistence or room to store or display such a collection. I must admit however, that there is very little wall space showing in my shack.

See you next month. ■

RTTY

BY ROBERT MARGOLIS

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

Was there a squabble after Crispa White Cement got squeebled? Can I scribble a squibble about one of my RTTY intercepts, without knowing the answer? I'll try to squattle.

Crispa White Cement didn't get squeebled by very much. They fell victim to Triple-V by a score of 86-84. That's what I found out in a RTTY news broadcast from the Philippines that gave the results of the PBA Philippine Cup matches held at Ninoy Aquino Stadium. The writer used the word "squeebled," which is not to be found in any of my dictionaries.

I heard this on station 16692.5 (used by ships to send teletype) on Sat. Jan. 4: "End of press via DZG/LDG." DZJ is Bulacan Radio, Philippines. I don't have an ID for LDG. One has to tune in the frequency in advance of the broadcast. There are no RY's or other types of tests sent to tune in the station correctly. It appears suddenly on the air with "PX coming MOM (Press coming. One moment). Press report via Microwave Communication, Inc., as of (the date of the broadcast is inserted here)." The station signs off with "back to 540" after the identifier.

The resignation of former Soviet President Mikhail Gorbachev was foretold several days in advance. When he made his resignation speech, I watched him on Cable News Network. Five minutes after the speech ended, the Russian news agency, Tass, ran an "urgent" notice about the event, over HF Radio. I had mu receiver tuned in advance to 14901 kHz and was able to copy the first RTTY transmission that told of the historical event.

Royal Navy radio station MTO, Rosyth, England, was spotted on another frequency after being seen on the two other frequencies I mentioned in last month's column. The latest frequency monitored was 22550.6. The previously logged frequencies wer 6336.3 and 14634 kHz. The three frequencies were previously used by GYA in London. In each case, MTO sent a test tape similar to GYA's.

A station using the callsign "TIMS" was spotted briefly on 15779.6 kHz sending a test tape of foxes. No traffic was sent after the test transmission came to an abrupt end at 1716 UTC.

A strange type of signal was heard on 16160.4 kHz at 1358 UTC. It appeared to be a 75-baud RTTY signal that owuld slow down to CW-like pulses and speed up again to 75 bauds. This continued for a long period of time. Any ideas from our reader as to what kind of singal that was?

Bracknell Meteo, England, was found last December, sending radiofax weahter charts on a previously unpublished frequency of 13366 kHz. The signal was quite good and could be heard from midmorning to late afternoon in the U.S. Transmissions were at

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WELCOME TO ANTS
PLEASE LOGIN"?)) NS
) NOMBO QRU - MERRY CHRISTMAS AND HAPPY NEW YEAR - GA"?)?4 8113 NTS NOLNB 1220/
2121Z
1 R
DE LNB 323
R 1900402 DEC 91
FM NNNOBYR FL
TO NNNOPPE VA
BT
UNCLAS
SUBJ: ELECTRONIC MAILBOX FREQUENCY CHANGE
1. EFFECTIVE 12/19/91 THISTA ELECTRONIC MAILBO. HAS CHANGEDY DURING 0600AM TO 60
OPM DAILY TO 14758.50 WINDOW.
FROM 600PM TO 600AM FREQUENCYV11401.00 IS STILL CORRECT.
2. CALLSIGN USAGE CHANGE: ALSO EFFECTIVE IMMEDIATELY, PER
PHONCON WITH NNNOAST, ALL MARSTELSYS MBX'S ARE USING THE
NNOXXX FOR THEIR CALLSIGNS, ALSO ON THE LOGINS. SEEMS LIKE
THE FCC WANTS TO KNOW WHO WE ARE, AND THE OLD WAY, CAN BE
CONFUSED WITH AMATEURS WHO HAVE THE SAME CALLSIGNS.
BT
NNNN
ZZZZ
ACCEPTILEEBA 8013CABCEPTED)BBSNOJET GA"?));)3 NOMBO SK
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It appears from this Marine Corps MARS traffic that the FCC can show disdain to the military if FCC rules and regulations are not followed by them. (Item 2) Monitored on 14936 kHz at 1600 UTC, ARQ, by Robert Margolis.

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USCG CALLED VSL RQSTD MASTERS NAME,NAT
IONALITY N SHIPS
     POSITION
2105-ASKED USCG WHETHER TO REDUCE SPD.THEY REPLIED NOT PRESENTLY
2140-INSTRUCTED VSL TO REDUCE SPD
2200-USCG SEARCH SQUAD ON BOARD.CONDUCTED THOROUGH SEARCH.OPENED
     BOOBY HATCH TO CHECK HOLDS.ALL OFF/CREW CABINS SEARCHED
26,OCTOBER 1991 POS 1316N/8029W
0328-USCG COMPLETED SEARCH NOTHING WAS FOUND
0335-USCG DISEMBARKED
0340-PERMISSION GRANTED BY USCG TO PROCEED ON VOYAGE
0342-RFA
BB.SECOND SEARCH 7,NOVEMBER 1991
   RQST PLS REFER MY TELEX 308
CC.12,NOVEMBER 1991,NEWYORK
   THE VSL WAS SEARCHED BY US CUSTOMS WITH DOG SQUAD,DIVERS
   N THEY FOUND AS PER THEIR VERBAL INFO ABOUT 55KG COCAINE
   IN APTK.NO OFFICIAL RECEIPT GIVEN TO VSL.FYI APTK WAS SEARCHED
   WITH DIVERS.ALL OFF/CREW FINGER PRINTS TAKEN BY US CUSTOMS.IT
   WAS THEN MR. [redacted] CHCOOK APPROACHED ME THAT HE WAS
   AN INFORMER WHICH SELF CONVEYED TO THEM.HE WAS ITERVIEWED
   IN MY CABIN BUT NOT RPT NOT IN MY PRESENSE.
1400-[redacted] CH.COOK N [redacted] TAKEN ASHORE BY
     CUSTOMS REASON UNKNOWN
1700-COMPLETED DISCHARGING CARGO
2030-2130 VSL SHIFTED to ANOTHER BERTH AWAITING CUSTOM CLEARANCE
DD.13,NOVEMBER 1991
1500-SAILED FOR SAVANNAH AFTER OK FM CUSTOMS
RGDS/MASTER
NNNN
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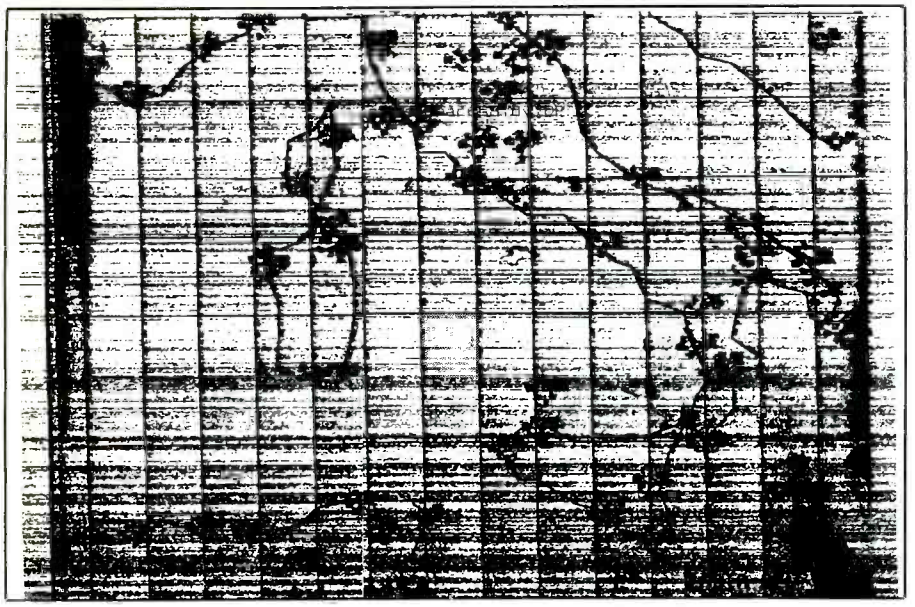
Telex from a ship's captain explains a search for drugs aboard ship by the USCG and U.S. customs agents, and the subsequent seizure of cocaine. The RTTY column editor tuned in the station too late to learn the ship's identity. This transmission was on 16699.5 kHz at 0007 UTC, in ARQ mode. The names of persons aboard ship, who were mentioned in the telex have been deleted by POP'COMM.



Weather chart issued by IMB55, Rome Meteo, Italy, on 8146.5 kHz was tuned in shortly after transmission began. Toward the end of the transmission atmospheric disturbances caused the chart to become blacker. Subsequent charts were impossible to read. (Logged by Robert Margolis).

120/576 and 120/288. One weather chart, monitored at 2035 UTC, is shown in figure 3. The broadcast schedule was the same as that of the GFE callsign radiofax stations.

CZW, Maritime Air Group, Halifax, Nova Scotia, Canada, transmits radiofax weather charts on 14626.5 kHz,, at 120/576. I monitored the transmissions for the first time on Sat., Jan. 4. Charts were sent at 1504, 1600, and 1618 UTC, with the legend saying they were from Gander, Newfoundland. It was from upper sideband communications on 14624.5 that I learned about Halifax as being the transmitter site of what must've been a relay.

There's no more telegraph at the American Telephone and Telegraph Company (AT&T), and there's hardly any teletype service left either.

An item in the *New York Times* said that AT&T closed down its 104-year-old telegraph service, and its teletype business had dwindled to only one customer, an airline reservations firm in Montreal, Quebec, Canada.

