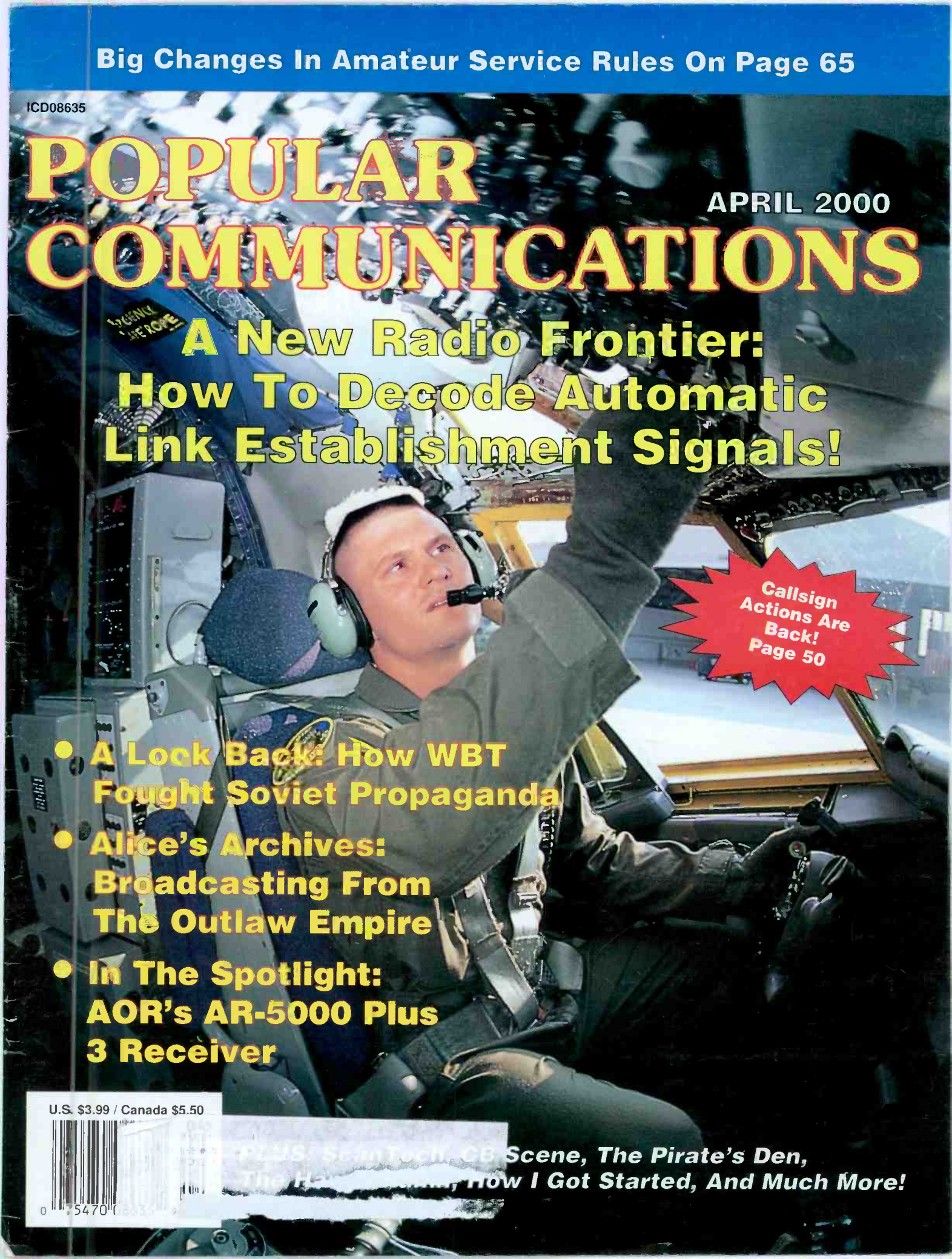
Big Changes In Amateur Service Rules On Page 65

ICD08635

POPULAR COMMUNICATIONS

APRIL 2000



A New Radio Frontier: How To Decode Automatic Link Establishment Signals!

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- Alice's Archives: Broadcasting From The Outlaw Empire
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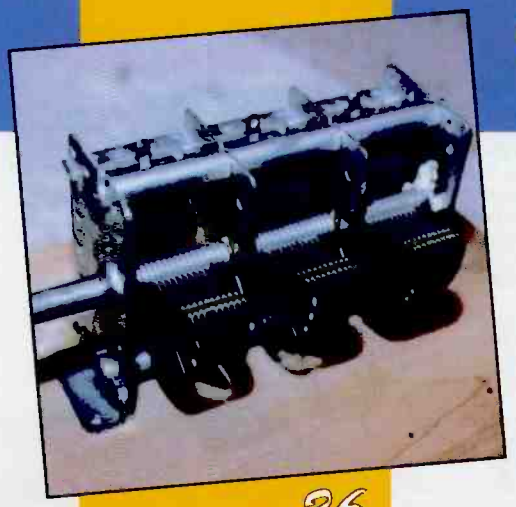

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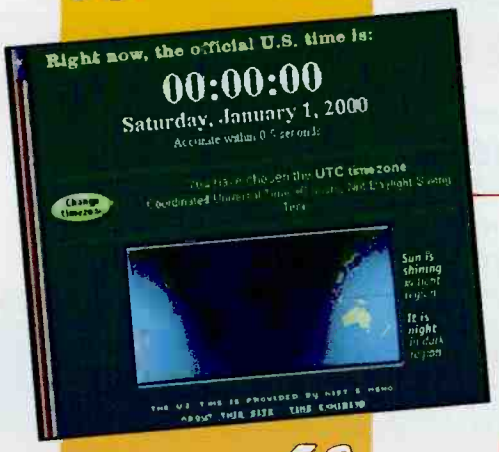

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Departments

On The Cover

Aircraft Commander Captain Kevin E. Schiller pre-flights his KC-135 tanker aircraft at MacDill AFB. You can hear the U.S. Air Force ALE network and much more by decoding Automatic Link Establishment (ALE) transmissions. This month's "Communications Confidential" column by "RD" Baker and Mike Fink explains how on page 70. (Photo by Larry Mulvehill)

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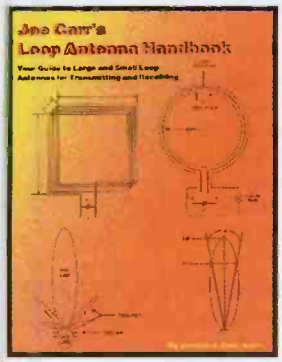

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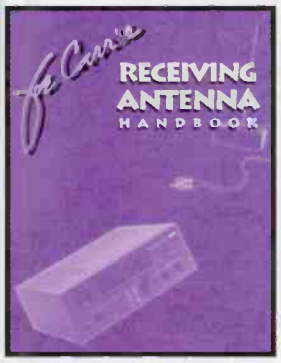

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tuning in

An Editorial

Three License Classes And One Morse Code Exam

Some will see it as they saw the no-code Technician licensing program — a dumbing down of amateur radio — while thinking, reasonable hams will see the light. The FCC's recent restructuring of the amateur radio service, effective April 15 will contain three license classes: Technician, General, and Extra with a single written exam for each grade of license. And there will be one code exam at 5 wpm. Period. The restructuring decision will also grandfather current Novices and Advance Class operators, who may renew or modify their current license; there's no change in privileges. Tech-Plus hams will be renewed as Technicians, but will retain their HF operating privileges. Other pertinent changes include:

- There are no changes in callsign groups.
- VECs' Question Pool Committee will decide which parts of the current exam elements 2, 3A, and 4A will combine into which new elements.
- Recognizing the reality that the VECs actually prepare the exams rather than individual VE teams.
- There will be no automatic upgrades — all must be requested at a VE session.
- The much-abused disability waiver for code tests is eliminated.

These are the salient points of the restructuring; for more details, read this month's "Washington Beat" column on page 65. These changes have been coming for a long time — long overdue changes that finally put the code/no-code debate to rest once and for all. Who won and who lost? It's pretty simple, actually. We all won. Those who view this as a lost battle are the same old codgers who will die holding onto that code key while the rest of the world zips along at light speed. Rest in peace.

You've probably noticed in the last couple of issues of *Pop'Comm* how we've been providing more in-depth ham related material; Kirk's "The Ham Column" is now highlighting — in addition to the usual Technician-level material — General Class items including HF operation. Gordon's "Radio Resources" column this month is about HF verticals. There's more coming down the pike to help new HF operators gain a better understanding of everything from propagation to RF safety, so stay tuned and make *Pop'Comm* your first choice!

There's no question that the code bar needed to be lowered. Given the fact that the amateur hobby isn't exactly experiencing phenomenal growth and that anyone can hop on the Internet — with or without knowing how to type or even put words together to form a sentence — without being concerned about antennas, neighbors, licenses, tests, expensive equipment, or restrictions. That's still not to say we shouldn't be encouraging people to join our ranks. But, more importantly, we shouldn't be *discouraging* people from joining amateur radio's ranks — either by outdated code tests or our own blind stupidity, selfishness, and cranky attitudes. Potential hams with two-thirds of a brain will go elsewhere for fun.

I'll admit that I've been procrastinating. I wrote the book on "later," especially when it comes to taking *any* kind of test. Like most people who study, in the end I almost always amaze myself. But getting to "the end" is sometimes like going to the dentist. Chances are I'm only in for the standard cleaning, but the thought of that bright light and all those shiny tools practically kills me. So it was even with the basic Technician test. I knew my stuff, but nevertheless still got sweaty palms.

By the time we see this issue of *Pop'Comm* in print, I hope to be on the way to becoming a General. (I always thought I'd be a good general — all those goofy majors I worked for could use some serious discipline!) That aside, the books are open and code tapes have finally arrived. I'm actually quite excited about upgrading. Reading in the living

(Continued on page 78)

BY HAROLD ORT, N2RLL, SSB-596

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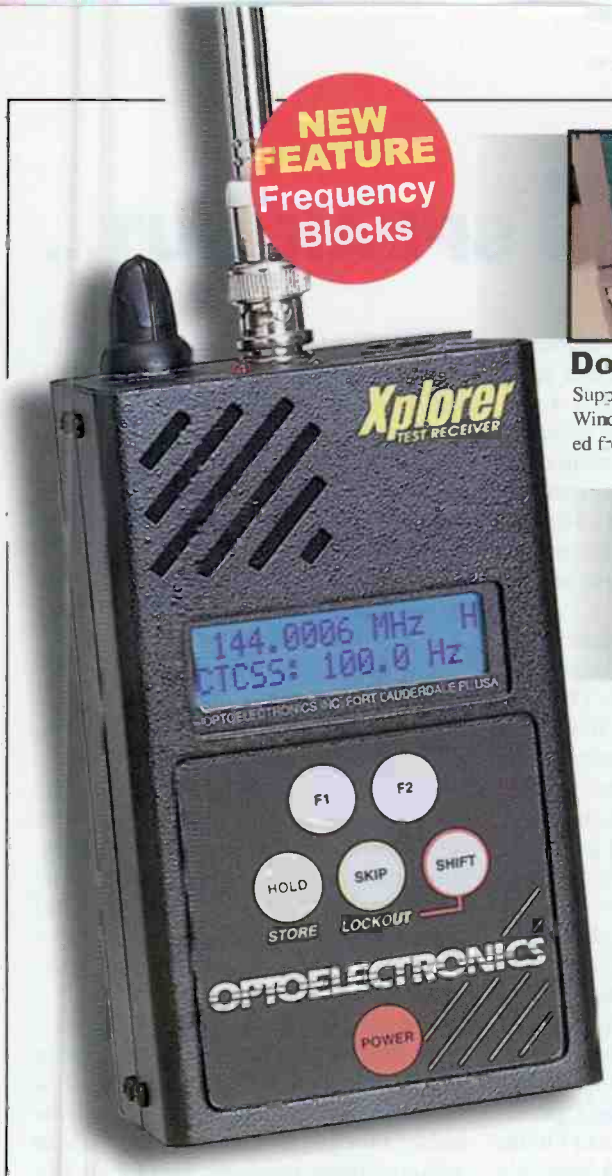

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A POPCOM Modem?

Dear Editor:

As a long time reader of *Pop'Comm*, I'd like to congratulate you on your new venture. Now, in addition to providing information about communications technology, it's evident that *Pop'Comm* is actually manufacturing high-tech communications equipment. Enclosed for your consideration is an example: A POPCOM modem. Intel is shaking in their boots!

Jim Bruce, K1FF

Dear Jim:

Thanks for the POPCOM modem. I wish everyone could see this — an actual modem with a "POPCOM" label. As usual, when something unusual arrives, we usually convene a meeting. A noon meeting (on Monday) of the Pop'Comm *"What's This?" Council was begun and it's currently 11:30 p.m. Wednesday. The lights are on behind this closed-door session and Dominos has just delivered another pizza. Please pray for them.*

Asleep At The CW Key Again

Dear Editor:

Yep, it's me, your Old Codger. It's time for me to get out my dirty, old, and faded heavily starched handkerchief for my monthly crying session (laughter is a wonderful medicine). Morse Code (CW) again. My views on this wonderful subject are not directed to anyone, just an overall view of what I have read in *Pop'Comm*. It will be brief and surely get some folks out there ready to rumble.

Requirements to be an amateur radio operator: Morse Code, receive at a specific word-per-minute rate for a certain license class and a written examination. Simple, those are the two requirements.

Requirements for a driver's license: Eye test, written exam, and an on-the-road driving test. Simple, those are the three requirements.

No-Code amateur radio operators are lazy individuals with a lot of excuses; I have a name for them: Shack On The Belt. CW is old, CW is slow, but CW will get through where voice communications will not, period. A little extreme, but former POWs used Morse Code to talk with one another and they weren't going for an amateur radio license. CW is not that difficult to overcome; 5 wpm — slow, but you can sure have lots of fun. Listening to the ham at the other end making mistakes, slow and laughing, scratching out what you wrote down because the guy said he made a mistake. Go for it, practice receiving, practice sending, listen, and then you'll be a ham. Don't get all bent out of shape because you can't write down what the DIT or DAH was, it's another language that takes time, practice, memory, and perseverance — about 15 or 30 minutes a day. Try.

When you go for your driver's license tell them, "Gimme a driver's license, all I'm gonna take is your eye test."

Tah Tah now,
Ray Yakesh

Dear Ray:

You know what the problem is here, Ray? Your attitude. You and the other folks who are constantly beating the "no-coders aren't real hams" drum into the ground. Frankly, your words do the hobby more harm than you obviously realize. It's insensitive, infantile, and totally uncalled for. You've forgotten that this is a hobby, Ray, and that no-coders are federally-licensed amateur radio operators, whether you like it or not.

You do know, I hope, that there are different classes of driver's licenses and the requirements for driving differ from state to state. Take for example the commercial driver's license. Just because I don't have one and can't drive a tractor-trailer doesn't mean I'm not roadworthy. It will be a cold day in hell when I'm found driving one of those rigs! There's a reason for that, Ray. I'm a darned good driver (just like you're a darned good ham except for your attitude, right?) but I'm not yet qualified to drive a big rig. Not only that, but I DON'T WANT TO RIGHT NOW. But it certainly doesn't make me less qualified to drive our car.

Ray, I'm not a psychologist, but I'll bet your problem isn't about lazy operators or using CW to save lives, it's something deep-rooted in your life — that little voice you must be hearing that whispers to you something like, "Ray, you're better than anyone else, go ahead — prove it, go on, prove it, man. Tell the world that anyone who doesn't live up to your personal expectations is lazy. That's right, Ray — everyone who hasn't attained your personal level in life is lazy."

I've said it before, but you obviously were sleeping. Once again, Ray, ham radio is a pastime; a hobby. It's all about folks having fun at whatever aspect of the hobby they personally like, NOT about self-appointed spectrum watchdogs like yourself assigning labels based on empty, baseless arguments for code. This whole CW to-be-or-not-to-be grind is getting old, but since I like a good heated debate, especially when someone leaves himself wide open for good, constructive comment, and my ink costs less than yours, I'll go on for a moment.

How many comparisons need be made before you get it? OK, I give up, here are a few folks you can write, telling them how lazy they are because they don't fit your mold:

Dentist: Lazy because they aren't oral surgeons.

Baseball pitcher: Lazy because he isn't the star hitter.

Taxi driver: Lazy because she isn't a limo driver.

Parachutist: Lazy because she isn't the pilot.

Pilot: Lazy because he isn't a commercial pilot.

Family practice physician: Lazy because he isn't a brain surgeon.

(Continued on page 78)

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Radio Moscow — An American Version

At The Height Of The Cold War, WBT Fought Back

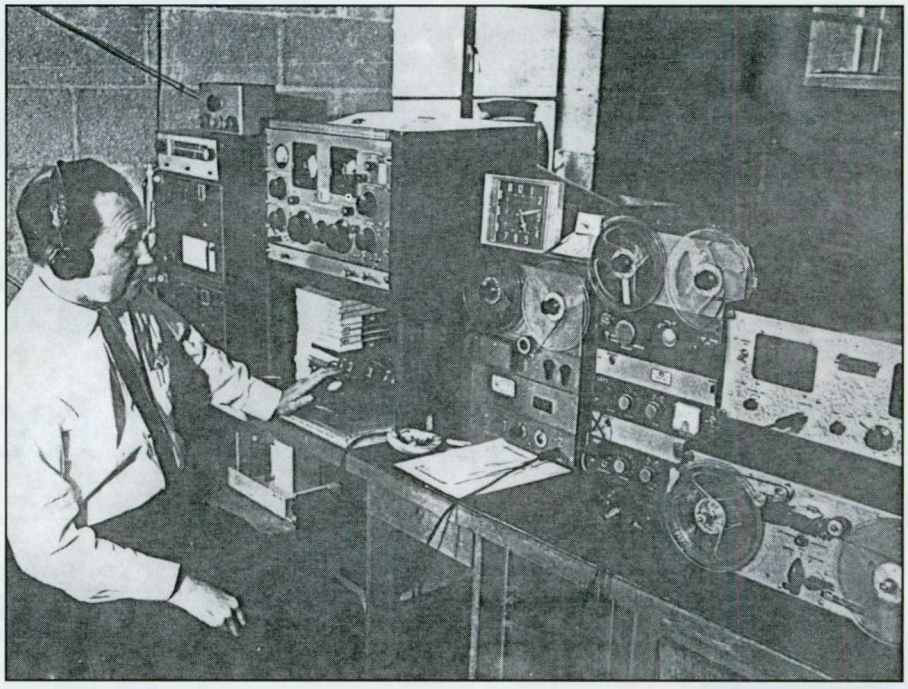
By Carl Tyrie

"This is Radio Moscow. Good evening, everybody. You are tuned to the North American service of Radio Moscow, operating in the 31-, 41-, and 49-meter bands. Transmission begins daily at 6 p.m. Eastern Standard Time on 10 frequencies: 9.62, 9.59 . . ."

Thus began the Soviet Union's propaganda message aimed at U.S. shortwave listeners in the 1950s and '60s. The Russian transmissions combined hour-long programming cycled with interludes of music each day between 6 p.m. and 1 a.m. The above Radio Moscow opening was also heard three times a week on the *commercial airwaves* in Charlotte, N.C., between 1959 and 1965. It was part of an American version of Radio Moscow aired by WBT(AM). WBT's version consisted of taped excerpts from recent Russian broadcasts, followed by analysis and rebuttal by WBT's co-hosts.

Although hard-core McCarthyism was mostly out of date when the program made its debut in January, 1959, the Cold War was going strong and anti-Russian sentiment would remain strong for several years, aided by incidents such as the downing of the American U-2 spy plane and the Cuban missile crisis. Therefore, the atmosphere allowed the airing of a commercial radio program that would be laughed at today.

Radio Moscow, the American version, was the brainchild of Charles Crutchfield, Vice President of the Jefferson Standard Broadcasting Company, the owner of WBT. Crutchfield was familiar with Soviet radio propaganda tactics following State Department missions to Greece and Russia, where he listened to Radio Moscow's European programming. When Crutchfield returned to the United States, he decided to do something about the propaganda coming into America. He already had the vehicle — WBT, a 50 kW clear channel station operating at 1110 kHz. With a north-south nighttime transmitting pattern, the station had a healthy U.S. audience up and down the East Coast and in Cuba, which was to be a primary target for the Radio Moscow series.



WBTV engineer Lon Chaney monitors Radio Moscow in the basement of his home in Union County. Lon has three receivers and three tape recorders. Depending on reception, he could have as many as three recordings at once. Later, he rigged a device which automatically recorded from the receiver giving the best reception.

For starters, Crutchfield recruited his "team," which revolved around two men who did most of the research, writing, and on-air work. Hired as chief writer was former Charlotte Observer editor Rupert Gillett, who had previously worked for newspapers in Texas, Florida, and Ohio. Gillett's duties during his 15-year stint at the *Observer* included foreign affairs editorial writing.

WBT staff announcer Alan Newcomb was selected as producer and primary anchor for the program. Newcomb had been a WWII prisoner of war in Nazi Germany and was freed by Russians. He made many Russian contacts at that time, using these and his prisoner-of-war experiences as resource material for a book, *Vacation With Pay*.

After experimenting with various types of shortwave equipment, WBT installed receivers and recorders in the basement of the home of a staff engineer, whose primary job was to monitor and record the

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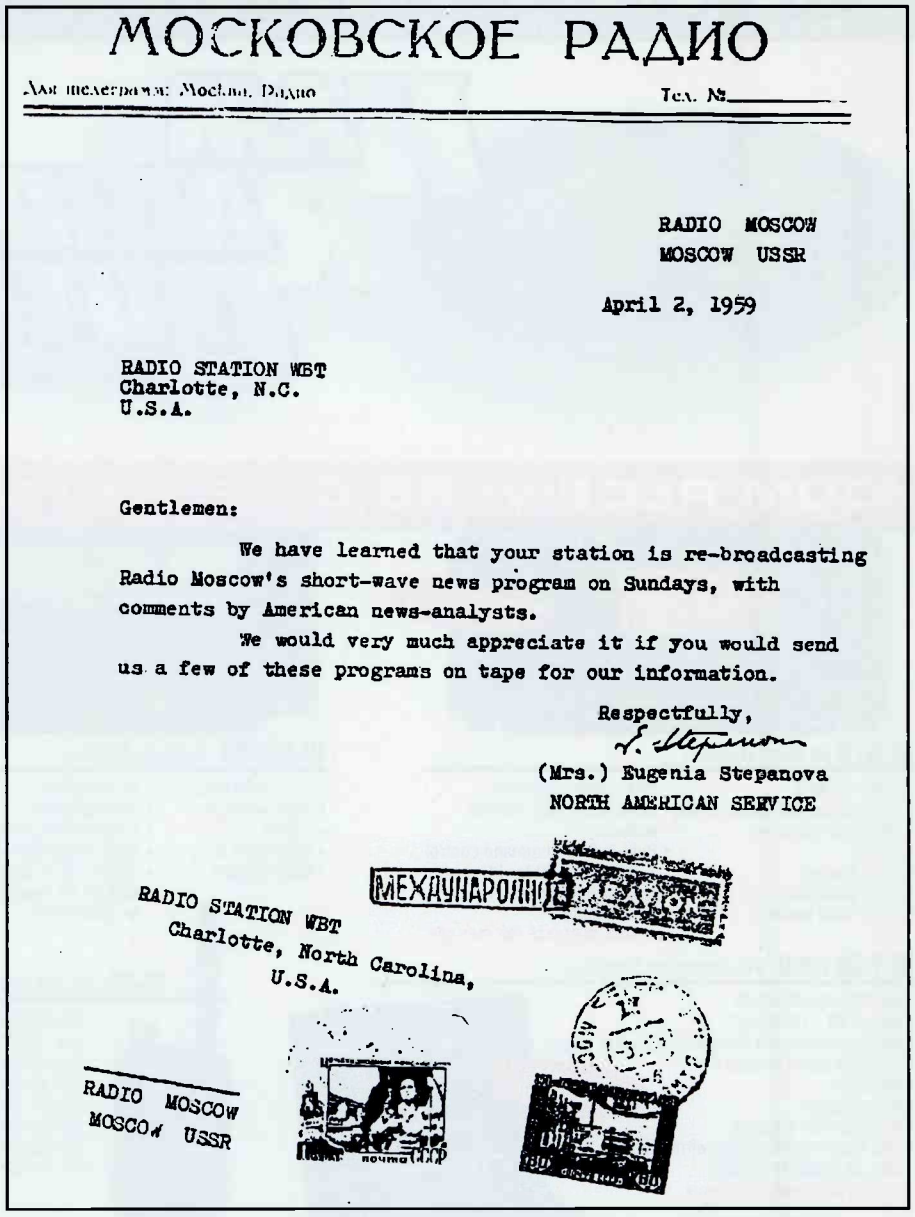
daily Russian broadcasts. Gillett would then listen to the recordings and select the excerpts he considered to be suitable for use on WBT's version of Radio Moscow. He and Newcomb would refine the WBT rebuttal and serve as co-hosts during the broadcasts. To keep the commentaries as current as possible, programs were usually written from the previous night's Soviet broadcasts. During periods of poor reception of Soviet signals, programs were put together from Radio Moscow tapes on file that had no time element, such as discourses on general topics such as Communism, industrial growth rates, and education in the Soviet Union.

With the production team chosen and the technical problems solved, the series went on the air late in January, 1959. For the first two months, weekly half-hour programs were aired Sunday nights at 9 p.m. From then on, programs were cut to 15 minutes and aired at 9:15 p.m. on Mondays, Wednesdays, and Fridays. The format for each program was basically the same: a half-dozen 30- to 40-second cuts from Soviet broadcasts would be played and interspersed with commentary by Gillett and Newcomb.

A typical program was aired on February 15, 1959. Part of the program centered on the controversy involving the Russian downing of an American plane inside the Soviet borders. This was not the Gary Powers' U-2 incident, although that event would be a prime source for many Radio Moscow programs, both the Soviet and American versions, the following year. The February 15, 1959 program began with the standard recording of the Soviet program's opening, followed by:



МОСКОВСКОЕ РАДИО

Адрес телеграмм: Москва, Радио Тел. №_____

RADIO MOSCOW
MOSCOW USSR

April 2, 1959

RADIO STATION WBT
Charlotte, N.C.
U.S.A.

Gentlemen:

We have learned that your station is re-broadcasting Radio Moscow's short-wave news program on Sundays, with comments by American news-analysts.

We would very much appreciate it if you would send us a few of these programs on tape for our information.

Respectfully,

(Mrs.) Eugenia Stepanova
NORTH AMERICAN SERVICE

RADIO STATION WBT
Charlotte, North Carolina,
U.S.A.

МЕЖДУНАРОДНОЕ

RADIO MOSCOW
MOSCOW USSR

The letter from Radio Moscow to WBT requesting tapes of the programs.

Newcomb: "You are listening to the actual voice of Radio Moscow, beaming its powerful propaganda message toward the North American continent, as the Soviet Union sends hundreds of broadcasts in many languages to people all over the world each day.

With the purpose of informing the American public of the day-to-day activity of the Cold War, WBT has begun the actual re-broadcasting of shortwave reception from Radio Moscow, so that you — a free American citizen — may know what the Russians are saying about you and your country. I am Alan Newcomb and with me here in the shortwave room is Mr. Rupert Gillett, editorial foreign affairs expert. Mr. Gillett, our monitoring of Russian broadcasts this week has all had one emphasis, hasn't it?"

Gillett: "Yes, the theme song this week has been mainly the incident in which the American plane was shot down behind the Soviet frontier in Armenia, and also, the closing speech of Premier Kruschev before the Communist Party Congress."

Newcomb: "Well, this plane incident has really stirred a lot of fuss. Moscow could be expected to scream 'Foul' when the State Department released the recordings of conversations between Russian fighter pilots while they were shooting down an unarmed American transport plane near the border of Russian Armenia. This recording, as translated by the State Department, gives the whole exchange of messages by the Russian pilots while they stalked and shot down the American plane. It gives a graphic description, from Russian lips, of the whole incident. Now listen to what Radio Moscow has to say about this revelation."

Radio Moscow: "This evening Radio Moscow news observer Nikoli Andriev dwells on the fuss raised in the United States about the United States Air Force plane crash over Soviet territory last September, and this is what he has to say. 'It looks as if the State Department wishes to make the crash of the American military plane over Soviet Armenia last September the main leader for fanning the Cold War and its anti-Soviet campaign for the present. The ceaseless hullabaloo in

(Continued on page 15)

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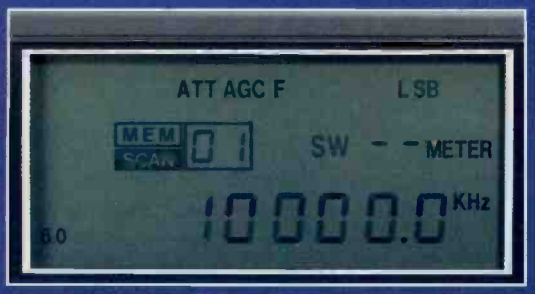

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the last few days about the fake voice recordings of Russian fliers supposed to have shot the plane down are meant to breathe new strength into an old campaign. Let's just for one moment disregard the propaganda rattle and melodramatic poses of State Department spokesmen. Let's examine the facts objectively and soberly and see who's right and who's wrong in this whole affair. The American plane that crashed over Armenia was a military plane. It was deep in the USSR's air space. Its intrusion was not accidental, but deliberate. As the New York correspondent of the Paris Figarro wrote yesterday, 'The American plane that crashed was most probably a flying antenna for an American intelligence station located in the Turkish border town of Vann.'"

Newcomb: "Well, as you can see (interrupting this Radio Moscow summar), when Moscow begins to investigate something objectively and with a cold look at the facts, the facts turn out to be Russian facts — flat denials, first of all, of the fact that Russia had anything to do with the loss of the plane. Secondly, a flat statement that the Americans trumped up and fabricated the whole affair. You'll note, for example, that they say it was a military plane, implying that this was an armed invasion of Soviet Armenia, when actually this was a military transport — a flying boxcar — and not a military plane in the sense that it was a weapon of war. It was rather a transport plane."

Gillett: "And you notice that they quote the newspaper '*Figarro*,' which is a French Communist newspaper. If not Communist, it is at least very far to the left and could be expected to agree with Radio Moscow on whatever that organ says."

Newcomb: "They seem to make a point, don't they, Mr. Gillett, of quoting those papers which are probably going to give the line they want to use anyway?"

Gillett: "Oh yes. They either do that or they change the quotations that they take from more respectable newspapers."

During the remainder of the WBT program, Gillett offered examples of how the Soviets altered quotes taken from *The Washington Post* and *The New York Times*.

The American version of Radio Moscow became national in scope shortly after WBT began producing the programs. Tapes of the programs were offered to other commercial stations at a nominal charge and offered to university stations at no charge. According to an in-house WBT newsletter in February, 1963, 25 stations subscribed to the service, making Radio Moscow available to 80 percent of the U.S. KGEI in Belmont, California, also beamed the programs via shortwave to a Latin American audience. The Soviet version of Radio Moscow even paid some attention to the program, requesting tapes of the WBT broadcasts in April, 1959.

Radio Moscow received several honors over the years for WBT. When Sigma Delta Chi awarded its two radio awards in 1960, one of them (for distinguished public service) went to Radio Moscow, which was in good company that year: other SDX winners were Hodding Carter III, Managing Editor of the Greenville, Mississippi, *Delta Democrat* for editorial writing, Smith Hempstone, Jr., of the *Chicago Daily News* for foreign correspondence, and David Brinkley, then of NBC, for TV newswriting.

After receiving the SDX and several other awards, WBT got a letter from FBI Director J. Edgar Hoover. "Your series certainly is deserving of recognition," he said, "and I know these awards must give you a deep sense of satisfaction. Your continued interest in seeking to alert our citizenry to the menace of atheistic [sic] communism is indeed encouraging."

In effect, the fate of Radio Moscow was tied to the ebb and flow of the Cold War. As the nation moved into the mid-'60s, the perceived threat of Communism seemed to fade. The Russians contributed to this by pursuing cultural and agricultural trade agreements with the West and by lessening its jamming efforts against radio services such as Radio Free Europe. The Soviets also toned down their rhetoric. Terms of denunciation such as "capitalistic pigs" and "fascist hyena" faded from the airwaves. Meanwhile, American attention was being increasingly taken up by threats in another part of the world — Southeast Asia.

The Cold War Ends

As the Cold War faded, Radio Moscow died. It was taken off the air by WBT in January, 1965, after a six-year stint as one of the most unusual locally-produced programs in American broadcast history. Newcomb, Gillett, and Crutchfield have all since died, and Crutchfield donated all Radio Moscow material to the Broadcast Pioneers Library, the archives at the University Of North Carolina, Chapel Hill and the Charlotte Public Library.

Crutchfield felt that the atmosphere in the United States had become considerably different than it was in those days. He said Americans used to believe everything that came out of Washington. "But," he said, "there's a great deal of skepticism. And rightfully so. We not only distrust Communist propaganda, but we distrust our own news, particularly that coming out of Washington." ■

Broadcasting From The Outlaw Empire

The "Nation" Lasted Only 13 Years, But Made Itself Heard!

By Alice Brannigan

Manchuria, a region in East Asia under loose Chinese control, had long been coveted by both Russia and Japan, and was the primary site of the 1904–05 Russo-Japanese war. The Russians lost and withdrew, leaving the Japanese in control of South Manchuria. In 1907, a Chinese civil administration was set up in Manchuria, though for years Japan insisted upon special rights there. This was necessary, Japan claimed, to defend its interests in adjacent Korea. But in the 1920s, the Japanese became uneasy about Chiang Kai-shek's increasingly successful efforts to unify China. This resulted in officers of the Japanese Kwantung forces stationed in Manchuria staging an incident that led to the complete Japanese occupation of Manchuria.

The Mukden Incident

Known as *The Mukden Incident*, this event occurred on September 18, 1931. An explosion took place along the Japanese controlled railroad. Japanese troops used this pretext as justification to quickly occupy the city of Mukden, followed a few days later by a full-scale Japanese invasion of all of Manchuria. In 1932, despite protests from the League of Nations, the Japanese proclaimed Manchuria as the "independent" republic of Manchukuo (or Manchoukuo), with its capital at Hsinking. In 1933, the adjacent province of Jehol was also occupied and annexed. In 1934, figurehead Manchu emperor K'ang-te was the appointed ruler, and the Japanese puppet Empire of Manchukuo was established.

The Japanese forces had met little resistance because Chiang Kai-shek was concentrating his efforts and resources on controlling the rest of China. He had told his forces in Manchuria to withdraw without resisting the Japanese. However, the League of Nations appointed the Lytton Commission to investigate the Japanese occupation and decide what should be done. The Commission declared Japan the aggressor, ordered Japan to dissolve the Empire of Manchukuo, and withdraw its troops. Instead, Japan walked out of the League of Nations, continued its occupation of Manchuria, and maintained its Empire of Manchukuo.

Studios and transmitter site of station JQAK, Darien, Manchukuo.

Spreading The Word

The occupation government realized the potentials of radio broadcasting to reach out to local citizens. By 1936, the Japanese-run *Manchuria Telephone and Telegraph Company, Ltd.*, 601 Daido-Traigai, Hsinking (now known as Changchun) had constructed 15 broadcasting stations across Manchukuo. Five regional stations ran the most power. They were JQAK in Darien with 1 kW on 760 kHz, MTBY in Mukden (now called Shenyang) with 1 kW on 890 kHz, MTCY in Hsinking with 10 kW on 560 kHz, MTGY in Yinkow with 1 kW on 1270 kHz, and MTFY in Harbin with 3 kW on 674 kHz. Other stations had only local coverage and ran 50 watts, with one using as little as 10 watts and another rated at 100 watts. The lower powered local stations were located in Mutankiang, Yenki, Tsitsihar, Chengheh, Chinchow, Chinhsien, Peian, Hailar, Chiamssu, and Kirin.

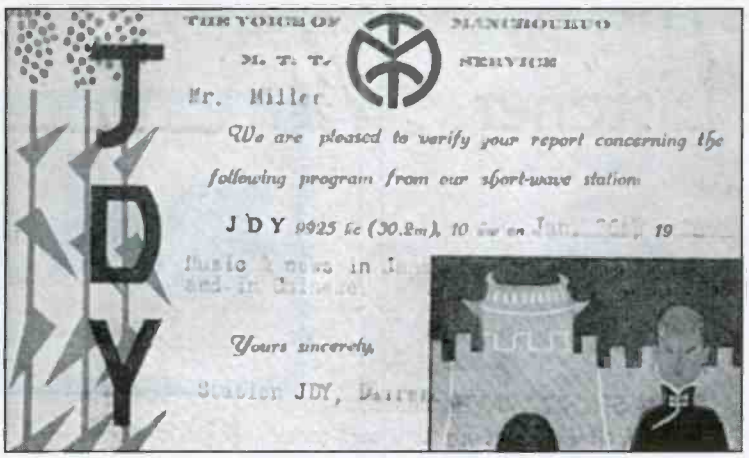
Those odd call letters beginning with the prefix "MT" were bootleg. That's because "MT" belonged to a callsign block assigned to the United Kingdom. Actually, MT&T used the prefix "MT" simply because it happened to reflect the initials of *Manchuria Telephone*. The network's flagship station, MTCY, earned those self-assigned call letters because they loosely represented the term *Manchuria Telephone Company*.