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                    RYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYRYR
YRYRYRYRY
THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG 1234567890 TEST DE AIR
THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG 1234567890 TEST DE AIR
 DE FAIRIAF KN
AFQ AFQ DE AIR
THE HQ USAF WEEKLY MARS BROADCAST IS TRANSMITTED EACH WEDNESDAY ON
TELETYPE AT 1800Z ON FREQUENCIES 7832.5 AND 15515.0 KHZ AND AT 0200Z
ON THURSDAY ON FREQUENCIES 4873.5 AND 7832.5 KHZ.  ALSO AT 0300Z ON
THURSDAY ON FREQUENCY 7832.5 KHZ.  TEST PROGRAM AT 60 WPM WILL
BEGIN AT 10 MINUTES PRIOR TO THE HOUR FOLLOWED BY THE BROADCAST
ON THE HOUR AT 60 WPM.  A TEST PROGRAM AT 100 WPM
WILL IMMEDIATELY FOLLOW THE 60 WPM BROADCAST FOR 5 MINUTES FOLLOWED
BY THE BROADCAST.  THE BROADCAST WILL BE SENT VIA CW
AT 15 WPM ON FREQUENCIES 6995.5 AND 13985.0 KHZ AT 0100Z ON
THURSDAY FOLLOWING A TWO MINUTE TEST.
HQ USAF MARS BROADCAST NUMBER 48, DATED 18 DEC 91 (EXP: 18 JUN 92).
ITEM 077:  AMATEUR PUBLICATIONS.  OCCASIONALLY MARS RELATED ARTICLES
ARE SUBMITTED FOR PUBLICATION IN ONE OF THE AMATEUR RADIO MAGAZINES.
SHORTLY THEREAFTER, WE START RECEIVING COPIES OF THE ARTICLE FROM
MEMBERS WHO ARE UNAWARE THAT WE HAVE ALREADY SEEN IT.  WE ARE
GRATEFUL TO THOSE WHO SEND US COPIES HOWEVER, TO PREVENT UNNECESSARY
MAILINGS, WE WOULD LIKE TO INFORM OUR MEMBERS TO PLEASE NOTE THAT WE
RECEIVE SUBSCRIPTION ISSUES FROM THE FOLLOWING AMATEUR PUBLICATIONS:
QST, RTTY JOURNAL, AND WORLDRADIO.  NEWSWORTHY ITEMS FROM ANY OTHER
PUBLICATION ARE ALWAYS WELCOME.  WE THANK DAVE, AFA2TR (N4WWL), FOR
THE GREAT BIT OF PUBLIC RELATIONS FOR MARS IN THE DEC ISSUE OF QST.
ITEM 078:  HOLIDAY CALLS.  COURTESY OF SPRINT LONG DISTANCE SERVICE,
FREE CALLS WILL BE OFFERED DURING THE HOLIDAY SEASON IN CONJUNCTION
WITH OVERSEAS TO CONUS PHONE PATCHES.  THE EFFECTIVE PERIOD OF THE
HOLIDAY CALLS WILL BE 230501Z DEC 91 TO 0407592 JAN 92.  REQUEST
WIDEST DISSEMINATION OF THIS INFORMATION AT OVERSEAS LOCATIONS.
ITEM 079:  END OF YEAR.  THIS IS THE LAST BROADCAST FOR 1991.  THE
NEXT BROADCAST WILL AIR ON 8 JAN 1992.  THE USAF MARS STAFF, RAY
COLLINS, JEFF TRIMMER, AND WILLIE BROWN WISH ALL MILITARY MARS
STATION PERSONNEL, AFFILIATES, AND FAMILIES A JOYOUS AND HAPPY
HOLIDAY SEASON, AND A SAFE, PROSPEROUS NEW YEAR.  CHIEF, USAF MARS.
BT
```

This transmission of AIR, USAF MARS HQ, Andrews AFB, Maryland, was logged by Robert Margolis on 15515.3 kHz at 1759 UTC, 45 baud.

"Teletypes never got faster than several hundred words a minute (since its invention)," the article said. "Today's telecommunications, like a soon-to-be-introduced service called frame relay, can send nearly 135,000 words a second, or the equivalent of teh novel *Moby Dick*."

This is one explanation why many stations have abandoned HF Radio RTTY operations, and moved their communications systems to the satellites. The fastest teletype speed encountered over the radio is 300 baud ASCII. Computer terminals are used for packet radio operations at 300 baud ASCII. Computer terminals are used for packet radio operations at 300 baud, and some of the newest RTTY modes, such as ARQ-E3, ARQ-M2, and FEC-A, which attain speeds only as fast as 192 and 200 bauds.

In case you're wondering, AT&T says it'll retain the word "telegraph" in its corporate name for its historical image.

Charles Hunter of Ontario, Canada: Thanks for your letter about CFH's planned reduction of its weather service from Halifax, Nova Scotia. Many other RTTY monitoring hobbyists, including myself, have seen the notice. I'm sure that if all the hobbyists in the world wrote a letter to CFH, to try to save the station, it wouldn't do any good. CFH is not in business for our benefit, but to service those with an official need for its RTTY weather reports and radiofax weather charts.

RTTY Intercepts

441: UKB, Riga R., Latvia, w/msgs for several ships, 75 baud at 0910. (Ary Boender, NLD)

4002: YRR2, Bucharest Meteo, Romania, w/coded wx at 0058, 50 baud. (Boender, NLD)

4172.5: M/V Nathalie Delmas w/a msg to "Sisa Abidjan" re cholera vaccination, ARQ at 2230. (Boender, NLD). This is a French cargo ship w/ the c/s of FNWC—Ed.

4173: LNQK, M/V Skandi Surveyor, w/msgs at 2145, ARQ. (Boender, NLD). This is a Norwegian weather ship—Ed.

4174: M/V Velenje w/tfc to "Comscmed Naples," ARQ at 2228. (Boender, NDL). The c/s for this Yugoslav cargo ship is YTTV—Ed.

4175: C6BB3, Bahamian passenger ship Mermoz gives ID before receivingh tfc from a coastal sta., ARQ at 0532. (Ed.)

4442.5: RGC72, Kiev Meteo, Ukraine, w/coded wx at 0133, 50 baud. (Boender, NLD)

5112: 4OC3, Tanjug, Belgrade, Yugoslavia, w/nx in SC, 50 bauid at 0113. (Harold Manthey, NY)

6267: OWOG2, the coaster Magic (Danish registry), w/a telex in Danish to Hamburg, Germany, ARQ at 0027. (Ed.)

6434.5: Un-ID w/crypto containing RYRY, apparently for sync purposes, 75 baud at 0800. (Ed.)

7625.6: TZH42, ASECNA, Bamako, Mali, w/RYRY + "pse QJH1 (run a test tape)," 50 baud at 0242. (Ed.)

7715: RCU71, Novosibirsk Meteo, Russia, w/coded wx, 50 baud at 1600. (Boender, NLD)

7715.6: Un-ID w/tfc in SS at 0324, ARQ. (Ed.)

7726.8: Un-ID sends QEMP selcal for a lengthy period, ARQ at 0341. (Ed.)

8134: DFH23, PIAB, Bonn, Germany, w/electrician prognoses, FEC-A/96 at 1515. (Boender, NLD)

8165: 5YD7, Nairobi Aero, Kenya, w/aero wx, 50 baud at 0430. (Ed.)

9430: ZAT, ATA, Tirana, Albania, w/nx in FF, 50 baud at 0949. (Ed.)

9796.8: YOJ27, Rompress, Bucharest, Romania, w/nx in FF at 1013, 50 baud. (Ed.)

10132.6: TNL, ASECNA, Brazzaville, Congo, w/coded wx at 2340, 50 baud. (Robert Hall, RSA)

SENATE WAS STILL DELIBERATING LAST NIGHT ON THE BICAMERAL CONFERENCE REPORT ON THE NATIONAL BUDGET AT THE REQUEST OF MINORITY FLOOR LEADER JUAN PONCE ENRILE. THE BUDGET BILL, HOME ER, IS NOT AMONG THE PRIORITY, WHICH PRESIDENT CORAZON AQUINO SUBMITTED TO CONGRESS FOR THE SPECIAL SESSION.

ITEM 3 - 65 TEACHERS SEEK CLEMENCY -

SIXTY-FIVE DISMISSED SCHOOL TEACHERS HAVE APPLIED FOR EXECUTIVE CLEMENCY FOR REINSTATEMENT INTO THE SERVICE. EDUCATION SECRETARY ISIDRO CARINO SAID YESTERDAY AT MALACANANG THAT APPLICATIONS OF THE DISMISSED SCHOOL TEACHERS ARE NOW BEING REVIEWED FOR APPROPRIATE ACTION. CARINO SAID THAT 23 TEACHERS HAVE ACTUALLY BEEN ACTUALLY REINSTATED EARLIER AFTER SUCCESSFULLY PASSING THE REVIEW OF THEIR CASES ON THEIR PARTICIPATION IN A STRIKE LAST YEAR. HOWEVER, HE EMPHASIZED THAT THE REINSTATEMENT OF THE TEACHERS DOES NOT MEAN THE SOFTENING UP OF THE GOVERNMENT POSITION AGAINST STRIKING TEACHERS.

ITEM 4 - HOUSE APPROVES BILL HASTENING TAX PAYMENTS -

THE HOUSE OF REPRESENTATIVES PASSED ON THIRD AND FINAL READING LAST NIGHT A BILL MALACANANG CERTIFIED AS URGENT EXEMPTING WORKERS WITH FIXED SALARIES FROM FILING INCOME TAX RETURNS. MEANWHILE THE COMMITTEE ON WAYS AND MEANS HEADED BY REP. HERNANDO PEREZ (LDP-BATANGAS) REPORTED UP FOR SECOND READING DELIBERATION, ANOTHER (URGENT) MEASURE ESTABLISHING A LARGE TAX PAYERS UNIT AT THE BUREAU OF INTERNAL REVENUE (BIR) AS THE HOUSE WENT FULLSPEED IN WRAPPING UP THE SEVEN BILLS PRESIDENT AQUINO STIPULATED IN HER CALL FOR THE SPECIAL SESSION ENDING FRIDAY.

ITEM 5 - SPORTS.

TRIPLE - V NIPS CRISPA, POP COLA STOPS (A) -

TRIPLE - V BEHIND CHARITIES BY ARTHUR AYSON,

ESCAPED WITH AN 86-84 SQUEEBLED OVER CRISPA WHITE CEMENT LAST NIGHT TO GAIN A SHARE OF THE LEAD AS NEW POP COLA HUMBLED ERSTWHILE UNBEATEN PACESETTER (A) AND THE HABURGER 78-62, IN THE PBA PHILIPPINE CUP AT THE NINOY AQUINO STADIUM. AYSON, A FORMER LETRAN KNIGHT, PUMPED IN EIGHT CONSECUTIVE CHARITIES IN THE FINAL THREE MINUTE AND 30 SECONDS TO FORM A VIRTUAL ONE MAN ARMY AGAINST THE ON RUSHING MIXERS, WHO CAME BACK FROM AS MUCH AS A 14-POINTS DEFICIT EARLY IN THE GAME TO PRESSURE THE HOODMASTERS UP TO THE CLOSING SECONDS. THE MIXERS, ONLY LOST OUT WHEN KEVIN RAMAS MISSED ON A FOLLOW-UP OF HIS MISSED CHARITY FROM A THREE POINT PLAY OFF JOSELITO ESCOBAR WITH FOUR POINTS.

ITEM 6 - PESO REFERENCE RATE APPRECIATES TO P 26.69 / 1 USD

END OF PRESS

ANS 540KHZ

Rerun Of First Part Of Transmission Received About An Hour Later.

TESTING N TUNING

PRESS REPORT VIA MCI AS OF DECEMBER 19, 1991

ITEM 1 - GOVEVERNMENT TO CUT PROPOSE POWER RATE

MALACANANG SAID YESTERDAY THAT IT WILL SLASH THE 27 CENTAVO PER KILOWATT HOUR INCREASE IN POWER RATES BEING SOUGHT BY THE NATIONAL POWER CORPORTATION TO HOLD DOWN CONSEQUENT INCREASE IN THE PRICE OF GOODS AND SERVICES. THE PALACE ALSO SAID THAT THE ROLLBACK OF OIL PRICES IS UNDER REVIEW FOR ADOPTION SOON TO HELP CUSHION THE EFFECT OF THE EMPENDING INCREASE IN POWER RATES. MALACANANG'S POSITION ON THESE TWO CRUCIAL ISSUES WAS SPELLED OUT YESTERDAY BY EXECUTIVE SECRETARY FRANKLIN DRILON.

ITEM 2 -

An RTTY news broadcast from the Philippines.

IT'S BACK!

1992 Monitoring Times Convention

Atlanta, Georgia

OCTOBER 2,3,4
Omni Hotel at CNN Center

Register before June 30, 1992 and save $5.00 off registration fee & $2.00 off banquet fee.

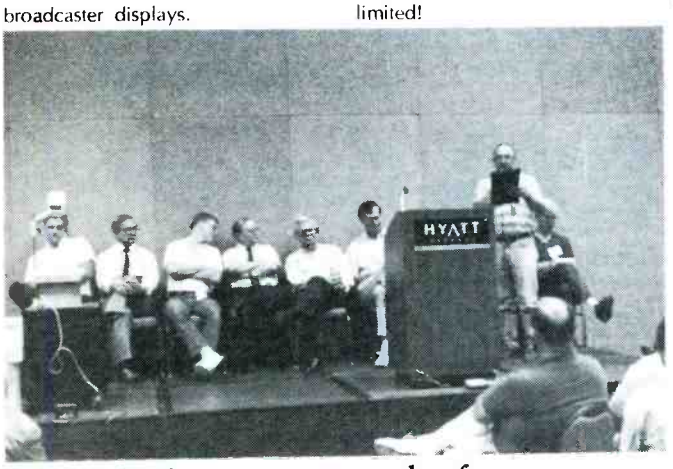
This year, join hundreds of shortwave and scanner enthusiasts and attend the most popular listeners' convention!

For only a $35 registration fee, you can mingle with an impressive gathering of radio experts, hobbyists, manufacturers and exhibitors.

Your registration gives you entrance to all 40 seminars being presented Friday through Sunday and the exhibit hall. The exhibits alone feature over 50 displays from manufacturers and distributors of your favorite radio equipment and accessories, as well as international broadcaster displays.

AND, your registration includes a FREE TOUR of the Cable News Network (CNN), the leading news source that brings the emotion of war, the power of entire nations being built, and the joy of success home to millions of viewers around the nation.

PLUS, for only $69 per night (regular price, $185.00!), you can immerse yourself in the hobby for the entire weekend while enjoying the comforts of the prestigious Omni Hotel at CNN Center in the heart of Atlanta. But make your reservation early; space is limited!



A journey into the future with steps from the past.

Be a part of the 1992 Monitoring Times Convention and save $7.00 by signing up today! Return this registration along with your payment and you too can take a step into the future.

CIRCLE 145 ON READER SERVICE CARD

Tentative Schedule

Friday, October 2

12:00 to 5:00 PM
EXHIBITS OPEN AND
REGISTRATION BEGINS

7:00 to 9:15 PM
EVENING SEMINARS

Saturday, October 3

8:00 to 9:00 AM
REGISTRATION

9:00 to 12:30 PM
EXHIBITS OPEN AND
MORNING SEMINARS

12:30 to 3:00 PM
EXHIBITS OPEN AND
LUNCH BREAK

3:00 PM
EXHIBITS CLOSE

3:00 to 5:15 PM
AFTERNOON SEMINARS

7:00 to 9:00 PM
BANQUET

Sunday, October 4

9:00 to 12:30 PM
MORNING SEMINARS

CONVENTION CLOSES AT 12:30 PM

Monitoring Times Convention Registration
P.O. Box 98
Brasstown, NC 28902-0098
(704) 837-9200

[ ] Enclosed is my $35.00 registration fee ($5.00 savings)

[ ] Enclosed is my $19.95 banquet payment ($2.00 savings)

Payment:
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Card # _____

Exp. Date _____

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Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone #: _____

You will receive a registration package within 10 days after receipt of payment.

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ZCZCKNA194 Q INF 0050 TASS DF395 E220 EN E220001
"GORBACHEV'SRESIGNATION
" ZZ

      .URGENT - GORBACHEV RESIGNS.
      25/12 TASS 103

      MOSCOW DECEMBER 25 TASS - PRESIDENT OF THE FORMER SOVIET
UNION MIKHAIL GORBACHEV ANNOUNCED ABOUT HIS RESIGNATION ON
WEDNSDAY.
      ITEM ENDS
MSK 19.18 WTAQWAQQQQ
NNNN
```

Here's an RTTY transmission sent out by the Russian news agency, Tass, telling of the resignation of Mikhail Gorbachev.

Abbreviations Used In The RTTY Column

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

11175.7: 5HD, Dar es Salaam Aero, Tanzania, w/RYRY, 50 baud at 0148. (Manthey, NY)

12265: BZR64, Xinhua, Beijing, China, w/nx in EE at 1600, 75 baud. (Manthey, NY)

12496: VRKA, the ship S. Lorenzo (Hong Kong cargo), w/wx obs to Halifax, NS, ARQ at 1845. (Ed.)

13310: RFFXI, French Mil., Bangui, CAF, w/"controle de voie," ARQ-E/72 at 1828. (Manthey, NY)

13316.2: Un-ID w/5F msgs, 50 baud at 1914. This is a suspected Vietnamese diplo link. (Don Schimmel, VW)

13386: Un-ID w/5L grps, 75 baud, 1453-1454. (Ed.)

13391.8: Un-ID w/5L msgs, 75 baud at 1436. (Schimmel, WV)

13398.9: Un-ID w/end of text in EE, 75 baud at 1533. (Ed.)

13530: RVW53, Moscow Meteo, Russia, w/coded wx at 1427, 50 baud. (Manthey, NY)

13545.2: Dutch Embassy, Moscow, Russia, w/9 pages of 5L grps, foll by telexes in Dutch re visas issued in Moscow & Novosibirsk. Was ARQ at 1100. (Ed.

13563: 3MA22, CNA, Taipei, Taiwan, w/nx in EE, 50 baud at 1425. (Manthey, NY)

13571: HBD20, MFA, Berne, Switzerland, w/diplo tfc in FF, ARQ at 1055. (Ed.)

14367.2: BZP54, Xinhua, Beijing, China, w/nx in EE, 75 baud at 0901. (Hall, RSA)

14480: Un-ID w/5L grps & a few words in FF, 1415-1416, 75 baud. (Ed.)

14546.5: Italian Embassy, Riyadh, Saudi Arabia, w/a 5L msg to Rome, ARQ at 1444. (Ed.)

14635.3: RFLI, French Navy, Fort de France, Martinique, w/a variety of tfc, including wxs reports & 5L grps, 1600-0800, ARQ-E3/100. (Ed.)

14673.7: DFZG, MFA, Belgrade, Yugoslavia, w/nx in SC at 1446, 75 baud. (Ed.)

14760.6: NNN0MPI, USMC MARS, Parris Island, SC, w/MARSgrams, ARQ at 2049. (Ed.)

14800: 3VA71, TAP, Tunisia, w/nx in FF at 1439, 59 baud. (Ed.)

14912: DFZG, MFA, Belgrade, Yugoslavia, w/a lengthy text in FF, re Yugoslav foreign relations, 75 baud at 1610. (Ed.)

15515.3: AIR, USAF MARS HQ, Andrews AFB, MD, w/RYRY & weekly broadcast, 45 baud at 1759 & 75 baud at 1814. (Ed.)

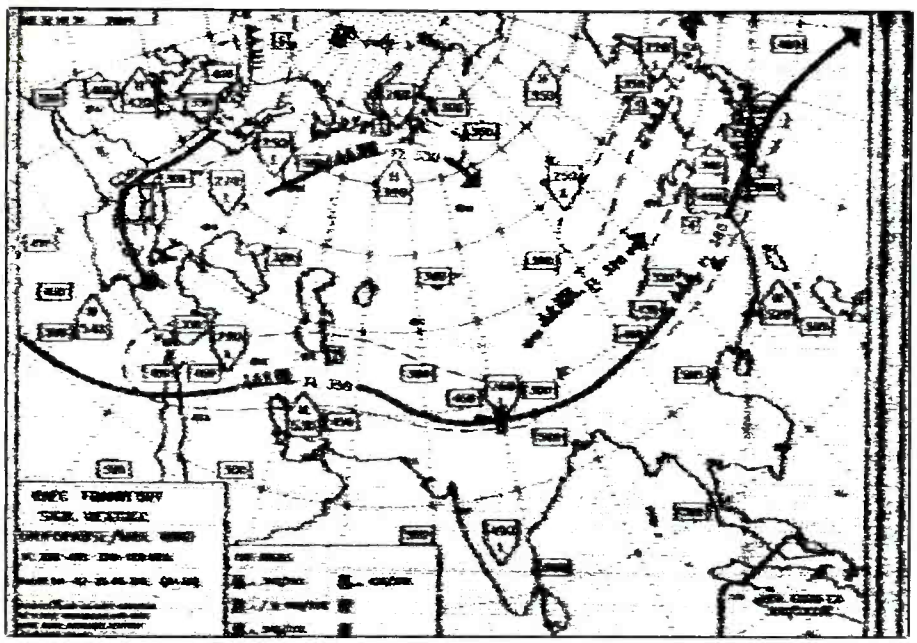
15779.6: "TIMS" w/foxes & 10 count, 75 baud at 1716. (Ed.)

15811.7: Un-ID Italian diplo w/a lengthy 5L msg at 1451, foll by s/off in II at 1515, ARQ. (Ed.)

15875.3: TAD, MFA, Ankara, Turkey, w/text of a press conf. in EE + 5L grps, 100 baud at 1720. (Ed.)

16051.7: MFA, Cairo, Egypt, w/texts in AA, ARq at 1533. (Ed.)

16069.7: Un-ID w/text in AA, ARQ at 1430. Sig gradually weakens. Still could be heard but not copied at 1515. (Ed.)



Bracknell Meteo was found sending radiofax weather charts on 13366 kHz.

16138: "YBU" w/RYRY & ID, foll by 5L grps, 75 baud at 1825. (Manthey, NY)

16246.8: VOA, Tangier, Morocco, w/RYRY to Greenville, NC FDM 75 baud at 1352. Was //16248.2. (Ed.)

16692.5: DZJ, Bulacan R., Philippines, w/nx of the Philippines in EE, FEC at 2031. (Ed.)

16700: ULSB, the ship Kazakhstan (Ukrainian cruise liner), w/telegrams to Odessa, ARQ at 1815. (Ed.)