Getting On Shortwave

Beginning on July 16, 1937, station JQAK's programs were occasionally given one-hour shortwave relay broadcasts via MT&T's 10 kW point-to-point station JDY. This station operated on 9925 kHz (later changed to 9994 kHz). JQAK's programming was in Japanese, Chinese, and English. JDY was primarily used for two-way phone communications with Tokyo and was considered "elusive" by North American DX'ers. Though JDY would send colorful QSL cards to confirm correct reports of its JQAK relays, it ignored reports concerning its point-to-point transmissions. JDY took at least three months to respond to North American reception reports. Note that during the 1930s, Japan was a nation that forbade its own citizens (except licensed amateur operators) to own shortwave receivers.

Telling The World

The shortwave relays from JDY were too brief, too irregularly sent out, and too



An early version of the four-color QSL sent out by JDY, which relayed JQAK on shortwave.

poorly received overseas to be considered true international broadcasts. Surely, JDY was insufficient to allow Manchukuo to plead its case before the world. This, in the face of Japan's rejection of the League of Nations edict, and the continuing controversy regarding its occupation of Manchuria and establishment of the Empire of Manchukuo. In response to this, the government claimed it would reduce the world's anxiety level about Manchukuo's existence using educational broadcasts about itself. This would be done by means of introducing powerful and regularly scheduled daily international broadcasts.

On July 20, 1939, the MT&T Company established what it called *The Shortwave System* under the control of its flagship station MTCY, the Central Broadcasting Station, Hsinking. What this meant was that MTCY set up shop as an international broadcaster with its own 20 kW shortwave transmitters on 6125, 9545, and 11775 kHz.

Four different one-hour international broadcasts were directionally beamed to various areas by MTCY each day, consisting of news, lectures, and entertainment. Programs directed to Europe, as well as Hawaii and the Pacific Coast of North America, were in English only. The broadcast sent towards China, the Philippines, Strait Settlements, Australia, New Zealand, and the South Seas was in Manchu, Japanese, and English. A broadcast to Mongolia and Russia was in Mongolian and Russian.

MT&T explained MTCY's shortwave broadcasts as follows, "Our purpose lies in the introduction of Manchukuo to the world, the creation of good-will among Occidental and Oriental peoples and the provision of good wholesome entertainment to listeners abroad."

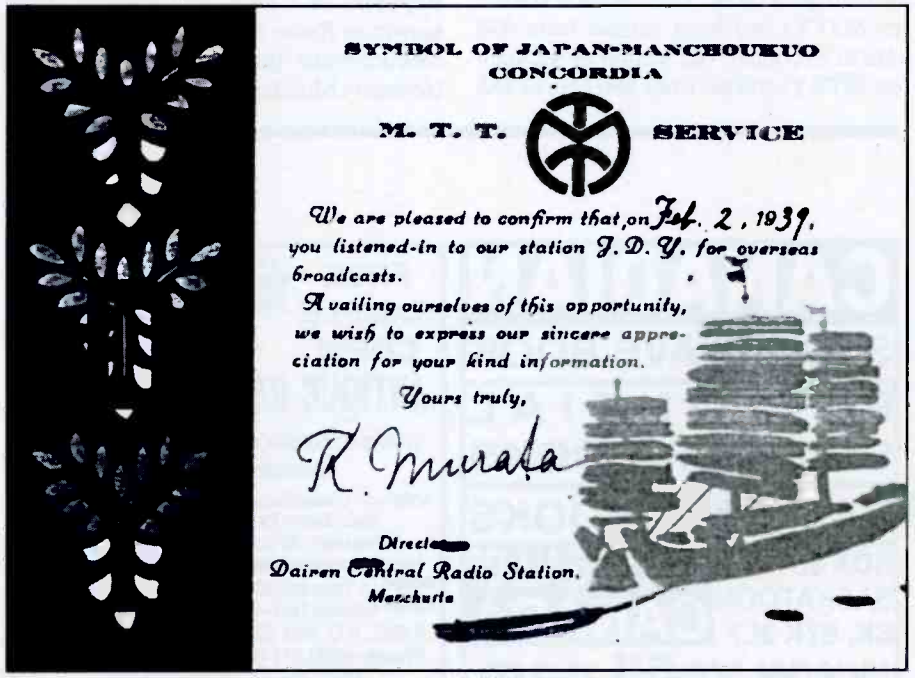
These shortwave programs were widely reported and soon attracted a substantial audience. MTCY was generous with its QSL cards, and even sent listeners greeting cards for Christmas, 1939. One curious thing about MTCY's 1939 greeting card is that it depicts a Manchurian folk character named *Pulaohu*, a tiger. This thing looks strangely like it might be a distant ancestor to *Pikachu*, today's popular *Pokemon* character!

World War II Arrives

A series of four agreements beginning in October of 1936, and culminating in the Tripartite Pact (September 27, 1940), provided for a military and political coalition between Japan, Germany, and Italy (the Axis Powers). Inasmuch as France had fallen to the Germans, on September 22, 1940, Japan was sanctioned by the local Vichy (German appointed) government in French Indochina to station 30,000 troops there. From that date, and until the end of WWII, Indochina was a Vichy French-administered possession of Japan. This marked the onset of World War II military action in the Pacific. MTCY continued its shortwave broadcasts, but until WWII ended, MTCY was just one of more than 45 other Axis shortwave propaganda stations in Japan and French Indochina.

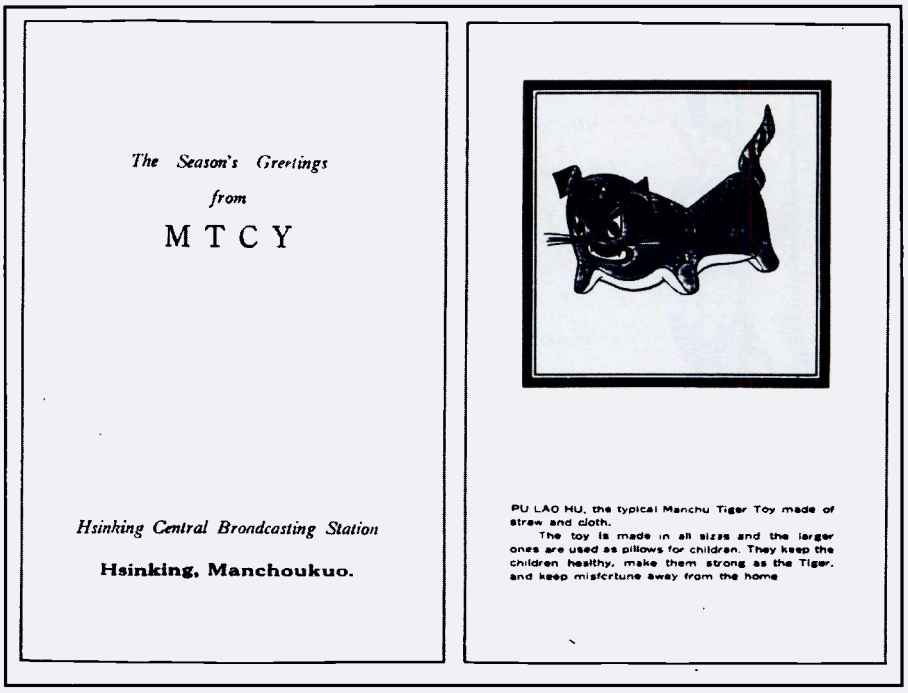
As soon as the U.S. dropped the atom bomb on Japan in 1945, Soviet troops invaded Manchuria, and Manchukuo was dissolved. Russia occupied Manchuria from 1945–46. Fighting broke out there from 1946–48 between Chiang Kai-Shek's (American supported) Nationalist Chinese troops and Mao Tse-tung's (Soviet-aided) Chinese Communist troops. Manchuria came under the complete control of the Communist forces in 1948, and Mao launched his successful sweep across the rest of China from there. Manchuria became incorporated into Mao's People's Republic of China.

Official CIA monitoring records of late 1947 indicate that, even though Japan had been out of Manchuria for three years, about half of the captured former MT&T mediumwave broadcast stations were



By early 1939, JDY was sending out this QSL. (Courtesy George Saunders, Calif.)

This 1940 QSL from MT&T station MTGY was similar to those sent out by all of the company's AM stations.



MT&T sent listeners this two-sided holiday greeting card in 1939. That critter on the right bears a vague resemblance to today's Pikachu. (Courtesy George Saunders, Calif.)

still in operation, though being run by the Chinese Nationalists! The station at Darien (ex-JQAK) had been shifted from 760 kHz to 1065 kHz. The former MTCY at Changchun (formerly Hsinking) remained on 560 kHz, but had new call letters, XQRA. Its shortwave broadcasts had been discontinued. Kirin's station with 50 watts on 765 kHz had been given the callsign XQDK. The station at Harbin (ex-MTFY) had been shifted from 674 kHz to 670 kHz. The station at Mukden (ex-MTBY) shifted from 890 kHz to 885 kHz and had a new callsign, XQPA. The 100 watt station at Chinchow on 955 kHz was given the call letters, XQDC. Former MT&T stations at other locations were reported as being inactive.

Records of 1955, however, indicate that these and all other previously extant stations in China had been phased out. Broadcasting was run by the Peoples Republic of China, and stations were known as *Radio Peking*. A *Radio Peking* mediumwave transmitter in Shenyang (formerly Mukden) was then operating on 980 and 1070 kHz, but it isn't known if this outlet was using the former MTBY/XQPA facilities.

Remember that Germany's network of powerful shortwave stations had originally been constructed at enormous expense in 1936. At the time, it was claimed these stations were needed to broadcast the Berlin Olympics to the world. Three years later, when Germany attacked Poland and France, their true purpose and great value as Axis propaganda tools was revealed. This made me wonder if MTCY's international broadcasts from Manchuoko were, as claimed, primarily intended to explain the Empire's existence. A mere 14 months after these broadcasts had begun, Japan became fully aligned with Germany, and an active participant in WWII. MTCY's popular shortwave facilities were there waiting to be immediately placed into service disseminating Axis war propaganda. Was it just a coincidence?

Hope you will be with us next time for another look into the forgotten nooks and crannies of radio history. We are always anxious to hear from readers with comments as well as column ideas. Our direct E-mail address is <Radioville@juno.com>. You can send snail mail to us at: Alice Brannigan, *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801. ■

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Basic Technology for the Amateur Radio Enthusiast

Table of Contents

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Interesting Thoughts And Ideas For Enjoying The Hobby

Ready For Worldwide HF Action? Gordo Tests All-Band HF Vertical Antennas

Whether you're a shortwave listening enthusiast, or a new amateur operator taking advantage of the restructured 5 wpm General class license, a single antenna and feedline that would cover all shortwave bands would be a nice thing to have on your roof, hidden in the backyard, or mounted on a patio cover where only the tip of the antenna might be seen from the front yard.

This month we will present the tests of **vertical multi-band antennas**. In upcoming months, we will show you the results of our horizontal dipole tests, long wires with tuners tests, and many other hidden wire configurations that cover the HF bands.

For shortwave reception, all of our vertical antennas worked out well in improving signal strengths from the AM broadcast band through 30 MHz. For reception purposes where no transmitting will take place, almost any conductive vertical radiator, fed with quality coaxial cable and a suitable ground plane, will work well. But don't forget the ground plane; if you were to run coax to a 30-foot long wire that goes straight up to an overhead tree branch without a good ground plane right at the point the long wire clears the braid, the entire coax would act as an antenna, and may pick up excessive noise inside your radio monitoring room. If you take the far end's braid and terminate it to the aluminum downspout, your vertical wire now has a "push-off point," and your radio receiver down below will be less apt to pick up nearby noise sources.

For those of you who may take advantage of the new restructuring rules that may allow worldwide ham operation with just a 5 wpm code test, you will be looking for a *resonant* vertical antenna, along with an associated ground plane, that will *resonate* on the following bands:

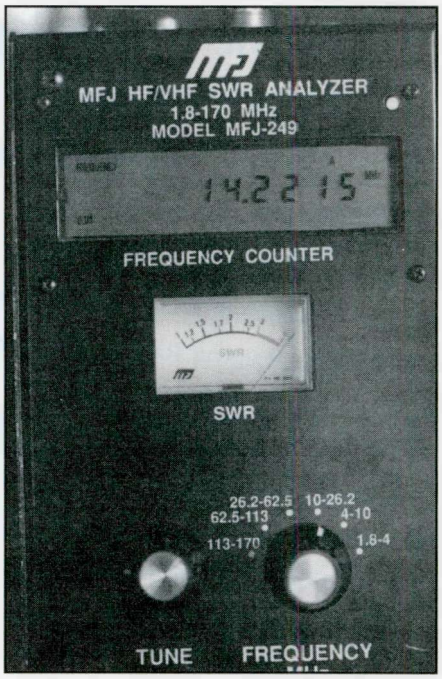
10 meters
12 meters
15 meters
17 meters
20 meters
30 meters
40 meters
75/80 meters

Now this is a lot to ask of an aluminum vertical antenna that is not much more than 20 feet in length. The capability of a resonant vertical antenna is to *eliminate* the need for any type of antenna tuner down below at the ham shack, or an expensive antenna tuner somewhere hidden under the eaves. The *resonant* vertical antenna uses matching networks that will either pass, block, or pre-tune specific bands without any moving parts, or any external tuner required. Each manufacturer has their own way of developing a multi-band resonant vertical for ham operation. I recently tested many of these antennas on my roof to see how well they performed, how easy or difficult they were to put together, and how good or ugly they looked from the street.

Hustler Multi-Band HF Verticals

My favorite is the 5-band trap vertical that looks the cleanest from the street in case you have antenna restrictions. The Hustler verticals are stout aluminum that barely bend in the wind, and have parallel resonant L/C traps that provide good efficiency, low SWR, and can handle 1,000 watts power. The 75/80 meter top section is really the mobile series loading coil, along with some not-so-obtrusive capacity hat appendages.

But the Hustler requires tuned ground radials for each band of operation. Hustler provides the specific lengths for each wire radial, or you can work it out yourself by the formula 468 ÷ frequency in MHz = length in feet and fractions of a foot. Two wire radials per band would be a minimum, and four radials per band exquisite. If you have an aluminum patio cover, you might try the aluminum cover beneath the vertical antenna as a substitute for the radials, and as long as the base of the antenna is right there at the aluminum patio cover, you will achieve a well-tuned antenna system. But if the base of the antenna is 2 feet higher, 2 feet lower, or 2 feet separated from the aluminum cover, chances are you won't get an effective match of your ground system.



Use an SWR analyzer by MFJ to tune your vertical antenna.

The Hustler 5BTV sells for around $160, and does not require monofilament guy lines. It is one of my favorites.

Cushcraft R7000

Here is another nice, trim, 24-foot tall, self-tuned, vertical antenna system. It uses traps quite similar to the Hustler, and seven short counterpoise rods eliminate the need for a lengthy ground radial system. There is a tuning "match box" at the base of the antenna that properly induces the currents up the shaft, and out into the airwaves with minimum SWR. But this wonderful little match box makes this a rather expensive antenna system — about $379, and comparative signal reports really don't show any skywave signal dif-

BY GORDON WEST, WB6NOA

ferences between the R7000 from Cushcraft and a comparable Hustler. But if you really can't lay out ground radials like you need to do with the Hustler, the R7000 is a terrific performer at a much higher price tag.

Butternut

Here is another 6-band *very efficient* HF antenna we have tested, measuring 26 feet tall. The three loading coil/trap assemblies are located down low so you don't see any strange open-air coils waving in the breeze near the top. However, the Butternut HF6V-X does use a small wire near the top that runs along the length of the aluminum radiator. It looks a little bit out of place and also tends to slightly pull the antenna to one side. The Butternut is relatively lightweight, and this tends to cause the antenna to swing back and forth if a little breeze picks up.

For grounding the Butternut, you can go with inexpensive ground one-quarter wavelength radials like the Hustler, or you can go for their $100 radial system that eliminates the need for a whole bunch of long wires running all over the roof. The price of the HF6V-X from Butternut is around $289, so again, $100 more than the similar-performing 5-band Hustler.

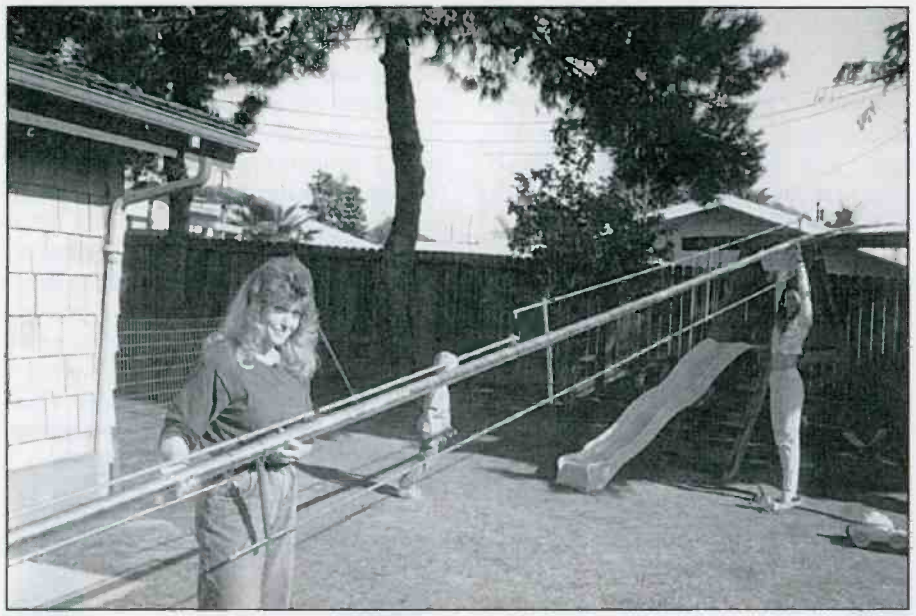
MFJ's Line-Up

The gang at MFJ recently purchased Hy-Gain, and the Hy-Gain 8-band AV-640 vertical is a great performer with a no-ground-radial system similar to Cushcraft. But instead of coils, the Hy-Gain 8-band vertical employs capacitive loading and quarter-wave stubs that can be seen on the outside radiating aluminum mast, and at the top as short capacitive rods. It's a rather stout antenna, so it doesn't move around much in the breeze, but is not quite as rigid as the low-priced Hustler. The Hy-Gain sells for around $350, so again, this is a relatively expensive vertical antenna with a proven track record.

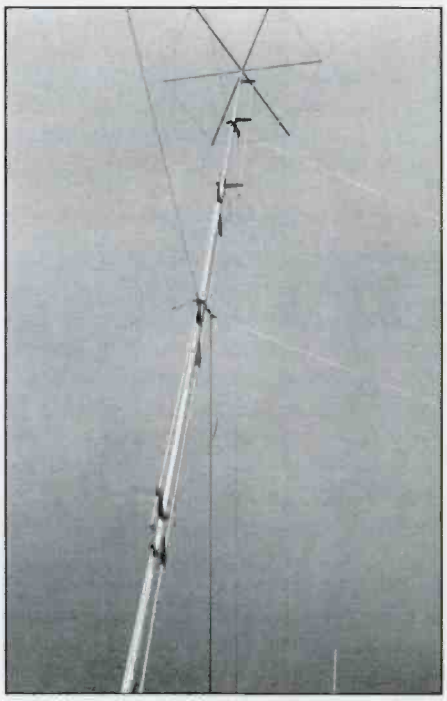
MFJ also makes a — catch this — 10-band, high-frequency plus 6-meter and 2-meter antenna with its own built-in ground radial system, and it sells for under $290. It's a massive collection of wires, rods, loop, and black box, that will take you a couple of days to finally figure out how to put together. I suggest you wear safety glasses because of all the things sticking up and out. But once you get it all together and tune it, it works very well. Because of its top-loading, it does sway in the breeze. But it also covers 6 and 2 meters, and is great in case you're also into scanning the VHF bands. It also does a nice job of receiving 460 MHz public safety signals! You can see it on the Web, along with all the other great MFJ products, at www.mfjenterprises.com. This is a very noticeable antenna.

GAP Antennas

Like MFJ, GAP sells direct, and to order GAP antennas, call 561-571-9922. GAP offers several styles of all-band vertical antennas, and I have tested the Titan DX that covers 10 meters through 80 meters, and stands 25 feet tall. It sells for just a little over $300, and like MFJ, it will take you a couple of days to put together and a couple of years for your neighbors to appreciate the looks. But despite its strange looks with no loading coils, it's a good, solid performer without the need of ground radials. They say that adding radials won't significantly improve performance, and they say that elevating the GAP also offers no significant improvements to its performance and range. This



Preparing a big GAP antenna for roof mounting.



The big GAP with its top capacity hat in place.

means you could hide it quite nicely in your back yard; and as long as you have a nice tall house, no one will see it except your neighbor over the back fence. Just tell him it's part of your clothes line.

The Best Performer?

All of these verticals offer omnidirectional, multi-band performance within one or two S-units of each other. Performance will change between the different verticals depending whether or not you're trying to work stations close in, halfway across the country, or that rare DX coming in over the poles. This means I really can't say that any one single vertical is much better than any other vertical for all situations. And any claim from a manufacturer that *their* vertical is *dramatically* better than all of the other verticals mentioned here has also been unfounded in my tests.

But I did make some interesting discoveries. Getting the vertical up to the highest point on the roof and in the clear really makes one heck of a difference. While some verticals can work quite nicely right at ground level, some of the signal may be absorbed by surrounding trees, and sometimes ground-mounting will increase the susceptibility of the antenna to hear noise coming out of your nearby computer and your neighbor's cable TV box. Getting the vertical up and away from any noise sources will certainly help.

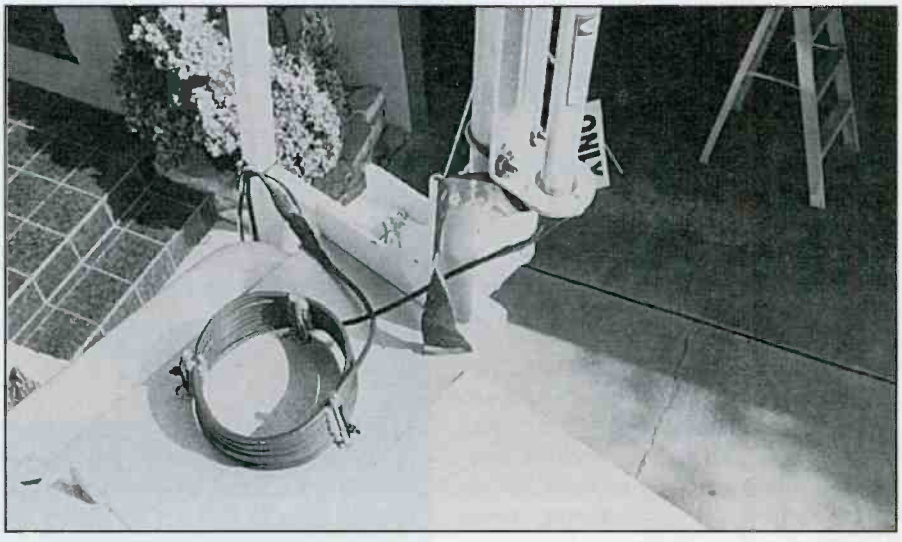
WARNING: STAY AWAY FROM POWER LINES. ANY VERTICAL CONTACTING POWER LINES MAY KILL YOU! WATCH FOR OVERHEAD WIRES! NEVER MOUNT A VERTICAL CLOSE TO POWER LINES. YOU COULD BE KILLED!

Now that I've said that, try to get the antenna up as high as possible; and if you have the capability of running one-quarter wavelength ground radials, two or three per band, chances are you'll have a relatively inexpensive and efficient radiating system.

Will any of these verticals do as well as a nice compact 15-foot boom beam? I've made the tests, and the answer is NO! I have never tested a vertical that has as much punch as a compact 15-foot or larger beam. But keep in mind that they don't make compact beams for 75 meters either!

If you're just starting out on the high-frequency bands, you may wish to start with the simple Hustler 5-band trap vertical, and make up your own small-wire radial system. You will be pleasantly surprised on all of the DX you are going to work; and if you mount it on the back side of your roof, hardly anyone around you will be any the wiser of your ham radio and shortwave hobby. Just watch out for those overhead dangerous wires!

Your local ham radio stores will have most of these verticals in stock, so look for our advertisers and log onto their Website, get to the antenna section, and see all what is offered. ■



The radial kit going in place below a five-band Hustler.

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the radio connection

A Look Behind The Dials

Building A Selective Crystal Set

I was about seven or eight years old and owned a Remco crystal receiver kit. It was a tiny plastic toy radio, yet only using a humble 15-foot antenna wire and a connection to the kitchen radiator it let me hear signals from WTIC and WDRC in Hartford, Connecticut, some 15 miles distant from my childhood home back in the late 1950s. No matter that someone standing on my roof would most likely see the transmitting towers — a radio that needed no batteries or other sources of power was purely magical!

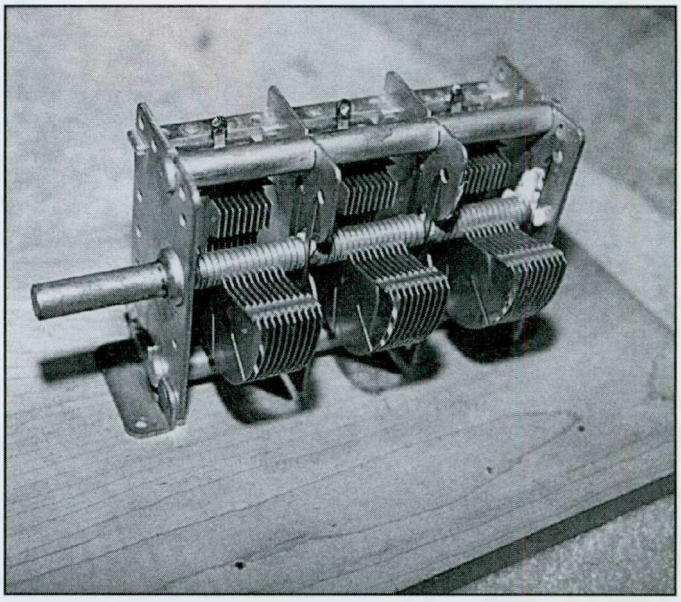
Crystal sets were never known for being overly sensitive or selective —indeed, a set that allows single-signal reception of two or three strong stations across the band is usually considered to be an outstanding performer! The reason is simple: most modern crystal sets are based on the same simple designs used back in the early 1900s when stations were few and far apart. Many of you were Cub Scouts during the '50s and '60s and probably had a chance to build the simple Cub Scout crystal radio kit that was so popular back then. Nowadays, crystal radio kits are still being offered by RadioShack and Vectronics. Unfortunately, while simple crystal sets are fun, they do little to inspire confidence in a crystal set's ability to do any serious AM DX work.

Nothing could be further from the truth. I will show you a few designs that are capable of hearing signals from distances of several hundred miles when used with a good antenna and ground system. Crystal set DXing is a sporting alternative, not a replacement for a serious communications receiver in your listening post! It simply adds a much more challenging dimension to hearing distant stations.

Let's Build One!

Our first crystal set project will be a single-coil design loosely based on a design by Mike Tuggle. Mike dubbed this set the Lyonodyne in light of its co-developer, Terry Lyon. My information on the Lyonodyne is based on two different copies of different Lyonodyne articles that were sent to me by a friend. I wish I could fully credit the original sources for this material, but I am sure at least one came from the Old Timers Bulletin published by the Antique Wireless Association. With some small changes, the set that will be shown here is basically similar to the original Lyonodyne receiver.

Crystal set performance is often gauged by the number of tuned circuits, hence 'coils,' which are used to provide selectivity. The Lyonodyne set uses a single coil in a unique circuit that offers surprisingly good selectivity. It is an unusually complex design for a one-coil set, and features numerous switches and controls for tweaking the most signal from a distant weak station. Later on, we will add a notch filter for eliminating strong local stations that interfere with reception of near-frequency weaker station and also a second tuned stage for even better selectivity.



Our three-stage tuning capacitor provides about 365-pF per section. Capacitors between 300 to 400-pF section are usable.

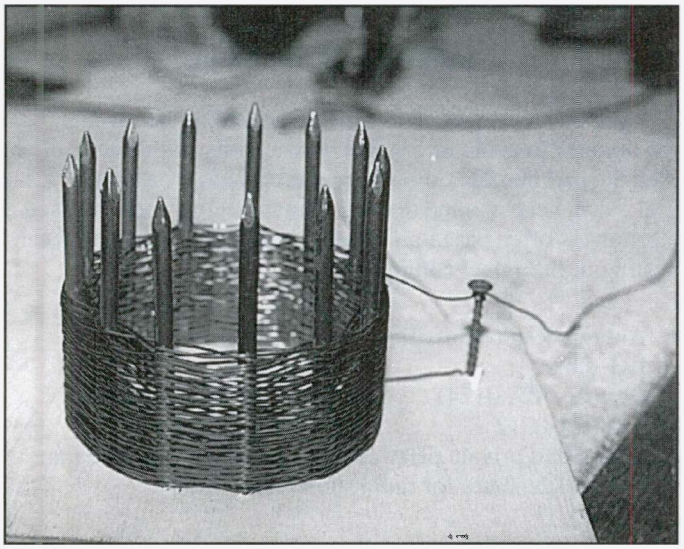
My favorite crystal set is a three-tuned stage design; it easily separates WBZ at 1030 and WBBR at 1130 kHz from nearby WTIC's 50 kW signal on 1080. I've logged dozens of DX stations across the Eastern U.S. and Canada using that set! Below 900 kHz, stations as close as 30 or 40 kHz have been resolved with careful tuning. Each of the three stages has adjustable coupling, tap positions for setting the optimum L/C tuning ratios, and antenna load coils for improved lower frequency performance. Unfortunately, the set's design is not easily reproduced since it is poorly documented and uses some exotic vintage components. I'll include some photos in a later column since it is a very interesting set.

Headphones

A set of high-quality vintage headphones is most important; your headphone sensitivity will make or break the best-designed set. Early Brandes headsets are probably the most commonly found vintage headsets, and by luck are also fairly decent performers. My favorites are three pairs of early Baldwin headsets I use exclusively for weak signal crystal set work. You can find vintage headsets on Internet auction sites, such as eBay, and also at local vintage radio meets and in the classified sections of Antique Radio Classified.

Ardent crystal set builders swear by homemade headphones using headpiece elements salvaged from old war-surplus sound-powered telephones; apparently the performance of their bal-

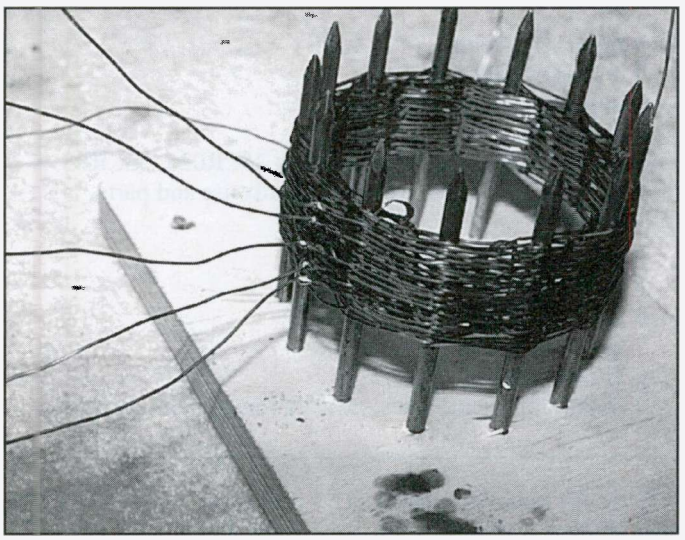
BY PETER J. BERTINI <RadioConnection@juno.com>



The 13-point form for winding the basket-wound coil is made from a square plywood base with 13 spikes spaced equally over the diameter of a 3-1/2 inch circle. The wire is wound over the outside of two nails, on the inside of the third, over the outside of the next two, over the inside the next one to produce a winding pattern that repeats every third turn. These coils are produced using forms with an odd number of points.

anced armature design offers unequaled sensitivity. These early headsets had DC resistances of around 2,000 ohms; that equates to an impedance in the area of about 12000 ohms (12K-ohms)! When buying vintage headsets, make sure the buyer will allow you to return them if the coils are open or if the magnets have become demagnetized.

Don't despair if you don't have ready access to vintage headsets. Inexpensive imported Kobitone ceramic earphones, carried by Mouser Electronics, can be ordered with 2.5-mm or 3.5-mm mono plugs, or with simple tinned leads and will work fine with crystal sets. For best results, you will need one earphone for each ear with the cords wired in parallel. The earphones with the basic tinned-leads are only $1.85 each, or $1.54 each when ordered in lots of ten! It's a good idea to order several at one time. Not only will you save some bucks, but these inexpensive devices are prone to failure from rough handling and normal wear; and having a large selection will allow you to pick-and-choose the most sensitive earphones for your crystal set project. Crystal or ceramic earphones must have a 47K-ohm resistor in parallel to allow diode current to flow for proper detection.



Once the 60 turns of number 20-enamel wire are completed, the coil is secured using lacing cord. Five tap positions are also added. These will be used for antenna matching, setting the tuning range, and detector impedance matching.

Impedance Matching And Headphones

We'll get into this in more detail in later columns, but one of the limiting factors in crystal set performance that is most often overloaded is the "loading" of the tuned circuits by the detector diode and headset impedance. Even the 12,000-ohm impedance of most early magnetic headsets requires audio matching transformers for the best possible performance — a subject that is rarely discussed in modern or vintage crystal set design. Fortunately, the inexpensive Kobitone ceramic earphones from Mouser have an impedance of over 20-Megohms, and are a perfect choice for our crystal set experiments, even if their sensitivity is not as good as could be desired. We'll discuss headphone impedance matching after we build our first crystal set and look for ways to further improve its performance.

Getting Started

The heart of the receiver is the coil and the tuning capacitor. These two components are very critical, and attention to detail in winding the coil will be amply rewarded later. In fact, it is fair to state that the exceptional results achieved by the original designers probably would be difficult to fully duplicate by most of us. The Lynonodyne was the culmination of several years' worth of experimentation and research by its designers. Nevertheless, even when using commonly available off-the-shelf parts performance, will still be far ahead of simpler mail order kits. The original Lyonodyne receiver used a three-section 365-mmFd (365 pF) tuning capacitor. Mike offered several suggestions for finding the most optimum tuning capacitor design for the Lyonodyne:

1. Each of the three stages should be 300 to 400 mmFd per section.
2. Preferred stator insulator material is glass, ceramic, Bakelite, or phenolic (in that order).
3. The rotor wipers should be brass or silver plate, with a pair of forks for each gang and they should be directly soldered to the frame.
4. In general, the larger the plate size and the spacing, the better.
5. "Straight-line" tuning designs are preferred (oblong plates with eccentric shaft mounting).

Alas, what is ideal is also rather impractical for the average builder reading this column. I only mention the *ideal* capacitor in case a more experienced builder just happens to have something that meets these criteria in his junk box. Mike noted that the capacitor that worked best in his set was an "ugly duckling" compared to others he had tried. Feel free to experiment if you have a variety of suitable candidates on hand. Don't worry. The suggested suppliers listed at the end of the column can supply

three-gang tuning capacitors and all of the other parts needed to build a Lyonodyne crystal set if your junk-box is lacking.

The capacitor I selected is a war-surplus item I've been hoarding for about 30 years; and it is certainly not the most optimum selection for this project based on Mike's criteria. However, it is probably very representative of what is most commonly available. If you want to keep to the original design, the most likely source for a capacitor meeting all requirements would be likely salvaged from an early TRF type receiver. Both Ocean State Electronics (part number BC15500 for 500 pF) and Antique Electronic Supply (part number C-V500-X3 for 500 pF, C-V365-X3 for 365 pF) offer three-section variables that are suitable for this project.

You could also use two capacitors. Two sections of the capacitor are paralleled and used to control the amount of ground coupling — with the most coupling (maximum capacitance) provided at the lowest BCB frequencies. This results in improved sensitivity at the lower frequencies, and less loading and improved selectivity at the higher end of the tuning range. A dual-section 365-mmFd capacitor could be used for sections C1c and C1b for the ground coupling adjustment; while a single section 365-mmFd could be used for C1c, the main tuning control. (These part numbers reference a schematic that will be shown in the next issue). Having to juggle two caps does complicate the tuning, but it also gives the operator a bit more control of the ground coupling at any particular frequency the set is tuned. I suggest using a larger-sized knob(s), four inches or so, or better yet, a vintage vernier dial like shown on our Boy's First Receiver project for tuning.

The Coil

The amount of enjoyment delivered by a project is often related to the amount of work and skill needed to bring it to completion! The more handiwork you put into a set, the more you will get out of it. So, I intend to make our "Radio Connection" projects as challenging as possible. Let's take a look at how coil L1 is constructed.

Even more important than using a high quality tuning capacitor is the design of coil L1. Coil L1 is designed for a very hi "Q," that is minimum losses due to internal resistance. Ideally, crystal set coils should have a diameter approximately equal to their winding length for best results. The coil is wound with number 20-enamel wire in a basket-wound 3-1/2" diameter 13-point form. Use wire with heat-strippable insulation since several tap positions will be soldered to finished coil windings. (Hosfelt part number 36-374). The basket-winding technique minimizes the stray capacitance between adjacent coil turns and improves the tuning range. Basket-wound coils are rarely used these days, but they were very common in early battery sets dating from the 1920s.

You will need to make a form to wind the coil. I used a section of 5" x 5" square plywood for the form base. A 3-1/2 circle was carefully drawn on the surface using a drafting compass. At the same time, I also drafted several identical 3-1/2 inch circles on scrap paper. Next, 13 equally spaced points need to be marked around the circumference of the scribed circle. These are each 27.7 degrees apart, or roughly a little over 13/16" apart for a 3-1/2" diameter circle. Since setting the exact distance on the compass can be touchy, use the circles drafted on the scrap paper to test various compass settings until one finally produces thirteen equally spaced points.