17432: DFZG, MFA, Belgrade, Yugoslavia, w/nx in EE, 75 baud at 1438. (Ed.) Same w/RYRY at 1430. (Manthey, NY)

17437: Bulgarian Embassy, Madrid, Spain, w/telexes in Bulgarian, 75 baud, 1300-1307. (Ed.)

17443: BZG48, Xinhua, Yuryumqi, China, w/nx in FF at 1335, 50 baud. (Manthey, NY)

17547.3: HDN, Quito Navrad, Ecuador, w/RYRY & SGSG to PWX33, 75 baud at 1245. (Ed.)

18055: DFZG, MFA, Belgrade, Yugoslavia, w/Tanjug nx in SC & "telefaks," 75 baud at 1539. (Ed.)

18462: PCW1, MFA, The Hague, The Netherlands, w/coded msgs & sending selcals TVVP + TVVY, ARQ at 1530. (Boender, NLD)

18760: "P6Z," MFA, Paris, France, w/msgs & 5L grps to "milfrance santiago du chili," FEC-A/192 at 1855. (Ed.)

19151.1: Un-ID w 5L grps, 75 baud at 1450. (Manthey, NY) A sta using a c/s of "YBU" has been noted here many times w/coded grps—Ed.

19171: CNM85, MAP, Rabat, Morocco, w/nx at 1350, 50 baud. (Boender, NLD)

19210: RCC79, Tass, Moscow, Russia, w/nx, 50 baud at 1334. (Boender, NLD)

19698.1: Oostende R., Belgium, w/ARQ phasing sig & CW ID at 1838. (Hall, RSA)

19731.8: PCW1, MFA, The Hague, The Netherlands, w/ARQ phasing sig & ID in CW at 1845. (Hall, RSA)

19745.8: 6VU79, Dakar Meteo, Senegal, w/RYRY + CQ, 50 baud at 2247. (Don Thomas, IN). It appears from some of the freqs you sent in that you were decoding RTTY on USB. The actual freq used by this sta is 19747.5—Ed.

19756.7: MFA, Jakarta, Indonesia, w/nx in Indonesian & EE, FEC-S/96 at 1147. (Hall, RSA)

19822.5: 5AF, Tripoli Aero, Libya, w/wx & aero msgs, 50 baud at 1115. (Boender, NLD), and at 1900. (Hall, RSA)

20022: DFU20H3, PIAB, Bonn, Germany, w/nx in GG at 1509, FEC-A/96. Was //DFX69H6 on 23697 kHz. (Thomas, IN)

20085: ISX20, ANSA, Rome, Italy, w/nx at 1435, 50 baud. (Boender, NLD)

20470.2: CXR, Montevideo Navrad, Uruguay, w/RYRY & SGSG to PWX, foll by IANTN tfc in SS & merchant ship reporting list. Was 75 baud, 1821-1846. (Ed.)

20560: 5AQ88, Jana, Tripoli, Libya, w/nx in EE at 1610, 50 baud. (Manthey, NY)

20845.2: RFQP, French Navy, Djibouti, w/msgs & 5L grps, ARQ-M2/200, 1809-1930, on channel A. (Ed.)

20987: SAM84, Swedish Embassy, Washington, DC, relaying tfc from Guatemala to MFA, Stockholm, Sweden, SWED-ARQ, 1710-1729. (Ed.)

21831.5: CLP1, MFA, Havana, Cuba, w/5L grps to Managua, Nicaragua, ARQ at 2025. (Manthey, NY) Are you sure it's CLP1? Fred Hetherington & I have monitored this sta for a long time & have never been able to come up with an ID. I've seen msgs in coded grps & some text in SS, but never w/an embacuba designation. To date, I haven't come across the ARQ mode being used on any of the known Cuban diplo channels. That's why your entry leaves me scratching my head—Ed.

22126.6: Egyptian Embassy, Washington, DC, w/text in EE, ARQ at 1530. Had to wait until s/off at 1645 to see an ID. (Ed.)

22185.3: Un-ID w crypto having RYRY inserted for sync purposes, 75 baud at 1517. (Ed.)

22285.1: Rog. Mossgas oil rig w/tfc re divers, winches, etc., ARQ at 1200. (Hall, RSA)

22550.6: MTO, Rosyth Navrad, England, testing at 1716, 75 baud. (Ed.)

22888: DFZG, MFA, Belgrade, Yugoslavia, w/nx in EE, 75 baud at 1518. (Boender, NLD)

22967: HBD20, MFA, Berne, Switzerland, w/5L grps, ARQ at 1335. (Manthey, NY)

23561.7: PCW1, MFA, The Hague, The Netherlands, w/coded msgs to "RIY" (Riyadh), ARQ at 1520. (Boender, NLD)

23544.7: DFX54, PIAB, Bonn, Germany, w/nx in FF, FEC-A/96 at 1040. (Hall, RSA)

24790: ISX24, ANSA, Rome, Italy, w/nx in EE, 50 baud at 1549. (Manthey, NY)

25320.5: DFZ32, PIAB, Bonn, Germany, w/nx in GG, FEC-A/96 at 1346. (Hall, RSA)

26101.6: OXZ, Lyngby R., Denmark, w/telex tfc, ARQ at 1347. (Hall, RSA)

26441.4: DFZ64, PIAB, Bonn, Germany, w/nx in GG at 1342, FEC-A/96. (Hall, RSA)

27998.6: 5XR88, ICRC, Kampala, Uganda, w/a report to Geneva, Switzerland on Ethiopian Army demobilization and aid requirements, ARQ at 1251. (Hall, RSA)

27999.5: ICRC, Luanda, Angola, w/several msgs in FF for ICRC, Geneva, ARQ at 1339. (Hall, RSA) ■

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

As radio telephones continue to evolve, various refinements to the services are ready to go into use. This is especially true with respect to repeaters.

For instance, the FCC has now decided to allow routine licensing of cell enhancers or repeaters. Such devices are used in cellular systems to receive, amplify, and retransmit the signals of a particular cell site and its mobile units in order to beef up coverage in poor signal areas. The FCC feels that this approach is less expensive than requiring the installation of a full-blown new cell site, which might also require the need to reconfigure existing cells in the system. In addition, newer high power cellular repeaters can be used as a more economical way to increase coverage in new areas.

At the customer end of the phone line, a company called Telemobile Inc., has introduced a new terminal to its point-to-point *Phonelink* Extension systems that allows a terminal unit to act as a radio repeater.

This means that two remotes can operate from the same terminal, each one being as much as 50 miles away from the point where the phone terminal (landline or cellular) is located. Either remote station can answer the incoming call, or place the incoming call on hold and dial the other remote station selectively like an intercom to advise them to take the call.

Remotes can also call other remotes like a selective call intercom without utilizing the phone line or cellular service.

For outdoor activities or businesses, such as construction over a wide area, or oil companies, or forestry products, ranching, real estate sales, area vehicle operations, etc., all of the benefits of a telephone system that would normally be within one building can be extended over a radius of 50 miles or more where no phone service (including cellular) is available.

The link back to the public phone network can be, in addition to landline or cellular, via satellite or into a microwave link, or tied to another repeater to reach over a mountaintop.

With the device's features, phone service for voice or data can now be made available to virtually anywhere in the world with a selection of operating frequencies covering between 66 and 520 MHz, based upon terrain conditions and available frequencies.

Telemobile is located at 19840 Hamilton Ave., Torrance, CA 90502.

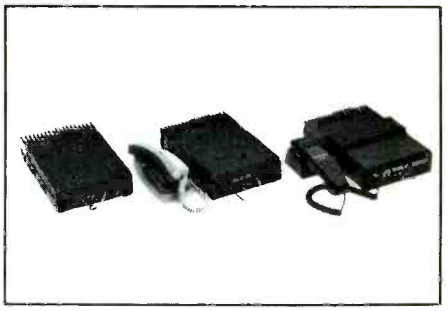
Bell Atlantic Mobile Systems' (BAMS) first application of AT&T's Compact Base Station (CBS) recently went into operation just west of Washington, Penna. It adds 100 sq. miles of coverage in the area. What makes this installation unusual is that it allowed much of the cellular equipment normally housed in a 12X30 ft. building to be contained in an 8X4X6-ft. cabinet. Although the CBS does have some limitations, it does offer a site design option for areas where ground space is limited or where building size is an issue in the zoning/building permit process.

While other BAMS cellular users in the Indiana, Penna. area may assume a new cell has gone on line, they are actually using the company's first high-power booster that went on-line last September. Unlike low-power boosters used to provide coverage in tunnels or other small areas, high power boosters can have as much power as a typical cell site. The one at Indiana, Penna. covers 150 sq. mi.

The Antenna Specialists Extend-A-Cell unit is radio-linked to a "donor cell" nearly thirteen miles away. It simulcasts several of that cells channels to the new area, and is able to hand-off to the new area from the donor cell. Future refinements will provide for more than one donor cell, and even the linking of boosters to cover long stretches of highway in remote areas.

Another BAMS service improvement affects Washington/Baltimore customers. BAMS now offers callers intersystem handoffs between its Frederick, Maryland, and Washington/Baltimore systems. Calls in progress can continue without interruption as customers travel along major and secondary roads between these systems. Earlier, BAMS implemented a similar handoff between the Philadelphia and Atlantic City systems. It was necessary to receive a waiver from restrictions stemming from the divestiture of AT&T to allow BAMS to carry cellular phone calls across "local access transport areas."

Thanks to the staff at *Bell Atlantic World* for providing us with the updates on BAMS service innovations.



The photo shows the Telemobile desktop terminal (left) with fixed station remote phone and mobile remote phone. Each remote can make and receive phone calls and also call one another.

Cellulars In Aircraft?