Radio Parts Suppliers

Vendors are suggested as a convenience for our readers. We do our best to avoid errors, but please verify with the supplier that the part numbers shown are correct before ordering material. Also, keep in mind that the "suitability" of some part suggestions is often based on catalog descriptions and not bench testing of the actual components.

Antique Radio Classified
P.O. Box 2
Carlisle, MA 01741
978-371-0512
Dealer and private party ads for vintage electronic parts, vendor ads, dates for radio shows, and events.

Antique Electronics Supply
6221 South Maple Avenue
Tempe, AZ 85283
Tel: 602-820-5411
For headphones and variable capacitors, misc. hardware, and parts.

C and H Sales Company
2176 East Colorado Blvd.
Pasadena, CA 91117
800-325-9465
Lacing cable (part numbers M19501, 750 yds. waxed nylon); also surplus electronic parts, supplies, assemblies, optics, mechanical devices.

Hosfelt Electronics
2700 Sunset Blvd.
Steubenville, OH 43952-1158
800-524-6464
Heat-strippable magnet wire; 150 feet #20 AWG part number 36-374; misc. hardware, and parts.

Mouser Electronics
958 North Main
Mansfield, TX 76063-4827
800-346-7873
Kobitone earphones: part numbers 25CR025, 25CR035, 245CR06; also misc. electronic hardware and parts.

Ocean State Electronics
P.O. Box 1458
6 Industrial Drive
Westerly, RI 02891
800-866-6626
Variable caps, earphones, misc. hardware, and parts.

Once the board is marked, use a drill press to drill holes that will produce a snug fit for a large-sized nail at each of the 13 points. Mike Tuggle suggested using number 16 nails, but I used a much larger size. I'll have the local hardware store "size" them and report back in the next column. Each nail must be snug and perfectly perpendicular to the board's base. Once the form is

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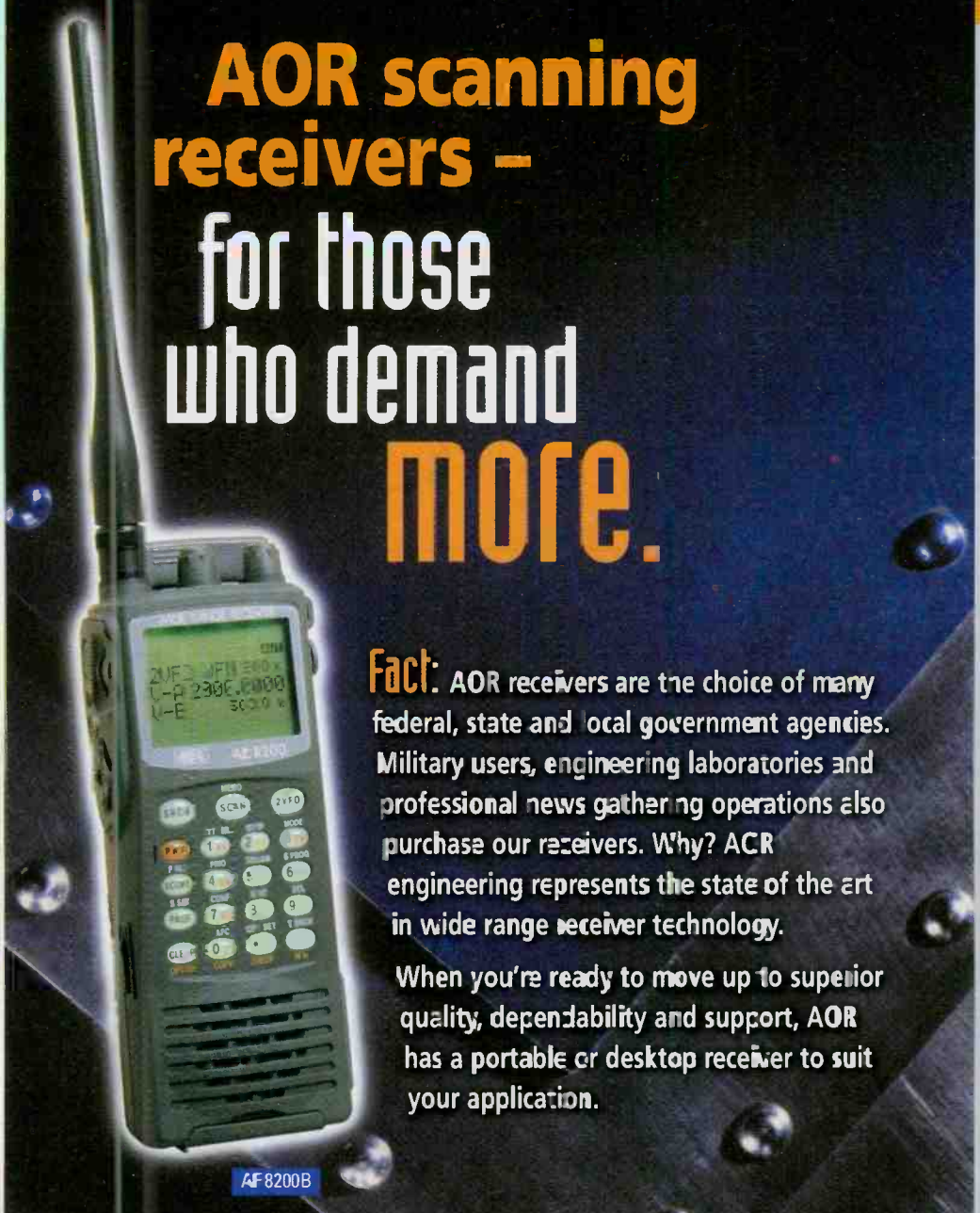

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- 8.33 KHz airband step is correctly supported
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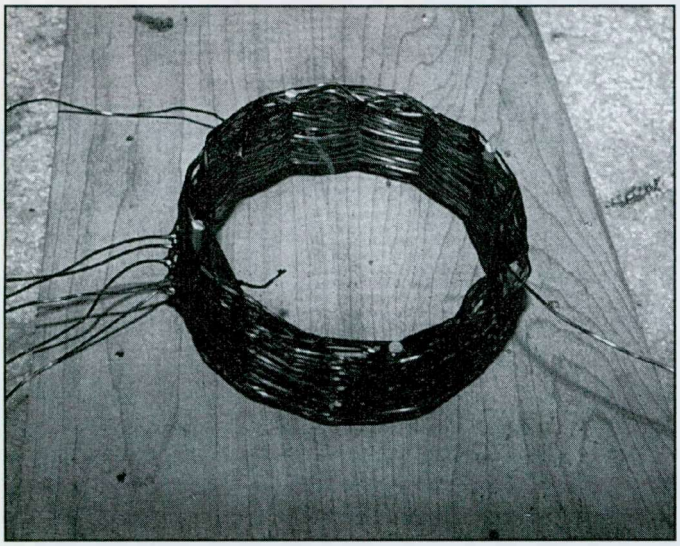


The coil free of the winding form. Several 1/8" sections of wood dowel are inserted in the windings to stiffen the coil assembly.

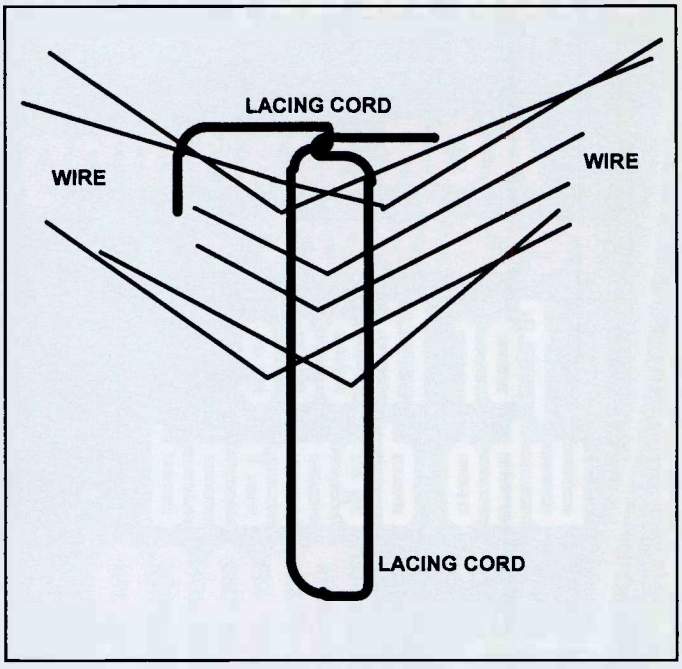


Figure 2. Coil is laced at the "X" winding crossovers to strengthen the coil form shape.

made, you may begin winding the wire. Begin by running the wire over the outside of the first two nails, then on the inside of the third, followed by the outside of the next two (Figure 1). Keep winding following this "over two, under one" pattern until about 60 turns are completed. If you are doing this properly, for every third turn the winding pattern will repeat, and no two adjacent turns will match. Keep the wire fairly tight while winding the coil to produce a nice tightly wound coil, and be careful not overlap any of the windings.

Don't be in a rush to remove coil from the form when it's finally finished. First, you should lace and tie the turns as shown to prevent the coil from unraveling or losing its shape when free of the winding form. If lacing cord is not available, use something similar, such as the heavy thread used for sewing on coat buttons. Note that the lacing cord loops through the "X" crossover points of the coil windings and that the loops are secured at each "X" crossover (Figure 2). My coil is roughly 60 turns, and I wanted to add five tap positions. At about every 10th winding, I added a tap-off position by tinning the wire using a very hot 47-watt soldering iron and soldering on a 4" wire lead. It is best to use the recommended heat-strippable wire to keep this job manageable. The exact tap positions are not extremely critical, so don't worry if you end up off by a winding count or two at any of the tap positions. It's more important to select tap points that are easily soldered to, than exact positions that end up being impossible to reach with a soldering iron. Likewise, don't worry if your coil ends up being a few windings more or less than 60 turns. The large tuning capacitor and numerous tap positions will more than cover the entire BCB plus some of the SW spectrum. The important thing is to wind the coil with snug and neatly wound windings. While winding the coil, take pride in reliving the craftsmanship and skills honed by pioneer radio set builders well over 80 years ago.

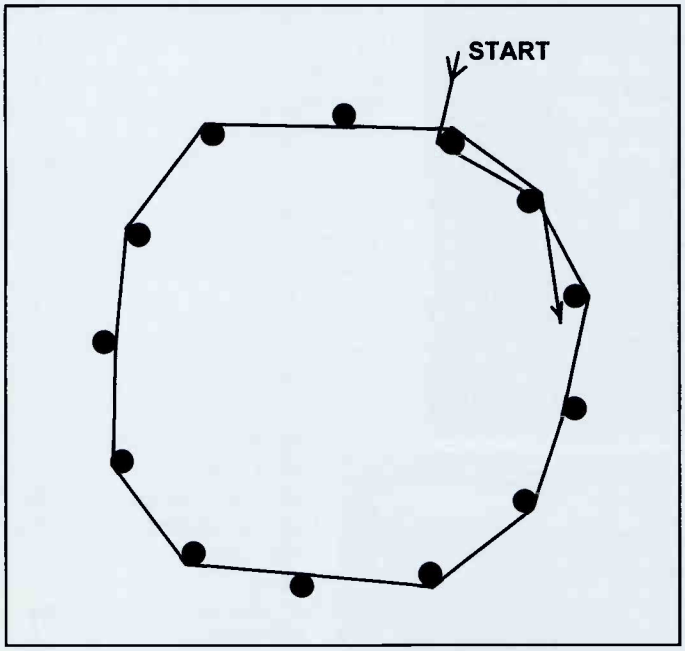


Figure 1. The basket winding is done by winding the wire over the outside of two nails, then on the inside the next nail, followed by the outside of the next two nails, then the inside of the next nail until 60 full turns are finished. For a 13-point form, every third winding repeats the pattern.

After It's Wound

After the coil is wound, tapped, and secured with lacing cord, carefully work it free of the 13-point nail winding jig. Once my coil was free of the jig, I inserted 1/8" diameter wood dowels at four points on the coil form to give it added strength. Large size toothpicks could also be used to reinforce the coil. Place the coil in a safe place until we're ready to install it.

That's it for this month. Next month, we will be mounting the coil and tuning capacitor, and I will be covering the final items and the steps needed to finish building the basic version of the Lyonodyne Crystal Set. ■

clandestine communiqué

Tuning In To Anti-Government Radio

Radio Free Chechnya's Current Schedule, And The Latest Anti-Castro Lineup On WRMI

Here's the current schedule for the new **Radio Chechnya Svobodnya** (Radio Free Chechnya), programmed by the Russian government and aired over transmitters at St. Petersburg: 0300–0600 on **5935**; 1830 to 2100 on **7305**; 0300–0700 on **7335**; 1430 to 2100 on **7340**; 1500 to 1800 on **7355**; 0630 to 1430 on **11635** and 0730 to 1400 on **15605**. The service should be reasonably well heard in the transmissions during North American evenings (0300 plus). Brian Alexander in Mechanicsburg, PA, has found this on 7335 at 0257 sign-on with test tones, "distinctive" instrumental IS and ID sequence at 0300 and again at 0400, talk and brief news breaks. Brian suggests using LSB mode to avoid interference from CHU. He also spotted them on **11635** at 0621 sign-on after running test tones. This was a very good signal and in parallel with 7335. If you hear it, let us know.

The Voice of Tibet is aired via various transmitter sites, in Tibetan and other local languages, from 1215 to 1300 on **9910** and **15645**, and 2315 to 0000 on **9920** and **15685**. This is also relatively easy to hear in North America. The address for reception reports is Wellhavensgat 1, 0166 Oslo, Norway.

La Voz de Alpha 66 airs Monday through Friday at 1030 and 0000.

La Voz de la Fundacion is on Monday to Friday at 1100 and 0100, Saturdays at 1100, and Sundays at 0000.

Foro Militar Cubano is aired at 2000 Saturdays and 1500 Sundays.

Conversando entre Cubanos is broadcast at 0100 Saturdays and 0230 Sundays.

Radio Revista Lux is on at 0200 Saturdays and 1700 Sundays.

La Nueva Voz de Cuba airs on Sundays.

All of the broadcasts are in Spanish. WRMI will usually issue its own QSL confirming reception of the individual broadcasts, if requested. Write to WRMI, Radio Miami International, 8500 S.W. 8th St., Suite 252, Miami, FL 33144. Be sure you enclose one unit of first class postage.

Brian Alexander found the Colombian FARC guerrilla station, **La Voz de la Resistencia** on **6261.25** from 2215 tune-in to sign-off at 2231, airing folk music, with talks, IDs, TV theme music, including the one for the "Dallas" TV show. They closed with an anthem. Six megahertz conditions aren't good enough this early the further one is from the East Coast. Chances for a log are as good or better during their morning transmission around 1130. Note that the frequency tends to wander.

A new Kurdish clandestine is the **Voice of the Kurdistan Toilers**, the station of the Kurdish Toilers Party. It operates on **4250** from 0400 to 0430 in Kurdish and 0430 to 0500 in Arabic. Also from 1600 to 1700 daily, with the same language split.

Harim Radio is the Voice of the Regional Government of Iraqi Kurdistan, operating on **4085** from 1430 to 1530. It is backed by the Kurdish Democratic Party (KDP) and broadcasts in Kurdish and Arabic.

The 4085 frequency is also used by the KDP for broadcasts of its own Voice of Iraqi Kurdistan, which is on the air from 0350 to 0600 in Kurdish and Arabic and 1615 to 1800 in Kurdish only.

Another new one is **Radio International** (a rather vanilla name for a clandestine!) which is broadcasting in Persian (Farsi), directed to Iran. The schedule seems to be from 1730 to 1800 on **7520**, although this may not be daily. Apparently, the broadcasts come from a site in Tajikistan. The station (or representatives thereof) can be reached through this address: BM Box 1499, London WC1N 3XX, England.

Rainbow Radio, beamed to Ethiopia, is currently scheduled for Sundays at 0100–0159 on **6155**, 1000–1059 on **5995**. Also Thursdays at 1600–1659 on **15105**. All of these transmissions are via Germany's site at Julich.

The Voice of Oromo Liberation's current schedule is Sundays and Thursdays from 1700–1800 on **15105**, also via Julich.

The Voice of the Tigers, operated by the Liberation Tigers of Tamil Eelam is active from 0130 to 0300 on **7460**. This one uses very low power.

The anti-Sudanese Voice of Sudan is currently on the air from 0400 to 0600, 1200 to 1400, and 1600 to 1800, using **8000, 9520/9517, 10000, and 12000** in Arabic. The station is run by the Sudanese National Democratic Alliance and has an address of 16 Cameret Court, Lorne Gardens, London W11 4XX, England. Brian Alexander (PA) recently spotted an unidentified Sudanese-flavor station on **7999.94** at 0405 which was *not* the Voice of Sudan (which he located on 8000.76). This might have been the government-operated jammer which tries to bug the Voice of Sudan. He also heard the Voice of Sudan on new **9517.51** squeezed between stations on **9515** and **9520**. This was from 0400 sign-on and notes that reception was much better on the usual 8 megahertz frequency, specifically **8000.76**.

Anti-Vietnamese **Oue Houng Radio** is via KWHR in Hawaii (**9930**) from 1530 to 1630 daily except Sundays. The address is 2670 South White Road, San Jose, CA 95148.

Radio Gaalkacyo, based in the Somali town of that name, is one of the many small stations trying to make headway in the political confusion that is Somalia. This one is the work of Australian Sam Veron, who was also behind Radio Free Bougainville in Papua New Guinea. The station currently operates from 1600–1700 on **7012**.

That does it for this time, except to remind you that we always welcome whatever information you may turn up relating to the subject of clandestine broadcasting — whether it's a logging, a QSL, or other information you might run across about the various stations and their backers (schedules, locations, etc.). We can certainly use any illustrative material, such as copies of clandestine QSLs. Thank you for your continued interest and support. Until next month, good hunting! ■

BY GERRY L. DEXTER

cb scene

27 MHz Communications Activities

Idiocy At The Repair Bench, Horror And Trepidation At The FCC, And Cobra's New NightWatch 29 WX ST

This time, readers, I come bearing bad tidings: there's some crazy stuff going on in the world of CB radio that you need to be aware of, that could impact you, and that, perhaps, you can do something about. Recently, I spoke with a service technician at a national electronics firm that makes, among other things, CB transceivers.

"You wouldn't believe what we're seeing," he said. "The rig has come back to us because the customer keeps getting reports that it sounds awful. When we talk to the customer, the story is almost always the same: they took it to some repair shop to have it tuned up. The so-called technicians' only tools apparently were a screwdriver, a pair of diagonal cutters, and somebody's tune-up guide," the service technician reported.

"When we look inside the radio, we find the modulation limiter has been cut — sometimes in several places — the power has been turned up full, and the modulation has been maxed out. If you were to design a transmitter for maximum splattering, you could scarcely do a better job. And we're seeing this kind of butchery on almost every single radio that comes in for warranty work."

Some of the key signs of a good CB technician — one who can do a proper tune-up on your radio — include: the factory manual and schematics for the radio, an oscilloscope for examining the transmitter signal, and a frequency counter for aligning the rig's transmit, and receive frequencies. A superb tune-up shop may even have a spectrum analyzer for making sure that your tuned-up CB does not splatter at any frequency. Further, the modulation limiter should never, ever, be disabled.

When radios are butchered, the service technician told me, they produce enormous amounts of splatter, even when they are not running huge amounts of power. This means they are far more likely to get into your neighbor's phone, stereo, or television. Continual interference with these devices will eventually provoke complaints to the local authorities or the FCC. And that leads me neatly to the next point.

Cobra's new NightWatch 29 WX NW ST delivers classic Cobra performance, weather channels, and pleasing after-dark operation.

Horror And Trepidation At The FCC

In November, I decided to act on an urge that had been prodding me in the ribs for some time. So I called the Federal Communication Commission's Public Information Office and asked the following question: "When was the last time the FCC busted someone for intentional interference to CB Ch. 9?" I was curious about the answer because it is my understanding that the FCC is supposed to pay special attention to "hazard to human life" frequencies, those on which emergency transmissions take place. CB Ch. 9 is defined in the FCC rules as "may be used only for emergency communications or for traveler assistance."

After I left a message on the Public Information Office's voice mail, a woman from the office called me back and said that someone would call me soon about this issue. The answer, as you will discover, both astounded and shocked me. A "high-ranking official" in the enforcement bureau called. I won't give his name because after the interview was over, he said that all his comments were "on background," but you can find the name on both cigarette packs and a stock car racing series. I asked the question: "When was the last time the FCC busted someone for intentional interference to CB Ch. 9?"

"You don't understand," he said, "the real problem is the CBers. We get hundreds of thousands of complaints about CBers. They have to clean up their act." They use the CB instead of long distance telephone service. Some don't have local phones so they don't have to deal with the neighbors." He then went on to cite a litany of horrors. There was a case in Bellevue, Illinois, where a CBer was terrifying the neighborhood, another case where a CBer wouldn't stop interfering with a phone, so a neighbor could call an ambulance for her husband who had suffered a heart attack.

"CBers have to become more human," he said.

I asked about situations in which CBers are running *legal* stations with *legal* power and the interference is the result of consumer electronics failing to meet

BY JOCK ELLIOTT

"The performance of this radio is classic Cobra 29 — smooth audio on receive and crisp audio on transmit."

standards. He then said he was putting great hope in a bill before Congress that would put CB enforcement in the hands of local law enforcement.

He never did satisfactorily answer my original question, but as I reflected on his answers and his strident tone, the picture became clear. CB as it now stands, is a monumental irritation to the FCC. It's out of control, and the FCC has done little to get it back under control. In all likelihood, the FCC has done little to protect CB Ch. 9, a hazard to human life frequency. More than anything, the FCC would like to get this annoyance off their plate and on to someone else's. It won't solve the problem, but at least from the FCC's perspective, it will be gone.

There is a lot we can do, as CBers, to help ourselves. First, we can, indeed, clean up our act: run legal power and legal modulation. If you need more oomph to communicate locally, put up a directional antenna. I can highly recommend the Maaco 103 beam. It will mount on a TV rotor and can be strapped to many chimneys. It will improve both receive and transmit and add more punch to your signal than having ten times the power.

When you're running a completely legal setup, if someone comes knocking at your door, you can say, "Go ahead, inspect my station. You'll find that I am a good neighbor."

Second, we can organize. You could join the U.S. CB Operators Association on the Web at http://home.att.net/~uscb_association/. It costs nothing and could be just what we need for representing ourselves in the future.

In addition, we could become self-policing. If CB "1 percenters" are ruining CB in our towns or neighborhoods, perhaps we should track them down, turn them in, and then hold the FCC accountable for doing something about it.

Cobra's Nifty NightWatch 29

CB manufacturers seem to be on a hot streak for Stuff That Glows, and Cobra has joined the club with the NightWatch 29 WX NW ST. That's quite a name, and what the alphabet soup means is that this is a

Cobra 29 (the model that so many over the road drivers know and love) with seven weather channels, NightWatch technology (more about that in a moment), and Cobra's SoundTracker system.

This 40-channel, AM-only rig has a bunch of goodies that makes life easier for any CBer. There's a front-mounted microphone connector that makes mounting in or under the dash easier, a nice long nine-foot microphone cord, and the ability to use the CB as a public address system with a PA speaker. Tactile controls allow you to feel where a dial is in its rotation without taking your eyes off the road, which is always a good idea.

What sets this radio apart is the NightWatch fully-illuminated display. It consists of an electroluminescent panel that glows under an overlay. Switch it on and the lettering for each of the controls glows. Crank up the dimmer switch to the max setting and you'll see that the lettering glows brightly while the entire faceplate of the radio is faintly illuminated. In all, it is a satisfying effect that works well for finding the control you want, when you want it, as you are trying to put miles behind you on a "dark and stormy night."

Let's take a guided tour of this new rig. It measures 8-5/8 inches deep by 7-9/32 inches wide by 2-13/16 inches high. At the upper left corner of the front panel is a meter for measuring transmitted power, received signal strength, and SWR. Immediately to the right is a three-position switch for selecting meter function. Next to that is the noise blanker/automatic noise limiter switch, followed by a switch for choosing between CB and public address function, and then a switch for selecting CB or NOAA weather channel operation. Moving to the right again, there is a switch for normal operation or instant Channel 9 or instant Channel 19. These are followed by LEDs for indicating transmit and receive and weather channel operation. Below these LEDs is a button for activating the SoundTracker system. At the upper right of the front panel is the channel indicator.

Beneath the channel indicator, in the lower right corner, is a larger channel selector knob. Next to it is the SWR calibration knob, followed by a knob for selecting one of seven weather channels, the NightWatch on/off/dimmer knob, a concentric knob for RF gain and Dynamike control, and finally a concentric knob for controlling volume and squelch. On the back panel of the rig are an antenna connector, power connector, and connectors for a PA speaker and an external speaker.

A couple of features deserve special mention: the radio receives weather alert tones *even if the rig is turned off* or if the rig is in CB mode, so long as there is power to the rig. This means that you can be driving down the road listening to other drivers, and if the weather service issues an alert of threatening weather, you won't miss it.

The performance of this radio is classic Cobra 29 — smooth audio on receive and crisp audio on transmit. In addition, the SoundTracker system, when activated, can provide a noticeable reduction in noise on receive and, in certain situations, can help to boost transmitted audio.

In all, this new Cobra NightWatch 29 WX NW ST might be called "the traveler's friend." It's a great radio for staying in touch on the road, and NightWatch makes it even better for after-dark operation. Suggested retail price of this new CB is $149.95. ■

how I got started

Congratulations To Nick Ferrari Of Canton, Ohio!

A look inside Nick Ferrari's radio shack.

Popular Communications invites you to submit, in about 150 words, how you got started in the communications hobby. Entries should be typewritten, or otherwise easily readable. If possible, your photo (no Polaroids, please) should be included.

Each month, we'll select one entry and publish it here. Submit your entry only once; we'll keep it on file. All submissions become the property of *Popular Communications*, and none will be acknowledged or returned. Entries will be selected taking into consideration the story they relate, and if it is especially interesting, unusual, or even humorous. We reserve the right to edit all submitted material for length, grammar, and style.

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to *Popular Communications*. Address all entries to: "How I Got Started," *Popular Communications*, 25 Newbridge Road, Hicksville, NY 11801 or E-mail your entry to popularcom@aol.com, letting us know if you're sending photos. If you're E-mailing photos, please send them in a separate E-mail with your name in the "subject" line.

Our April Winner

Pop'Comm reader, Nick Ferrari of Canton, Ohio, says, "My interest in radio started the year I graduated from high school in 1935; I was 19 years old then, and now I am 82. I started building one and two-tube sets with hand-wound plug-in coils for different frequencies. I built at least a dozen receivers. Later, I purchased professional receivers, such as National, Hallicrafters and Howard.

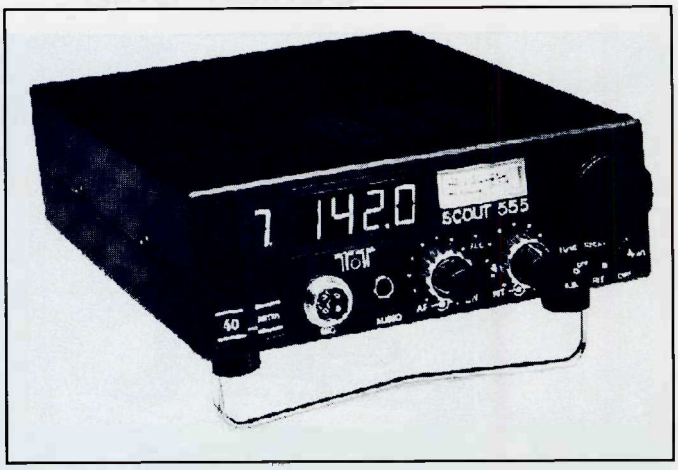
My first transistor radio was a Lafayette HA-600A that I still own. I now have a Kenwood R-2000 and a Realistic 200-channel PRO-2022 scanner. I've logged many foreign stations, but being a native Italian, I listen a lot to RAI Italian Radio. In my retiring years, I enjoy my hobby more than ever and *Pop'Comm* helps a lot." ■

the ham column

Getting Started As A Radio Amateur

Radios And Road Trips

Just in case you've been asleep for a decade or so, HF mobile operation is better, cheaper, and easier than ever before. That's especially good if you're on the go, suffer from antenna restrictions, or endure pesky RFI problems at your home shack. Ham radio can be a constant companion on cross-country runs or daily commutes to the office. Contesting, ragchewing, DXing — whatever. Today's mobile hams do it all!



Ten-Tec's Scout isn't flashy, but it's probably the only mobile rig made that's truly easy to use when you're cruising down the boulevard and splitting your attention eight ways from Sunday. The compact 0–50 W rig uses plug-in band modules (available for all bands 160 through 10) instead of a conventional bandswitch. What it lacks in frequency agility, it makes up for in all-around good performance and ease of use. Check out Ten-Tec's complete line at <www.tentec.com>.

Mobile Reality

For all their glitter and apparent innovation, most mobile ham stations use vertical antennas worked against the body and frame of a car or truck, which serves as the RF ground. As with ground-mounted verticals, the size of the radiating element and the quality and size of the RF ground determine the overall effectiveness of the antenna system. Big radiators and big RF grounds mean big signals, and vice-versa.

Unless you drive a 40-foot RV, this imposes certain restrictions. At 2 meters and up, where car bodies are more than a wavelength in size and whip antennas are a quarter-wavelength or longer, mobile installations are typically efficient and represent little or no compromise when compared with typical base station antennas mounted at the same height. At HF, however, efficiency falls dramatically. At 80 meters, for example, car bodies are a fraction of a wavelength, as are mobile whip antennas. No matter where you mount them, physically small antennas with poor RF grounds don't radiate powerhouse signals. This doesn't mean that lower-band operation is impossible, but it does mean that you have to "do things right" to be successful. Luckily, antenna performance increases with frequency, so if you want an easy introduction to mobile hamming, start out on the upper HF bands and leave the low-frequency stuff for later.

Mobile Hardware

Technically, just about any radio that can be powered by 13.8 Vdc can be made to operate in a mobile environment, but unless you're driving a Lincoln Continental, you'll have better luck with today's mini mobile rigs. Mini mobile rigs from Alinco, Yaesu, ICOM, Ten-Tec, and SGC are wildly popular. Most cover HF, VHF, and even UHF bands with digital readouts and lots of bells and whistles. About the size of a car radio, these rigs are easy to find space for on a crowded dashboard. All have conventional mobile mounts and some have detachable "control heads" that allow the bulk of the radio to be mounted under the seat or in the trunk.

Before getting started, plan your installation thoroughly and read *Everything You Forgot to Ask About HF Mobileering*, by Don Johnson, W6AAQ. Don has forgotten more about the subject than most of us will ever know. The book costs $8 and is available from your favorite ham radio dealer or Worldradio Books in Sacramento, California. If you're serious about mobile hamming, do yourself a favor and get a copy before you begin! Where to mount the radio depends on its size, whether it has a detachable head, the type of vehicle it's being installed in, and so on. Older rigs require more space and more robust mounts. Newer rigs are tiny and lightweight. I use a home-brewed hook-and-loop mount and quick-disconnect cables to allow me to quickly remove the radio for storage or service in my home shack.

The exact routing of the power and antenna leads also depends on a lot of variables. Finding a way through the firewall probably won't require any drilling. In most cars and trucks, you can pop out a grommet or piggyback on the same hole used by a hose or cable. If you do have to drill, mark your hole carefully and don't drill any deeper than necessary to avoid hitting wires, hoses, or ducts.

Whatever your rig, whatever your vehicle, your first tasks are to mount the radio securely and position it to allow easy operation while underway; run a pair of *heavy-gauge* power supply wires from the cockpit-mounted rig *to the vehicle's battery*; find a sturdy, low-resistance chassis ground point *as close to the rig as possible;* and run a coaxial cable from the rig to the antenna mount.

Power Cables, XCVR Grounds

Even for 100-W transceivers, your power cables should be *beefy*. Use well-insulated, flexible power leads that are 8-gauge

BY KIRK KLEINSCHMIDT, NTØZ

or larger. The big cables will practically eliminate voltage drop and minimize RFI and noise pickup under the hood. Use a few inches of smaller-gauge wire to make the connections at the back of your rig.

The positive and negative supply cables should *each* be fused *at the vehicle battery*. And use clean, new, properly sized battery terminals when making your power supply connections. Don't jury rig connections that might pass more than a hundred amps of DC! Don't rely on the negative power supply lead or the shield braid of the coaxial antenna feed to provide a good transceiver ground. Connect a low-inductance braid or strap from the transceiver chassis directly to the nearest piece of frame metal. Drill a hole and install a ground bolt in the firewall, the metal dashboard frame, the floorboards, or the vehicle seat mounts. Don't use a long, meandering ground wire — just make it big, and make it direct.

Mobile Antennas

Choosing exactly where to mount your mobile HF antenna is your first antenna task. Performance-wise, mounting the antenna in the center of the vehicle roof is best. The trunk and hood decks are next, and the front or rear bumpers are tied for last place.

Antenna mounts come in all shapes and sizes. Some bolt directly to your car body, some attach to the lip of your car's trunk, and some use powerful magnets to hold your antenna in place — but they all simply provide a place to mount your whip antenna. The whip must be insulated from the car body and the coax shield must be connected directly to the car body/frame.

"The positive and negative supply cables should each be fused at the vehicle battery."

There are dozens of mobile HF antennas to choose from, but I'm going to mention only two here today. If you get the fever, be sure to investigate mobile antennas more thoroughly. W6AAQ's book is a great place to start.

Arguably, the best antenna for HF mobile newbies is a monoband whip. If you want a simple, inexpensive, and reasonably effective antenna, or if you want to operate on a single band at 20 meters or higher, consider Lakeview's line of Hamsticks (<www.hamstick.com>). These helically-loaded whips are easy to use and easy to tune, and models are available for every band from 80 through 6 meters. Hamsticks sell for about $25 each and they're compatible with most mobile antenna mounts. Performance on the low bands isn't spectacular, but from 20 through 6 meters, Hamsticks work fine and are an outstanding value.

". . . physically small antennas with poor RF grounds don't radiate powerhouse signals."

Antenna Grounds

Good RF grounds are *critical* for mobile HF performance. We've already talked about grounding the rig in the

cockpit. Now it's time to talk about grounding things at the antenna feed point and elsewhere.

Despite comments from well-meaning bystanders, every mobile antenna mount must have a good, low-impedance connection to ground — and that includes magnetic mounts! Without that connection to the vehicle body/frame, your RF performance will suffer tremendously. Bumper mounts and other direct-to-the-frame mounts usually provide an OK connection to ground, but even direct frame/body connections can usually be improved with the addition of a ground strap made from copper braid or strap. It might sound excessive, but reducing the resistance in the ground connection by even a small amount can dramatically improve antenna performance and help reduce or eliminate unwanted noise. The bottom line is, you can never have a ground connection that's too good.

Good Advice

Unfortunately, most mobile installations are pretty hostile. Your rig may encounter temperature extremes, voltage swings, mechanical shock, excessive humidity, and a host of other factors that aren't relevant at home. You may also have to deal with electrical noise from the ignition system, on-board computers, blowers, fans, defrosters, and so on. You may even *cause* interference to your car's electrical system! W6AAQ's book covers noise and RFI in detail, as does *The ARRL RFI Book*. If you have noise problems, be sure to follow up with one or both volumes.

"Unfortunately, most mobile installations are pretty hostile. Your rig may encounter temperature extremes, voltage swings, mechanical shock, excessive humidity, and a host of other factors that aren't relevant at home."

There's a lot to learn about mobile HF operating. Here are a few points to consider:

• An effective noise blanker is priceless. When shopping for a mobile rig, test noise blankers carefully and check out ham magazine product reviews to see how well the noise blankers work.

• Install a good-quality auxiliary speaker. Unlike the minimal speakers found in most rigs, a speaker designed for mobile work can pump out crisp, clear, loud audio without breaking up.

• Be safe, not sorry. Enthusiastic ham operators can easily cause an accident when tuning antennas, tweaking knobs, reading SWR meters, jotting logbook entries, etc. Drive first, operate second!

• Never use a cockpit-mounted antenna tuner to "match" your mobile whip. Mobile antennas are physically small and offer compromised performance at best. Don't waste precious decibels by using a tuner! If you require extreme frequency agility, get a screwdriver antenna or place an autocoupler at the antenna feed point.

• There are many excellent resources for mobile ops on the Internet. Try KA6WKE's HF Mobile Web Pages at www.qsl.net/ka6wke/hfmobile.html or WB6HQK's Mobile Antenna Shootout Results at http://people.delphi.com/cecilmoore/shootout.htm.

If I don't see you on the highways and byways, I'll see you next month. Send your QSL cards, questions, and letters to *Popular Communications*, "The Ham Column," 25 Newbridge Road, Hicksville, NY 11801. ■

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MFJ's exclusive *TelePrinterPort*™ lets you monitor any station 24 hours a day by printing transmissions on an Epson compatible printer.

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"World Radio TV Handbook" says MFJ 1024 is a *"first-rate easy-to-operate active antenna ...quiet... excellent dynamic range... good gain... low noise... broad frequency coverage."*

Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz-30 MHz.

MFJ-1024 **$139.95**

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MFJ-1020B **$79.95**

Rival outside long wires with this *tuned* indoor active antenna. *"World Radio TV Handbook"* says MFJ-1020B is a *"fine value... fair price... best offering to date... performs very well indeed."*

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as a preselector with external antenna. Covers 0.3-30 MHz. Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

Compact Active Antenna

MFJ-1022 **$49.95**

Plug this *compact* MFJ all band active antenna into your receiver and you'll hear strong, clear signals from all over the world, 300 KHz-200 MHz including low, medium, shortwave and VHF bands.

Detachable 20 inch telescoping antenna. 9 volt battery or 110 VAC MFJ-1312B, $14.95. 3⅛x1¼x4 in.

Eliminate power line noise!

MFJ-1026 **$179.95**

New! ***Completely*** eliminate power line noise, lightning crashes and interference *before they get into your receiver!* Works on all modes -- SSB, AM, CW, FM, data -- and on all shortwave bands. Plugs between main external antenna and receiver. Built-in active antenna picks up power line noise and cancels undesirable noise from main antenna. Also makes excellent active antenna.

MFJ Antenna Matcher

MFJ-959B **$99.95**

Matches your antenna to your receiver so you get maximum signal and minimum loss.

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Select 2 antennas and 2 receivers. 1.6-30 MHz. 9x2x6 in. Use 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

Dual Tunable Audio Filter

MFJ-752C **$99.95**

Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

High-Gain Preselector

MFJ-1045C **$99.95**

High-gain, high-Q receiver preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Push buttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18 VDC or 110 VAC with MFJ-1312, $14.95.

CW, RTTY, ASCII Interface

MFJ-1214PC **$149.95**

Use your computer and radio to receive and display brilliant full color FAX news photos and incredible WeFAX weather maps. Also RTTY, ASCII and Morse code. Frequency manager lists over 900 FAX stations. Auto picture saver.

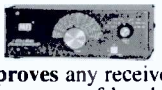
Includes interface, easy-to-use menu driven software, cables, power supply, manual and *JumpStart*™ guide. Requires 286 or better computer with VGA monitor.

High-Q Passive Preselector

MFJ-956 **$49.95**

High-Q passive LC preselector boosts your favorite stations while rejecting images, intermod and phantom signals. 1.5-30 MHz. Preselector bypass and receiver grounded positions. Tiny 2x3x4 inches.

Super Passive Preselector



MFJ-1046 **$99.95**

New! **Improves** any receiver! Suppresses strong out-of-band signals that cause intermod, blocking, cross modulation and phantom signals. Unique Hi-Q series tuned circuit adds super sharp front-end selectivity with excellent stopband attenuation and very low passband attenuation and very low passband loss. Air variable capacitor with vernier. 1.6-33 MHz.

Easy-Up Antennas

MFJ-38 **$16.95**

How to build and put up inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before. Antennas from 100 KHz to 1000 MHz.

MFJ Antenna Switches

MFJ-1704 **$64.95** MFJ-1702C **$24.95**

MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection. Good to 500 MHz. 60 dB isolation at 30 MHz. **MFJ-1702C** for 2 antennas.

World Band Radio Kit

MFJ-8100K **$69.95** *kit*
MFJ-8100W **$89.95** *wired*

Build this regenerative shortwave receiver kit and listen to signals from all over the world with just a 10 foot wire antenna. Has RF stage, vernier reduction drive, smooth regeneration, five bands.

21 Band World Receiver

MFJ-8121 **$39.95**

MFJ's new 21 Band World Receiver lets you travel the world from your armchair! Listen to BBC news from London, live music from Paris, soccer matches from Germany and more! Covers 21 bands including FM, Medium Wave, Long Wave and Shortwave. *Sony*® integrated circuit from Japan, multicolored tuning dial, built-in telescopic antenna, permanent silkscreened world time zone, frequency charts on back panel. Carrying handle. Operates on four "AA"s. Super compact size!

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Pop'Comm's World Band Tuning Tips

April 2000

This listing is designed to help you hear more shortwave broadcasting stations. The list includes a variety of stations, including international broadcasters beaming programs to North America, others to other parts of the world, as well as local and regional shortwave stations. Many of the transmissions listed here are not in English. Your ability to receive these stations will depend on time of day, time of year, your geographic location, highly variable propagation conditions, and the receiving equipment used.

AA, FF, SS, GG, etc. are abbreviations for languages (Arabic, French, Spanish, German). Times given are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 4 p.m. PST.

UTC	Freq.	Station/Country	Notes
0000	6000	Radio Havana Cuba	
0000	6155	NHK Radio Japan, via UK	
0000	7375	Radio Bulgaria	
0000	9470	Voice of Russia	SS
0000	9580	Radio Yugoslavia	
0000	11615	Radio Prague, Czech Republic	
0030	3310	Radio Mosoj Chaski, Bolivia	Quechua
0030	6120	Radio Vilnius, Lithuania, via Germany	
0050	11800	RAI, Italy	
0100	5940	Voice of Vietnam, via Russia	
0100	6536	Radiodifusora Huancabamba, Peru	SS
0100	7300	Radio Slovakia Int'l	
0130	3280	La Voz del Napo, Ecuador	SS
0130	6055	Radio Exterior de Espana, Spain	
0130	7275	Voice of the Islamic Republic of Iran	AA
0130	15425	Sri Lanka Broadcasting Corporation	
0145	6120	Radio Tirana, Albania	or 6115
0145	6280	Voice of Hope, Lebanon	AA/EE
0200	4885	Radio Clube do Para, Brazil	PP
0200	4980	Ecos del Torbes, Venezuela	SS
0200	6200	Radio Prague, Czech Republic	
0200	7180	Voice of Russia	
0200	11675	Radio Kuwait	AA
0200	11780	Radio Nacional Amazonas, Brazil	PP
0200	11865	Radio Canada Int'l	
0200	15140	HCJB, Ecuador	SS
0200	15365	Radio Sultanate of Oman	
0200	15575	Radio Korea Int'l, South Korea	
0200	17675	Radio New Zealand	
0230	3290	Radio Namibia	
0230	4845	Radio Fides, Bolivia	SS
0230	9845	Radio Netherlands, via Bonaire	
0230	9905	Swiss Radio Int'l	
0230	11710	Radiodifusion Argentina al Exterior	
0245	9495	Radio Sweden	
0245	11905	Sri Lanka Broadcasting Corporation	Unid
0250	6265	Radio Zambia	
0300	4960	Radio Vila, Dominican Republic	SS
0300	9165	Voice of Azerbaijan	Azeri
0300	9655	YLE Radio Finland	
0300	11655	YLE Radio Finland	
0300	15395	Radio Thailand	
0300	15470	Voice of Russia	
0330	9660	Vatican Radio	
0330	9835	Radio Budapest, Hungary	
0400	4819	La Voz Evangelica, Honduras	SS
0400	6105	Radio Universidad, Costa Rica	SS
0400	7245	Tajik Radio, Tajikistan	RR
0400	9517	Voice of Sudan	Unid
0400	9630	Radio Jordan	AA
0400	11585	Kol Israel	
0400	11690	Voz Cristiana, Chile	SS
0400	11760	BBC, via South Africa	
0400	11820	Broadcasting Service of Kingdom of Saudi Arabia	AA
0415	4919	Radio Quito, Ecuador	SS
0430	7500	Radio Moldova Int'l, via Romania	
0430	9705	Radio Mexico Int'l	SS
0430	9745	HCJB, Ecuador	
0430	9820	Radio Havana Cuba	
0430	9905	Swiss Radio Int'l, via French Guiana	
0430	11765	BBC, via Ascension	
0445	6165	Radio Netherlands, via Bonaire	
0445	9775	Voice of America, via Botswana	
0500	4770	Radio Nigeria, Kaduna	
0500	5025	Radio Rebelde, Cuba	SS
0500	6100	Deutsche Welle, Germany	
0500	6110	NHK Radio Japan, via Canada	
0500	7135	Radio France Int'l	FF
0500	7175	Voice of the Broad Masses, Eritrea	Amharic
0500	7255	Voice of Nigeria	
0500	9410	BBC, England	
0500	9435	Kol Israel	
0500	9445	Voice of Turkey	TT
0500	9495	Radio Sweden	
0530	4915	Ghana Broadcasting Corp	
0530	4950	Radio Nacional Angola	PP
0530	6115	NHK Radio Japan, via Canada	
0530	9420	Voice of Greece	
0530	9490	RTBF Int'l, Belgium, via Germany	
0530	17580	RTBF, Belgium, via Germany	FF

UTC	Freq.	Station/Country	Notes
0545	4815	RadioTV Bukina, Burkina Faso	FF
0600	4835	RTV Malienne, Mali	FF
0600	6080	Voice of America, via Sao Tome	
0600	7125	RTV Guineenne, Guinea	FF
0600	7250	Vatican Radio	
0600	9400	Radio Bulgaria	
0600	9580	Africa Number One	FF
0600	11515	Voice of Hope, Lebanon	AA
0630	6015	Radio Austria Int'l, via Canada	GG
0630	6940	Radio Fana, Ethiopia	Amharic
0630	9570	Radio Korea Int'l, South Korea	
0630	9575	Radio Medi-Un, Morocco	AA
0630	12095	BBC, via Cyprus	
0630	15515	Radio Australia	
0645	7180	Radio Norway	NN
0645	7255	Vatican Radio	
0645	9530	Radio Romania Int'l	
0700	4991	Radio Apintie, Surinam	local
0700	6005	BBC, via Ascension	
0700	6070	CFRX, Canada	relay CFRB
0700	6100	Radio Liberia Int'l	
0700	7290	Radio Rossi, Russia	
0730	5020	Solomon Islands Broadcasting Corp.	
0730	7260	Radio Vanuatu, Vanuatu	
0745	9870	Trans World Radio, Monaco	
0800	3290	Radio Centro, Ecuador	SS
0800	6030	CFVP, Canada	
0800	6185	Radio Educacion, Mexico	SS/EE
0800	11755	HCJB, Ecuador	
0830	9515	Radio Nova de Paz, Brazil	PP
0900	2410	Radio Enga, Papua New Guinea	
0900	3925	Radio Tampa, Japan	JJ
0915	13820	Croatian Radio, via Germany	Croat
0930	3350	South Pyongyang Prov. Stn, North Korea	KK
0930	4975	Radio del Pacifico, Peru	SS
0930	6090	Radio Esperanza, chile	SS
1000	4775	Radio Tarma, Peru	SS
1000	4783	Radio Oriental, Ecuador	SS
1030	4835	Radio Tezulutlan, Guatemala	SS
1045	6674	Radio Nueva Sensacion, Peru	SS
1100	3325	Radio Maya, Guatemala	SS
1100	3380	Radio Chortis, Guatemala	SS
1100	6798	Radio Ondas Rio Maranon, Peru	SS
1100	9590	Radio Singapore Int'l	
1100	9740	BBC, via Singapore	
1100	12095	Far East Broadcasting, Philippines	various Asian
1100	13605	BBC, via Singapore	
1100	25820	Radio France Int'l	FF
1130	9490	Radio Nacional, Venezuela	SS
1200	4725	Radio Myanmar, Myanmar (Burma)	local
1200	4755	Radio Republik Indonesia, Ujung Pandang	II
1200	4925	Radio Republik Indonesia, Sumatra	II
1200	7130	Radio Taipei Int'l, Taiwan	
1200	7145	Radio Pyongyang, North Korea	CC
1200	9965	KHBN, Palau	
1200	11940	National Radio of Cambodia	Khmer/EE
1200	21510	Radio Ukraine Int'l	
1230	4890	NBC, Papua New Guinea	
1230	5010	Central People's Broadcasting Station, China	CC
1230	9500	Radio Australia	unid
1230	15700	Radio Bulgaria	
1250	15775	Icelandic State Broadcasting Service	USB, Icelandic
1300	4895	Radio Malaysia, Sarawak	Unid
1300	6020	Radio Australia	
1300	7365	KNLS, Alaska	
1300	11980	KDSA Adventist World Radio, Guam	
1330	9715	Radio Tashkent, Uzbekistan	
1330	15240	Radio Sweden	
1330	17870	Channel Africa, South Africa	
1400	7405	China Radio Int'l	
1400	9670	Radio Veritas Asia, Philippines	
1400	17790	Radio Romania Int'l	
1430	13720	Adventist World Radio, via Russia	
1500	9525	Channel Africa, South Africa	
1500	9580	Radio Australia	
1500	13630	UAE Radio, Dubai, UAE	
1600	11570	Radio Pakistan	
1600	11690	Radio Jordan	
1600	15435	Radio Jamahiriya, Libya	AA
1600	15540	RDP International, Portugal	PP
1700	17780	Channel Africa, South Africa	
1715	15365	Radio Romania Int'l	
1730	13720	All India Radio	Unid
1730	15640	Kol Israel	HH
1745	13630	UAE Radio, Dubai, UAE	AA
1830	17695	Radio Vlaanderen Int'l, Belgium, via Germany	
1900	11990	Radio Kuwait	
1900	15190	Radio Pilipinas, Philippines	EE/Tagalog
1930	9022	Voice of Islamic Republic of Iran	
2000	7440	Voice of the Mediterranian, via Russia	
2000	9685	Radio Baghdad Int'l, Iraq	
2000	11715	Radio Algiers Int'l, Algeria	AA
2000	15150	Voice of Indonesia	
2000	15160	Radio Algiers Int'l, Algeria	
2100	11705	Radio Bulgaria	
2100	11830	Radio Anhanguera, Brazil	PP
2130	7105	Radio Belarus Int'l	
2130	9525	Voice of Turkey	
2130	9555	Broadcasting Service of Kingdom of Saudi Arabia	AA
2130	9570	Qatar Broadcasting Service	AA
2130	9625	CBC Northern Service, Canada	
2130	9735	Radio Sultanate of Oman	AA
2145	11605	Croatian Radio, via Germany	
2200	9695	Radio Rio Mar, Brazil	PP
2200	9780	Republic of Yemen Radio	AA
2200	9900	Radio Cairo, Egypt	
2200	9925	Radio Norway	NN
2200	11620	All India Radio	
2200	11720	Voice of the Islamic Republic of Iran	
2200	15170	Radio Exterior de Espana, Spain, via Costa Rica	SS
2200	15325	Radio Canada Int'l	
2200	17565	Voice of Greece, via VOA/Greenville	Greek
2230	9925	Radio Denmark, via Norway	DD
2230	11840	Deutsche Welle, Germany, via Sri Lanka	GG
2230	11975	China Radio Int'l, via Mali	
2230	15540	RDP International, Portugal	PP
2300	11335	Radio Pyongyang, North Korea	
2300	11660	Swiss Radio Int'l, via French Guiana	II
2320	11560	Adventist World Radio, Guam	CC

product parade

Review Of New, Interesting And Useful Products

MFJ's New Simplex Pocket Repeater™

Extend the range of any radio; 2-meter, 440 MHz, handhelds, mobile, or base! This easy-to-use unit just plugs in and records/plays back your 32-second message. It's perfect for when you and a friend are out of radio range; you can have your own private portable repeater within your neighborhood or when hunting, fishing, or on the road. During a disaster, your MFJ-662 can provide emergency comms when other repeaters are down.

The new MFJ Simplex Pocket Repeater™ works with virtually any radio in any mode or frequency in any ham band or business band. It's perfectly legal! The unit uses a 9-volt battery, or 9-15 Vdc or 110 Vac with optional MFJ-1312B ($14.95). The new Simplex Pocket Repeater™ is $79.95 from MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762 or call them at 662-323-5869 for more information. You can also visit the MFJ Website at <http://www.mfjenterprises.com> or E-mail mfj@mfjenterprises.com.

Got a Bearcat 220–245 scanner? Get MetroWest's new Mini-Max 500 charger.

MetroWest Mini-Max 500 Battery Charger

The folks at MetroWest have just released their new Mini-Max 500 charger for the Bearcat line of scanners — BC-220, 230, 235, and 245-XLT. Also supported is the Sportcat and PRO-90. The unit provides fully automatic charging and a rapid four-hour recharge (four times faster than Uniden charger and battery), housed in the same cradle shell Bearcat provided on models before the 245-XLT. The Mini-Max 500 also provides trickle charge mode for true 100% stand-by. The MetroWest package includes a 1500 mAh NiMh battery pack, which doubles the run-time of the 245 and nearly triples it on earlier scanners with 600 mAh packs!

The unit is only for use with NiMh batteries. (MetroWest also makes a Mini-Max 300 for NiCd battery packs). The new 500 is powered by a higher capacity wall transformer. For more information on the new MetroWest Mini-Max 500 charger, which sells for $55 ($80 with a 1500 mAh NiMh battery pack), contact MetroWest at 708-354-2125 or for sales 800-657-1475 or via E-mail Metrowest3@aol.com. Be sure to visit the MetroWest Website at www.metrowestscan.com. You can also write the company at 822 N. Spring, LaGrange Park, IL 60526. Tell them you read about it in *Pop'Comm*!

Ham Radio Operator's Guide From Sams!

New from Howard W. Sams is this book by Carl J. Bergquist. It's 320-pages long and covers ham radio A to Z. Bergquist writes the book from the perspective of a new user, while keeping the experienced operator in mind. Coverage includes getting your amateur radio license, a large section on equipment, ranging from antenna types to power supplies, education, contests, clubs, safety, as well as often-overlooked topics like jargon and etiquette.

Also included in this huge book are instructions for several exciting construction projects such as a field strength meter, antennas, a power distribution center, and other add-ons to dress up any ham shack.

For more information on the *Ham Radio Operator's Guide* by Carl Bergquist, KG4AIC, which sells for $29.95, call 800-428-7267 or visit the Howard W. Sams Website at www.hwsams.com. They're located at 2647 Waterfront Parkway, E. Drive, Indianapolis, IN 46214-2041.

Howard W. Sams has just released Carl Bergquist's Ham Radio Operator's Guide.

Howard W. Sams & Company has also just released their *2000 Annual Index*. It contains all the information needed to determine if Sams has the service data for the model of TV or VCR you're servicing. With over 4,200 Photofact® sets in print, you're sure to find what you need. Sams created Photofact® over 50 years ago, and continues the tradition today with 13 new sets produced each month. And as we always say, be sure to tell them where you read about the new Bergquist book!

Global Broadcasting Guide

The Association for International Broadcasting is marking Y2K with a great bargain for active international broadcast listeners worldwide. Effective with the December 1999 edition of the AIB's popular *Global Broadcasting Guide* (formerly the Global Radio Guide), prices are cut in half. It's a permanent two-for-one sale. SWLs can now get two editions — a full year — of *The Guide* for a new low price.

The Guide contains the schedules for English language broadcasts from some 85 international broadcasting stations

BY HAROLD ORT AND R.L. SLATTERY

worldwide, along with contact details for each station.

It's now possible to update the compact and easy-to-use *Global Broadcasting Guide* at any time via the AIB's Internet Website. Copies of *The Guide* will always be up-to-date within each broadcasting season! The new low price is $5.75, post-paid.

The *Global Broadcasting Guide* can also be ordered via the AIB's Internet Website at www.aib.org.uk, where you'll find an order form which that can be printed out and mailed to the appropriate AIB address.

While the Association for International Broadcasting is a non-profit, professional trade association for everyone involved in international broadcasting, they also have the interests of the listener in mind. Orders should be sent to Marbian Productions Int'l. (AIB), P.O. Box 41063, 2529 Shaughnessy St., Port Coquitlam, BC V3C 5Z9, Canada. Payment can be made by personal check (USA & Canada only) or by International Money Order, payable to Marbian Productions Int'l.

CCRecorder Is HOT!

The brochure from C. Crane Company says it's "The ultimate digital hard disk recorder." Amen. The brand new CCRecorder can record over 115 hours of great voice quality audio in monaural, and cassette-quality in full stereo for 15 hours! This is one hot radio accessory that we'll be reviewing in an upcoming issue of *Pop'Comm*, so stay tuned. In the meantime, here's the scoop on this truly great shack accessory.

Designed for long-duration mono voice or direct-from-your radio recording, it's billed as a "complex tool for the recording enthusiast." That's not to say it's complicated to use, but this is one piece of gear that you'll need to read the manual to use. It features a built-in microphone, plus two programmable line inputs, built-in speaker to monitor or play-back live recordings, headphone jack for listening or output to another recording device, QuickSetup feature that allows you to record many popular AM BCB radio shows in a few seconds (really!), keys to allow you to scan back or forward, mute/pause to stop playback or mute the recording session, ability to pre-program to record up to 16 events, storage of up to 240 separate recordings, 10-year lithium battery back-up to retain time, 90-minute sleep timer, and much more. You can even use the continuous playback feature that's great for background music and many other applications.

The new CCRecorder is a high-tech recorder that can store up to 240 separate recordings.

The CCRecorder comes complete with a power cord, built-in mic, radio patch cord, and a one-year warranty serviced by C. Crane Company, Inc. The 3-lb. unit, which sells for $449.95, operates on 110 Vac power only (adapter included) and measures (HWD) 4" x 4 1/2" x 9".

For more information on the CCRecorder, contact C. Crane Company, Inc., 1001 Main Street, Fortuna, CA 95540-2008 or call 800-522-8863. Visit them on the Web at ccrane.com. ■

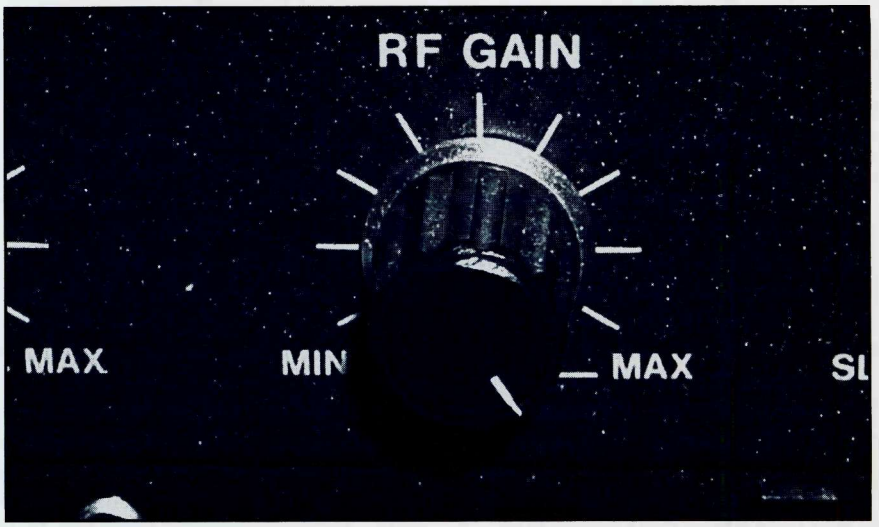
scan tech

Trunking, Tips, Techniques, And Mods

Scanner Features, Part II

This month we're continuing our series on scanner terms and features. And we tackle a couple of tough ones this month.

Look through the subheads, and if you already know all the terms, you can have the month off. We'll see you next time. In the meantime, let's jump right in where we left off.



More sophisticated receivers often include an RF gain control in addition to, or instead of, an attenuator. This reduces the amplification in the front end of the receiver and can help reduce interference. Of course, it also reduces sensitivity to weak signals, so you don't want to use it unless necessary.

The Dreaded dB

dB is a commonly used term and often misunderstood, so while it's not really a scanner feature per se, I thought it might be appropriate to include. If you're reading this paragraph, then it means that Ol' "What the heck are you talking about" Harold agreed with me and left it in.

The d part of dB stands for deci — one tenth. One tenth of a Bel is what the dB measures, so what exactly is a Bel? Bel is a measure of gain or efficiency expressed in a funny notation. If something is 10 times better than something else, or can amplify or produce 10 times more signal than something else, it would be one Bel better. Something 100 times better would be two Bels, so each zero adds one to the count, so to speak. Mathematics people will recognize this as a logarithmic scale, and that's exactly what it is.

So now, to confuse things a bit, but since we don't normally get as much as 10 times the amplification, a smaller, more graduated scale is in order, and that's where the decibel comes into play. Ten dB is equal to one Bel, or 10 times the amplification. Twenty dB would be two Bels, or 100 times the amplification. By using decibels, we can get some easy-to-think-of numbers that are meaningful. For instance, 3dB is about two times the efficiency, or if it's a loss, then -3dB would be about 1/2. 6dB is about four times the gain or efficiency.

Having said all that, it seems relatively simple. But there's a problem: the standard for measurement. In order to get a gain measurement of one thing over another, there must be two things to compare. But WHAT was the other thing compared to when you see published specs? That's where things get a bit tricky. There are some standards, but they're not always adhered to in the real world. By comparing to some other "adjusted" standard, you can make the dB figures much more impressive.

For instance, it's very common to see gain figures for antennas published in dB. The standards for comparison are an isotropic dipole (an antenna that doesn't really exist, but is a perfect dipole in an interference-free environment) or a standard 1/4 wave ground plane antenna, which would also have been affected by its environment. Often, however, there's no way to tell what the manufacturer used as a comparison.

This problem caused the AOL scanner conference group to come up with a new standard that makes most antennas look quite impressive. It's abbreviated dB-ws; dB over Wet Spaghetti. You can get so much gain by just switching to a metal antenna that even a 1/4 wave ground plane probably has 20 or 30dB of gain. But even then, there are problems associated with how wet the spaghetti has to be, and how do you connect it to the radio? This obviously sarcastic measurement helps underscore the problem with specifications in general. Most manufacturers aren't going to distort things this much, but it means *you have to take specs between two different manufacturers with a liberal grain of salt.* Comparing two models from the same manufacturer should be a reasonable thing to do.

Delay

Depending on how the two-way system that you're listening to is set up, the reply to a particular transmission may or may not take place on the same frequency as the original transmission. Put another way, sometimes the mobiles are on the same channel as the base, and sometimes they are not for a variety of reasons.

If the reply takes place on the same frequency, then it would be nice to have the scanner wait a second or two for the response before going off to find the next available activity. This feature is called *channel delay*, or simply "*Delay.*"

This is one of those basic functions that you shouldn't have to think about, but you do. Some radios out there don't have it, or have a universal delay setting. That is, you turn the delay (usually two seconds)

BY KEN REISS <armadillo1@aol.com>

on for *all* channels or off for all channels, but it is one way or the other. The ideal situation, and that's found on the higher-end units, is *channel selectable delay*, where you can choose which channels wait for the two seconds and which do not. If you listen to very many agencies (and are not on a trunked system), that's a very convenient feature.

This way, if you listen to some channels that are simplex (that is, the mobile and base units transmit on the same frequency without a repeater) there can be a delay on those channels. But other systems may use some form of repeater which builds in a delay, or worse yet, the reply might take place on a different frequency. On those channels, you probably don't want *any* delay so that the scanner can go in search of the reply as quickly as the first transmission ends.

More advanced radios go even a step further and allow you to set the *amount* of delay. This can be convenient if you find that two seconds is too much, or perhaps not enough. With some computer control systems, you can set the amount of delay per channel. While this might seem like a bit much, in reality some fine tuning on the system can make a real difference in the "continuity" of what you're hearing on the radio.

Hold Function

Scanners that feature a search function might also have a hold button. The idea is that as you're searching along and find something of interest, you might want to sit on that channel for a few minutes to see what else happens. The hold function will do just that. On some receivers, it's also used to temporarily hold or store the frequency so that you can move it to a permanent memory location. That's particularly useful if you don't have an autostore available, or choose not to use it.

Mode: NFM, WFM, And AM

The term mode refers to the *method of transmission*, using one of the standard, or not so standard transmission types. NFM is by far the most common, and refers to Narrowband Frequency Modulation. This is the method used by most of the public safety and business users in the bands we monitor.

WFM stands for Wideband Frequency Modulation, and is reserved, for the most part, for FM transmissions in the FM broadcast band, although there are a few government and military stations that use some form of wide, or at least wider than NFM transmission.

This receiver has the modes listed on buttons, but many just have one button labeled "mode" that steps through the choices. On a scanner, we'd expect to find AM for aircraft and NFM (Narrow FM) for public safety transmissions. Better receivers also have WFM (Wide FM) for reception of broadcasts and wireless microphones. Communications receivers sometimes include SSB (Single Side Band, a variation of AM) or USB and LSB (Upper and Lower Side Band) for use with special communications modes.

Finally, AM is short for antiquated . . .er, Amplitude Modulation. It's an older system and generally reserved for aviation band enthusiasts, both commercial and military. This is really a function of World War II, when radio was first added to airplanes. After the war, all the planes came back with AM radios in them, and the cost of conversion was simply too high, so they continued to use AM in all aviation applications. There is also the theory that AM will produce a whine, or heterodyne when two people transmit at the same time, which FM does not. That way, the tower could tell if two planes doubled with each other. That's an advantage of AM, but not the reason we're still using it for airplanes.

What the *mode function* does is to allow you to *switch modes on a given frequency*. For instance, the upper end of the 300-MHz range can be used in *either* AM or FM, depending on the service that's using the frequency in your area. Most of the low-end scanners pick a mode and stick with it, while higher-end units will have a mode switch to allow you to choose which method should be used.

As a side note, the SSB or Single SideBand modes of transmission are rarely used above 30 MHz, but some radios do feature this mode. They're usually labeled USB and LSB for Upper and Lower sideband. There are some modes in use around the country that can be received using these methods. In addition, some hams operate in these modes for weak signal and long distance operations. A scanner with these modes might be useful for that if you're interested in listening.

Beyond that, the reason you'd want to pay extra for a radio that has USB and LSB available is if that radio also ventures down into the HF shortwave portion of the spectrum. These so-called "Wide Band Receivers" cover not only the public safety frequencies, but also can receive shortwave and tropical frequencies where SSB is commonly used to save frequency space and enhance distance. If you're not interested in these types of communications, you won't want to pay extra for a radio that has them.

RF Gain

The easiest way to explain RF gain is to explain AF gain, which you already have but didn't know you did. AF gain is Audio Frequency gain — or the volume control. **RF stands for Radio Frequency** gain and controls the amount of amplification the front end of the receiver applies to the incoming signals. By reducing the amount of the gain, you can reduce interference from strong signals, but you do that at the expense of signal sensitivity. Most frequently found only on communications-grade receivers, a true RF gain

control isn't really necessary for most scanner applications. Related to RF gain, however, and very useful to scanner folks is an Attenuator setting, which we defined earlier.

S Meter

Some form of indicator of the strength of the received signal is a very desirable feature on any receiver. It is helpful to test antennas, or just to get some idea of how far away a signal might be, based on reception. And it's also useful to note if something changed. If you always hear your dispatcher at full strength on the meter and suddenly they drop to S7, there's something wrong somewhere. It could be they've made changes to a transmitter, or switched to a backup, or it could be your antenna got water in the coax last night, but it's a good indicator that you should check things out.

Unfortunately, signal strength meters are found only on the higher-end units, and many of them are an LCD bargraph indicating one to five units. This is much better than nothing, but it's not quite as convenient as a real *meter*. With a real meter, you can see slight changes which

A signal strength indicator is extremely convenient for testing antennas. It's also convenient to see the incoming strength of various mobile units (if not on a repeater) and have an idea of how far away they might be. Once reserved only for high end expensive communications receivers, more and more scanners are including some form of signal indicator.

is very convenient for tuning an antenna, or pointing it in the right direction.

The S unit, or Signal Unit, which is what an S-meter is supposed to measure, is also a distorted standard. The standard says that the receiver with no antenna connected should read S-0. That allows for the receiver's own internal noise and environmental factors to be subtracted before the signal measurement begins. Then each S-unit is supposed to be 6dB, or 4 times the signal strength of the previous S unit, up through S-9 or a total of 54dB. Then most meters indicate 10, 20, and sometimes 30 above that.

The problem is that most meters are not calibrated. So comparing one receiver to another is meaningless. The same signal through the same antenna might measure S-5 on one radio, but S-7 on another. Comparing *signal strength* on the same radio is valid. This is good for comparing relative signal strengths of various received signals, or comparing the performance of one antenna to another, but you can't compare across receivers. Sorry.

Real analog meters or LCD meters with enough steps to simulate an analog meter are only found on communications receivers. If you're not looking to spend that much money, you'll have to take what you can get, but some form of signal strength indicator is highly desirable.

Scanner Versus Communications Receiver?

Just what is the difference between a high-end scanner and a communications receiver? Well, in some terms, nothing. They're both receivers intended to pull radio signals out of the sky, and both probably cover about the same frequency range. Many of the VHF/UHF capable communications receivers are actually wide band units that also cover down into the 100- or 150-kHz range.

The difference lies in the intention of the receiver. A high-end Uniden scanner (one like the BC-9000 for instance) was intended mostly for scanning, and has many functions available to support scanning including alpha display, banks, lockouts, channel selectable attenuators, etc. Pretty much all the things we've talked about as being desirable for scanning.

A communications receiver on the other hand, might be able to scan, but the primary purpose is to have the best receiver possible. These units have very high specifications, but tend to fall apart a bit in the basics. Many of them make terrible scanners without computer control of some sort. Radios like the ICOM 7100 or the AOR 3000 for instance, really are able to scan almost as an afterthought. The 3000, for instance, can only scan one of its 100 channel banks at a time. The 7100 doesn't even have banks. Many of them don't have channel lockouts, or if they do, it's a bit of a chore to make it work.

So why bother? Well, the communications receiver has specifications that will blow most of the scanners away. Most scanners these days are fairly sensitive, so that's not as much of a factor as it used to be. But the communications receiver tends to be a bit more *selective*; the ability to hear one channel without being bothered by another channel close by.

Communications receivers also excel in the area of dynamic range — the abil-

ity of the receiver to hear one weak signal without being bothered by stronger signals on close-by frequencies. Most of our scanners can't do this, and so even though they may have the same sensitivity as another receiver, the real world operation of that scanner with strong signals all around us means that it won't be able to process the weaker signals we want to hear on a consistent basis. The communications receiver will.

An example of this problem is my local police, which have a transmitter that is about one mile from my house. That transmitter has to cover quite a distance, so it puts out a fairly strong signal: The voice of St. Louis County, as we affectionately call it. They transmit on 154.845. The north precinct of the county is on 154.875, about 25 miles away. On a scanner, I can hear the 154.875 transmissions IF 154.845 isn't on the air. As soon as that strong signal 30 kHz away comes on frequency, my scanner gets overwhelmed with the strong signal and the 154.875 transmission is lost — dropped below the receiver's ability to pull it out.

On many of the communications receivers that I've tested, this doesn't happen. On the better ones, 154.875 stays right where it is and nothing happens. On most, because the signal on 154.845 is so strong, you can hear a little bit of desensitization, or desense as it's commonly called. This sounds like the 154.875 signal has gotten a bit weaker . . . there's static on it that wasn't there before.

What's really happening is that the 154.845 transmitter's signal has gotten into the front end of the receiver a little bit and caused the receiver to turn down the amplification . . . it thinks it's now dealing with a strong signal. Same thing happens on the scanner, but to such a level that the desired weak signal actually disappears. It is this "dynamic range" that really separates the two types of receiver.

I hate to draw lines, because as soon as I do, someone will remind me of an exception to the rule. However, in order to help you see where the distinction is drawn, let's put an artificial barrier at about the $800 level. Above that price point, you're probably getting a fairly sophisticated piece of equipment that will meet most, if not all, of the requirements of a communications receiver. Below that price point, you probably have a high end scanner. I know somebody's gonna say "what about . . ." and you're right. But as a quick and dirty judgement tool, this should work with today's market.

If you're really interested, we did a more extensive discussion of this topic way back in the June '98 — you remember — last century . . . the good ol' days? If you don't have the back issue or have other questions, don't hesitate to write. When we get enough questions, we'll address the issue again.

Your Input Needed!

Well, we're done for another month. Once again, I hope you've found the definitions useful or informative, or perhaps even both. We'll be back next month with the third and last half of this continuing series on scanner features.

In the meantime, if you've got a question or information you'd like to share, don't hesitate to write. I can be reached at armadillo1@aol.com, or via traditional methods at Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126. Until next month, good listening! ■

broadcast dxing

DX, News And Views Of AM And FM Broadcasting

Callsign Actions Are Back!

Due to the overwhelming feedback received from our readers, the monthly listing of station changes returns to "Broadcast DXing." Thanks to all who sent letters and E-mail. The callsign actions released by the FCC Mass Media Bureau will be listed each month, along with facilities changes as warranted. However, if you can't wait for the latest edition of *Popular Communications* to arrive, then here's how to check out the latest information for yourself at the FCC website.

The FCC's new Portals office building shown on their Internet home page.

As a part of their 5-year plan to streamline and speed up the delivery of services, the FCC maintains a website with links to such things as application forms, public notices, and E-mail contacts. FCC Chairman William E. Kennard envisions a paperless FCC with on-line E-filing. The goal is for the FCC to be able to respond to emerging technologies more efficiently. Some changes are already in place. Application forms for broadcast station licenses and construction permits can be printed off of the website. Callsign reservation and authorization can now be completed entirely through the Internet.

More of interest to DXers are the public notices released by the FCC's Mass Media Bureau. According to the website description, "The Mass Media Bureau regulates AM, FM, and television broadcast stations and related facilities. It assigns frequencies and call letters to stations, and designates operating power and sign-on and sign-off times . . . it regulates existing stations, ensuring that stations operate in accordance with rules and technical provisions of their authorizations." Because the broadcast airwaves are in the public domain, the Mass Media Bureau issues public notices for comment before final approval of actions. These are usually issued as an application or proposal. This process has been streamlined considerably by the website, making the latest broadcast actions available to anyone with Internet access.

Begin by going to <www.fcc.gov/>. This is the FCC home page, with a photo of the new Portals office building prominently displayed at the top of the page. To get to the Mass Media Bureau, first click on "bureaus & offices," then click on "Mass Media Bureau." Next, click on "Public Notices" followed by "Call Sign Changes" and a list of files will appear. Look for "MMB Call Sign Actions" for a summary of actions over the past couple of weeks. You may also go to "Broadcast Actions" for complete listings of daily actions. Much of the daily actions will include such things as ownership name changes and transfers, which are often transparent to DXers. The MMB Call Sign Actions are the best place to start for learning about changes, including new station approvals. Back at the Mass Media Bureau home page, you may conduct an AM or FM query to retrieve data on an individual station. Monthly transmitter site sunrise/sunset data and location plotted by the U.S. Census Tiger Map service are also linked to AM/FM query.