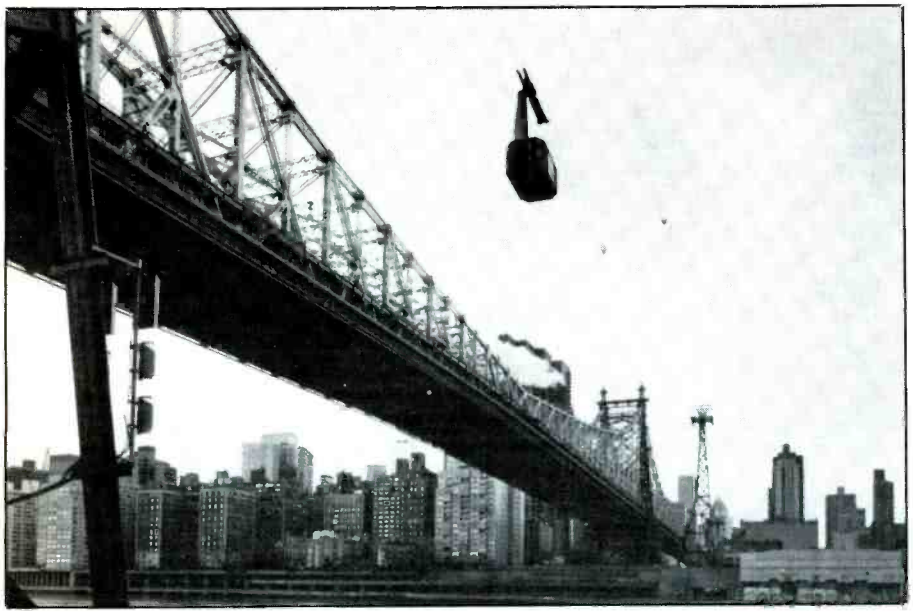
The FCC set aside certain frequencies for telephone calls to and from aircraft (including helicopters, balloons and other airborne vehicles). Those frequencies are somewhat different than the frequencies established for regular cellular service. But, as cellular service became increasingly popular, there came a demand to use cellulars in all types of airborne vehicles. Although some airlines, on their own, forbade the use of cellulars in their aircraft, FCC regulations did not specifically cover the situation. The FAA continually asked the FCC to provide an interpretation of the rules covering such cellular use.

As a result, the FCC has finally clarified matters by adopting a rule that prohibits the use of cellular phones in airborne aircraft. The reasoning is that if a cellular is used in an aircraft, its transmitting range will be much greater than a land-based cellular phone. Its signals will cause harmful interference because they will be received simultaneously at multiple cell sites of the cellular system over which the aircraft is flying.

Because a cellular phone can operate on all of the allocated cellular frequencies, depending on the altitude of the aircraft, simultaneous interference could, in fact, be caused to cellular systems in several different cities at the same time. So, the FCC decided that cellulars can't be used in aircraft, and must be turned off once the craft is airborne.

The FCC, though, will allow the use of cellulars while the craft is on the ground, subject to FAA regulations and policies. The FAA is worried that cellulars could possibly cause interference with aircraft systems, so the FCC

Harris' new radio telephone system permits telephone calls to be direct dialed from HF/VHF/UHF mobile radio transceivers.



At the left foreground, under the bridge, you can see a cell site antenna. This is a new NYNEX site in New York City that improves coverage along the heavily traveled FDR Drive and the Manhattan side of the Queensboro Bridge. The object above the bridge is a Roosevelt Island passenger tram, which travels along a cable.

left the final word on this with the FAA, based on further testing. The FAA is working up guidelines that will restrict cellulars to usage at the gate and during extended waits on the ground, when authorized by the captain of the aircraft. A notice outlining the rules will have to be posted next to any cellular installed in an aircraft.

So, cellular use while airborne, under all conditions, is now forbidden by the FCC. Cellular use in an aircraft on the ground is, for all practical purposes, under the control of the FAA. Because such use is subject to FAA guidelines, neither cellular service suppliers nor cellular users can demand or expect cellular service aboard any aircraft on the ground unless such use is in full accordance with the FAA's guidelines.

Service With a Sneer

In April of 1990, SEG Limited Partnership asked the FCC to allow them to construct two new cell sites at Indianola and Dallas, Iowa, for its service to the Des Moines area. The authorization wasn't granted because SEG didn't request FAA approval for the antenna proposed for the Dallas site.

Then, less than seven months later, SEG notified the FCC that it had it had completed construction of sites at Indianola and Panther, Iowa. Permission had not been sought to put up a site at Panther. On August 5, 1991, SEG asked the FCC for special temporary authority to continue operations. Two days later, SEG amended its application to correct for the unauthorized construction at Panther, Iowa.

The FCC decided that the Panther site was a "major modification" to the existing facilities. As such, an FCC Form 401 should have been filed. Instead, SEG incorrectly used an FCC Form 489, "in violation of the rules." The FCC claims that this caused the

Indianola and Panther cell sites to be placed in operation without FCC approval.

The FCC told SEG that this series of events makes them "apparently liable" for a "forfeiture." In other words, a fine. Try $80,000 on for size. Sure, SEG stumbled over the rules and screwed up the FCC's paperwork a little. Big deal. What actual harm was done to the public, or to SEG's service? If $80,000 isn't blatant highway robbery, I don't know what is. Shameful.

Calling Home

New from Harris RF Communications is a radio telephone system that permits calls to and from HF/VHF/UHF mobile transceivers in the field to be direct dialed and connected automatically into switched telephone networks or private subscriber lines.

The Harris system consists of a handheld Remote Access Unit (RAU), the RF-3565, which hooks into the mobile transceiver; and a Telephone Interface Unit (TIU), the RF-3560, which hooks into a standard two-wire subscriber line of a PABX or a telephone exchange.

The RAU is sealed and splashproof, and is ruggedized for harsh environments. It functions very much like a cordless telephone removed as far away as hundreds or thousands of miles from its base. To initiate a call from the mobile unit, the user simply enters the telephone number on the keyboard. The unit can accept up to 28 digits, which is sufficient to access any telephone, anywhere in the world.

The TIU is designed for unattended operation. Incoming calls are patched through a two-wire subscriber line into a PABX or other switch line without operator intervention.

In order to contact anyone in the field, a telephone user dials a telephone number (or extension) to which the TIU is connected. The call is automatically answered by the TIU, and the user is patched through to the field radio. Security code access may be used, if desired.

This is made by Harris RF Communications, 1680 University Ave., Rochester, NY 14610.

Digital Horizons

Hughes Network Systems of Washington, D.C., announced that it will be manufacturing Time Division Multiple Access (TDMA) dual-mode (analog/digital) cellular phones for the emerging digital American cellular market.

With the introduction of digital service availability in a few areas this year, Hughes said that production quantities of their dual-mode phones should be on tap by mid-year. Hughes Network Systems is a part of the General Motors/Hughes Electronics family, and the phones will be sold through 10,000 GM dealers. The company predicted the eventual availability of after-market digital cellular services including auto theft monitoring, mayday, navigation, and others.

Slam Dunk That Call

The Sacramento Kings basketball activities were this year again enhanced by the availability of PacTel's Priority Message Center, located on the southwest side of the Concourse Level, behind section 107, at ARCO Arena, in Sacramento.

This free service allows attending fans to make and receive important calls during home games. Upon arrival at the arena, fans can register their name and seat location at the Message Center. By dialing (916) 764-CALL, an outside caller can leave a message of emergency nature for a registered fan at the arena. The message is then delivered to the fan, along with a transportable cellular so that the call may be returned from the fan's seat.

The service is especially useful to medical, law enforcement, and fire personnel, as well as expectant fathers.

We are always pleased to hear from our readers. Send us your questions, thoughts, photos, and anything else relating to cellular, mobile, maritime, aero telephones, or cordless phones and beepers. We also appreciate information from service suppliers and equipment manufacturers.

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Implement Global Maritime Distress And Safety System

Called the biggest improvement in marine safety since the first maritime regulations were enacted following the sinking of the *Titanic* in 1912, the Commission amended its rules to implement the Global Maritime Distress and Safety System (GMDSS). The GMDSS changes international distress communications from Morse code and manual operation, to automated or semi-automated communications using satellite and digital technologies.

This action by the FCC adopts the requirements of the international Safety of Life at Sea (SOLAS) Convention for large oceangoing U.S. vessels and will be phased in through February 1, 1999.

Over 10 years ago, the International Maritime Organization (IMO), an agency of the United Nations, began revising the 1974 SOLAS Convention to improve maritime safety. The system designed by the IMO was the GMDSS. By incorporating advanced communications techniques and using ship-to-shore communications links, the GMDSS brings to international shipping, a unified satellite technology, automated reception of maritime safety information, and rapid distress communications with Rescue Coordination Centers.

The rules adopted by the Commission will require ships subject to the SOLAs Convention or Title III, Part II of the Communications Act of 1934 to conform to the GMDSS provisions. Currently, such ships are required to carry certain radio equipment for safety purposes and are termed compulsory ships or vessels. Compulsory ships include passenger ships carrying 12 or more passengers, and all cargo ships of 300 gross tons engaged in international voyages. Other ships fitted with the same equipment are termed voluntary ships or vessels. Compulsory ships will be required to carry one or more radio operators licensed to operate GMDSS equipment and dedicated to radio communications only in distress situations.

Although it retains ship-to-ship capability, the GMDSS is primarily a ship-to-shore system consisting of several communications systems—some old, some new. The COSPAS-SARSAT satellite system in use since 1982, is a distress alert system using the 406 MHz emergency position-indicating radiobeacon. The International Maritime Satellite Organization's (INMARSAT) maritime mobile satellite system, also in use since 1982, forms a major component for distress alerting and communications. In addition to satellites, new automated terrestrial data systems and existing systems are combined into one overall communications system.

Effective August 1, 1993, all compulsory ships will be required to carry emergency position-indicating radio beacons (EPIRB) operating on 406 MHz and a NAVTEX receiver to receive maritime safety information. The remaining GMDSS requirements become mandatory on February 1, 1995, for newly constructed compulsory ships, and on February 1, 1999, for all compulsory ships. Depending on the areas of the sea in which they travel, compulsory ships will be required to carry digital selective calling radiotelephones operating in the medium frequency (MF), high frequency (HF), or very high frequency (VHF) bands. Ships may also carry satellite earth stations in lieu of HF equipment. Ships will also carry search and rescue transponders operating in the 9 GHz band. In addition to NAVTEX receivers, most ships will also carry specialized receivers for the reception of maritime safety information from either the INMARSAT communications system or via HF narrow-band direct-printing telegraphy. Ships which are not required to carry the JGMDSS, called voluntary ships, may carry the GMDSS equipment at their option.

Finally, the Commission established a new class of radio licenses for GMDSS radio operators. As provided by the SOLAS Convention, the Commission allowed the three methods of radio maintenance: at-sea maintenance, shore-based maintenance, and duplication of equipment. Ships electing the at-sea maintenance method must carry a licensed GMDSS radio maintainer. At present, the Commission will recognize the existing First and Second Class Radiotelegraph Certificates (T-1 and T-2) and the General Radiotelephone (G) as qualified GMDSS radio maintainers. Agreeing with commenters, the Commission encouraged the industry to review the qualifications for the at-sea GMDSS radio maintainer and make further recommendations regarding an outside entity or entities administering the licensing process.

In adopting the GMDSS provisions for U.S. vessels, the Commission stated that the GMDSS represented significant improvements for maritime safety such as, worldwide alerting, coordinated search and rescue operations, and dissemination of maritime safety information. It noted that rapid progress toward full implementation is in the public interest. The Commission emphasized, however, that the rules adopted today do not relieve compulsory ships from the current radiotelegraphy and radio officer requirements as specified in the Communications Act of 1934, as amended (Act). Until the Act is amended, the GMDSS rules must be viewed as an extension of the current safety system requirements.