If you don't have convenient access to the Internet, then why not consider joining a DX club that caters to your specific interests. Club bulletins can provide a wealth of timely information unavailable from any other single source. AM DXers will find FCC updates, DX listings, and shared tips from members published by two clubs in North America dedicated to mediumwave: the National Radio Club, and the International Radio Club of America. In addition to regular bulletins, the National Radio Club publishes the *AM Radio Log* and other items of interest to AM radio enthusiasts. The International Radio Club of America also has a wide range of publications including a Mexican station list that's updated periodically. If FM and TV are more to your liking, then touch base with the Worldwide TV/FM DX Association, which publishes the TV Station Guide on a regular basis. DX club publications are also carried by retailers including many that advertise here in *Popular Communications*, but club members get discounts by ordering direct.

No matter where you may go for the latest information, I hope that you will stay tuned to *Popular Communications* for a convenient monthly compilation of MMB actions, along with the unique mix of DX tips found here in "Broadcast DXing."

Legal ID?

Reader Paul Darnell writes, "For many months, there has been a station broadcasting in Lexington, Kentucky, WSAI, at 1580 kHz. I am in easy listening range of this station, and have heard them ID many times. Historically, 1580 has been assigned to Georgetown, Kentucky, and previous call letters have been WAXU and WBBE. To your knowledge, is there any other case in the United States of two stations using the same call letters, operating in different cities and on different frequencies?"

Indeed, this is an unusual case. However, rest assured that both 1530

BY BRUCE CONTI <BAConti@aol.com>

The two antennas that produce the directional pattern for 620 AM in St. Petersburg, Florida, are dissected by Route 92.

Cincinnati and 1580 Georgetown have not been assigned the same call letters. The FCC only requires a legal ID at the top of the hour. If you listen carefully to 1580, then you'll hear the legal ID for WTKT Georgetown buried in the programming somewhere around the top of the hour. The rest of the time, a radio station may use whatever ID it wants. WTKT is probably trying to capitalize on the popularity of the nostalgia programs heard on WSAI Cincinnati at 1530.

It's common practice for radio broadcasters to bury the legal ID between commercials, or make the announcement so quick that most listeners don't even hear it, especially on FM. The station nickname and closest large metro area are emphasized instead, such as WQSX Lawrence 93.7 IDing as "Star 93.7, the Rhythm of Boston," or WWKX Woonsocket 106.3 as KIX 106 Providence. So now you may ask what constitutes as a legal ID according to the FCC? Call letters followed by the city of license at sign-on, sign-off, and as close to the top of every hour as feasible are the only requirements. As far as I can tell, the FCC makes no attempt to assign parameters regarding the clarity of the announcement, which may irritate DXers, but probably isn't at the top of the list of complaints from the general public.

Station Swaps

Call letters are being shuffled around in Tampa, Florida. First it was WHNZ 570 "Wins" that switched ownership with WSAA 620. Now "The Sports Animal" WDAE is moving to 620 from 1250 which will be occupied by WHNZ. 620 is perhaps most famous for its transmitter site, which is dissected by Route 92 crossing Tampa Bay from St. Petersburg. Of course, call letter movement and station swaps are nothing new, but they do seem to be more common in this age of multiple station ownership. They often occur when a station is sold to a competitor that already owns stations in the same metro region. The owner may decide to move a popular format to a better frequency, and then sell their old station. Regardless of why they happen, these swaps are always entertaining and DXers enjoy collecting the history of call letters with QSLs and air checks.

QSL Information

First, some disappointing news from Don Hallenbeck in Maine who writes, "Just a quick note on WCBS 880 AM; they do not QSL. I have written several times and E-mailed them once. I can copy WCBS every night from local dark to approximately local dawn depending on QRM & signal strength. I also use an antenna booster to haul in WCBS. I listen to WCBS as I have relatives in the NYC area."

Is anyone else having difficulty verifying WCBS? I hope this isn't true, because WCBS is a favorite DX target here in North America and abroad. WCBS is often logged as far away as Australia and New Zealand. QSLing broadcast stations seems to be getting more difficult than ever. It might be a good idea to thank any

Pending

New Call	Location	Freq.	Old Call
KXCD	Duncan, OK	1350	KKEN
WTMC	Wilmington, DE	1380	WAMS
KKLV	Bismarck, ND	94.5	KQDY
WOGI	Charleroi, PA	98.3	WZKT
WYKL	Byhalia, MS	94.9	WYLT

Changes

New Call	Location	Freq.	Old Call
CINF	Montreal, PQ	690	New
CINW	Montreal, PQ	940	New
KBLJ	La Junta, CO	1400	KBZZ
KNTR	Lake Havasu City, AZ	980	KBBC
KOMJ	Omaha, NE	590	WOW
KSLG	St. Louis, MO	1380	KZJZ
KUYL	Stockton, CA	1280	KJAX
WFOG	Riverhead, NY	1570	WRHD
WGMF	Watkins Glen, NY	1490	WBZD
WKYH	Paintsville, KY	600	WKLW
WLGZ	Rochester, NY	990	WDCZ
WMKI	Boston, MA	1260	WPZE
WODZ	Johnstown, PA	850	WJAC
WPGY	Ellijay, GA	1560	WLJA
WPTR	Albany, NY	1540	WDCD
WWKK	Petoskey, MI	1110	WJNL
WYDE	Birmingham, AL	850	WMKI
KBQC	Independence, KS	88.5	New
KDUW	Douglas, WY	91.7	New
KGHL-FM	Billings, MT	98.5	KIDX
KGNA-FM	Arnold, MO	89.9	KCWA-FM
KHTA	Wake Village, TX	92.5	KBHA
KJRF	Lawton, OK	91.1	New
KKAL	Morro Bay, CA	99.7	KWWV
KWWV	Santa Margarita, CA	106.1	KKAL
KKMR	Haltom City, TX	93.3	KKZN
KKWK	Cameron, MO	100.1	KNOZ
KLMM	Morro Bay, CA	94.1	KBZK
KLSC	Malden, MO	92.9	KMAL-FM
KLUN	Paso Robles, CA	103.1	KBZX
KMBN	Las Cruces, NM	89.7	KBOU
KMRR	Sanger, TX	104.1	KXZN
KMXJ-FM	Amarillo, TX	94.1	KBUY-FM
KPMB	Plainview, TX	88.5	New
KRKD	Dermott, AR	105.7	KDTL
KRLJ	La Junta, CO	89.1	New
KSSZ	Fayette, MO	93.9	KLSC
KSXZ	Lost Cabin, WY	99.1	New
KTEE	Seaside, CA	103.9	KISE
KULW	Kindred, ND	92.7	KPHT
KVCF	Freeman, SD	90.5	New
KWKD	Roy, UT	107.9	KSNU
KXLV	Amarillo, TX	89.1	KLMN
KYCE	Hams Station, CA	90.1	New
KYOD	Glendo, WY	100.1	KUUY
KZLV	Lytle, TX	91.3	KXPZ
WEGF	Montezuma, GA	95.1	New
WFBJ	Fernandina Beach, FL	105.3	New
WHYQ	New Johnsonville, PA	89.7	New
WJOF	Monroe, MI	88.1	New
WKEY-FM	Key West, FL	93.5	WKRY
WMYP	Frederiksted, VI	98.3	WREY
WODZ-FM	Rome, NY	96.1	WFRG-FM
WPGT	Roanoke Rapids, NC	91.1	WXQD
WRQQ	Goodlettsville, TN	97.1	New
WSJZ	Folsom, LA	104.7	WYLK
WUZZ-FM	Lima, OH	104.9	WAJC
WVCM	Iron Mountain, MI	91.5	WBMU
WVEZ	Louisville, KY	106.9	WVEZ-FM
WWJS	Watertown, NY	90.1	New
WWSO-FM	Suffolk, VA	92.9	WFOG-FM
WWSY	Seelyville, IN	95.9	WTHC
WZBA	Westminster, MD	100.7	WGRX

radio stations that *do reply* to QSL requests. Send a postcard letting them know how much you appreciate their response, and then let them know that the radio station will receive some free publicity right here in *Popular Communications* when you send your report to "Broadcast DXing!"

660 KEYZ Williston, North Dakota, received in 300 days for a taped report of a DX test, signed Earl Gross, CE. Address: P.O. Box 2048, Williston, ND 58801-2048. (Martin, OR)

1110 KLIB Roseville, California, received hand-written letter in 10 days from "Rosa Garnja," Sales. Address: 3463 Ramona Avenue, Ste. 15, Sacramento, CA 95826. (Martin, OR)

1700 WAFN Miami Springs, Florida, letter in 10 days for a taped report, signed Cindy Roman. Address: 8525 NW 53rd Terrace, Ste. 109, Miami, FL 33166. (Martin, OR)

Broadcast Loggings

A new x-band station is on the air from Colorado. Patrick Griffith checked out the transmitter site. "I drove out to the transmitter site for KBJD 1650 this afternoon and confirmed that the construction permit for KRKS 990 is also on the air from this site. I suspect that the two-tower setup uses a separate tower for each station during the day when 990 is non-directional and the 1650 tower does double duty as part of the 990 directional array at night. I also noticed that KRKS is now using the slogan Power Nine Ninety."

Mark Connelly finds an opening that was good to the Iberian Peninsula and northwest Africa, but poor to northern Europe, Patrick Martin hears KBJD from

Radio Organizations

International Radio Club of America
P.O. Box 1831
Perris, CA 92572-1831
www.geocities.com/Heartland/5792/

National Radio Club
P.O. Box 5711
Topeka, KS 66605-0711
www.nrcdxas.org
(Send two stamps for sample bulletin.)

Worldwide TV/FM DX Association
P.O. Box 501
Somersville, CT 06072
www.anarc.org/wtfda

his new winter home in Rancho Mirage, California, and Dan Gillespie checks in with some new logs from Ada, Michigan in this month's selected logs. All times are UTC.

550 KGME Phoenix, Arizona good here with talk format, "KGME" ID at 0406. (Martin, CA)

560 KBLU Yuma, Arizona, heard well all day here in the desert, but nonexistent after local sunset, talk format. (Martin, CA)

585 RNE1 Madrid, Spain, at 2308 fair with news and telephone interview in Spanish parallel 855, hetted by Tunisia — 585.25. (Connelly, MA)

630 KHOW Denver, Colorado, talk format, then "K-How" monitored at 0605. (Martin, CA)

640 R. Progreso, Cuba, at 0925 carrying R. Reloj network, then at 0958 the national anthem and start of R. Progreso programming, over WHLO and CBN. (Conti, NH)

670 KLTT Commerce, Colorado, monitored at 0534 good with religious format, "K-Light" IDs, no sign of KBOI down here. This one is also heard all day here. (Martin, CA)

670 WMAQ Chicago, Illinois, at 0533 with Larry King Live call-in, then into commercials. (Gillespie, MI)

693.7 RDP Santa Barbara, Azores, at 2259 discussion in Portuguese, stronger than stations on 693.0 (growl of 700 Hz noted). (Connelly, MA)

830 WCCO Minneapolis, Minnesota, at 0048 with *60 Minutes* audio feed, commercials reference Billy Dean appearing at Treasure Island Resort & Casino, Al Momberg, and Viking News at midnight, then into Andy Rooney at +7 to +9 signal strength. (Gillespie, MI)

836 RDP, Pico da Barrosa, Azores, at 2247 outdoor public address or sports announcements by man in Portuguese, better than Canaries-837 at the time. (Connelly, MA)

891 Algiers, Algeria, at 2242 Arabic vocal, flutes, drums, low audio but huge S9+30 carrier. (Connelly, MA)

981.1 Radiodif. Algerienne, Algiers, Algeria at 2355 about 100 Hz on the high side of the channel with bits of Arabic vocal heard, otherwise mostly a big het against WTRY/WCAP. (Connelly, MA)

1070 KNX Los Angeles, California, at 0558 with commercial then ID. At 0600, the *Lone Ranger* show. +20–40 here lasting 2–3 minutes then fade for one minute, kept up same type of signal off and on 'til fade out at 0614. The first west of the Rockies for me here since I started logging several months ago. (Gillespie, MI) Congratulations, nice catch!

1080 WTIC Hartford, Connecticut, at 0039 with UConn/Louisiana Tech women's basketball game, at +7 to +9 signal strength. (Gillespie, MI)

1100 WTAM Cleveland, Ohio, at 0615 with Art Bell Show, news, and weather brief at 0630. (Gillespie, MI)

1250 KHIL Wilcox, Arizona, good at 0606 with country music, weather, and "K-Hil" IDs. (Martin, CA)

1503 AFRTS, Lajes, Azores, at 2215 with U.S. football game coverage, poor, over RTTY-type jamming(?) signal. (Connelly, MA)

1580 WPGC Morningside, Maryland, at 0855 an ad for an Isuzu dealer in Laurel, and "Heaven 1580 . . . the spirit of the Lord" ID, briefly over WRDD. (Conti, NH)

1580 WRDD Ebensburg, Pennsylvania, at 0835 fair, "You're listening to the Cambria Radio Network, AM 950 WNCC Barnesboro, and AM 1580 WRDD Ebensburg. Two great radio stations, one great sound at your service 24-hours every day," and '60s to '70s oldies music. (Conti, NH)

1650 KBJD Denver, Colorado, at 0655 with contemporary Christian music, "KBJD, The Beat" ID, over/under KGXL. (Martin, OR)

Thanks to Mark Connelly, Paul Darnell, Dan Gillespie, Patrick Griffith, Don Hallenbeck, and Patrick Martin. Until next month, 73 — and keep the cards and letters coming! ■

radio & the internet

Pop'Comm's Cyber Sleuth Checks Out Online Resources

It's On The Internet, So It's Gospel, Right?

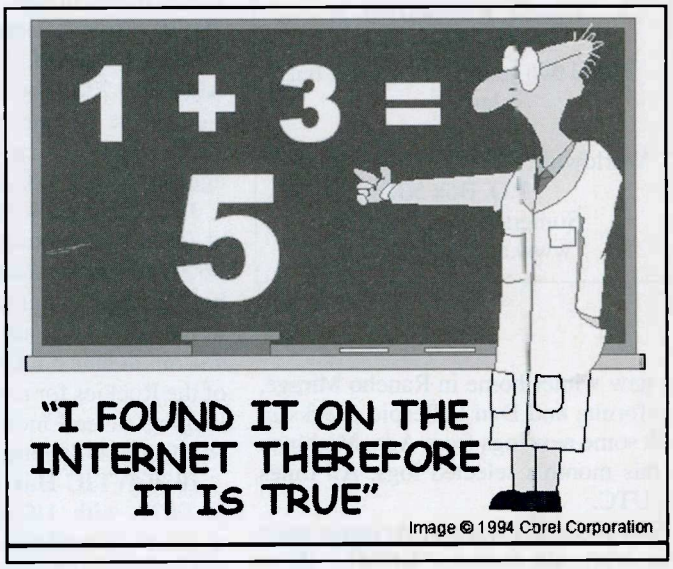
Recently, a *Pop' Comm* reader sent me a note pointing out an important element with respect to information found on the Internet. I guess I had not thought to share it with you (until he tapped me on the shoulder) because it's second nature to me.

Databases and other information you access online are subject to the same problems that are found offline; namely, the difficulty of keeping things current and accurate. Information obtained via the Internet is no different from information found anywhere else. You'll find typographical errors, non-current, missing and incorrect data, or the effect of a programming glitch or two. Consequently, you can usually count on some of the information being incorrect, missing, or out-of-date. While I don't believe it to be any more of a problem than that found offline, it's something to keep in mind before "betting the farm" — as you would for any source of non-validated information. It's also something you can help correct. When visiting an online resource and you notice something not up to par, send an E-mail to the Webmaster advising him/her of your observation. Most web pages have an E-mail contact link so you can easily notify them. Some sites even provide special pages that permit you to submit updates or changes right then and there. And, yes, your help will be most appreciated.

When sending them an E-mail, copy the exact URL of the "offending" page (from your browser's location window) and paste it in your note. Sites have hundreds (even thousands) of pages so the problem you encountered could be next to impossible to find (let alone fix) unless the *exact URL* is known. I used to have a large clip-art site (The Clip Art Connection) with thousands of images spread over about 1,200 pages. Imagine trying to resolve a problem from notes that read (in entirety): "Bummer! Your cat image doesn't work" or "I clicked on the link and it made my computer die — thanks a lot!" or "Where did you put that picture I saw last week?" If you'll provide the exact URL with a little detail about the problem, most Webmasters will appreciate your input and get things fixed pronto. (Thanks to Lee Freshwater for the tap on the shoulder regarding this issue).

While we're on the subject of site content, another reader advised that, due to excessive advertising content, his web browser "froze" when he visited a site hosted by a free Web hosting service I had recommended. Consequently, he wondered why I suggested them in lieu of a normal ISP (Internet Service Provider), an ISP that could provide a gateway to the Internet plus Website hosting (with phone support and help on "how to do it") in a single package.

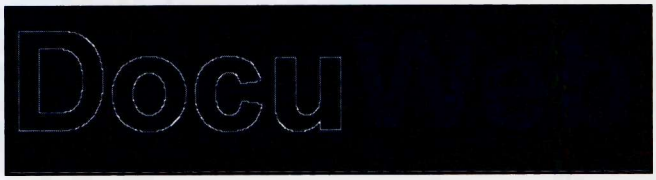
If you are fortunate enough to have such an ISP within your local dialing district or are already paying for ISP services that afford that capability, then sure, it provides you with another, perhaps more desirable, option depending on your needs and circumstances. Regardless, the keyword here (in terms of the reader's negative experience) is "hosted." The offending site



was not a product of the hosting service per-se, but rather the person who built it using the hosting service's resources. Unless something illegal is attempted, most Web hosting services, including regular ISPs, will exercise little or no control over actual content. If people elect to just load-up their sites with tons of advertising (or even excessive graphics, animations, etc.), they are free to do so — just as we are free to NOT return to their sites. The "pros," responsible for high traffic (excluding "adult" oriented) sites, recognize that any volume of advertising MUST be offset with substantial, meaningful, and useful content in order to keep folks coming back.

Test And Upgrade Your Browser Here

Sometimes, your browser will appear to freeze because of the sheer volume of material being transferred. This is particularly true if you are using a "slow" modem or network traffic is exceptionally heavy. However, there are many, many web pages that will indeed "lock-up" an older browser. Most often this happens when newer programming techniques are used but not recognized or supported by the out-of-date browser. If you are experiencing frequent "display type" problems or lock-ups while surfing the 'net, it's probably time to upgrade your browser to a more



Super Resource for Testing and Upgrading Your Web Browser.

BY ERIC FORCE <eforce@cybernet.net>

recent version. If you're in doubt, The "DocuWeb Browser Upgrade Assistance Plan" page is a great place to test (for free) your current browser's capability and to upgrade to a current version if needed. (Be sure to check DocuWeb's main page if you're in need of state-of-the-art distribution of digital information) Visit http://www.docuweb.ca/browser_upgrade.html.

General Mobile, And Family Radio Service

It had to be fate. Just after writing the paragraph on advertising and site content, I received a note from a *Pop' Comm* reader who wished to share his online "find" of Doug Smith's (KAF9830) "GMRS Web Magazine."

Folks, if you're interested in General Mobile or Family Radio

One of the best sites around for GMRS & FRS.

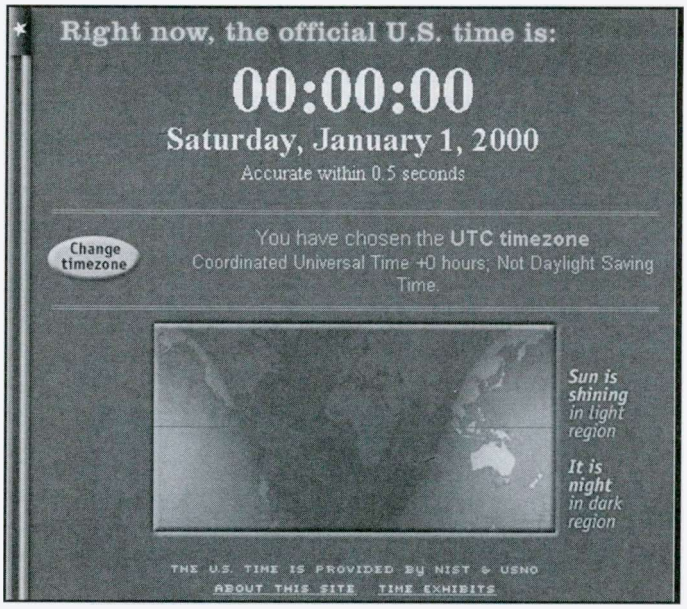
Service information, this is THE site to check out. (Even if you're not interested, visit this site and you will be.) Ironically, it's also a site heavy on advertising but exemplifies the exact point I was trying to make. Advertising? Yes! Substantial, Meaningful, and Useful content? Another, but emphatic, YES! There's hardly an area (including equipment reviews) about GMRS or FRS that hasn't been superbly covered — either directly or via pointers to other quality resources. I have yet to find a better overall resource for an area of communications that seems to be taking the nation by storm. (Thanks to Robert K. Leef, KB6DON, for the timely tip.) Don't Miss http://www.gmrsweb.com/gmrs.html.

It's About Time

If I didn't know better, I'd swear there was some type of competition going on between agencies of the U.S. government for best website and/or public resource. These resources just keep getting better and better. I think they've finally realized that investing in online technology is a much more cost effective and efficient way to serve the public.

The Official United States Time Server is a good example. This public service is cooperatively provided by the two time agencies of the United States: the National Institute of Standards and Technology (NIST), and the U. S. Naval Observatory (USNO). Readings from the clocks of these two agencies contribute with others to define Coordinated Universal Time (UTC). An attractive interface and display is available online complete with a sun clock for your particular time zone. Visit http://www.time.gov/.

• TIP: While visiting the Official U.S. Time site, be SURE to

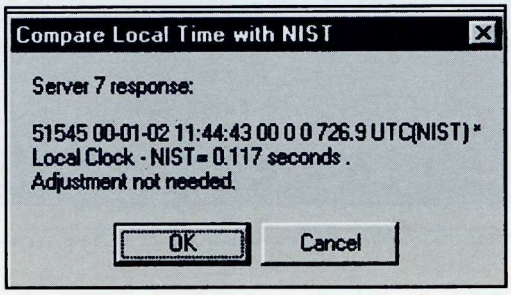


Ringing in the New Millennium at the U.S. Time Server.

browse their "Time Exhibits" section available from the main screen. You'll find a treasure chest of information about time and the equipment used. A DON'T MISS for all! (Home schoolers, take note).

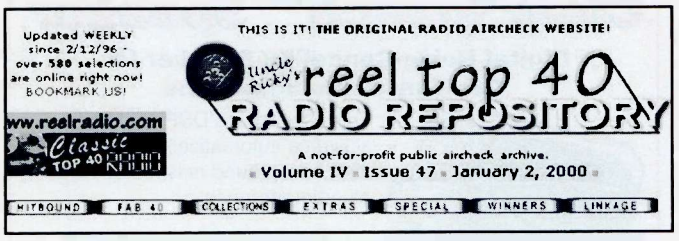
Synchonize Your PC's Clock

You're probably familiar with and routinely use the Time Standard Broadcasts from WWV or WWVH on 2.5, 5, 10, and 15 MHz (plus 20 MHz for WWV). However, there's an easier (and perhaps more accurate) way to set your PC's clock — online. While there are several "commercial" programs available for purchase, here's one that works like a charm and is FREE. Written by Judah Levine of NIST, it uses the NIST Network Time Service. I highly recommend it for your software toolbox. And, you can't beat the price! It's at http://www.bldr-doc.gov/timefreq/service/nts.htm.



Synchronize your PC's clock with this FREE Software.

Our neighbors in Canada also contribute to defining UTC via their Institute for National Measurement Standards (INMS) facilities in Ottawa. NRC Time Standard broadcasts on station CHU can be heard on 3330, 7335, and 14670 kHz USB. For more information visit http://www.inms.nrc.ca/inms/time/ctse.html.



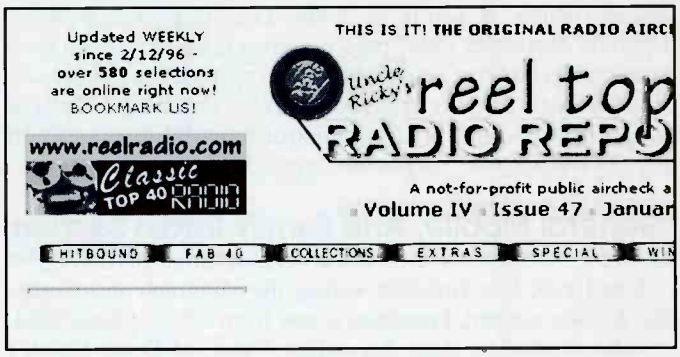
Countless hours of listening enjoyment await you here.

All-In-One Desktop Reference

Beeler Educational Technologies provides an outstanding "desktop" reference resource that should be part of everyone's (online) research arsenal. You'll find cream-of-the-crop references covering Online Encyclopedias, Dictionaries, Maps, Calculators/Converters, Almanacs, Factbooks, and Libraries at this single page repository. Don't miss it! Be sure to visit them at http://www.beelertechnologies.com/links/refrnce.htm.

Reel Radio Top-40 Repository

"The Reel Top 40 Radio Repository" Website by Richard W. Irwin (a.k.a. "Uncle Ricky") is an authentic aircheck museum of classic Top 40 Radio. The repository "is about Top 40 Radio, the last great mass-appeal music format, before variety became diversity and every popular music station took a small, specialized piece of what was once a very big American Pie." Nearly 600 selections and countless hours of listening enjoyment



One of Eric's Favorite Desktop Reference Resources.

(RealAudio format) await your visit. Contributions to the repository are welcome. Don't miss it! Thanks to Mark from Cape Cod, E-mail CAPECOOL@AOL. COM, for the tip on this outstanding resource. Visit http://www.reelradio.com/.

Thinking about RealAudio, there's another streaming media delivery system beginning to raise some eyebrows — and it's not from Microsoft®. Utilizing JAVA™ and based on EMBLAZE™ streaming media technology, it currently works on better than 80% of all Internet Web browsers and does NOT require a browser plug-in or other external programming — pretty slick!

For a live demonstration of how this technology is being used by a growing number of Web Broadcasters, visit WCIB 101.9 FM's site. You'll also experience how another neat web application, Macromedia's SHOCKWAVE™, is being utilized. SHOCKWAVE™ does require a plug-in but it's well worth obtaining if you don't already have it. (Thanks, again, to Mark from Cape Cod for pointing out his station's use of these emerging technologies) Check 'em out at http://www.COOL102.com/.

For more information about EMBLAZE™ streaming media technology visit http://www.emblaze.com/.

Additional information and the most current version of the SHOCKWAVE™ player can be found at http://www.shockwave.com/.

MW DX Resource, And Government Sites In Other Countries

The BCB DX Logbook, by Lee J. Freshwater, provides an impressive online resource for MW (AM Broadcast Band) DXing. Using material gleaned from *M Street Journal*, *IRCA DX Monitor*, and FCC databases, *The BCB DX Logbook* uses a format similar to the Jones Log Book of the '60s and '70s. An excellent resource for MW DXers! Be sure to visit http://members.aol.com/bcblogbook/main.htm.

To wrap things up for this month, here's a global telecommunications resource. You'll find links to government telecommunications and broadcast sites in countries outside the United States at this FCC page. If you're globally oriented, some interesting material awaits you via these pointers. Check out http://www.fcc.gov/mmb/asd/bickel/foreign.html.

Thanks for joining me on this month's journey into cyberspace. Be sure to visit the *Pop'Comm* Website at http://www.popular-communications.com/ for the latest greatest and keep those comments and suggestions coming!

Until next time, 73 ■

the listening post

What's Happening: International Shortwave Broadcasting Bands

Super Six: English Skeds From A Half-Dozen Broadcasters

Watch for a frequency change for Mexico's **XERTA Radio Transcontinental de America**. They're planning a move from 4800 to **4810** and likely some higher power as well. They also have a new address: Plaza San Juan, Esquina con Ayuntamiento, Primer piso, Dispacho 2, Centro, 06070, Mexico, D.F. In recent months, they've operated only sporadically.

If you've noticed rather spotty reception of **La Voix du Sahel, Niger**, lately it's because equipment problems have been forcing inactivity. They are in the process of installing some new transmitters, so **5020** should be supporting better signals before long.

A second transmitter for **WBCQ** (The Planet) has, by now, likely taken to the air. WBCQ-II was to have tested on **9340**, though we don't know if that will be the permanent frequency.

Wanna hear English programming from our pals at the **Voice of the Islamic Republic of Iran**? Here's the current schedule: 1530–1630 on **7245, 9885, 11775**; 1930–2030 on **9022, 11740, 11765, 13745**; 0030–0130 on **6065, 6135**; 1100–1230 on **13710, 15395, 15585, and 21470.**

Radio Miskut (Nicaragua) is off the air, thanks to some damaged parts, replacements for which the station can't locate.

Here's something a bit different from **Poland**. The state's shortwave facility is carrying programming from a Radio Racja, which is apparently a FM station in the town of Bialystok. It's on the air currently from 0600 to 0700 on **6035**, in Polish, though you'll have to find a way to get past QRM from the VOA. Other chances to hear this are from 1100–1200 on **6180** and 1900–2000 on **6165** (if you're an East coaster).

Belgium's **Radio Vlaanderen International** sends English out via the Bonaire relay from 0400 to 0430 on **11980**, 0800–0830 on **5985**. 1200–1230 on **9925**, 1830 to 1900 on **5910, 9925, 13600** (Germany), and **17695** (Germany) and 2300–2330 on **13670** from Germany.

YLE/Radio Finland has English from 0300 to 0330 on **9655, 11665**, 0730–0800 on **9840 and 21670** and 2030 on **6135**. Other broadcast languages are Finnish, Swedish, German, Russian, French, and Latin. The Latin broadcasts are at 0750–0800 Saturdays on **9840 and 21670** and Saturdays from 1950 to 2000 on **6120 and 11755,** and Sundays at 2020–2030 on **6135**. Normally half-hour broadcasts are shortened to 20 minutes on those days in order to insert the ten minute Latin segments.

English from **Radio Pakistan** is at 1600–1615 on **11570, 15100, 17510, 15335, and 17720.** English from **Radio Yugoslavia** is broadcast from 0100–0130 (except Sunday) on **7115**, 0200–0230 on **7130**, 1330–1400 on **11835**; 1930–2000 on **6100 and 9720** and 2200 2230 on **6100 and 6185**.

Here's an odd one (we cannot vouch for its being 100% accurate), but we've seen a report that the **Russian Radio Mayak** is being relayed by military transmitters in Belarus during their nighttime hours, on **2382 and 3355**, and "mornings" on **3564 and 4541**, all in double-sideband mode.

The Catholic-operated Radio Renascenca in Portugal left the air a few years ago after a long career on shortwave.

Lithuania may have vanished from shortwave (and medium wave) if they can't dig into the backs of enough sofas and come up with the necessary cash to keep the station going. They've been hit with a budget cut of monster proportions.

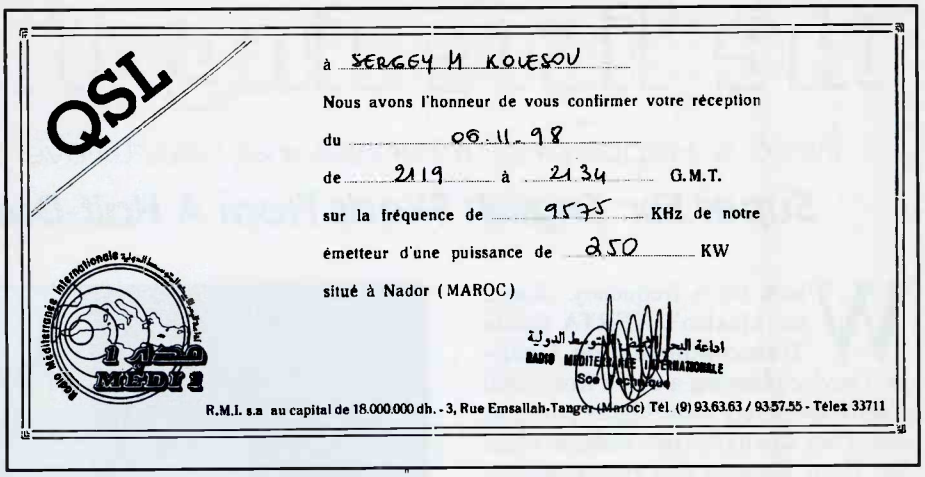
Radio Romania International in English airs at 0200–0300 on **9510, 9570, 9690, 11740, 11830, and 11940**. Also from 0400-0500 on **9570, 11830, 15335, and 17735**. And from 0600–0700 on **9530, 11830** plus 0640 to 0700 on **7105, 9510, 11775, 15105**. Also 0700–0800 on **17720 and 21840**, 1300–1400 on **11940, 15335, 15390, 17805**; 1700–1800 on **9625, 11740, 11940, 15365**; 2100–2200 on **5955, 7195, 7215, and 9690**; 2300–0000 on **7195, 9570, 9690, and 11940**.

English from the **Voice of Turkey** is at 0400–0500 on **6010; 7240, 21715**; 1330–1430 on **15295 and 17815**; 1930–2030 on **9630, 9895**; 2130 to 2230 on **9525**; 2300–0000 on **6135 and 9655**. Your editor could listen to their interval signal for hours at a time.

A new shortwave service called **Earth One**, a creation of the Global Vision Network, should be on the air by now,

BY GERRY L. DEXTER

This card is almost 43 years old. It was issued back in the good old days, when Radio Denmark not only had its own transmitters within Denmark, but also had regular English broadcasts.



Sergey Kolesov in the Ukraine recently got this QSL from Radio Medi-un in Morocco.

using facilities of Merlin Communications, the people who operate transmitters for the BBC. Earth One will carry programming with a "humanitarian edge" and will be advertiser supported. The frequencies to be used haven't been announced yet.

This month's book winner is **Bruce Alexander**, who never fails to come up with some first rate logs. He knows how to dig out the really good ones! Bruce win's a copy of the year 2000 edition of *Passport to World Band Radio,* courtesy of **Universal Radio**, 6830 Americana Parkway, Reynoldsburg, Ohio, 43068. Universal has a monster catalog of SWL supplies — everything from multi-thousand dollar communications receivers to antennas to books and batteries. To receive a copy of their latest catalog, **call 800-431-3939**. While you're at it, please also thank them for supporting this column!

Remember your reception logs are always welcome. Just be sure to list items by country, do a minimum double space between each (so we can navigate scissors more easily) and add your last name and state abbreviation after each item. By the way, it's a good idea to include your full address in your report because envelopes usually aren't forwarded. Other things we can put to good use here are spare QSL cards you don't need returned, station photos, and other items from stations, including schedules. And, hey! How about a photograph of you at your listening post? As always, thanks for your continued interest and cooperation!

Here are this month's logs. All times are in UTC, which is five hours ahead of EST, i.e.0000 UTC equals 7 p.m. EST, 6 p.m. CST, 5 p.m. MST, and 4 p.m. PST. Double capital letters are language abbreviations (FF = French, AA = Arabic, SS = Spanish, etc.). If no language abbreviation is included, the broadcast is assumed to have been in English.

ALASKA — KNLS, **7365** at 1308 with news, music, ID. (Gale, NC) **9615** at 0825 with severe QRM. (Becker, WA)

ALGERIA — Radio Algiers Int'l., **15160** at 2005 with news and a female DJ who said "I promise you a good show." (Brossell, WI)

ANGOLA — Radio Nacional de Angola, **4950** at 2230 in PP with modern Brazilian songs. (Kolesov, Ukraine)

ANGUILLA — World University Network (Dr. Gene Scott), **6090** at 0605 and 0705. (Becker, WA)

ANTIGUA — Deutsche Welle relay, **9690** at 0708 in GG, **9700** at 0338, and **11810** at 0247. (Becker, WA) BBC Relay, **5975** at 0259 with ID, "World Today." (Jeffery, NY)

ARGENTINA — Radio Argentina Exterior, **11710** at 0224 with economic news, music, sport, DX program. (Burrow, WA)

ARMENIA — Voice of Armenia, **9965** in SS at 0345 with ID, talk. (Brossell, WI) **15270** at 1015 with letters and mention of Spanish programs. (Linonis, PA)

ASCENSION ISLAND — BBC relay, **6005** at 0640, **7105** monitored at 0555 in FF to West Africa, **7160** at 0612, **12095** at 0256. (Becker, WA)

AUSTRALIA — Radio Australia, **5995** at 1500 to the western Pacific, **//6080** to SE Asia. 0927 in Pidgin English "Radio Australia, radio belong you." **9580** at 1623. **9500** at 1429 with "Waltzing Matilda" preceding sign-on. **9580** at 1548 and **11650** at 1558. (Becker, WA) **6020** at 1320. (Miller, WA) **9500** at 1227 with IS. (Brossell, WI) **9580** at 1615. (Burrow, WA) **13605** at 1100 to South Pacific. (Provencher, ME) ABC/Camma Radio, Tennant Creek, **2325** at 0914 with what sounded like a cricket match in progress. (Foss, AK)

AUSTRIA — Radio Austria Int'l, **6015** via Canada at 0628 with sports broadcast in GG. (Miller, WA) **6015** via Canada in GG at 0519 and **7325** in GG at 0319. (Becker, WA)

BELARUS — Radio Belarus Int'l., **7105** at 2130 with news, comment, choral music, address. Poor, and even weaker on **//7210**. **7210** also heard at 0300 with news, comment, ID, local folk music under strong co-channel Qatar (presumed). Listed **6070** not heard under strong CFRB. (Alexander, PA)

BELGIUM — RTBF, via Julich, Germany, **21758** at 0556 in FF with commercials, Journal. (Kolesov, UK) Radio Vlaanderen Int'l, **9925** at 1830 with EE ID and into unidentified language. (Brossell, WI)

BOLIVIA — Radio Fides, **4845** at 0235 in SS with songs. (Kolesov, Ukraine)

BOTSWANA — Voice of America relay, **9775** at 0422 and **9885** at 0400. (Becker, WA)

BRAZIL — Radio Clube do Para, **4885** at 0245 in PP with music and ID. (Gale, NC) Radio Nacional Amazonas, **11780** at 0711 in PP. (Becker, WA) 2250. (Miller, WA)

BULGARIA — Radio Bulgaria, **7535** at 2052 and **9400** at 0235. (Becker, WA) **11720** at 2105 with news. (Burrow, WA)

BURKINA FASO — Radio Burkina, **4815** at 2230 in FF with "Matador" song and phone conversation with listeners. (Kolesov, UK)

CAMBODIA — National Radio of Cambodia, **11940** at 1210 with news in EE and Khmer. (Gale, NC)

CANADA — CHU time station, **7335** at 0555. (Becker, WA) Radio Canada Int'l., **5960** at 0638 in FF, **9670** with news at 0625, **11945** with "Spectrum" at 2111. (Becker, WA) **9535** at 0359 with IS, ID, frequency info,

Abbreviations 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

and into "African Eyes." **9755** at 0300 with news, ID, and "The Vinyl Café." **13690** at 2130 and 2235. (Jeffery, NY) **11865** at 0200 sign-on, "Spectrum." (Wilden, IN) **15325** at 2213 "The Arts in Canada." (Miller, WA) CFRX Toronto, **6070** at 0720 with CFRB relay. (Becker, WA) CFVP, Calgary, **6030** at 0805, relaying CKMX. (Becker, WA) CKZU, Vancouver, **6160** at 1525 relaying CBU. (Becker, WA) Radio Japan via Sackville, **6115** at 0544. (Becker, WA) China Radio Int'l., via Sackville, **9535** at 0223 and **9560** at 0520. (Becker, WA) CBC Northern Service, **9625** at 2150 and 0320. (Becker, WA) 2217 with "Home Run" and Quebec news. (Jeffery, NY) BBC via Sackville, **9515** at 1257, **9590** at 2110, and **17840** at 1800. (Jeffery, NY)

CHAD — Radio Tchadienne, **6165** heard at 2200 in FF with journal, local folk songs. (Kolesov, Ukraine)

CHILE — Voz Cristiana, **6070** monitored at 0631 with religious broadcast in SS. (Miller, WA) **11690** at 0720 and **11890** at 0803. (Becker, WA)

CHINA — Central People's Broadcasting Station, **5010** at 1242 in CC. (Brossell, WI) China Radio Int'l, 9730 (via French Guiana) at 0455 with ID, mailing address and web page URL. (Becker, WA)

COSTA RICA — World University Network/Gene Scott, **5030** at 0650, **6150** at 0607 and **9725** at 0748. (Becker, WA) RFPI, **6975** at 0700. (Becker, WA) **5050** at 2211. (Miller, WA)

CROATIA — Croatian Radio, **9925**, via Germany, at 0411 with headline news to 0419. (Burrow, WA) **11605**, via Germany, at 2148 with news. Also on **9525, 9925, 11880, and 13820**. (Miller, WA) **13820**, via Germany, at 0925 in presumed Croatian. (Foss, AK)

CUBA — Radio Havana Cuba, **6000** at 0230, **9820** at 0339, and **13750** at 2112. (Jeffery, NY) **6000** at 0150, **9550** at 0634, **9820** at 0639, **11875** at 0251. (Becker, WA)

CYPRUS — BBC relay, **9635** at 1637 in RR to Europe, **9895** at 0524, and **12095** at 0646. (Becker, WA)

CZECH REPUBLIC — Radio Prague, **6200** monitored at 0220 **//7345**, both very good. (Alexander, PA) **7345** at 0221. (Becker, WA) **11615** at 0000. (Provencher, ME)

DENMARK — Radio Denmark, via Norway, **7180** at 0653 and **7485** at 0557, both in Danish. (Becker, WA) **9925** at 2249 in DD. (Miller, WA)

DOMINICAN REPUBLIC — Radio Villa, **4960** at 0035 in SS with LA songs. (Kolesov, Ukraine) 0305 in SS. (Brossell, WI)

ECUADOR — HCJB, **9745** at 0400 with news. (Jeffery, NY) 0637. **9755** at 0711, **11755** at 0800, and **12015** at 0645. (Becker, WA) **12015** at 0102 with news of South America. (Wilden, IN) Radio Centro, **3289.88** at 0810. Looking for Guyana but found this instead. SS announcement, LA music, electronic sound effects, ID at 0820. (Alexander, PA) Radio Quito, **4919** at 0415 with news in SS. (Miller, WA)

EGYPT — Radio Cairo, **9850** at 1631 with Koran, **9990** at 2207 with pops. Strong but audio suffers. **9950** at 1700 with music. (Becker, WA) **9988** with AA songs at 1830. **15210** at 1805 in unidentified African language. (Brossell, WI) **9900** at 2204 with "Journey Through Literary Heritage." (Wilden, IN)

ENGLAND — BBC, **6175** via Delano, CA, with a drama at 0636. (Miller, WA) **9410** with news at 0518, **9580** at 0745. (Becker, WA) **11765** via Ascension Island at 0435, **//7160**. (Burrow, WA) **12095** at 0101 with news. (Wilden, IN) **15225** at 1630. (Linonis, PA) **15400** via Ascension at 1957. (Jeffery, NY)

ERITREA — Voice of the Broad Masses, **7175** at 0520 with news in Amharic, music. (Gale, NC)

ETHIOPIA — Voice of Ethiopia, **7165** monitored at 1635 with news, rock 'n roll. (Kolesov, Ukraine)

EQUATORIAL GUINEA — Radio Africa, **15186** at 2005 with religious programming. (Brossell, WI)

FRANCE — Radio France Int'l, **5925** at 0640, **7135** at 0522, **11700** *(probably via Gabon — Ed)* and **11995** at 2113, all in FF. (Becker, WA) **7135** at 0701 with news in FF. (Miller, WA)

FRENCH GUIANA — Swiss Radio Int'l relay, **9905** at 0430 with program "Rendezvous." (Becker, WA) China Radio Int'l relay, **9730** at 0418 with news. (Becker, WA) Radio Japan/NHK relay on **11895** at 2250 in JJ. (Becker, WA)

FINLAND — YLE Radio Finland, **9655** at 0311 with "Profiles in Finnish History" and Finnish language lesson. (Jeffery, NY) 0321. (Becker, WA) **9655** and **11655** at 0300 with news of Northern Europe. (Provencher, ME) "Press Review," ID, and address at 0328. (Brossell, WI)

GABON — Africa Number One, **9580** at 0528 in FF. (Burrow, WA) 0534 with ID every now and then. (Becker, WA)

GERMANY — Deutsche Welle, **6100** at 0516 with news. (Wilden, IN) 0541 with news. **7285** at 0215 with EE ID and off. (Becker, WA) **11840** via Sri Lanka at 2230 in GG. Also **15275** via Rwanda. (Miller, WA)

GHANA — Radio Ghana, **4915** at 2350 with religious service. (Brossell, WI)

GREECE — Voice of Greece, **7475//9420** at 0608, Greek music, EE ID. (Becker, WA)

GUAM — Adventist World Radio, **11560** in CC to Asia at 1120. (Provencher, ME)

GUATEMALA — Radio Chortis, **3380** with SS ID at 1057. Nice, slow, easy listening music. (Montgomery, PA)

GUINEA — RTV Guineenne, **7125** at 0619 in FF with Afro-pops. (Becker, WA)

HUNGARY — Radio Budapest, **9835** at 0350. (Becker, WA) **9840** at 0243 with "DX Blockbuster" program. (Burrow, WA)

INDIA — All India Radio, Delhi, **4860** at 1900 in Urdu with songs from Indian movies. (Kolesov, Ukraine) **9950** in unidentified language at 1630. (Brossell, WI) **11620** at 2100. (Becker, WA) 2115 with music, astrology discussion. (Wilden, IN) 2159 with news. (Miller, WA) 2205 to 2230 close with news, comment, ID. Very strong; weaker on **//7410, 9910, 9950, and 11715**. (Alexander, PA) 0300. Also **13720** at 1730 in unidentified language. (Brossell, WI)

INDONESIA — Radio Republik Indonesia, Ternate, **3345** at 0932, woman in unidentified language. (Foss, AK) RRI Ujung Pandang, **4755** at 1255 in II. (Miller, WA) RRI Sumatera, **4925** in II at 1228. (Miller, WA) Voice of Indonesia, **15149.83** at 2000–2100 with EE news and comment, ID, local music. FF prior to 2000. (Alexander, PA)

IRAN — Voice of the Islamic Republic of Iran, **7340** at 0530 with Koran. (Becker, WA)

ISRAEL — Kol Israel, **7545** at 0409 with QRM from WSHB-7535. **9435** at 0507, **11590** in HH at 1705, **11605** in Yiddish at 1710. (Becker, WA) **11585** at 0206 in unidentified language. (Miller, WA) 2300 in HH with possible call-in show. (Linonis, PA) **15640** in HH at 1730. (Brossell, WI)

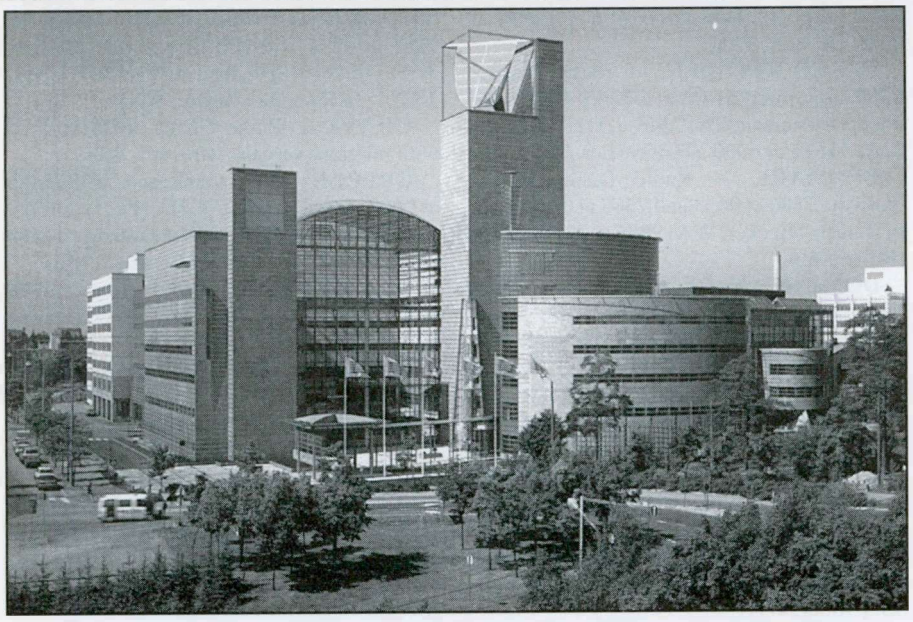
ITALY — RAI International, **11800** at 2300 in II with news, music, and dialogue. (Linonis, PA)

JAPAN — Radio Japan/NHK, **6110** (via Canada) at 0517 with listener letters and call to a listener in India. (Wilden, IN) **6155** via Skelton, England, at 0000 with news and comment. (Provencher, ME) **7200** with EE ID at 0200, **9505** at 1525 with "Let's Try Japanese." Also **9535** in JJ at 1530 and **9835** in JJ at 1652. (Becker, WA) **11705** via Canada at 2330 in JJ. (Linonis, PA) JJY time station, **8000** at 0645. (Becker, WA)

JORDAN — Radio Jordan, **11690** with hits countdown at 1630, under heavy RTTY. (Brossell, WI) 1700 with news in EE. (Burrow, WA)

KUWAIT — Radio Kuwait, **9880** at 1630 with AA songs. (Brossell, WI) **11675** at 0211 in AA with call to prayer. (Miller, WA) **11990** at 1950 with contemporary American songs. (Provencher, ME)

LEBANON — Voice of Hope, **6280** at 0149



YLE Radio Finland operates from this snazzy complex in Helsinki.

with AA music, EE ID at 0157. (Gale, NC)

LIBERIA — Radio Liberia Int'l, **5100.02** at 2105 to 0000 close. EE news about Liberia, ID as Radio Liberia International and Liberian Communications Network, some talk in vernacular, Afro and U.S. pops "Goodbye everyone." And off. Also **6100** at 0700 with news, political talk about Liberia, Afro pops. (Alexander, PA) **5100** at 2130 with music. (Kolesov, Ukraine)

LIBYA — Radio Jamahriya, **15435** at 1720 in AA. Near perfect signal. (Brossell, WI)

MADAGASCAR — Radio Netherlands relay, **11655** at 1719 in DD and **11695** in DD at 1727. (Becker, WA)

MALAYSIA — Radio Malaysia, Sarawak, **4895** at 1419 with Islamic prayer. (Miller, WA)

MALI — China Radio Int'l relay on **11975** monitored at 2250 with CC music to sign-off. (Becker, WA)

MALTA— Voice of the Mediterranean, **7440** via Russia at 2020 with EE program about Malta, IDs, into AA at 2100. (Alexander, PA)

MAURITANIA — ORTM, **4845** heard at 2200 in AA with news and interview. (Kolesov, Ukraine)

MEXICO — Radio Educacion, **6185**, 0400 ending SS and into EE with "DXperience" program. (Burrow, WA) 0637 in SS. (Miller, WA) 0648 with music, occasional EE announcements. (Becker, WA) Radio Mil, **6010** in SS at 1255 with ID, pops. (Brossel, WI) Radio Mexico Int'l, **9705** at 0430 in EE. (Provencher, ME)

MOLDOVA — Voice of Russia via Moldova, **7125** at 0535 with EE to NA but very poor. (Becker, WA)

MONACO — Trans World Radio, **6240** at 0012 sign-on to 0032 off. Into EE religious programming with ID at 0015, abrupt sign-off midway through program, back at 0043 with end of EE program, IS and into religious program in unidentified language at 0045 to 0100 close. (Alexander, PA) Listed as Cerrik, Albania. (Editor)

MOROCCO — Voice of America, **7295** at 0548 to West Africa. (Becker, WA) Radio Medi-un, **9575** at 0506 with music, ID in AA. (Gale, NC)

NETHERLANDS — Radio Netherlands, **7375** via Petropavlosk at 1417. (Becker, WA)

NETHERLANDS ANTILLES — Radio Netherlands via Bonaire, **6165** at 0445. (Burrow, WA) **9590** at 0505, **9715** at 0709 in DD, **9845** at 0235. (Becker, WA) **17605** at 1938 with "Sincerely Yours" and "Dutch Horizons." (Jeffery, NY)

NEW ZEALAND — Radio New Zealand Int'l, **17675** at 0006 with "Cadenza." (Jeffery, NY) 0204 commenting on recent floods. (Montgomery, PA)

NIGER — La Voix du Sahal, **5020** at 1900 in FF with news from Paris, African music. (Kolesov, Ukraine)

NIGERIA — Voice of Nigeria, **7255** at 0500 with ID and "Wave Train." (Jeffery, NY) 0607 with local music and ID. Terrible audio. (Becker, WA)

NORTH KOREA — South Pyongyang Provincial Station, **3350** at 0935 with female vocal. Off in middle of instrumental. (Foss, AK) Radio Pyongyang, **9975** at 0701. (Becker, WA) **11335** at 2308 with EE news, **//13760**. (Burrow, WA) **11680** at 2315 with lengthy commentary in KK. (Linonis, PA)

NORTHERN MARIANAS — KFBS, Saipan, presumed, **11650** at 1300 with religious music audible under Radio Australia. (Silvi, OH)

NORWAY — Radio Norway, **7180** at 0700 **7465** at 0552, **9925** at 2204, all in NN. (Becker, WA)

OMAN — Sultanate of Oman Radio, **9735** in AA at 2141. (Miller, WA)

PAKISTAN — Radio Pakistan, **11570** at 1600 with time pips, ID, and YL with news. (Burrow, WA)

PAPUA NEW GUINEA — NBC, Port Morseby, **4890** at 1257. (Miller, WA) Radio Enga, **2410** at 0903 in unidentified language. (Foss, AK)

PERU — Radio Ondas Rio Maranon, **6797.65**, 1044 with SS ID by man, Peruvian music. (Montgomery, PA) Radio Nueva Sensacion, **6674** at 1050 with reverb effect ID, back to Peruvian music. (Montgomery, PA)

PHILIPPINES — Radio Veritas Asia, **9670** at 1555 with EE ID and sign-off. (Becker, WA) Voice of America relay, **6110** at 1513 with QRM from Japan. Also **9760** at 1559 in Special English and **9845** at 1552. (Becker, WA) **9760** at 1300 and **17820** at 2303. (Jeffery, NY)

Always creative when it comes to QSLs, AWR's now silent Radio Lira issued a series featuring crests of the Costa Rican states.

The Voice of Armenia issued this yellow and black QSL a couple of years ago. In a reverse of the usual pattern, this former Soviet state is easier to hear than it was back then.

PORTUGAL — RDP Internatonal, **15540** monitored at 1725 in PP. (Brossell, WI) **15540//21550** with soccer at 2228. (Miller, WI) 1740 in PP with show tunes. (Jeffery, NY) Deutche Welle relay, **7225** at 0611, **9640** monitored at 0245 in SS to close at 0250, and **11820** at 2250 in PP. (Becker, WA)

PUERTO RICO — AFRTS, **6458.5** USB monitored at 0415 with "The Parent's Journal." (Jeffery, NY)

QATAR — Qatar Broadcasting Service, **9570** at 2137 in AA. (Miller, WA)

ROMANIA – Radio Romania Int'l, **9510** at 0200. Tough copy at times due to QRM from co-channel station and carrier on **9515/9520** from 0230. (Silvi, OH) **9510** at 0645 **//9530**. (Becker, WA) **15365** with "World of Culture" at 1715. (Brossell, WI)

RUSSIA —Magadan Radio, **5940** at 1311 in RR, co-channel QRM from Vatican Radio. (Miller, WA) Voice of Russia, **7125** at 0519, **7180** at 0204, **12020//13665** at 0253. (Becker, WA) Radio Rossi, **7200**, Yakutsk, at 0530; **7210**, Kharbarovsk, at 0657; **7250**, Moscow, at 0530; **7290**, Irkutsk, at 0709; **7320**, Magadan, 0530; **9530**, Magadan, at 0530; **9860**, Moscow, at 0339. All in RR. (Becker, WA)

SAO TOME — Voice of America relay, **6080** at 0606, **7265** in FF to central Africa at 0542 and **11975** in PP at 1754. (Becker, WA)

SAUDI ARABIA — Broadcasting Service of the Kingdom of Saudi Arabia, **9555** at 2134 in AA. (Miller, WA) **9870** at 2030. (Brossell, WI) **11820** at 2300 with Holy Koran service. (Linonis, PA)

SEYCHELLES — Far East Broadcasting Association, **11640** at 1725. Off with ID at 1730. (Becker, WA) **15440** at 1030 in CC with religious program. (Linonis, PA)

SINGAPORE — BBC relay, **6195** at 1505 and **9740** at 1558. (Becker, WA) **9740** at 1120 with news reports. (Montgomery, PA)

SLOVAKIA — Radio Slovakia Int'l, **7300** monitored at 0100 with ID and news. (Brossell, WI)

SOUTH AFRICA — Adventist World Radio relay, **12130** at 1758. ID at 1800. (Becker, WA) BBC relay, **7125** at 0341 and **11760** at 0419. (Becker, WA)

SOUTH KOREA — Radio Korea International, **9570** at 0657 in KK. (Miller, WA)

SPAIN — Radio Exterior de Espana, **6055** at 0008 with "Panorama." (Jeffery, NY) 0501 with frequency announcements in EE, then news in SS. (Wilden, IN) 0154, and **9630** at 0226. (Becker, WA) **11880** via Costa Rica at 2315 in SS. (Linonis, PA) **15170** via Costa Rica at 2212 in SS. (Miller, WA) **15285** at 2003 in EE. (Burrow, WA)

SRI LANKA — Sri Lanka Broadcasting Corp., **11905** at 0255 in unidentified language. (Brossell, WI) **15425** at 0310 with U.S. pops, six time pips at 0315, ID and into religious program, (Montgomery, PA) Voice of America relay, **9645** at 1534. (Becker, WA)

SWEDEN — Radio Sweden, **9495** at 0245 with "60 Degrees North." (Provencher, ME) 0303 in Swedish. (Becker, WA) 0330 with news and "60 Degrees North."

SWITZERLAND — Swiss Radio International, **9905** *(via French Guiana — Ed)* at 0439 with "Rendezvous." (Burrow, WA)

TAIWAN — Radio Taipei Int'l, **7130** at 0743. (Becker, WA)

TAJIKISTAN — Tajik Radio, **7245** at 0409 with news and music in RR. (Gale, NC)

THAILAND — Radio Thailand, **9810** at 1240 with news and Thai history to 1300 close. (Brossell, WI) **15395** with talks, QSL address, IS, and into Thai. (Burrow, WA) VOA relay, **7125** at 1540. (Becker, WA)

TOGO — Radio Lome, **5047** in FF at 2345 with hi-life music. (Brossell, WI)

TUNISIA — RTV Tunisienne, **11730** in AA with Koran at 1740. (Becker, WA)

TURKMENISTAN — Turkmen Radio, **5015** monitored at 2000 in TT with local songs, weather, interview. (Kolesov, Ukraine)

TURKEY — Voice of Turkey, **9445** at 0516 in TT. (Becker, WA) **9525** at 2130 with news. (Miller, WA)

UGANDA — Radio Uganda, **4976** at 2000 with "Adventure With Christ" program. (Kolesov, Ukraine)

UNITED ARAB EMIRATES — UAE Radio, Dubai, **13630** at 1735 in AA. (Brossell, WI) 13675 at 0329 with EE ID, music, news. (Jeffery, NY)

VATICAN — Vatican Radio, **7250** at 0621, **7255** at 0645, **7280** at 0647, and **9660** at 0333. (Becker, WA)

VIETNAM — Voice of Vietnam, **9840** with talks on foreign aid at 1245. (Brossell, WI)

ZAMBIA — Radio Zambia, 2130 in local language with phone conversations with listeners. (Kolesov, Ukraine) 0248 with fish eagle IS, national anthem monitored at 0250, announcement in local language, and then music program. (Montgomery, PA)

Attention! And a snappy salute to the following who came through for you this month: Pete Becker, Clarkston, Washington; Robert Brossell, Pewaukee, Wisconsin; Sergey M. Kolessov, Kiev, Ukraine; Dave Jeffery, Niagara Falls, New York; Bruce R. Burrow, Snoqualmie, Washington; Jack Linonis, West Middlesex, Pennsylvania; Mike Miller, Issaquah, Washington; Edouard S. Provencher, Biddeford, Maine; Marty Foss, Talkeetna, Alaska; Brian Alexander, Mechanicsburg, Pennsylvan-ia; Dave Gale, Newland, North Carolina; Lee Silvi, Mentor, Ohio, and Sue Wilden, Noblesville, Indiana. Thanks to each one of you. Until next month, good listening! ■

product spotlight

BY KEN REISS
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POP'COMM REVIEWS PRODUCTS OF INTEREST

AR-5000 Plus 3

There was a lot of excitement in the scanner world when AOR first introduced their AR-5000, a new and exciting wide band communications receiver. Many people bought and are still enjoying this great receiver, although it wasn't long before people using the lower end of the spectrum started to notice a few deficiencies. Particularly for shortwave broadcast use, but all across the HF range, a couple more controls would have been nice.

The Plus 3 version of this great receiver addresses these shortcomings, as well as adding a couple of extra nice features. AOR should be complimented right away for listening to user feedback and responding in such a positive manner so quickly. It's not very often in this industry that we see this kind of response from a manufacturer.

And make no mistake about it, the original AR-5000 is an excellent receiver. Sure, if you're going to use it primarily for HF reception, the Plus 3 features are nice, but not essential, and if you're primarily interested in the VHF/UHF bands (which most wide band receivers are used for) then the Plus 3 options are not necessary at all, although they still might be desirable for those times when you do venture below 30 MHz.

The three functions added are Synchronous AM mode, for broadcast listening; Automatic Frequency Control which works in both the AM and FM modes to help keep the signal centered (quite frankly, it's really more of a help to the synchronous detector than anything else I could find); and a Noise Blanker, which is highly desirable if you're using HF frequently, but not necessary in the FM modes that most of us operate in for scanning.

The added feature, which some AR-5000 users discovered on certain earlier units, but is now fully supported on the AR-5000 Plus 3, is EPROM bank switching. This is almost like having two radios in one. By pressing and holding the SRCH or SCAN button as power is turned on, you can switch from EPROM-0 to EPROM-1. Each EPROM has a complete set of memories, VFO's, and settings. I haven't found much need for this yet, but I could see using it to divide scanner functions from HF functions or something like that so as to take advantage of the effectively two thousand memory channels available. I haven't filled up anywhere near the first thousand, but I'll keep you posted.

The AR5000 Plus 3 provides a lot of radio in a small space. The speaker is bottom-mounted, but directed forward through the grille at the bottom. The elevated front feet can be removed if desired so the radio sits level on the table.

Great Receiver Before Enhancement

On the surface, the AR-5000 has always been a well-equipped receiver. Coverage runs from 10 kHz to 2600 MHz. It's an all mode receiver, and its one thousand channel memory is divided into 10 banks of 100 channels each. In addition, there are 20 search banks, each of which has 100 pass frequency memories available. There are five individual VFO's on board, so finding a place to experiment with frequencies shouldn't be a problem either.

The receiver has all the common modes, AM, USB, LSB, CW, and FM, both wide and narrow. The correct mode is chosen based on the frequency of operation, as well as the correct channel step. These can be overridden if desired, so that any frequency and any step between 1 Hz and 999.999 kHz can be used. Very versatile indeed.

The AR-5000 Plus 3 also includes a computer control RS-232 port. This is a standard 9 pin connector, and any standard computer COM port will work fine. There is no need for a separate interface unit as with other models. Many applications are on the market which support the AR-5000 and several more are under development. The protocol is also available if you wish to write your own control software. Once again, hats off to AOR for making this available.

Unique "Accessory" Connections

One of the things that caught my eye almost immediately as I was unpacking it is the presence of two "accessory" jacks,

The unique front-mounted accessory jack provides a lot of options including a discriminator output if you need one.

one on the front panel and one on the back. They're called ACC-1 (front panel) and ACC-2 (rear panel) so as not to get them confused. Some very interesting signals are available on the ACC-1 connection. These include things like discriminator audio for connection to a terminal unit or other accessory, and audio output, as well as tape recorder control. There is an optional tape recorder cable available, however it is not supplied.

ACC-2 is mostly used for connection of the optional antenna control unit. This allows for switching of up to four antennas from the front panel. If the receiver is regularly used for a wide variety of frequencies, and if you have the antennas available, this could be quite a handy feature, although I did not get to try it out.

Even without this feature, there are two antenna jacks on the rear panel; one with an SO-239 connection, and one with an "N" type connection. I used the N connector for VHF/UHF and the SO-239 for shortwave. You can set the radio to auto switch between the two connections based on a cutoff frequency, so once set up, it's very convenient.

There are a wide variety of bandwidths available, particularly for VHF/UHF use. These range from Wide band filters of 220, 110, and 30 kHz, to more typical narrow FM filter widths of 15 and 6 kHz. The 6 and a more narrow 3 kHz would be used for AM and shortwave modes, although a somewhat more narrow filter than 3kHz might prove useful in extensive SSB use for utility listening. An optional .5 kHz filter is available for CW use, but that setting is only available when the filter has been installed.

Comfortable To Use

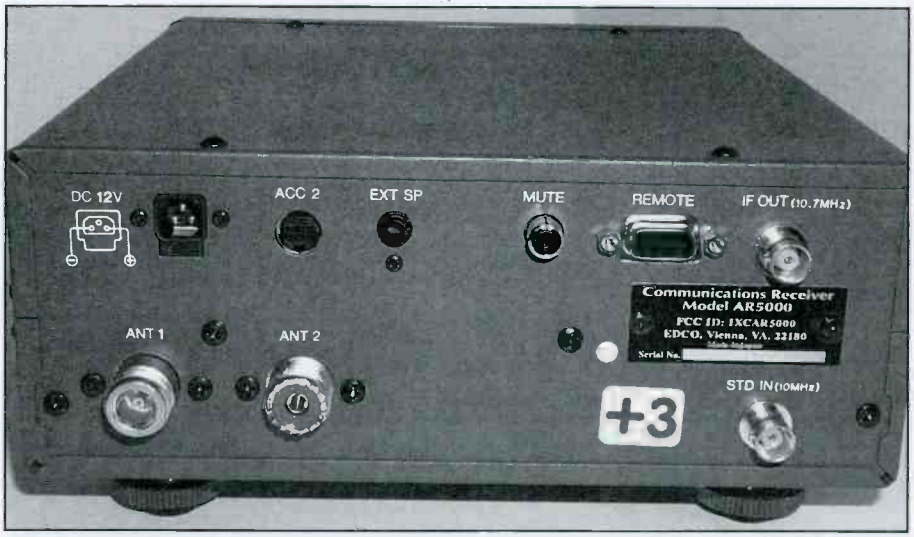
Many receivers with smaller front panels can be a bit overcrowded. I did not find

"This is almost like having two radios in one."

this to be the case with the AR-5000. There are many keys that have more than one function and most, although not all of them, are marked. The keypad and controls are reasonably well spaced so that even with my big clumsy fingers, I was able to get along just fine. Some folks may object to the multi-function keys, which I certainly can understand. But in practice, I found the AR-5000 to be fairly well laid out, and quite frankly, there are so many functions that to have an individual key for each would make the front panel so large that it probably wouldn't fit on your desk. Or else the keys would have to be so small that you couldn't operate them. Like anything else, once you get used to how it operates, the AR-5000 is not difficult at all.

I was, quite frankly, all set to blast the dynamic range of the receiver. That is, when you're on one frequency, but another strong transmitter comes on nearby, it interferes with, or desensitizes the receiver so that the desired frequency is noisy or not heard at all. However, I was rereading the manual and discovered the problem. To put it mildly: operator error. The AR-5000 has a built-in pre-amp, and the default mode is on.

If you've read "ScanTech" for any length of time, you'll know that I'm



The rear panel of the AR-5000 Plus 3 is quite well-equipped. Note the "+3" sticker which is the only outward indication that this receiver is equipped with the additional features. Also note the two antenna jacks — a type N and an SO-239.

quite close to a powerful transmitter and have trouble with many receivers regarding this problem. Amplifying the incoming signal only adds to the problem. You'll also know that I'm not fond of pre-amps in metropolitan settings.

On the AR-5000, the pre-amp is controlled through the attenuation setting, which is why I missed it earlier. At 0dB attenuation, you are in the pre-amp "ON" mode. By setting the attenuation to read -10dB, I'm actually turning the pre-amp off, but not really adding attenuation to the system. And at -20dB, the system actually starts reducing the incoming signal. I have used the -10 setting quite successfully, and have not noticed much in the way of missing signals except for the undesired artifacts of the interference problem.

"The AR-5000 Plus 3 also includes a computer control RS-232 port."

Oh, no doubt, I'm missing a few fringe mobiles, but they're probably not present on other receivers either. By adding the pre-amp, AOR is increasing the sensitivity of the receiver significantly, and if you can use that extra sensitivity, great. If not, using the -10 position is not much of a compromise, and you're eliminating the interference, at least in my case which is pretty severe. Even at the -10 position, the AR-5000 is still a very sensitive receiver as far as I can determine without test equipment. My preference would have been for the attenuation setting to read +10, 0, and -10 instead of 0,-10, and -20, or for there to be a separate pre-amp switch so that it called attention to what was happening, but knowing how it works is certainly an acceptable solution.

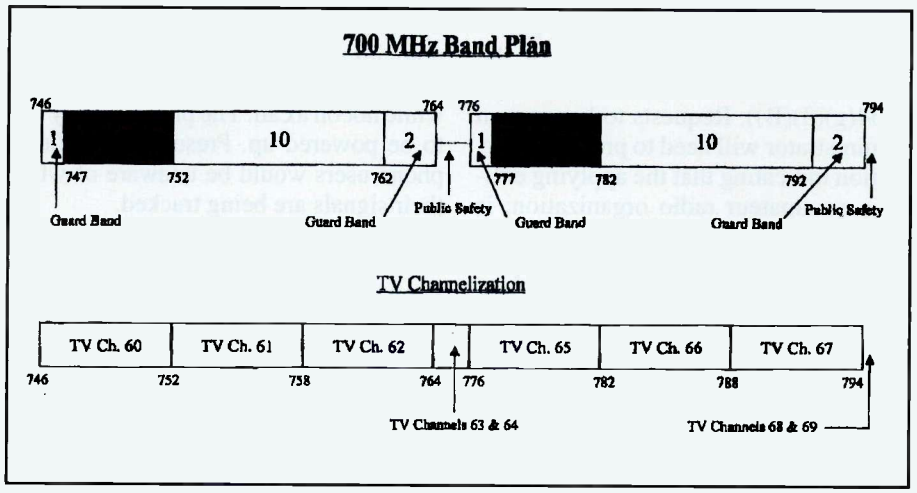
If you've been looking at the high end of the wide-band receiver market, you've no doubt run across the AR-5000 and the Plus 3 in your travels. You certainly owe it to yourself to check out this receiver, particularly if you have more than a passing interest in the shortwave portion of the bands. I'll be adding one to my shack soon, and I think you might find a place for it in yours also. Further information can be obtained from your radio dealer, or directly from AOR's website at www.aorusa.com. ■

washington beat

FCC Actions Affecting Communications

Big Changes In Amateur Service Rules

It was a busy winter for the fine folks at the FCC, after all. Last December, the Commission put the finishing touches on its Biennial Regulatory Review of the Amateur Service Rules. The biggest collective changes brought forth were the long anticipated **major changes to the Amateur Radio Service license class structure.** The 70-some page document, Report and Order (R&O) FCC 99-412, finalizes changes proposed roughly two years ago in WT Docket 98-143. The R&O contains much discussion on the issue, a complete list of all commenters and reply commenters' names, and some minor wording changes to various sections of Part 97, the Amateur Service rules.



The new 700 MHz radio band.

The licensing changes are indeed radical. Effective April 15 of this year, only *three classes of new amateur operator license will be issued: Technician, General, and Extra.* The examination requirements for these three license classes have been significantly reduced. Previously, Technicians needed to pass two written exam elements with a total of 65 questions. Starting April 15, **Technician** class applicants will only need to pass a revised written exam Element 2, comprised of only **35 questions. General** class applicants previously needed to pass a 13 word-per-minute (WPM) Morse code examination and a written exam element of 30 questions, in addition to the previous Technician exam requirements, mentioned above. On the above date, new **Generals** will only need to pass the **new Technician Element 2, a 5-WPM Morse code exam Element 1, and a new General exam Element 3,** consisting of only 35 questions. In other words, starting from scratch, General applicants once had to pass written exam elements totaling 95 questions, plus 13 WPM code. Very soon, applicants for this class face a maximum of only 70 written questions, and 5 WPM code for full general privileges! Becoming an Amateur Extra required an additional 90 questions in two written exam elements, above and beyond the previous requirements for General. And, they had to pass a commercial speed 20-WPM code test. But, starting April 15, new Extra class applicants will need to meet the new General class exam requirements, and simply pass an additional 50 question written exam Element 4. That's right, Extra licenses used to face a total of 185 written questions, and 20-WPM code. This is changing to a maximum of 120 written questions, and only 5 words-per-minute Morse code, from the perspective of new, unlicensed applicants. Already a General? Becoming a General after April 15? Simply pass new 50 question Element 4, and you will be an Amateur Extra. Passing scores of 75% (rounded), remain in effect for the written ham test elements. Operating privileges remain unchanged for all license classes.

What about existing Novice, Technician Plus, and Advanced class licensees? Not to worry. These three classes will be able to renew indefinitely, and upgrade to any appropriate new class at any time. Renewing Technician Plus licensees will see their license class listed as only Technician, but will retain the previous "Plus" HF privileges. Regrettably, this may necessitate these licensees to once again carry a copy of their Certificate of Successful Completion of Exam (CSCE) along with their license, as documentation of their Morse code proficiency. These licensees had to do this in the early days of no-code Technicians, before the FCC started issuing distinct "Plus" licenses. Those holding or considering applying for commercial class licenses should be aware that some of the revised amateur exam element numbers are now the same as some commercial exam element numbers. This had been the situation some years ago, was subsequently corrected, but will again be a problem. In their infinite wisdom, our friends at the Commission have assigned two new Amateur exam elements, the numbers 1 and 3, already used to describe commercial elements used in Maritime Basic Radio Law and the General Radiotelephone Operator exams, respectively. Be aware that ham and commercial exam elements bearing the same element number are not the same, and are not interchangeable.