Interactive Video Data Service

The Commission established the Interactive Video and Data Service (IVDS) and allocated spectrum for its use.

IVDS is expected to be a convenient, low-cost system that will allow two-way interaction with commercial and educational programming, along with informational and data services that may be delivered by or coordinated with broadcast television, cable television, wireless cable, direct broadcast satellites or future television delivery methods. IVDS will be regulated as a personal radio service under Part 95 of the Commission's rules.

This action comes as a result of a petition by TV Answer, Inc., which asked the Commission to allocate spectrum in the 218-219 MHz range for IVDS using technology that TV Answer had developed. It also asked for promulgation of technical rules consistent with its proposed system design to minimize interference to TV channel 13, which occupies a nearby band.

The spectrum allocated for IVDS is currently allocated to the Automated Maritime Telecommunications System (AMTS) and is unused because necessary technical restrictions render the channels only marginally useful to AMTS.

The Commission adopted technical and operational requirements that reflect those proposed in the rulemaking notice to protect adjacent TV channel 13, television channels generally, and the adjacent frequencies that will remain allocated to AMTS.

The Commission will issue two IVDS licenses per service area. Service areas will coincide with the 734 cellular service areas. These cellular service areas are well known to the communications industry and cover the entire country.

Selection of licensees will be by lottery. The Commission adopted an abbreviated filing procedure for the lottery. It will require applicants to file only FCC Form 155 specifying the applicant's name and address, the service area number and the fee code along with a filing fee of $1,400.00 for each application. Lottery selectees will be required to timely file a complete license application package consisting of FCC Form 574 and required showings. A Public Notice will be released later detailing specific instructions for filing lottery applications and the deadline for each market.

The Commission also adopted regulations to ensure that an applicant that obtains a license through the lottery process actually builds the IVDS system. These include construction benchmarks and a prohibition on sale or transfer of IVDS licenses before 50 percent of the IVDS market is covered.

900 MHz Paging

Skytel Corporation (Skytel) filed a request for waiver of Sections 22.505(c), 22.506(e) and 22.506(f)(2) of the Commissions Rules to permit it to operate its non-nationwide facilities on frequency 931.4375 MHz at powers to and including 3500 watts.

Selecting Licensees For The 220-222 MHZ Nationwide Authorizations

The Commission is soliciting comments on the best available means for selecting licensees for the 220-222 MHz nationwide authorizations. Specifically, it asked commenters to address whether the use of comparative hearings was preferable to random selection as a mechanism for determining which nationwide applicants are best qualified to become licensees.

The Commission asked commenters to discuss whether the distinctions between the nationwide commercial and non-commercial set-asides rendered any particular selection procedure preferable in either context.

Finally, the Commission proposed certain general criteria to be used in the event that it chooses to use comparative selection procedures.

In both the Notice of Proposed Rulemaking and the Report and Order adopted in this proceeding, the Commission concluded that the lottery process was the best means for selecting licensees. Because the Commission recognized that an undesirable characteristic of lotteries is their appeal to speculators, the Commission took several steps to minimize the number of applications filed by speculators, and thus to restrict lottery entry to entities with legitimate communications plans. Nevertheless, the Commission received approximately 60,000 applications, the majority of which were for the local channels. (Of the nearly 60,000 applications filed, only 174 are for nationwide authorizations.) In the Commission's view, the considerable number of applications filed demonstrated that, despite the adoption of measures specifically designed to prevent such a result, a number of the applicants may have had no apparent legitimate interest in developing and operating communications systems.

Because of this, the Commission has reviewed its decision to use lotteries and is considering whether the use of comparative hearings would help guarantee that only the most qualified entities are selected for nationwide licensing. Although the number of local applications filed led the Commission to believe that hte principal amount of speculation occurred at the local level, the FCC said it remained convinced that the substantial similarities between the proposed systems of local applicants made it impractical to attempt to compare their relative qualifications.

Likewise, the Commission stated that, in view of the volume of local applications filed and the small amount of spectrum associated with each local license, it would be markedly inefficient for the FCC to devote its resources to the comparative evaluation of local applicants.

In contrast, it said, the potential value of the nationwide authorizations, the small number of nationwide licenses available, and the amount of spectrum associated with each nationwide license caused it to question whether the public interest would be better served by the use of procedures more exacting than the lottery process to select nationwide applicants.

Emerging Technology Bands For Future Requirements

The Commission proposed allocating 220 MHz of spectrum, between 1.85 and 2.20 GHz, for emerging telecommunications technologies.

By allocating spectrum for innovative uses now, the Commission would be able to decide upon frequencies for new applications in an orderly manner, without having to go through a difficult and time consuming spectrum reallocation process each time a new service was introduced.

The Commission noted that, in recent years, technological advancements in digital and signal processing systems have created possibilities for the development of a broad range of new radio communications services, particularly mobile applications, that need spectrum to operate. However, virtually all of the spectrum that is suitable for these services already had been allocated to other services.

The Commission acknowledged that this reallocation will have a significant impact on the fixed microwave service users to whom the band is currently licensed. To minimize the impact on these users, the Commission proposed permitting existing fixed microwave users in these bands to relocate to higher frequency fixed microwave bands or to alternative media with minimum disruption to their operations. The Commission said this could best be accomplished through the use of a flexible negotiations approach that would permit financial arrangements between incumbents and new service providers during an extended transition period.

To minimize further the costs to existing licensees and disruption of service, the Commission proposed (1) allowing existing facilities to remain co-primary with the facilities of new services for a fixed time, such as 10 or 15 years, or alternatively, adopting a phased approach in which specific blocks of spectrum would be made available for new services over time; (2) allowing existing facilities to continue to operate on their currently assigned frequencies after the end of the transition on a secondary basis; and (3) permitting state and local government fixed microwave facilities to continue to operate on a primary basis indefinitely. Finally, pending the outcome of this proceeding, the Commission announced that it will authorize new fixed microwave facilities on the 2 GHz frequencies only on a secondary basis.

Mary Beth Richards Named Chief Of The Enforcement Division Field Operations Bureau

Mary Beth Richards has been appointed by the Commission to the position of Chief of the Enforcement Division, Field Operations Bureau.

Since June 1989, Ms. Richards had been Chief of the Common Carrier Bureau's Enforcement Division, which handles formal and informal complaints, investigations and consumer related matters involving all common carrier issues. Prior to that position, Ms. Richards served as Legal Assistant to the Chief of the Common Carrier Bureau, working on matters concerning the Bureau's Domestic Facilities, Enforcement, International Facilities, International Policy and Mobile Services Divisions. Before that she worked in the Common Carrier Bureau's Tariff Division and in the Private Radio Bureau.

Ms. Richards has also served as a Trademark Examining Attorney with the Department of Commerce, and has been in private practice. She received a B.A. from Virginia Polytechnic Institute and State University, and her J.D. from The Catholic University of America.

She resides in Washington, DC with her husband, Jack.

Alfred G. Franz Retires

Alfred G. "Jerry" Franz, an employee of the Federal Communications Commission (FCC) for the past twenty-four years, decided to retire from the United States Government effective January 3, 1992.

Jerry has been a fixture in the private land mobile radio community during his Commission tenure, involved in licensing, rule interpretation, and resolving interference complaints. His entire career has been spent with the Private Radio and the Safety and Special Radio Service Bureaus.

Jerry was born and raised in Baltimore, Maryland, having attended grade school, high school and college in that city. His Government career began upon enlistment in the U.S. Navy in 1944. He served on the destroyer USS Cone during World War II until his discharge in 1946. After the war, Jerry began his business career with the Railway Express Agency in Baltimore and continued his education. He obtained an LLB degree from the University of Baltimore in 1954.

Jerry's 40-year involvement with land mo-

bile and microwave radio began at Bendix Radio in Baltimore, where he served as federal government liaison from 1951 to 1958. From 1958 to 1967 he held a similar position with the General Electric Company in Washington, D.C. He joined the FCC in 1967. He has held several managerial and communications specialist positions with that agency. His expertise, vast network of contacts and helpful attitude have all contributed to a career characterized by exceptional service to the public.

Terminate Proceeding To Permit Wireless Cameras In The UHF-TV Spectrum; Lift Freeze On Wireless Microphones

The Commission terminated without prejudice a proceeding which proposed to permit new use of the UHF-TV spectrum by wireless cameras operated for electronic newsgathering, and to limit eligibility for such operation to television broadcast licensees, television networks, and cable television entities. As a result, the Commission also terminated the freeze on the authroization of wireless microphones on UHF-TV spectrum above Channel 23.

The Commission took this action because the record compiled in this proceeding showed little demand for wireless UHF-TV cameras. By terminating this proceeding, the Commission said a reason no longer existed for continuing the freeze on the authorization of wireless microphones, especially in view of the congestion problems caused by the intensive use of the spectrum by VHF-TV stations, and the shared use of lower UHF-TV channels with private land mobile services in larger metropolitan areas.

Final Decision On Remand Concerning Mobile Satellite Service In The Upper L-Band Frequencies

The Commission issued a Final Decision on Remand reconsidering several decisions related to the licensing of a domestic mobile satellite service ("MSS") provider in the upper L-band frequencies (1545-1559 MHz and 1646.5-1660.5 MHz).

The Final Decision on Remand: (1) reinstates the requirement that mobile satellite service in the upper L-band frequencies shall be provided by a consortium comprised of all willing and qualified applicants; (2) affirms the American Mobile Satellilte Corporation ("AMSC") consortium as the authorized licensee to construct, launch and operate an MSS system in the upper L-band spectrum; and (3) modifies the financial requirements for participation in the consortium to permit three entities whose applications previously were dismissed.

A mobile satellite service is a radiocommunication service between mobile earth stations or unspecified fixed earth stations and one or more space stations. When implemented, MSS potentially could provide land, aeronautical and maritime mobile voice communications services.

In the Final Decision on Remand, the Commission concluded that it has statutory authority to require that service be provided by a consortium comprised of willing and qualified applicants pursuant to its broad authority under the Communications Act to prescribe reasonable rules in the public interest.

Moreover, the Commission determined that its adoption of the MSS consortium licensing rule was both reasonable and fully justified by the unique, compelling circumstances of this case involving the international frequency coordination process. The Commission found that the consortium licensing approach, rather than comparative hearings, will best serve the public interest in these circumstances, noting that active and immediate participation by an authorized MSS license is critical to the success of ongoing U.S. efforts to secure needed spectrum for a domestic MSS system in the upper L-band frequencies.

In reaffirming its previous grant of the domestic MSS license to AMSC, the Commission modified the criteria for participation in the consortium to allow three reinstated applicants, Global Land Mobile Satellite, Inc., Globesat Express and Mobile Satellite Service, Inc., an opportunity to join in the existing AMSC consortium in accordance with their ability and willingness to invest in the MSS venture.