Radio Amateur Civil Emergency Service News

Also in FCC 99-412, the FCC states that Radio Amateur Civil Emergency Service (RACES) station licenses will not be

BY ALAN DIXON, N3HOE <n3hoe@juno.com>

renewed. Instead, club station and military recreation station licenses will have to be obtained through newly created Club Station Call Sign Administrators. In a separate action, DA 99-3018, the Commission announced that it would begin accepting applications for such administrator organizations not sooner than March 1, 2000. Privatization of club call sign administrators has been previously authorized by Section 4 of the Communications Act (47 USC §154(g)(3)(B)). Requests to become an administrator will need to provide information indicating that the applying entity is an amateur radio organization; is tax-exempt under §501(c)(3) of the Internal Revenue Code of 1986; will provide "voluntary, uncompensated, and unreimbursed" services for processing club and military recreation call sign applications; will submit information to the Commission in an electronic batch file; and will retain application information for a minimum of 15 months, and make such information available to the FCC. Administrator requests must be signed by a "responsible official" of the requesting organization, include a telephone number, and be filed with the FCC's Wireless Telecommunication Bureau. Qualifying organizations will have to successfully complete a pilot autogrant batch filing project.

Bureaucratic Double-Speak

As we all know, monitoring cellular phone calls is illegal. Right? So, when is monitoring cellular calls *not* really monitoring calls? When you're The government, of course! When is stalking not stalking? Why, when you're Big Brother, evidently. No government agency would *routinely* monitor cellular radio traffic without a showing of probable cause and a court order, would they? They certainly wouldn't follow cellular callers' travels as they made their calls while going about their daily business, right? Perhaps. **The Maryland State Highway Administration and the Federal Highway Administration** have entered into a contract with a vendor of wireless caller location equipment, **to monitor the flow of cellular traffic on certain highways**. If this sounds like a covert operation, then bear in mind that this information comes from press releases freely provided by the equipment vendor here, and another interested party.

The stated objectives of this project include real-time traffic speed and traffic congestion monitoring, among other things. Technology based on wireless 911 caller location systems will be used. Although the contracting parties state that they will not listen in on any conversations, or identify individual callers, the technical possibility of motorists' speed being clocked as they use their cellular phones, may be just a bit intimidating. Depending on how various location technologies are applied, it is possible for cellular phone customers to be tracked even while not on a call. The phone merely has to be powered up. Presumably, cellular phone users would be unaware of when their signals are being tracked.

This concept is not as new as it may seem, either. In 1996, an ITS project known as "D.C. Cellular Surveillance" made use of the existing cellular infrastructure for similar purposes, including "area wide surveillance" and determining the accuracy of cell phone geolocation data in the Washington, D.C. area. That project was completed at a price tag of over seven million dollars, according to the U.S. Department of Transportation. What is not at all clear is how projects such as these square with the Electronic Communications Privacy Act of 1986 (ECPA, 18 USC §§2510-2520). Provisions of the act specify generally that unlawful interception of cellular calls involves accessing the *contents* of an intercepted call. However, Section 2511(2)(a)(i) of the ECPA makes it a criminal offense for providers of wire "in whole or in part" (§2510(1)), communications service providers to "utilize service observing or random monitoring except for mechanical or service quality control checks." The Cellular Telephone Industry Association has been very vocal in the past concerning protection of cellular subscribers' privacy interests. Are they standing up for consumers on this privacy issue?

New 700 MHz Band Grows Closer To Materializing

It's around the corner, as existing NTSC broadcast television stations start upgrading to digital Advanced TV (ATV) technology, and moving out of the band presently occupied by TV channels 60 through 69. The Balanced Budget Act of 1997 directed the FCC to reallocate a portion of the 700-MHz band to Public Safety. The Commission subsequently allocated 24 MHz, in two 12 MHz blocks 30 MHz apart, for that purpose. The remaining 36 MHz of the 700 band (actually 746 to 806 MHz) was to be auctioned for "commercial" communications purposes.

Toward that end, the FCC had last year initiated WT Docket 99-158 to address this need. After, no doubt, much consideration, the FCC earlier this year adopted rules for licensing and operations for this 36 MHz portion of the 700 band, in FCC Docket 00-5. The new rules can be found in FCC Part 27, and services to be provided in this reallocated band may include "advanced" wireless services, to include both fixed and mobile Internet access. The band plan provides for two licensed bands. One will be 20 MHz, consisting of two paired 10 MHz bands, and the other to be 10 MHz worth, made up of two paired 5 MHz bands. The U.S. will be portioned into six "Economic Area Groupings (EAG) for licensing purposes." A single party can acquire both licenses in any given EAG, and existing Commercial Mobile Radio Services licensees will not be subject to existing spectrum caps when bidding for these 700 MHz band segments.

The remaining six MHz will be divided into "guard bands," two each, two MHz wide, and two each one MHz wide, to protect adjacent bands, particularly the 700-MHz Public Safety bands. There has been controversy among interested parties as to the technical necessity of such guard bands. Proper engineering techniques should be sufficient to prevent or mitigate any potential interference problem, with perhaps minimal band edge clearance. Yet with this stated technical concern of potential interference in mind, the Commission wants to license these guard bands for other, as yet unspecified, presumably commercial, uses. The Commission does note that licensees within the guard bands will have to meet more stringent operational parameters than licensees in the remainder of the commercial 700 MHz band. Their decision on guard band licensing is to be published in a subsequent Report and Order. The FCC also adopted standards to protect the approximately 100 existing TV stations on channels 60–69, until they convert to ATV and move to other, available channels.

No April Fool jokes in this column! Actual antics and anecdotes from Washington are usually strange enough, as is. Let me know of your concerns about FCC actions and the future of the communications industry and hobby via E-mail. See you next month. ■

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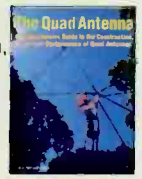

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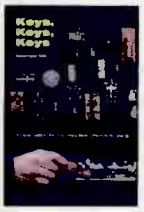

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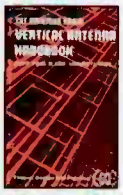

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the pirate's den

Focus On Free Radio Broadcasting

Captain Ron's Idea Of A Great Top-Ten List

Off we go to Pirate Land! We've got lots of great loggings, so fire up the radio and let's begin. **Radio Metallica Worldwide, 6955** at 0125 with Led Zeppelin, Dr. Tornado, and someone named "Boo Hoo" who ID's as "You are listening to 2000 powerful watts of Radio Metallica Worldwide — you're on Liberty 1999." (Pete Nelson, MI) **6956** from 1115 to 0142 close, with various rock and heavy metal and mention of Blue Ridge Summit address. (Robert Gregory, NV)

KIPM, 6955 USB at 0600 with discussion about problem solving and linear solution, "Max and Shadow" story hour. P.O. Box 24, Lulu, GA 30554 and off at 1616. Also heard at 0730 with various segments including listener letters, winning a Tom Thumb radio. Off at 0822. (Tim Taylor, PA)

Radio Toronto, 6955 USB at 2331 with ID, mail to P.O. Box 293, Merlin, ON N0P 1WO. Gave location as the 15th floor of Pittman Hall. Also at 1401 with a test broadcast, mentioning that the station had a 1,000 mile range. Also at 2205 with Bob Seger numbers, mentioned that it was their 14th broadcast and that they were in Nova Scotia, transmitting from the university. Off at 2222. (Taylor, PA) 2203 with test broadcast. Sponsored by someone in Canada? (Bill Finn, PA) 1158–1159 with possible test. (Silvi, OH)

WFMQ, 6955 USB at 0118 with Boy George tune. Off at 0125. (Taylor, PA) 1357 to 1428 with the usual stuff. Also at 0104. And at 0059. And another day at 0100. (Lee Silvi, OH)

RBCN, tentative, **6955 USB** at 0014 with Jimmy the Weasel and various tunes. Did "The Devil Went to Georgia" with Radio Bob's name used instead of The Devil. Off at 0027. (Taylor, PA)

Blind Faith Radio, 6955 USB at 2129 with ID, request for a song by Kiss. Program was entitled "The Kiss Collage." Dr. Napalm extended good wishes and mentioned Steve Mann's name, talked about acquiring a 1 kW amp. Gave Merlin, Ontario, address and went off at 2147. Also at 2150 with more Kiss selections, talk about the ACE, address, QSL information. Off at 2206. (Taylor, PA) 2142 with ID and E-mail address, Kiss, and Erythmics. Off at 2205. (Skip Blaser, MA)

Ah! Intrigue! A "Pirate's Den" reader, visiting Houston, Texas, managed to "DF" local FM pirate Montrose Radio to this house. He says the windows are heavily tinted (almost black) and there's an eight-foot chain link fence surrounding the house. About 25 feet behind the house is a small metal building with antenna lines feeding a "J-pole" antenna on top and audio and power cables running from the back of the house to the "shack."

WHYP, 6955 USB at 2236 with what sounded like church singers. Weather report, Chattanooga Shoeshine Boy, E-mail address (not copied), Devil Went to Georgia parody. Signed off at 2251. Also at 2300 with blues-type songs and parodies, possible mention of an E-mail address. (Taylor, PA) 2208 with Ravi filling in for his cousin James Brownyard. Usual James-isms, Jimmy the Weasel sings. Also 0100, including E-mail addresses: addy's-whyp1530@yahoo.com; whyp1530@starmail.com, and whyp@partlycloudy.com. Also at 0043. And at 2310 with WHYP salute to Radio Bob. (Finn, PA) 2233 "Soul Man" song and Radio Bob song. Said was brought to you by the "up to no good production team." (Blaser, MA)

WRAY — Ray Radio, 6955 at 0036 with ID, blues-type music, ID. Partially copied address of P.O. Box 452, Wellsville, New York, 14895 and to include postage. Mentioned "the way of the ray." Off at 0051. (Taylor, PA)

Voice of Captain Ron Shortwave, 6955 USB at 2259. Various songs, mention of their E-mail address. Off at 2258. (Taylor, PA) 2312 with Captain Ron "freezing his #$#$ off to play 007 theme songs and top-ten list of things you'll never hear Bond say." 2229 with "It's all part of my rock and roll fantasy."(Finn, PA)

Radio Free Speech, 6950 at 0203 with music parody to sign-off at 0205. Also at 1636. (Taylor, PA)

BY EDWARD TEACH

KMUD, 6950 from 0130 to 0240 with a variety of music. Claimed to be broadcasting from the Mojave Desert near Death Valley, California. (Gregory, NV)

Voice of Shortwave Radio, 6955 at 2115 with ID and QSL info (Blue Ridge Summit) and VOSWR@mailcity.com. Howard Stern segments, jingles, new OJ song. (Finn, PA) 2100 with IDs and mention of Blue Ridge Summit drop. (Lee Silvi, OH)

Voice of Anarchy, 6955 at 1748 with replay of July 4th program. (Finn, PA)

WHYT, 6955 USB heard at 0050 with music and a sports report by a guy sounding like Apu on "The Simpsons." (Neil Serafin, CO)

Radio Garbanzo, 6950 at 2138 mentioning the Belfast drop. Described the kilowatt cost for one of their relays. "Turn off your computers — this isn't a 'netcast,' but a pirate shortwave broadcast." Also at 2319 with phonetic ID, sound effects. Also with repeat of earlier show at 0116 (Finn, PA)

Radio Aesop, 6955 USB at 0000. Fable about earthenware, and host told what the moral was. Radioaesop@yahoo.com. Also from 2304–2345.(Finn, PA) 0258 to 0301 off. (Silvi, OH)

Radio Free Speech, 6955 at 0152 with host Bill O. Rights with commentary, Jimmy Stewart excerpt. Carrier from another pirate station on at the same time. (Finn, PA)

Voice of Prozac, 6955 heard at 2045 with music and IDs. Pittsburgh drop. (Silvi, OH)

Jolly Green Radio, tentative, **6955** at 0134. (Silvi, OH)

Radio Three, 6955 at 2210 with three songs, congratulations to the lucky 20 people with real QSLs, truck driver's song, Andy Rooney Car Alarm. Hosted by Sal Amoniac. (Blaser, MA)

Magic 105, 6955 at 0035. Tape or relay of a Cleveland area FM station which uses the "Magic 105" slogan. (Silvi, OH)

Jolly Green Radio Resting, 6955 at 0131 to 0134. (Silvi, OH)

Radio Cobaine (?) 6955 at 0139–0146 close. Music, but the announcer's audio was too weak. (Silvi, OH)

WBIG, 6955 at 1817 with music and many IDs. (Silvi, OH)

And that's a wrap for this time. Thanks to all who sent logs. Keep 'em coming! This column wouldn't happen without you! Catch you again next month! ■

communications confidential

Your Guide To Shortwave "Utility" Stations

A New Frontier — Copying Automatic Link Establishment (ALE) Signals Is Easy!

As mentioned in last month's column, Charles Brain from England has developed a program (PC-ALE Controller) which allows UTE monitors around the world to decode the ever-present Automatic Link Establishment (ALE) signals. This is a great entry point for new UTE digital monitors as the entry cost is something most of us already have overcome: a computer and an SSB-capable radio. Other than the time required to download the software from the Internet, the investment to get involved in this area of UTE digital monitoring is virtually nil.

In this month's column, we are going to take a look at the wonderful PC-ALE Controller program and ALE in general, and discuss the new "rave" in low-cost digital UTE monitoring. So, let's begin with a discussion about ALE, what it is, how it is used, and who uses it.

Longtime reader Bill Farley (New Mexico) sent a picture of his shack which includes several scanners (RadioShack, Uniden, etc.) and an ICOM VHF/UHF transceiver, and a Yaesu 757GX transceiver attached to a HAL CT-2100 CW, RTTY terminal.

Automatic Link Establishment is a generic term used to describe a family of signals used for, as its name implies, the automatic establishment of communication connections. ALE signals have been developed by a wide variety of companies and are often incorporated as part of an entire digital signal package. Different ALE variants include Arcotel ALE by Daimler Chrysler, a CIS variant running at 150bd, a Spanish Navy variant, and the most common, the Mil-Std 188-141A. It is this last variant in which we are interested. The Mil-Std 188-141A signal is an eight-tone FSK system running at 125bps. The 8 tones run from 750hz to 2500hz, with 250hz separation between each tone. These tones combine to form "words," which are used to represent the eight basic functions of ALE: "TO," "FROM," "THIS IS," "THIS WAS," "THRU," "COMMAND," "DATA," and "REPEAT." It is these "words," along with the user identification (from 1 to 15 characters), that enable the ALE system to determine who was talking to whom, and what instructions, if any, need to be carried out.

ALE is typically used on a scanning transceiver, which will step through a series of pre-programmed frequencies looking for other ALE stations from the same network. Once a signal is detected, the ALE system determines if the station sending the signal is calling the receiving station. Next, it will look to see if the sending station is within the same network. If so, the receiving station will then transmit and establish a link. Once the link is established, the users will typically switch to another form of transmission (voice or data), although short "order-wire" transmission can be sent using ALE. Once the communications are over, the receiver returns to scanning while it awaits the next call.

Another function of ALE, and one which is conducted with little or no user intervention, is known as "sounding." By sending a series of "sounding" calls from each station, all of the stations within the network can determine the best frequency on which to call each particular station. With every ALE call, the stations measure the Link Quality and Bit-Error Rate looking for the best possible frequency on which to establish communications. This information is automatically stored within the ALE system for use when needed. Most networks have a set sounding schedule where all of the stations will transmit on all of the assigned frequencies — usually at least once each hour.

Before we go looking for ALE networks, we need to take into account a few small "guidelines" for ALE monitoring. For starters, most, but by no means all, ALE transmissions occur in **USB mode**. Next, most (but again not all) ALE frequencies are on the whole or half kilohertz (ending in .0 or .5 . . . example: 5710.5 kHz or 18003.0 kHz). Lastly, we must take into account whether we desire to scan the frequencies within the network, or simply sit on one and wait for traffic. Neither option holds any serious drawbacks. The option to scan or sit on a single frequency will be partially determined by your receiver, as the PC-ALE program can control the scan for certain

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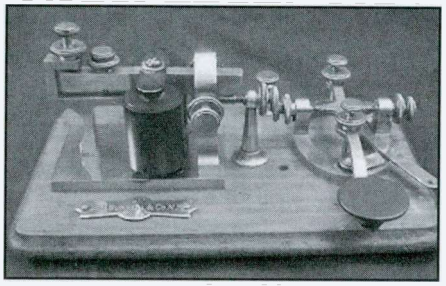
receivers (details below). Although scanning without the control of the PC-ALE program is possible, it is bound to result in missed or cut signals. Keep in mind that almost all networks require each station to "sound" on each frequency at least once every hour. By sitting on a single frequency for an hour or more, one can usually determine exactly which stations use that frequency — give or take a few "non-standard" net participants (common on SHARES and military networks). By scanning the frequencies within a network, you can cover all of the possible frequencies, but you'll tend to log the same stations repeatedly as they "sound" on each of the frequencies. To each their own. Great success has been had by users of both methods.

Now that we have covered the basics of ALE, how it is used, and how it functions in a network, let's take a look a few of the networks present on the HF airwaves.

One of the easiest ALE networks to find, and usually a good starting place for beginners, is the U.S. Air Force's ALE network, which runs parallel to its Global High Frequency System voice network. The ALE network is much larger than the GHFS system, with more stations involved in the ALE network than will ever be heard in voice at any one time. Ground stations identify themselves using a three-letter identifier corresponding to the station's name or ICAO designator. The primary stations in the network are ADW: Andrews AFB, AED: Elmendorf AFB, CRO: Croughton AFB England, GTL: Thule AFB Greenland, GUA: Andersen AFB Guam, HAW: Ascension Field, HIK: Hickam AFB, JDG: NAS Diego Garcia, JNR: Salinas AFS Puerto Rico, JTY: Yokota AFB Japan, MCC: McClellan AFB, OFF: Offutt AFB, PLA: Lajes Airfield, and TAG: Incirlik AFB Turkey. Also active in this network are a variety of secondary ground stations as well as transport/tanker aircraft. Aircraft are readily identifiable due to their use of 6-digit numbers as identification. These numbers equate to the aircraft type and tail number. The aircraft "type codes" are 1: C-5A/B, 2: C-17A, 4: KC-10A, and 5: KC-135. An example of these aircraft numbers is 280052. The "2" in the first position indicates that this is a C-17A GLOBEMASTER II, while the last five digits equate to the tail number 98-0052. This particular C-17A is nicknamed the "Spirit of McChord." To find out details about the specific aircraft tail number, surf over to the Scramble on-line databases at <http://www.scramble.nl/usaf.htm>.



Tom Severt, Kansas, sent in a picture of his newest (or oldest) toy: A Bunnell telegraph key. A local ham gave it to him. It was in poor shape when he received it with the brass being all brown/black, and the steel pieces were rusty. After taking it apart, polishing it up for a couple days, and rewiring it, Tom reports it works like a dream.

Lastly, some of the frequencies for this net include **4721 kHz, 6715 kHz, 8965 kHz, 9057 kHz, 11226 kHz, 13215 kHz, 18003 kHz, 23337 kHz, and 27870 kHz.** While this is not all of the frequencies in this net, these are some of the busiest (especially 11226 kHz) and thus will result in some of the quickest logs. The **9057 kHz** frequency is especially popular with aircraft that can use ALE to establish phone patches through the GHFS ground stations without the intervention of a GHFS operator.

Another common ALE network copied here in the United States is the Swedish Ministry of Foreign Affairs network. The Swedish MFA maintains embassies in every major country in the world and in many countries where other nations choose not to establish embassies. As a result of this worldwide network, the Swedish MFA recognized the need to adopt ALE to assist in managing communications between its embassies and the MFA in Stockholm. Like the USAF net, there are a large number of stations active in the Swedish MFA network. Within this network, however, there seems to be several smaller sub-nets, one for each geographic region. In the Western Hemisphere, the primary frequencies for Swedish Embassies are **10581 kHz, 10587 kHz, 12101 kHz, 12225 kHz, 16105 kHz, 18686 kHz, and 20958 kHz.** On these frequencies, one can log a variety of embassies identifying as S##. This identification corresponds to the SAM## callsign assigned to each embassy. (Example: S84 is SAM84: Swedish Embassy, Washington DC). The embassies active in the Western Hemisphere include Bogota (S12), Washington, D.C. (S84), Mexico City (S86), Buenos Aires (S88), Lima (S91), Managua (S92), Havana (S93), and Guatemala City (S94). In addition, the Swedish Ministry of Foreign Affairs (S00) will make an occasional appearance on this sub-net. Most traffic consists of "sounding" calls, or calls to establish links for the use of the Swedish QPSK modem. The QPSK signal is often heard on these frequencies following an ALE call. The best time to log this sub-net is during the morning and early afternoon during normal embassy working hours.

Another U.S. government ALE network commonly heard in the U.S. belongs to the Federal Aviation Administration. The FAA runs its network between the primary Air Route Traffic Control Centers (ARTCC) around the country. The FAA stations identify themselves using "FAA" plus a three-letter suffix. (Ex: FAAZMP). The three-letter suffix equates to the ICAO designator for the sending station (K+suffix, thus FAAZMP is KZMP: Minneapolis ARTCC, MN). Some of the other stations active in the net include FAASJU: San Juan, Puerto Rico, FAAZBW: Nashua (Boston), FAAZDC: Washington, D.C., FAAZJX: Jacksonville, FAAZLA: Los Angeles, FAAZNY: New York, and FAAZOA: Oakland. Frequencies for this net include **5860 kHz, 6870 kHz, 7475 kHz, 7611 kHz, 8125 kHz, 9914 kHz, 13457 kHz, and 16348 kHz.** If you come across an FAA station identification not listed above, don't despair. Simply read the rest of this column and you will find an URL for an on-line search tool to help you identify these stations.

The last net we'll look at in detail is an unidentified net from the Middle East. Widely heard in Europe, this net has also been logged in the U.S. Logged on a variety of frequencies, the participants in the network appear to be embassies of an unidentified country (Algeria has been one suggestion). Stations identify themselves using a three-letter identification, which corresponds to their geographic locations throughout Africa and the Middle East. Among the stations identified so far are AMM: Amman Jordan, CYP: Cyprus, KUW: Kuwait City, LAG: Lagos Nigeria, LUA: Luanda Angola, and RIY: Riyadh Saudi Arabia. Some of the frequencies logged so far for this network are **6845 kHz, 14580 kHz, 14814 kHz, 16934 kHz, 18974 kHz, 19464 kHz, 20602 kHz, and 23822 kHz.** This network is most often logged by listeners in Europe, however logs of the stations have been made from the eastern U.S., especially on **6845 kHz** during the late afternoon and early-evening hours.

Other networks often reported are the Romanian MFA (**6689 kHz, 6863 kHz, 17474 kHz, 18503 kHz, and 20533 kHz**), the U.S. National Guard (**5847 kHz, 8047 kHz, 9141.5 kHz**), the Danish Military (**2250 kHz, 4841 kHz, 5120 kHz, 13435 kHz**), and the Colombian Navy (**5500 kHz, 5710.5 kHz, 8400 kHz, 9200 kHz, 10608 kHz, and 11455 kHz**). These and many other networks await investigation! So, how do you begin? Read on.

We've covered some of the basics of ALE, as well as some of the nets available. The last thing you must know to copy ALE is where to get the PC-ALE Controller program. This program is available for download from Charles Brain's Website at <http://www.chbrain.dircon.co.uk/pcale.html>. This program has modest computer requirements, requiring only a Pentium-computer running at 75 MHz or better. Although written specifically for the Intel Pentium, the program does run without problem on most other high-end processors, such as the AMD K6/K62 and even most Cyrix processors. Besides the computer, the user will also need a Windows-compliant sound card, at least 16Mb of RAM and Windows 95 or 98. Also, of course, one must have an SSB-capable receiver. As mentioned earlier, the PC-ALE Controller program can control certain receivers in a scan mode for automatic detection of ALE. Among the receivers/transceivers supported are the **ICOM 706, ICOM 735, ICOM 746, ICOM R75, ICOM R8500, NRD535, NRD545, Kenwood TS850, Watkins Johnson HF1000, and the Ten-Tec 550 Pegasus.** The PC-ALE program is freeware, although the author does like to hear from users with suggestions and comments about its use and functionality.

Digital News

We start out this portion of the column with a couple of follow-up reports to items mentioned in previous "CommConf" columns.

Richard McClung, a member of the engineering services team from TCI/BR Communications, checks in this month with some additional information regarding the **6028 VFT signals** reported on back in the January edition. Richard writes that the 6028 Time Diversity Modem (TDM) is an error-reduction instrument intended for use on low speed HF and troposcatter teleprinter circuits. It may be rack mounted with the addition of flanges to the sides of the cabinet/chassis. The 6028 was manufactured by BR Communications in Sunnyvale, California and is part of a series of TDM's that includes the 6029C (rack mount with built-in front panel jack field), 6048 (tactical), and the 6078 (aviation ATR mount). The 6028 has the capability, with built-in tone modulator/demodulator circuits, to operate directly with SSB radio equipment employing a 3.0 kHz or greater voice channel bandwidth. The 6028 greatly reduces the effects of fading, impulse noise, and interference encountered on radio-teletype circuits. It utilizes a pilot tone for tuning with a seven-fold in-band tone diversity and time diversity to minimize errors due to impulsive-noise bursts, interference, and fading. The technique achieves dramatic error-rate reduction on difficult HF and troposcatter radio circuits where noise and interference are highly correlated in space and in frequency, but not in time. This factor allows the 6028 to eliminate character errors from an otherwise obliterating noise burst or complete signal fade up to three seconds duration. With the increase of HF activity during the upswing of Cycle 23, we have been getting requests from previous customers for factory service of these units. Thanks, Richard!

Another reader reports in from the West Coast with additional information regarding the **USCG G-TOR** net as reported on in the February edition. Matthew Skahill (WT3C) reports that there have been some changes made to the **USCG G-TOR** net since the February edition was sent to the publishers (in early November).

Matt writes that the G-TOR net made a switch to PACTOR-2 in November 1999 and that they have been running this mode successfully since that time. Additional information provided by Matt indicates that the station which ID's as NMC1 is not located at CAMSPAC Point Reyes, but rather is located at Coast Guard Island, Alameda, California. Also, Matt confirms that station NOJ (COMSTA Kodiak) is still active in the net, and is in fact the second-busiest station in the net behind NMC1. Lastly, Matt goes on to say that there are now about 16 Coast Guard cutters using the PACTOR-II system, however the Polar Star and the Polar Sea (the first two cutters to use G-TOR) no longer use this net.

Other Utility News

On December 23, the United States signed an agreement to return Rhein-Main Air Force Base back to the German government. As part of the continuing withdrawal of American military units from Europe, the United States agreed to turn over the air base to Germany by 2005. The United States has maintained a presence at the base since 1945 and has shared the land around Rhein-Main with the Frankfurt Airport since 1959. The Airbase was the central point for the Berlin Airlift in 1948 and 1949 and was a key staging point for troops during the Persian Gulf and Balkans Wars during the 1990s. U.S. military units at the base will be relocated to two other U.S. bases in Germany, with NATO and the German government picking up the tab for the relocation.

Reader Mail

Alan Gale checks in this month from the U.K. with information about **Malin Head Radio in Ireland** (c/s: EJM). Alan reports that Malin Head Radio began test transmissions of its new NAVTEX service in December 1999. On December 11, Alan copied the following NAVTEX broadcast: "110205 UTC DEC 99 MALIN HEAD RADIO EJM RNW 000028. THIS IS AN ENGINEERING TEST FROM MALIN HEAD RADIO/EJM. WE WOULD LIKE TO HEAR FROM VESSELS, REPORTING THEIR POSITION AND THE QUALITY OF RECEPTION OF OUR NAVTEX SERVICE. OUR MF WORKING CHANNEL IS 255 N 1677 kHz MALIN, 2102 kHz SHIP. OR CALL ON 2182 kHz MF, CH16 VHF. NNNN." Alan goes on to say that QSL reports can be sent to: Officer-In-Charge, Malin Head Radio Station, Malin Head, County Donegal, Republic Of Ireland. Listeners should give details of what they heard, where they're located and what equipment they are using. They should also enclose an IRC and envelope if a QSL is required.

Besides NAVTEX, this station also makes regular voice broadcasts on MF using 1677 kHz. Following announcements on **2182 kHz**, Malin Head Radio transmits navigational information at 0033, 0433, 0833, 1233, 1633, and 2033 UTC. In addition, the operators at Malin Head Radio passed the following information to Alan regarding their aerials: "We use 50 metre towers. The towers themselves are the radiators, tuned to resonance at the bottom using antenna tuning units housed in small huts, which are kitted out with power points, lights etc. so that we can work on the ATU's even

though it might be cold and wet outside. The towers sit on large insulators and the stays are broken up with insulators to prevent resonance on freq. or on the second harmonics, etc."

Besides the information regarding Malin Head Radio, Alan also writes with news of the **SAQ (Grimeton Wireless Museum)** special broadcast on 17.2 kHz. On January 2 at 0600z, Alan copied the following CW message: "VVV de SAQ SAQ SAQ CQ CQ CQ de SAQ SAQ SAQ = A radio message from Grimeton Radio/SAQ January 1, 2000. = From his majesty Carl XV Gustaf, King of Sweden. = 75 years ago the first wireless messages were sent from the radio station at Grimeton in Sweden to the United States of America. The new link was supplied with the ultimate in modern radio technology at that time, invented by the Swedish-American Ernst F. Alexanderson, USA. In that first message from Grimeton 75 years ago, my Great Grandfather King Gustav V expressed the hope that better communications would strengthen the relations between peoples and nations. Today, the only still existing Alexanderson = transmitter is again sending a message around the world. Today, the unique radio transmitter at Grimeton meets a new millennium. My message today is, however, the same as that very first sent by King Gustav V 75 years ago. With modern technology and means of communication, the possibilities of deeper understanding, peace, democracy, and free exchange of opinions between the peoples of the world will increase. Finally, I wish a happy new year to all of you around the world, who are listening to this transmission. = Signed Carl Gustaf Rex AR end of msg = note: listeners to this transmission pse QSL via Fax AR 46340 674 195. . . AR 46340 674 195 or via e-mail grimeton-radio@telia.se. . . grimeton-radio@telia.se or via SM6NM cba/buro . . . SM6NM cba/buro AR de SAQ SAQ SAQ VA."

Thanks, Alan, for sharing these two pieces of information. The SAQ log is especially nice with its historical nature!

Ray Prestridge, checks in this month with information regarding **Antananarivo ASECNA Radio** (c/s: 5ST). Following a couple of logs, Ray conducted some research on the Internet coming up with a Website for ASECNA (<www.ASECNA.com>). Ray states that while there is a link for an English version, the Website is only in French. Ray also wanted to report on another useful Website. While monitoring 5ST, Ray copied a METAR report for the ICAO identifier "FMMI." Wanting to find out the location for this identifier, Ray discovered the NOAA/NWS site at <www.nws.noaa.gov/oso/siteloc.shtml> . This site allows you to input a four-letter ICAO code (or a five-digit WMO code) and receive information about the place you are looking for. The information provided includes the place name, latitude and longitude, elevation, and a lot more. This site is great for aviation fans as well as monitors of various weather-related utility stations. Lastly, Ray reports that he has repeatedly copied Antananarivo Radio (5ST) on **7831.5 kHz** with decent ARQ-E3 (48 baud) signals around 0300 UTC.

MidAtlanticDXer checks in this month with a couple of interesting Websites. First, the Rescue Coordination Center Bermuda/Bermuda Harbour Radio (c/s: ZBM) maintains a Website at <www.rccbermuca.bm>. This nicely designed Website provides a lot of information about the history of ZBM, as well as its current operations. ZBM currently broadcasts NAVTEX transmissions on 518 kHz at 0010, 0410, 0810, 1210, 1610, and 2010 UTC, as well as navigational information voice broadcasts on 2582 kHz at 0035, 0435, 0835, 1235, 1635, and 2035 UTC. For the MF broadcasts, ZBM utilizes Sailor 2100 transmitters broadcasting at 600w. Even with this relatively low power (the USCG 2670 kHz stations use 1kw), the MF broadcasts are often heard along the eastern seaboard and, on occasion, as far inland as Texas and the Midwest. Another Website of interest details the communications capabilities of the Emergency Response Units deployed by the International Red Cross and Red Crescent Societies. Located at <www.ifrc.org/issues/eru/s_tele.htm>, this Website details the communications equipment and systems deployed with an Emergency Response Unit. This site will be of particular interest to the fans of monitoring the International Red Cross and Red Crescent Societies.

UTE Loggings SSB/CW/Digital

235: GNI, Grand Isle, LA at 0515. (BF-NM)
249: LYD, Houston, TX at. 0412. (BF-NM)
260: AVZ, Terrell, TX at 0511. (BF-NM)
263: JSO, Jacksonville, TX at 0416. (BF-NM)
272: OJA, Weatherford, OK at 0509. (BF-NM)
311: MVI, Monte Vista, CO at 0425. (BF-NM)
323: HJN, Hebron, NE at 0426. (BF-NM)
353: LI, Little Rock, AR at 0352. (BF-NM)

Abbreviations Used For Intercepts

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

360: YOG, Ogoki Post, ON at 1104. (RM-PA)
368: GYM, Guaymas, Mexico at 0345. L, Toronto, Canada at 0345. (BF-NM)
371: TVY, Tooele, UT at 0340. GHX, Graham, TX at 0339. (BF-NM)
373: 2R, Tyendinaga, ON at 1115. (RM-PA) TF, Pueblo, CO at 0456. (BF-NM)
376: ZIN, Great Inagua, BAH at 0849. LC, Columbus, OH at 1155. (RM-PA)
380: UCY, Cayabo, CUBA at 0849. (RM-PA)
382: SP, Springfield, IL at 1138. (RM-PA)
383: CNP, Chappel, NE at 0241. (BF-NM)
391: DDP, San Juan, PR at 1046. CM, Columbus, OH at 1130. (RM-PA)
395: XEN, Dayton, OH at 1125. (RM-PA)
397: LLJ, Challis, ID at 0323.
403: AZC, Colorado City, AZ at 0319. BPO, Oneida, TN at 1119. (RM-PA)
404: ZR, Sarnia, ON at 0924. (RM-PA) PRZ, Portales, NM at 0455. (BF-NM)
407: CO, Colorado Springs, CO monitored at 0446. (BF-NM)
408: JDM, Colby, KS at 0445. (BF-NM)
409: JHH, Griffin, GA at 1000. (RM-PA)
415: HJM, Bonham, TX at 0242. (BF-NM)
417: EK, Worcester, MA 0952. (RM-PA) IY, Charles City, LA at 0313. (BF-NM)
418: IY, Charles City, IA at 1105. (RM-PA)
423: PCW, Port Clinton, OH at 0210. (RM-PA) CKP, Cherokee, IA at 0311. (BF-NM)
424: RVJ, Reidsville, GA 0938. (RM-PA)
518: Malin Head Radio — EJM at 0205 with engineering test. (AG-UK)
521: TVX, Greencastle, IN at 0910. (RM-PA)
1708.8: UAI, sending VVV de UAI in CW w/qsx 16802 kHz pse at 0213. (BF-NM)
2518: BW, USN at 0139 in USB wkg IPW, BB, E, and others. JTFEX-related (MADX-MD) BRAVO WHISKEY and ECHO at 0259 w/tracking net. (JLM-KY) BRAVO WHISKEY net, probable *USS Eisenhower* Carrier Battlegroup. (RMC-GA) BRAVO WHISKEY with various single letter callsigns, with frequent references to PELICAN (P-3, VP-45, NAS Jax) and CARDFILE (P-3, unknown squadron probably from Jax). Bravo Whiskey at 0339 w/Foxtrot asking if track # 4625 is Lima's "pony" and if so can he push his Hawk link picture through. Lima confirms that the track is his "pony." (*Probable USN*

Link-11 net). (RP-MD) All in USB.

2670: NMG2, USCG Group New Orleans at 1236 in USB w/Marine Information Broadcast in progress. (RB-OH)

2789: French Navy, Brest, F w/RTTY 75/850 at 0215. (RP2-TX)

3167.4: 7DC at 0141 wkg 73R, WB and others. JTFEX-related (MADX-MD) Multiple tri-graph callsigns with discussions in USB reference flight ops and being anchored at a location for several days. Possible link coordination net. (RMC-GA) Both in USB.

4024: 5L groups in CW stopped transmitting at 0335, ended w/"VA" dit dit dit da dit da the standard ending for a CW QSO. (BF-NM)

4237: FUO, French Navy, Toulon, F w/RTTY 75/850 Testing/RY at 0145 (RP2-TX)

4240: ARMY GUARD COLUMBIA, CHARLESTON and SPARTANBURG at 2130 in USB moved here from 6910.0, where KY NG stations are still active. Called 4240.0 channel 1. (JLM-KY)

4426: CAMSLANT wkg USCGC Vigorous at 0117, medical call consult to Cape May regarding a fractured arm. (MF-OH)

4440: D3I (ncs) and other stations at 2330 in USB. (JLM-KY)

4483: Yacht Bright Morning Star at 0248 in USB clg Penta Comstat, VZX, for r/c to fulfill requirements of Sydney to Hobart Yacht Race entry and advised to QSY to race frequency 4603.6. (SD-AU)

4585: CAP Net, Civil Air Patrol Net, NCS had callsign of what sounded like "Middle East ###." Virginia had some check-ins using the Callsign "Jefferson ###." Also heard South Carolina, North Carolina, Virginia, and West Virginia were some of the stations heard checking in at 0209 in USB. (SI-VA) *(4585 kHz is the CAP Mid-East Region primary frequency — Ed)*

4739: CARDFILE 66 (P-3c, Jacksonville) w/FIDDLE (TSCC NAS Jacksonville) reporting Spare Group 3 and receiving QSL at 0254. (RP-MD) FIGHTING TIGER 755 clg FIGHTING TIGER 754 at 0225. (MF-OH) All in USB.

4742: Flight Watch (ARCHITECT) w/Ascot 5052 (RAF C-130) in position report at 0308. ARCHITECT w/Ascot 3106 (RAF L-1011) w/posn report and selcal check. at 0503. All in USB. (RP-MD)

4840: SITE 1, National Guard Relay Station, McConnellsburg, PA and WGY923, State EOC, Harrisburg, PA at 2019 in USB. H5U calling D2G at 2302 in LSB. (JLM-KY)

5058: VJA219, Australian Outward Bound School has comms w/AC wkg AT regarding wx and arrival time of buses at 0635 in USB. (SD-AU)

5104: 4XZ, somewhere in Israel in CW VVVs, heard every evening recently at 2000. (JD-UK)

5140: Illinois State Police, Du Quoin, IL (District 13) and WGY955, State EOC, Springfield, IL at 2130. Using 5140, 5192, 7477, and 7932 in Operation SECURE net. All in USB. (JLM-KY)

5190: *Liberty Star* (Space Shuttle Solid Rocket Booster Recovery Vessel) clg Cape Radio at 1518, trades signal checks *w/Freedom Star* (other SRB Recovery Vessel) and Cape Radio. (ALS-FL) Booster Recovery Vessel *Liberty Star* wkg BRD (Booster Recovery Director) re locations of booster #1 and #2. Is enrt to splash-down location at this time at 0057. Comms in support of STS-103. Both in USB. (RB-OH)

5202: A9A and 1261 at 1629 w/voice and ALE. BULLDOG MAJOR and others at 1423, possible AL NG. (JLM-KY) All in USB.

5313.5: WPEH727, AT&T, Bedminster, NJ and WPEH728, AT&T, Conyers, GA at 0351 in USB. (JLM-KY)

5315: Unid, presumed Tokyo in RTTY 75/400 w/synoptic weather, all messages from RJTD (Tokyo) at 2135. Unid RTTY 75/400 8-bit Baudot synoptic weather msgs from RJTD (Tokyo) and BCHK (is that a new ICAO ID for Hong Kong?) and others; every evening recently between 1800 and 2200. (JD-UK)

5320: USCG Group Detroit clg GRP Buffalo, GRP Buffalo then clg GRP Milwaukee at 0205. CG GRP Detroit clg CG Grand Haven at 0206. CG Grand Haven clg GRP Buffalo at 0209. GRP Buffalo clg CG ST Marie at 0209. CG GRP Detroit clg Cutter *Neah Bay* (WTGB-105 NRUU, Cleveland) at 0210. CG Grand Haven clg Cutter Neah Bay at 0211. CG GRP Milwaukee clg GRP Detroit at 0211. GRP Buffalo clg Cutter Neah Bay at 0212. Grand Haven clg GRP Milwaukee at 0213. Another few minutes passed with the same type tfc. (MF-OH) NRQW, USCGC Sweetgum (WLB-309) at 0417 wkg NMG2, Group New Orleans re Op's normal msg, is anchored four miles north of Southeast Passage. At 0427, gives posn as 28-55.6N/089-21.8W. (RB-OH) All in USB.

5500: 260, unid Colombian Navy at 0112 in ALE clg TURBO: Colombian Coast Guard Base Turbo and A0M: Unid Colombian Navy. At 0115, BRIM1: Colombian Navy 1st Naval Infantry Brigade clg RADGENA: Unid Colombian Navy. (MADX-MD)

5680: Rescue 51 at 1733 w/Tyne Tees Coast Guard (UK). Tyne Tees Coast Guard at 1736 w/Rescue 51 re is captain's discretion to decide if he wants to continue in company with sister ship or abandon vessel. SRG 181 at 1803 in r/c w/Kinloss Rescue, Sea King from St. Mawgan en route to Chivenor to take over SAR standby. Cross Corsen (F) at 1443 in r/chk w/Milford Haven Coast Guard (UK). Valentia Radio (IRL) at 1529 in test w/Cross Corsen (F), adv is strength 4 to 5. Corsen adv is end of the test, will speak to his colleague by phone. (AG-UK) All in USB.

5687: Shadow 92 (C-130 Hurlburt FL) w/Ops (in progress) who reports that they are on the ground at Eglin AFB and their status is Alpha 3 so they will not fly anymore this evening at 0312. (RP-MD) WISE 81 clg PLANTATION OPS at 0241. JAWS 51 clg PLANTATION OPS "in the blind" at 0303. (MF-OH)

5696: CG RESCUE 6033 (H-60, CGAS Clearwater) at 0330 w/CAMSLANT reporting posn 2131N/7047W over M/V *Amazing Grace*. 6033 adv cannot do hoist of injured person due to sea state and are exploring other options. CAMSPAC Point Reyes at 0235 w/Point Brower (WPB-82338, Marina Del Rey CA) w/posn report 3342N/12442W. (RP-MD) CAMSLANT clg RESCUE 2125 at 0229, req ID of ELT and whether there are any OSB in the vicinity. 2125 is unable to determine either. At 0243, 2125 is to drop a DMB (Dye Marker Buoy) at the position, then RTB "at the beach," refuel, and return to the scene to cover a helicopter enrt from Texas. (MR-MN) All in USB.

5841: CG33C (H-60, 6033 CGAS Clearwater) w/PANTHER (DEA, Bahamas) posn 60 nms bearing 310 degrees from Zulu at 0202. (RP-MD) 32C clg flt-ops normal to PANTHER at 0120. 32C rep they are landing at T7 will adv PANTHER when airborne at 2124. 32C clg PANTHER, due to interference switched to CAMSLANT. 10C clg flt-ops to PANTHER at 0127, again at 0157. All in USB. (MF-OH)

5842: CIP 77 (Net Control) w/CIP 76, CIP 76A, CIP 65, CIP 69, and CHH 770 in voice and RTTY tests. CIP 77 authorizes the use of abbreviated callsigns on this net. Canadian Y2K testing net at 0047 in USB. (RP-MD)

5845: 77 ALPHA and 76, probably CIP calls at 1558 in USB and RTTY. Canadian mil (JLM-KY)

5855: UNID: poss Colombian Navy 0406 CLOVER-2000 BPSM mode. (MADX-MD)

5860: FAAZLA, FAA ARTCC Los Angeles at 0105 w/sounding call. At 0112, FAAZBW: FAA ARTCC Boston w/sounding call. At 0124, FAAZMP: FAA ARTCC Minneapolis w/sounding call. All in ALE. (MADX-MD)

6227: Yacht *Bright Morning Star* at 0248 in USB clg Penta Comstat, VZX, for r/c on Sydney to Hobart Yacht Race secondary race frequency (SD-AU)

6577: New York Radio wkg American 688 w/pos rep at 0050. (MF-OH)

6637: Miami Radio (LDOC) monitored at 0511 in USB trying to contact AA 430 w/no response. (RP-MD)

6640: New York Radio wkg Delta 106, 116 (EQAK) Selcal check at 0036. (MF-OH)

6683: SAM 206, Special Air Mission C-20B 86-0206 at 1253 in USB wkg Andrews VIP w/radio check, ETA on ground is 50 mins. (RB-OH)

6745: CANFORCE 1812 w/Trenton military in unsuccessful r/c's at 0252 in USB. (RP-MD)

6751: Cape Radio at 0010 clg CG Cutter "DRUMMOND?" for r/c. DOD Cape clg "DRUMMOND" at 0017 for r/c. K1 Duty clg Cape Radio at 0024 to confirm launch is on schedule for 0050. Cape Radio clg K1 Duty at 0045, advising five minutes left, all systems go. Cape Radio advises at 0051 "we have launch;" at 0100 instructs K1 Duty to RTB, then thanks Cutter "DRUMMOND" for assistance. (RM-MN) *(Nice catch, this was used as range safety for launch of the shuttle on STS-103. Drummond would be NHSD, USCGC Drummond (WPB-1323), an Island-class patrol boat cutter — Ed)*

6761: Unid clg DOOM 97 at 0054. RAID 45 clg NODAK CONTROL at 0119. TURBO 33 clg any other TURBO a/c at 0244. (MF-OH) All in USB.
6766: KY623 and KY63 at 1429 in USB. (JLM-KY)
6767.5: H6X and W9J at 1819 in LSB, U.S. military stations w/ALE, and voice checks. (JLM-KY)
6786: MKD, RAF Akrotiri, Cyprus in Picc-6 (4 channels) working MUH at1700. (JD-UK)
6834: Unid, commercial station Papua New Guinea at 0915 in USB w/2 OMs w/chit-chat. Mentioned about Port Moresby, flight skeds and fuel. (IJ-NZ)
6845: HSP, Unid at 0152 w/sounding call and "thru" msg via OTO. At 0153, 1VV clg XDZ. Both in ALE. (MADX-MD)
6865: M8A, monitored at 1210 in CW w/5FGs (cut #). Already in progress. 2nd msg: "INGTD," 150gr. 3rd msg: "UIGMD," 150gr. (MADX-MD)
6870: KUS79, FAA, Florence, SC and KUZ31, FAA, Columbia, SC at 1641 in LSB. (JLM-KY)
6970: RBT54, Ikurtsk METEO Russia at 0910 in RTTY 50 Bd/850 w/RYRY, followed by WX synopsis. (IJ-NZ)
6977: Unid 607 and 622 at 2300 in USB w/strong signals, talking about E-mail programs. (JLM-KY)
6980: CIS201 clg VDD at 1832 in USB and ALE. ALE addresses CIS201 and VDD. (JLM-KY)
6982.5: KHA915: Unid NASA 1229 LSB wkg KHA920: NASA Pasadena "Will be monitoring this freq and 14 megs (14425 usb) as well." (MADX-MD)
7381: SB7F, Aust. mil net YL operator clg SQMY w/no joy at 0354 in USB. (SD-AU)
7629.1: USCG Group Milwaukee and District 9 at 2023 in USB w/exercise of some sort dealing with comms failure. Mentioned State of Wisconsin Emergency Management Agency. Continuing at 2113. (JLM-KY)
7831.5: 5ST, ASECNA Antananarivo, MDG w/ARQE3 48 baud/425 shift sending METAR for 'FMMI,' Shipping Bulletin for METAREA VIII (South). (RP2-TX)
7867: YONHAP Seoul S.Korea at 0855 in RTTY 50 Bd/425 w/NX in EE. (IJ-NZ)
8037: BRAVO 19 clg BRAVO 20 at 2002, ID as STA and MGE, respectively, in ALE. BEIGHTLER and SPRINGFIELD at 2100 in ALE, apparently, OH NG HQ at Beightler Armory in Columbus, OH and a unit at Springfield, OH. NYS10 and NYS22 call at 1418. All in USB. (JLM-KY)
8050: 77 and 205 Canadian military stations at 1658 in USB. (JLM-KY)
8076: Unid, possible PNG missionary net w/ U.S. accented OM discussing evacuations/ medical conditions w/ A575. Also discussion of Brisbane then hands to islander accented YL who conducts sked with various stations such as A556 at 2112 in USB. (SD-AU)
8095: AA7XA, AA7XC, AA7XE, and AA7XG at 2323 in USB, U.S. Army. (JLM-KY)
8122: "Waller," *HMAS Waller*, a Royal Australian Navy Collins-class submarine (SSG-75) at 1140 in USB clg DARWIN CONTROL. No joy. (MADX-MD)
8125: E5, The Counting Station at 2000 in AM YL/EE for id: 428 and 1-10. At 2010, tones and into 211 5FGs (3/2). (MADX-MD)
8130: Unid, English Man (E6) numbers stn in progress at 2010 in AM. (SD-AU)
8153: Unid, possibly X6 tonal numbers stn at 2013 in USB w/ continuous best of six tones and off at 2015. (SD-AU)
8156: ARCHITECT monitored at 0037 in USB w/wx information for various locations. (MADX-MD)
8188: Unid, Swedish Rhapsody (E23) numbers stn w/call-up at 1157 in AM. (SD-AU)
8300: V13: New Star Broadcasting at 1116 in USB weak-moderate w/QRM from SS comms. (MADX-MD)
8518.4: DZX, Manila Radio, PHL in CW w/wx at 1300. (RP2-TX)
8629: VRX, Hong Kong Radio, CHN in CW w/wx at 1330. (RP2-TX)
8722: GKT42, Portishead Radio, UK at 1249 in USB wkg unid S. Korean vsl w/conclusion of radiotelephone call. (RB-OH)
8743: HAS, Bangkok Radio, Thailand at 1258 in USB w/musical channel marker, at 1300 male voice w/ann. For extra bonus points, who can ID this melody? (RB-OH)
8825: New York Radio wkg IBERIA 6625 at 2201 in USB w\pos-rep. (MF-OH)
8846: New York Radio wkg REACH 5411 w/Selcal at 2013. New York Radio wkg IBERIA 6402 at 2030 w/pos-rep and selcal. (MF-OH) All in USB.
8894: Algiers (MWARA AFI-2) at 0156 in USB w/Springbok 220; Virgin 602; and Speedbirds 58 and 075. Niamey Control also active. (RP-MD)
8969: BLUE STAR clg SCORPION 05 in USB with no answer. BLUE STAR off freq. or new freq? (RMC-GA)
8974: SAVAGE 1 (RAAF F111) clg Air Force Sydney for p/p and after several feints became annoyed demanding immediate p/p at 0117. (SD-AU)
8983: CAMSLANT Chesapeake at 0155 in USB wkg 30 CHARLIE, 30C parent command is Panther, 6 POB, en route to area Quebec. (MR-MN)
8992: FAP Lisboa (Hqs Portuguese AF, Lisbon) at 0124 w/unid a/c. Navy RO 413 (unid) at 1324 w/McClellan in pp w/Task Force West (in progress) who reports that his Satcom is dead so he'll have to relay his traffic through CG Group Corpus Christi. RO 413 wants confirmation that there are no Blue Force vessels in their area. (RP-MD)
9023: BANDSAW WHISKEY and OPS at 1902 in USB concerning cancelled fighter activity (JLM-KY)
9057: REACH 97048 at 0214 in USB wkg ALE-originated phone patch. Enroute Charleston AFB, eta: 0515z, status A2. (MADX-MD)

9070.5: SWEET 03, CAJUN 07, DOMESTIC 09, RHINO 10, UHAUL 10, COBB 05 at 1530. Also ROD 07, UHAUL 03 and WILD-WIND 10 in the net (JLM-KY)
9016: WAR 46 req r/c w/OIL CAN at 0054. (MF-OH)
9122.5: WUG, USA COE, Vicksburg, MS and WUG336, USA COE at 1757 in USB. Moved to Channel 9 (11693.5 USB) and Channel 10 (12070.0 USB) for signal checks. (JLM-KY)
9130: MGJ: Royal Navy Faslane at 2122 in RTTY 75/340 w/CARB. (MADX-MD) Royal Navy Faslane, G w/RTTY 75/850 sending "two numbers and a letter groups" at 0130. (RP2-TX)
9260: NIGHTHAWK 81 and NIGHTHAWK 91 at 2053. REACH 7616 calling NIGHTHAWK 91 at 2134. Earlier NIGHTHAWK 81 calling NIGHTHAWK 82. (JLM-KY) All in USB.
9262: Unid, in RTTY 250/50 w/many "i"s sent as "1;" uses code-32 instead of normal letter-shift; one heading included "m1n1sterstwa oboroni ukra1ni . . ." Presumed Ukrainian diplo at 1830. (They were definitely sent that way — figure-shift 1 code-32 every time). (JD-UK) (*"m1n1sterstwa oboroni ukra1ni" translates as Ukrainian Ministry of Defense — Probably correct in assuming a Diplomatic Net, although you can't rule out the Ukrainian MOD — Ed*)
9270: Mossad (E10) numbers stn call-up VLB2 at 0546 in AM. (SD-AU)
9320: SAM 206 and Andrews AFB at 1826 in USB. (JLM-KY)
10233.5: STA, ANG St. Augustine at 1259 in ALE clg FFT: ANG Frankfort (poss). At 1303, clg MGM: ANG Montgomery. (MADX-MD)
10386.5: GYU, RN Gibraltar in Picc-6 single channel w/"QBF" tape at 1145. (JD-UK)
10588: WGY916: FEMA Denton, TX at 2038 in USB wkg unid FEMA sta. (MADX-MD) WGY912, FEMA, Berryville, VA and ARTISTIC STYLE at 1932 in USB w/phone patch for ARTISTIC STYLE by WGY912 to APPALOOSA FARM. H151925 message passed. Moved here (F27) from 10493.0 (F26). (JLM-KY)
10608: CESYP, Colombian Navy Special Command San Andres and Providencia Islands at 0045 clg CARMA: Unid Colombian Navy. At 2150 COVENAS: Unid Colombian Navy clg RADGENA: Unid Colombian Navy, then into ANDVT and CLOVER-2000 BPSM. Both in ALE. (MADX-MD)
10643: Unid Counting Station (E5) numbers stn call-up, 428 count 211 monitored at 2006 in AM. (SD-AU)
10762: Unid, Spanish Lady (V2) numbers stn in progress at 0606 in AM. (SD-AU)
10780: STARGATE (JSTARS E-8C 93ACW/93TS aft-end crew) wkg Cape Radio at 1543 w/pp to DSN#497-#### Robins AFB Raymond 19 CP. Passes formatted flight report. *LIBERTY STAR* (Space Shuttle Solid Rocket Booster Recovery Vessel) clg Cape Radio at 1515. Trying to reach BRD (Booster recovery Director) and *FREEDOM STAR* (other SRB recovery vessel). Told to move to 5190. All in USB. (ALS-FL)
11175: SKIER 93 (LC-130) in USB wkg McClellan re: In-flight emergency. Propeller/engine trouble #4, one hour east of Minneapolis. PP with Minneapolis air reserve base to see if they could land to have problem fixed. Skier 93 diverted to Minneapolis. (DS2-WI)
11184: ASUSHIHA 05 (sounded like) and Presumed JMSDF Atsugi NAS Japan at 0655 in USB w/Atsugi NCC, position report overhead Hashimoto, FL190 Ops normal, ETA Atsugi 1923 India. (IJ-NZ)
11228: ROMEO BRAVO Adventure Network International (ANI) Puntas Arenas Chile at 0605 calling Patriot Hills Antarctica. SAFAIR 845 (sounded like) and ANI Puntas Arenas Chile at 0902 w/8 POB, give a call when you have VHF contact w/Patriot Hills. (IJ-NZ)
11282: San Francisco (MWARA CEP-1/CEP-2) at 0416 w/unidentified aircraft switching to 5547. San Francisco at 2335 w/aircraft. (RP-MD) All in USB.
11430: HMF55, KCNA Pyongyang at 0957 in RTTY 75/210 w/RYs and calltape. (MADX-MD)
11455: MARQUEZ: Unid unit Colombian Navy at 1350 in ALE clg RADGENA1: Unid unit Colombian Navy. (MADX-MD)
11460: Executive 1 Foxtrot (C-20, 89th ALW Andrews w/First family member aboard) at 1701 in USB w/Andrews in radio check. Had switched here from 11.175. (RP-MD)
12057: NGB10, National Guard Bureau, Montgomery, AL, NGB19, St. Augustine, FL, and NGB54, Nashville, TN at 2210 in USB and ALE. ALE calls BNA (Nashville), STA (St. Augustine), and MGM (Montgomery). (JLM-KY)
12101: S12, Swedish Embassy, Bogota 1248 w/sounding call. Heard at 1245, S04: Swedish MFA (?) clg S51: Swedish Embassy Teheran. Never seen SAM04 before. Anyone have an ident? At 1252, S86: Swedish Embassy Mexico City clg S84: Swedish Embassy, Washington, D.C. then into QPSK modem. All in ALE. (MADX-MD)
12225: S94: Swedish Embassy Guatemala City at 1042 w/sounding call. At 1050, S91: Swedish Embassy Lima w/sounding call. At 1053, S12: Swedish Embassy Bogota w/sounding call. At 1054, 1058, and 1102, S84: Swedish Embassy Washington, D.C. clg S91: Swedish Embassy Lima. At 1104, S84: Swedish Embassy Washington DC wkg S12: Swedish Embassy Bogota then into QPSK modem. At 1108, S93: Swedish Embassy Havana w/sounding call. All in ALE. (MADX-MD)
12581: LSD836, Argentina Radio, ARG in SITOR B w/ tfc list and wx at 0100. (RP2-TX)
13152: Traffic list for various vessels, announced was standing by for traffic at 0107, began wkg unheard and Unid vessel on channel 1226 at 0109. (SW-IN) *(This was probably WLO, Mobile Radio — Ed)*
13155: TRICYCLE w/message of 30 characters at 2156 in USB. Open microphone also, heard Offutt and Andrews with EAMs at 2201–2203. (JLM-KY)
13257: Trenton Mil passing wx BC to CANFORCE 4204 for EGWN at 2120. (MF-OH)
13366: ZKX, RNZAF Auckland in RTTY 850/75 7-bit Baudot w/test tape (QBF, RYs, etc.) at 0935. (JD-UK)
13907: Omaha 85U (Piper PA-42, Caribbean AOU PR) at 1435 in USB w/Hammer (Customs DAICC, Calif) reporting he is on the ground at the flight support facility at St. Petersburg, Florida. (RP-MD)
14338.5: Unid, presumed BAA Beijing w/synoptic weather, all msgs from "BABJ" (Beijing) in RTTY 850/50 at 0945. (JD-UK)
14396.5: WGY9501, FEMA MERS, Bothell, WA at 1650. KSZ86, National Telecommunication Coordination Network, (NTCN) Kansas City, MO at 1708. KHA946, NASA, New Orleans, LA at 1814 on SHARES channel 2. KAF43, DOE, Tonopah, NV at 1820. SITE 1, NG Relay Station, McConnellsburg, PA and AFA3HY, USAF MARS at 2104. WGY9401, FEMA, OH at 1619. KPS396, COTHEN, MS at 1621. KNZ20, NTCN, Atlanta, GA at 1621. WGY911, FEMA, Maynard, MA at 1622. WGY9410, FEMA, VA at 1623. KNY65, NTCN, MD at 1627. KLB48. WGY9452, FEMA, NE at 1635. KOG93, FBI, Salt Lake City, UT at 1639. KNY80, NTCN, Ft. Wayne, IN at 1745. WGY9022, FEMA, US Virgin Islands and WGY943, State EOC, Charleston, WV at 1940. AA7XA, U.S. Army, unknown location, WGY916 Mobile, FEMA, Denton, TX, WGY901, FEMA, Maynard, MA at 2045 w/check-ins. All in USB. (JLM)
14575: "RFGW," MFA Paris in 192 bd FEC-A w/5L grps addressed to SRZ (Fr Embassy, Warsaw) at 1005. (JD-UK)
14968: Unid at 2042 in USB poss Ionosonde pulses. Never heard this type before . . . six buzzer-tones centered on 14968, repeated pattern apx 8 times before QRT. (MADX-MD)
15000: Unid, two-channel Piccolo, carrier 15000.0; Ch 1 15000.51 idling, Ch 2 15000.91 crypto — what was that about a guard-band for standard frequency stations at 1415. (JD-UK)
15088: 1503: USCG HC-130H at 2115 in USB wkg CAMSLANT. 1503 is going into Borinquen following in-flight trouble. Adv three landing gear down and locked, w/4th gear indicating that it remains up, although visual observation indicates that it is down. At 2126, 1503 reports "on deck" at Borinquen, problem resolved. (MADX-MD)
15642: KGD34, NCC, Arlington, VA at 1800 in USB looking for DLA303 and 303A. Possible Defense Logistics Agency frequency. (JLM-KY)
15851: FAAZLA, ARTCC Los Angeles at 1836 w/sounding call. At 1839, FAAMRB: ARTCC Martinsburg w/sounding call. At 1847, FAAZJX: ARTCC Jacksonville clg I57. At 1851, FAAZMP: ARTCC Minneapolis w/sounding call. All in ALE. (MADX-MD)
15962: MAMMA BEAR clg OIL CAN on Z250, "req they authenicate" at 0046. (MF-OH)
16253: Unid, French diplo in 192 bd FEC-A

w/opchat in French "receiving nothing — please move to 52 — QAP 52" monitored at 1120. (JD-UK)

16808: SPA, Gdynia Radio, POL in SITOR B w/tfc list at 1650. (RP2-TX)

16811: CBV, Playa Ancha Radio, CHL in SITOR B w/wx at 1900. (RP2-TX)

17138: LYL: Klaipeda Radio at 1605 in RTTY 50/170 w/New Years TGs in Russian. (MADX-MD)

17214: LOR, Argentine Navy Radio, Puerto Belgrano, ARG w/RTTY 75/170 at 2315 in SS w/sports, 5FG at 0045. (RP2-TX)

17940: Collins-Cedar Rapids (LDOC) at 1905 in USB w/Trans-Meridian 906 in pp w/Trans-Meridian Op's w/arrangements for pick-up and transport of extra flight crew members. (RP-MD)

18183.8: Presumed MFA Algiers COQ-8 clg Harare, Lagos, and "Ndjam;"/opchat in FF at 1430. (JD-UK)

18413: Unid, FAPSI station in RTTY 500/75 in QSO w/17473. Not heard starting, and link number not copied at 0930. (JD-UK)

19131: FLINT 411 (DEA aircraft) at 1348 w/Atlas (DEA contract facility, Iowa) reporting airborne from BLUEGILL 200 (San Juan PR) enroute to FANDANGO100 (unlocated). Flight time 1:30. (RP-MD) ATLAS passing tfc to LONGHORN from HARDROCK, concerning test pilot at 1926. (MF-OH)

19363: NAR, U.S. Navy, Key West, FL, w/120/576 wefax from 1200–2300 // 15781. Around 2300, change to 7870 and 7398, until around 1200. (RP2-TX)

19530: Unid, RTTY 75/850 QBF tape w/no ID at 1000. (JD-UK) Unid 75/850 RTTY FOXES at 1800. (RP2-TX)

19964: Aruba 291 calling Miami Radio (LDOC) w/no response. Gives position as over Illinois at 1824 in USB. (RP-MD)

20609: HBD20, MFA Berne Switzerland at 0902 in ARQ w/5LGs. (IJ-NZ)

20958: S93: Swedish Embassy, Havana at 1550 w/sounding call. At 1605, S92: Swedish Embassy Managua w/sounding call. At 1608, S94: Swedish Embassy, Guatemala City w/sounding call. At 1626 S86: Swedish Embassy Mexico City w/sounding call. At 1630, S12: Swedish Embassy Bogota w/sounding call. All in ALE. (MADX-MD)

21985: Aircraft (SS) w/ground station (SS) passing various checkpoints and ETA to Havana of 2210. Ground station passes wx forecast for Havana at 1819 in USB.

22377: GKE7, Portishead Radio, UK in SITOR Marker w/CW ID from 1535–1945. (RMC-CA)

22383.5: WLO, Mobile Radio at 1739 in ARQ wkg KHRC: MV Matsonia (22,224dwt, 713' cargo vsl). (MADX-MD)

22537: FUF, French Forces Fort de France monitored at 1730 in RTTY 75/850 w/test tape. (MADX-MD)

22603: PPR, Rio, Brazil w/CW marker from 2220–2238. (RMC-CA)

22610: CLA, Habana, Cuba in CW from 2229–2230. (RMC-CA)

23190: Unid, 192 bd FEC-A w/5L grps, looked like French diplo but no ID or clues seen at 1040. (JD-UK)

27647: UNID, prob U.S. military at 1609 in USB w/Ionosonde pulses. (MADX-MD)

This month's contributors: (ALS) Allen Stern, Florida; (AG) Alan Gale, UK; (BF) Bill Farley, New Mexico; (DS2) Dwight Simpson, Wisconsin; (IJ) Ian Julian, NZ; (JD) John Doe, UK; (JLM) Jack Metcalf, Kentucky; (JK) John Kasupski, New York; (MADX) MidAtlanticDXer, Maryland; (MF) Mike Fink, Ohio; (MR) Mike Rasmussen, Minnesota; (RM) Robert Montgomery, Pennsylvania; (RMC) Roland McCormick, Georgia; (RB) Rick Baker, Ohio; (RP) Ron Perron, Maryland; (RP2) Ron Prestridge, Texas; (SD) Simon Denneen, Aus; (SI) Sean Ingram, VI; and (SW) Sue Wilden, Indiana. ■

Tuning In *(from page 4)*

room at night has become a ritual of working with Gordon West's book, *Amateur Radio General Class FCC License Preparation (4th Edition).* Get this book today!

There are some really good topics and questions in the pool; lots of things every ham must know. Then there are others that, putting it bluntly, will have to be *memorized* to pass the test. Just like the 5-wpm code test maximum, we need to take a hard look at these questions and make them more relevant.

I'd say that most hams are pretty good with a soldering iron, but how many hams do you know that could tell you the formula — from memory — for figuring the length of the driven element on a yagi? Please don't get me wrong: I like building antennas, and obviously it's important to know those basic formulas, but are they *important enough* to be on a test? Perhaps, we're wrestling with ourselves, struggling with the reality that, like it or not, most hams buy, rather than build, their own antennas. Most hams have never opened that shiny new rig. If we did, we couldn't service it anyway!

I'd like to see questions on conducting nets — perhaps a round-table test with other hams going for the next higher grade, working with coax, PL-259s, "N" connectors, NiCds, and other hands-on *meaningful* topics. Food for thought: A few months ago, I was at a hamfest and this ham (an Extra Class) was selling all kinds of antenna poles, guy wire, and shack accessories. We began talking about the hobby and the topic of CBers came up. Another ham who was walking by stopped and added his two cents worth. "What's interesting about CBers is that they have lots of fun with radio and sometimes do more with their equipment and antennas than some hams." It was quiet for a few seconds as we thought about his unexpected comment.

It's getting late and we're getting our first taste of winter. Time to go downstairs and study Gordon's book.

I've still got a year to master the code.

Our Readers Speak Out

(from page 6)

Amateur astronomer: Lazy because he doesn't work at Mt. Wilson Observatory.

Backyard gardener: Lazy because she only grows perennials.

Army Two-Star General: Lazy because he isn't the Chief of Staff.

General Mobile Radio Service operator: Lazy because he isn't a ham.

Extra Class Amateur Operator: Lazy because he isn't a broadcast engineer.

Get the point, Ray?

A Big 10-4!

Dear Editor:

I applaud, cheer, and raise my glass to Jesse Risley, SSB-103, who wrote an excellent Letter to the Editor in the November '99 issue concerning his opinions on the debates over 11 meter CB.

Being involved in CB, SWL, and ham radio monitoring for 32 years and a *Pop'Comm* subscriber for 13 years, I feel Jesse's letter is one of the best I have ever read concerning 11 meters.

His unbiased, no name calling, no finger pointing approach to this subject is certainly an example that should be followed by all. Just think: If all the energy that is spent on writing negative letters over 11 meters could be channeled into cleaning up the bands, we would really have something! 73s,

Paul Specht, SSB-62E

Out Of The Ordinary Circumstances

Dear Editor:

I have the distinction of being the only person who wrote to the prisoner in Oregon, Randell Alexander, after reading his apology in your September issue. He informed me that all Oregon prisoners are not allowed to have any shortwave receiver. The only radio receiver they may have is a shirt pocket-sized AM/FM radio, and this must be bought in the prison and paid for from their earnings of 40 cents per day worked.

So, being in jail is much harder on radio people like us than on ordinary people. I am not knocking the Oregon Department of Corrections. I can imagine good reasons for this regulation. I can only suggest we obey the law and keep out of jail.

David Crystal
Israel

Dear David:

At least keep out of jail in Oregon!

Y2K Compliant!

Dear Editor:

Your January 2000 "Tuning In" makes sense to me. . . I made my preparations and have purchased a jug of Bushmills good Irish whiskey from County Antrim, Ireland . . . and another jug of Jack Daniels for a backup. Happy Y2K.

Terry Jones
Plankinton, SD

CB Problems

Dear Editor:

I've been with *Popular Communications* since 1987. I always learn a lot. OK, this bit about CB trouble — there is too much crap. I did have a CB license from 1979 to 1984. People get into high-powered equipment — I am guilty also, but am not over 100 watts, plus the arguments start. I always listen and don't get into it.

I'm also a scanner freak. Get a life, people!

Chet R.
Canastota, NY

Buzzing Your Mailbox: Plane Sense Is Coming!

Say that title aloud: You just *know* our next topic has nothing whatsoever to do with anything going on in Congress! A special welcome to Bill Hoefer who will take the controls of our new "Plane Sense" column in our next issue of *Pop'Comm.*

Bill is an Air Force veteran, having served from 1972–1982 at Patrick Air Force Base, Florida; Columbus Air Force Base, Mississippi; Tempelhof Flughafen with the Berlin Air Route Traffic Control Center; Sembach Air Base, Germany; and Hurlburt Field, Florida. (It certainly is a small world; Bill and I were in Berlin at the same time in the late '70s).

He has worked air traffic control in Albany, Georgia; Orlando, Florida; and Grand Island, Nebraska. Currently, Bill is at the St. Petersburg Automated Flight Service Station, Clearwater, Florida. He's also a member of the Civil Air Patrol and holds a Second Class Radiotelephone license, as well as his ham call, KB0ULJ.

Like our other columnists, Bill will be counting on YOU for aircraft monitoring questions, photos, and even QSL cards. Join him next month for "Plane Sense!"

advertisers index

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the loose connection

Radio Communications Humor

CB And The Army

In the early days of Citizen's Band radio, when hand-held walkie-talkies were a novelty, my dad thought we should own a pair. Their $14.95 price (each) was quite a bargain, considering they were hand-wired on printed circuit boards with discrete transistor circuitry. The metal cases with grey-wrinkle finish looked pretty impressive.

I used up the first three or four sets of batteries determining how far I could communicate between the two units. A friend lived two air-miles away, but on the side of a mountain. I could see his house from mine, and we were able to "work" one another pretty well. The spec sheet said the walkies would work "up to two miles," and we had achieved that range. Next was a mountain fifteen air-miles away. I could see the top and much of the eastern side of it, and thought it should work just fine. I should have taken a mirror with me. I listened intently, my shiny 54-inch telescoping antenna erect like the ears of a wise old hare. Nothing. I drove down the mountain to a friend's house, explained myself, called my dad on his phone and asked stupid questions ("Are you sure it was turned on?" "Is the battery OK?" "Do you have it on channel A and not B?") My father patiently answered "yes" to all my questions and told me once again that 100mW AM was just not going to cut it over a 15-mile path. Oh, he of little faith.

Back up the hill, I called and called again. Finally, I heard him, loud and clear, just as I knew I would. "Finally," I answered. "That's better. What did you do? Why wasn't it working before?" I asked him.

Nothing.

C'mon!," I yelled, "I heard you just fine. Whatever you did, do it again." Nothing. For a moment, I thought I too might have been doing something wrong, but a quick check (battery, antenna, channel A) told me there weren't many mistakes to be made. I heard him again, this time using his call sign and calling "base to unit 2," and knew he was using the big guns; four enormous, tube-driven watts, out-powering me by more than 15dB and outgunning my antenna by probably six more. I collapsed my antenna and drove home.

"I was always a kid who demanded proof, and because of that stubborn quality, I often heard my dad say 'Now do you believe me?'"

I was always a kid who demanded proof, and because of that stubborn quality, I often heard my dad say "Now do you believe me?" Shortly after that, I joined the Coast Guard, and with that came commissary privileges; a really great government deal whereby you sign your life away for four years, agree to a completely different set of laws which include such phrases as " . . . by hanging" and " . . . however slight, is sufficient to constitute an offense," in exchange for a discount on food and toilet articles. When I was home on leave, I asked my dad to ride with me to a nearby Army base and we'd get some bargain groceries while I was home. He wasn't allowed inside, and I was a bad shopper, so I ended up running back out to the car asking if eel bladders were a good deal at 39 cents a pound, and it took us forever to fill a couple of bags with bargains.

Next time, we took a walkie talkie. I would take it into the commissary and he'd wait in the car, using the mobile unit, but with its power output switched down to 100mW. The year was 1966, and you might remember that CB radio was not well known in those days. At least not by the Army.

By the time I realized I'd set the volume too high, most everyone in the government grocery store had heard my dad say, "Naaah, we can do better at Acme." It probably wouldn't have been so bad if the provost martial or prepositional article hadn't been shopping in the next aisle. My cart was whisked away, I was ushered out the automatic door and MPs converged on my dad's conspicuous '66 Dodge Charger with the funny antenna in the center of the roof. My hair still hadn't fully recovered from my boot-camp haircut at the time, but my dad handled the situation quite well. "Here's my station and operator's license. If you have any questions, you can verify this information with the FCC in Gettysburg," he said.

Well buckaroos, that provost participle wasn't about to be buffaloed by some slick commie-sympathizing civilian, particularly someone blatantly spying on the price of goat-innards. After quite a stern lecture about the base being filled with secret and top-secret information and equipment (" . . . and you keep that in your commissary?" my father interrupted), we were escorted off the post by a Jeep with red flashing lights and told never to darken their post again with our unauthorized radio equipment.

I enjoy recalling incidents such as this — it brings back the little, subtle things I remember about my dad, like the look on that Aggravator-General's face when my dad called him a "Pompous Twit," and saluted smartly as we drove off with our military escort. Pompous Twit. Yeah, I still like the sound of that. ■

A personal note this month to "I-know-more-than-you-do:" I was not surprised when you chided me that electricity travels at the speed of light. I'd always thought that stuff moved pretty fast. Heavy, brass sounder-arms, however, are slowed by inertia and friction, and rarely exceed the speed of sound, let alone that of light. Even these floppy old ears can hear the delay between a relay and the sounder it drives — BP

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