The Commission also extended the time period for participation in the consortium to allow for an appeal of its Final Decision on Remand. Thus, the three reinstated applicants listed above will have 180 days to join AMSC, beginning from the date the Final Decision on Remand is no longer subject to judicial review.

The Commission's action was prompted by the March 1991 decision of the U.S. Circuit Court of Appeals for the District of Columbia Circuit, which directed the Commission to reconsider two aspects of its prior MSS decisions.

In response to the court remand, the Commission issued a Tentative Decision in August 1991 which outlined tentative conclusions concerning the remand issues and invited comment by interested persons. After considering the public comments and the instructions of the court, the Commission issued its Final Decision on Remand generally affirming the tentative views set forth in the Tentative Decision.

C-Band Transponders On NASA Tracking And Data Relay Satellites

The Commission granted the applications of Columbia Communications Corporation (Columbia) for authority to use and offer for lease 12 C-band transponders located on each of the National Aeronautics and Space Administration (NASA) Tracking and Data Relay Satellite System (TDRSS) spacecraft located at the 41 degree (TDRS-41) and 174 degree (TDRS-174) West Longitude orbital positions.

Columbia will market the TDRSS C-band capacity on a non-common carrier, long-term lease basis for the provision of international and foreign domestic fixed-satellite services in the Atlantic and Pacific Ocean Regions.

In granting the applications, the Commission found that Columbia's proposal for an international satellite system separate from INTELSAT was consistent with the Commission's *Separate Systems* decision; that is, it found that Columbia possessed the requisite legal, technical and financial qualifications to operate such a system. It also found that Columbia's proposal would further the public interest in international communications and competitiveness. ■

(from page 4)

moned to Congressional hearings in Washington to confess whether or not they had ever been Communists. Ten of those who declined to answer were dubbed the "Hollywood Ten" by the media, and were sent to jail for contempt of Congress.

I mention this because in 1947, my father and grandfather were executives in the motion picture industry, and had been so for many years. Being mostly non-political, they weren't on any of the several "Black Lists," nor had they any particular reasons to fear that they might be showing up on one. Still, they certainly were less than pleased to see how easily hundreds of probably harmless people could be caught up in an out-of-control mass frenzy supposedly rooting out dangerous subversives. They didn't want me to cause them to be next.

Actually, my strongest critics were an elderly aunt and uncle. Aunt Rose kept loudly insisting that shortwave broadcasts from heathen Communists were the Biblical Tower of Babel, and that they had attracted flying saucers. Her proof was that UFO's had first shown up in 1947, which was when I began listening and also the first time she had ever heard of shortwave. Devils, demons, and evil spirits were soon to follow.

Uncle Al backed Aunt Rose's theory right to her last vampire, werewolf, and zombie. Al fancied himself as a vital cog in the movie industry; his life's work having consisted of changing the letters twice a week on a theatre marquee, and putting up new posters in the lobby. Neither Rose nor Al had been quite right since years earlier losing their life savings in a crackpot invention the likes of iron-on tattoos, or something of equal calibre. Luckily for me, the family had been humoring, if not altogether hiding from, Al and Rose for at least twenty years.

Keep in mind that it wasn't against any law to be a Communist. Only two years earlier the Soviets had been our allies in World War II. Presumably, so long as a person wasn't proven to be a spy for the Soviets or their allies, nor was out to violently overthrow our government, it was as legal to be a Communist as it was to be a Republican or a Democrat. A citizen supposedly had as much right to refuse to reveal or discuss their political affiliations or beliefs as much then as they do now. None of that made any difference in 1947 because the feeling was that there really was a Communist plot to overthrow our government.

Anybody and everybody was free to point an accusing finger, and it seemed that there wasn't any shortage of volunteers stepping forward to do so. Ginger Rogers' mother showed up at the Washington hearings to tearfully accuse an Academy Award winning screenwriter of being a Communist, complaining that his scripts contained Communist propaganda. When asked for a specific example, she quoted a line from one of his 1943 films, which read, "Share and share alike—that's democracy." He was blacklisted.

Undoubtedly, some genuine Communists and sympathizers were uncovered during those years. How many, if any, of those individuals were really Soviet spies, or intended running through our streets as bomb-tossing Bolsheviks, or merely had honest but unpopular political views, is open to some debate. J. Edgar Hoover, and others the public trusted said they were a threat, and that seemed good enough at the time. Certainly, many casual bystanders were also caught up in the grinder for the flimsiest of reasons.

These events are relevant because, in addition to just listening to shortwave, you'll recall that 1947 was also the year that I began sending out reception reports to stations in the USSR, Hungary, Albania, Bulgaria, and many other places that the people in Washington were having a canary about with the Communists. It was the first year that mail ever arrived at our house from Communist nations. Furthermore, it was also the year that my father thought that it was a particularly bad idea for mail from behind this Iron Curtain to be showing up in copious amounts at his residence.

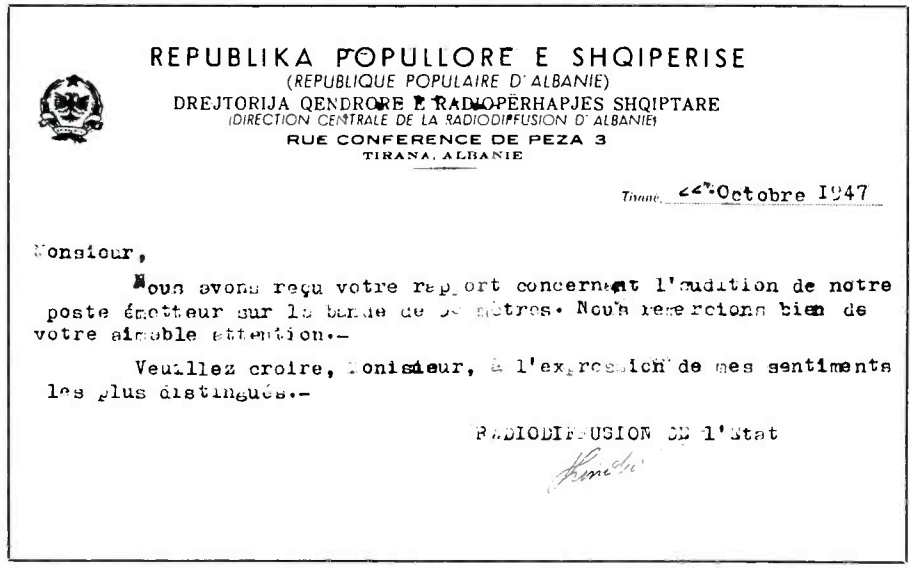
Part of the problem was that Communist nation broadcasters didn't just send a QSL card or letter and let it go at that. Once a person got on their mailing lists, thereafter they were sent a continuous stream of unsolicited mailings of station pennants, schedules, stickers, calendars, key chains, pens, greeting cards, pins, trinkets, newsletters, picture postcards, and assorted tidbits of highly-charged political propaganda. Within a few months of my starting to send out reception reports, scarcely a week went by without the arrival at our house of a whole box full of souvenirs and other anti-American litter from the deepest pits of Communist hell.

In our family, mail was distributed to members of the household only by the Lord of The Manor, namely the Old Man. He saw it as one of his duties to keep track of who was getting mail from where. Because of the Congressional goings-on in Washington, with each letter for me from a subversive nation he sorted, he would pause, then peer at me through one squinted eye. He regarded my mail from all places other than the United States with varying amounts of suspicion. In 1947, with things being as they were, no nation escaped without at least a raised eyebrow.

He flat out told me that he was picturing in his mind our sniveling little weasel of a letter carrier sitting there like a hero at the Congressional Un-American Activities hearings. The guy was in the process of turning us in as pinko Commie movie industry subversives; all the while waving around a fistful of my Albanian QSL's and Czech workers' struggle calendars as irrefutable evidence.

My tactic was not to comment on any of this. Parents tend to over react to things, anyway. I quietly brought my mail to my room to pore over my newly acquired trophies. Guess I was just too young and naive, and overwhelmed with enthusiasm for all aspects of the DX'ing hobby to be very concerned about possible problems resulting from my mail. But after I brought the stuff to my room, I could sometimes hear my folks speaking in low voices in the other room. My occasional fantasy was that this was my noble mother volunteering to take in other people's laundry to make ends meet when the Old Man was dragged off to Leavenworth to take the rap for my incoming QSL's. I knew he would never implicate me. What a guy!

Just imagine my folks' reaction had they ever realized that every time I sent a QSL request to Moscow, or Sofia, or Prague, or some place like that, my letter was repeatedly read on the air, with the announcer taking the liberty of addressing his overly friendly reply to "Comrade Tom Kneitel." Doubtless, that would have caused my instant removal from



REPUBLIKA POPULLORE E SHQIPERISE
(REPUBLIQUE POPULAIRE D'ALBANIE)
DREJTORIJA QENDRORE E RADIOPËRHAPJES SHQIPTARE
(DIRECTION CENTRALE DE LA RADIODIFFUSION D'ALBANIE)
RUE CONFERENCE DE PEZA 3
TIRANA, ALBANIE

Tirane, 22 Octobre 1947

Monsieur,

Nous avons reçu votre rapport concernant l'audition de notre poste émetteur sur la bande de 25 mètres. Nous remercions bien de votre aimable attention.-

Veuillez croire, Monsieur, à l'expression de mes sentiments les plus distingués.-

RADIODIFFUSION DE l'Etat

This 1947 veri letter (in French) from subversive Albania's "Radio Tirana" was definitely viewed with suspicion in the Kneitel household during the McCarthy era.

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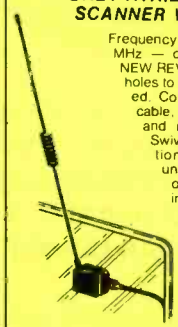

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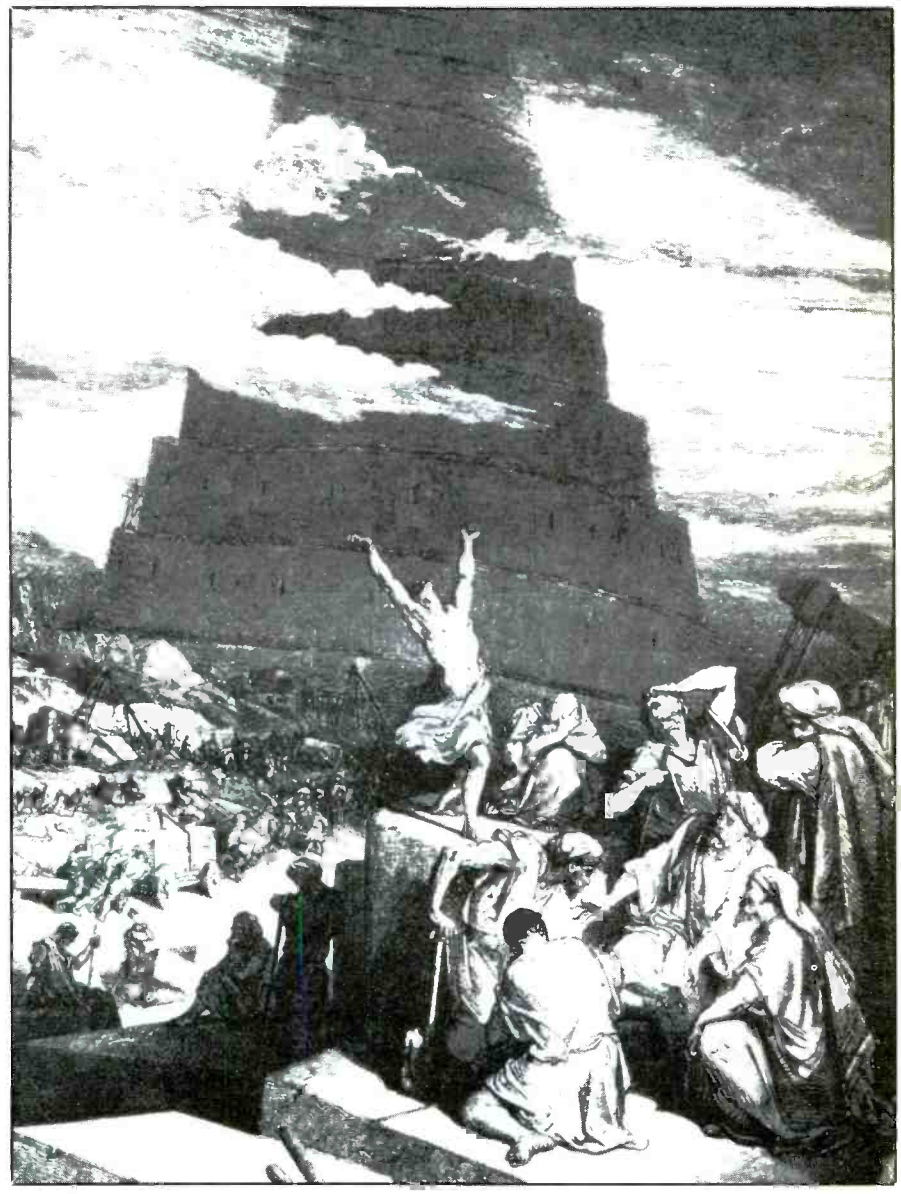

"Aunt Rose kept loudly insisting that shortwave broadcasts from heathen Communists were the Biblical Tower of Babel, and that they had attracted flying saucers . . ."

the QSL'ing game, if not the entire radio hobby, and quite possibly from Earth itself.

Ten years later, in 1957, when I was working at United Artists, I had occasion to meet film director Frank Borzage. Borzage was making a film, *China Doll*, for us. Although he had been a director since 1916, had made dozens of major films, and won no less than two *Oscars*, in 1948 he found himself blacklisted. He couldn't find work after that until *China Doll*, nine years later. When I told him the story of my Cold War mailings of the late 1940's, he looked very grim. He told me I was lucky I didn't cause problems.

No thanks to me, my family survived my late 1940's Iron Curtain QSL outburst, as did I. Those stations kept me on their mailing lists for many years, though.

These days, everyone in the hobby can listen to, write to, and receive mail from anywhere without wondering about the possible repercussions. This month's *How I Got Started* winner is from Russia, and experienced similar glitches relating to his own hobby activities.

So, all things considered, I'll readily agree that it's true the 1990's may well be the best time ever to have gotten started in the hobby of tuning in the world's broadcasters. The equipment is beautiful, the stations are there, and many important areas of the world are undergoing a political rebirth.

It's wonderful that even my own letter carrier recently got started in DX'ing. Almost daily, he stops on his mail route to spend twenty minutes gloating as he shows me his latest exotic QSL's. They're far better than those I ever earned in my early days. Tomorrow, I think I'll go to Washington to the Congressional postal investigation hearings to become a hero by turning in this sniveling little weasel for wasting so much time on his job.

HOW I GOT STARTED

We invite our readers to submit, in about 150 words, how they got started in the communications hobby. Please send them typewritten or otherwise easily readable. If you have a photo of yourself, please include it with your story. We can't return or acknowledge material, whether or not it is used. Your story need be submitted only once, we'll keep it on file to consider it for future issues. All submissions become the property of *Popular Communications*.

Entries will be considered on the basis of their story being especially interesting, unusual, or even amusing. We reserve the right to make any editorial changes we deem necessary to improve style or grammar.

Each month, we will select one winner. The author will receive a 1-year gift subscription (or subscription extension if already a subscriber) to *Popular Communications*.

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

Our Winner For May

This time around, our winner is Boris Ruslanov, Poste Restante, Kaliningrad 236 000, Russia. He has an interesting story to tell.

"As many people in a nation with a totalitarian regime, I was very eager to know true information about world events in general, and my own country in particular. Since the only means of popular information was under government control in the USSR in those years, I had to tune in shortwave. My first stations were RL/RFE, BBC, VoA. At first it was just trying to hear the news through the terrific noise of the jammers.

"The most interesting aspects came later when I began trying to seek out other stations. I didn't know anything about how to do this, so I just tried to pick up as many stations as possible. I kept a record of the times and frequencies.

"It wasn't until the day I tuned in on *Radio Sweden's* program *Sweden Calling DX'ers* that I realized that what I was doing was called DX'ing, and that I wasn't alone in this interest. What a surprise it was!

"I remember the care when I decided to send my first letter abroad. I asked at the post office how this is done. They looked at me with suspicion and asked why I would want to do that. They let me know it was most unusual to have a connection with someone in a foreign country. My heart sank in my boots, figuring that they were going to call the KGB.

"The first reply came in from Radio Japan, and it made me very proud. My friends warned that it might not be wise to pursue these mailings. Yes, I was a little afraid, but I didn't admit it to my friends and I kept right on.

"Once my letter was read over a Radio Liberty program, but they didn't mention my name. I would have been in trouble if they had said my name.

"Letters I received from other nations were always opened before they got to me. Some things like stickers, pennants, or other souvenirs were usually stolen. It was a hard time. Other Soviet DX'ers I eventually made contact with shared my complaint of a lack of DX'ing literature, and having to use poor equipment.

"Time flies. Now I can freely write to you, and I can enjoy your beautiful magazine. There are still problems, but things are getting better. I hope you enjoyed reading about how I got started."

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Advertising Rates: *POP'COMM* subscribers are entitled to one FREE 30-word, non-commercial classified ad per year. Enclose subscription name label with ad copy. For those people not in the previously mentioned group, non-commercial ads are 30 cents per word, including abbreviations and addresses; minimum charge $6.00 per issue. Ads from firms offering commercial products or services are $1.00 per word; minimum charge $20.00 per issue. Boldface words are $1.20 each (specifiy which words). Leading key words set in all caps at no additional charge. All ads must be prepaid in full at time of insertion; a 5% discount is offered for prepaid 6 time insertions. All ads must be typewritten double spaced.
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The American Sunbathing Association, in conjunction with The Naturist Society Amateur Radio SIG and the Federation of Canadian Naturists is in the process of developing an international Amateur Radio Weekend to be held in conjunction with National Nude Weekend, July 11-12.

The ZERO BEATERS AMATEUR RADIO CLUB will hold its 30th annual hamfest on Sunday, July, 1992 at the Bernie H. Hillerman Park (Washington Fairgrounds) in Washington, MO from 6 am til 3 pm. There will be VE exams, seminars, dealer displays, free parking, non-ham displays. Talk in: 147.240 and 444.900 repeaters. Admission is free. For more info: Craig Brune, N0MFD, PO Box 24, Dutzow, MO 63342, tel (314) 239-0600 days, (314) 281-2784 eve. & weekends.

Amateur Fair '92 will be held July 10 and 11 at the Aldrich Arena, 1850 White Bear Ave, Maplewood, MN. Admission is $6, parking is free, refreshments will be available, and children under 6 get in free. For more info contact: AMATEUR FAIR, PO Box 26331, St. Paul Minnesota 55126 or call (612) 653-9999, or by HAM-LINK at (612) 426-0000 (300-9600 baud).

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The Yakima Amateur Radio Club W7AQ will be sponsoring the 1992 Washington Hamfest on May 23 and 24. It will feature the the 1st Annual NW Packet Radio Conference. Seminars and VE testing for all levels of radio enthusiasts will be offered. MARS, ARES, QCWA and ARRL will participate. Admission is $5 in advance and $6 at the door. For information contact: Dick Umberger, N7HHU, (509) 453-8632.

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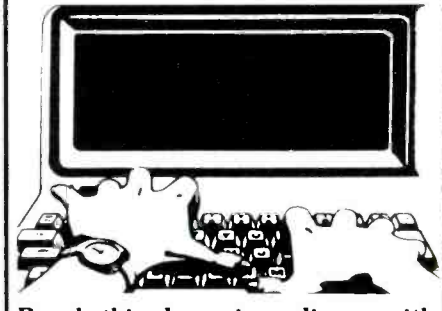

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Specifications:

Coverage:	500KHz-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
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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
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Mobile Mounting Bracket.	MM1	$14.90
RS232 Control Package (software & cable) offers spectrum display and database.	SCS2	$295.00
Wide band preamp	G-W2	$89.00

Specifications:

Coverage:	1MHz-1500MHz
Sensitivity:	.35uV NFM, 1.0uV WFM, 1.0AM/SSB/CW
Speed:	38 ch/sec. scan. 38 ch/sec. search
IF:	750.00, 45.0275, 5.5MHz 455KHz
Increments:	5,12,5,25 KHz
Audio:	1.2 Watts at 4 ohms
Power:	Input 13.8 V. DC 300mA
Antenna:	BNC
Display:	LCD, backlighted
Dimensions:	2 1/4H x 5 5/8W x 6 1/2D Wt. 1lb.

AR3000 $1095

400 Channels. 100KHz to 2036MHz.

Standard Features:

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- Telescopic Antenna
- One Year Limited Warranty.

Options:

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External Speaker. Mobile Mount.	MS190	$19.50
Extended Warranty. 2/3 yrs.		$65/$75
Mobile Mounting Bracket.	MM1	$14.90
RS232 Control Package (software & cable) offers spectrum display and database.	SCS3	$295.00
Wide band preamp	G-W2	$89.00

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
Audio:	1.2 Watts at 4 ohms
Power:	Input 13.8 V. DC 500mA
Antenna:	BNC
Display:	LCD
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(The VHF converter options must be used in the R-5000 and R-2000.)

R-5000

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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, squelch for narrow FM, illuminated keys, and a "beeper" to confirm keyboard operation.

Optional Accessory
- **PG-2N** Extra DC cable

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
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