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FEBRUARY 1997

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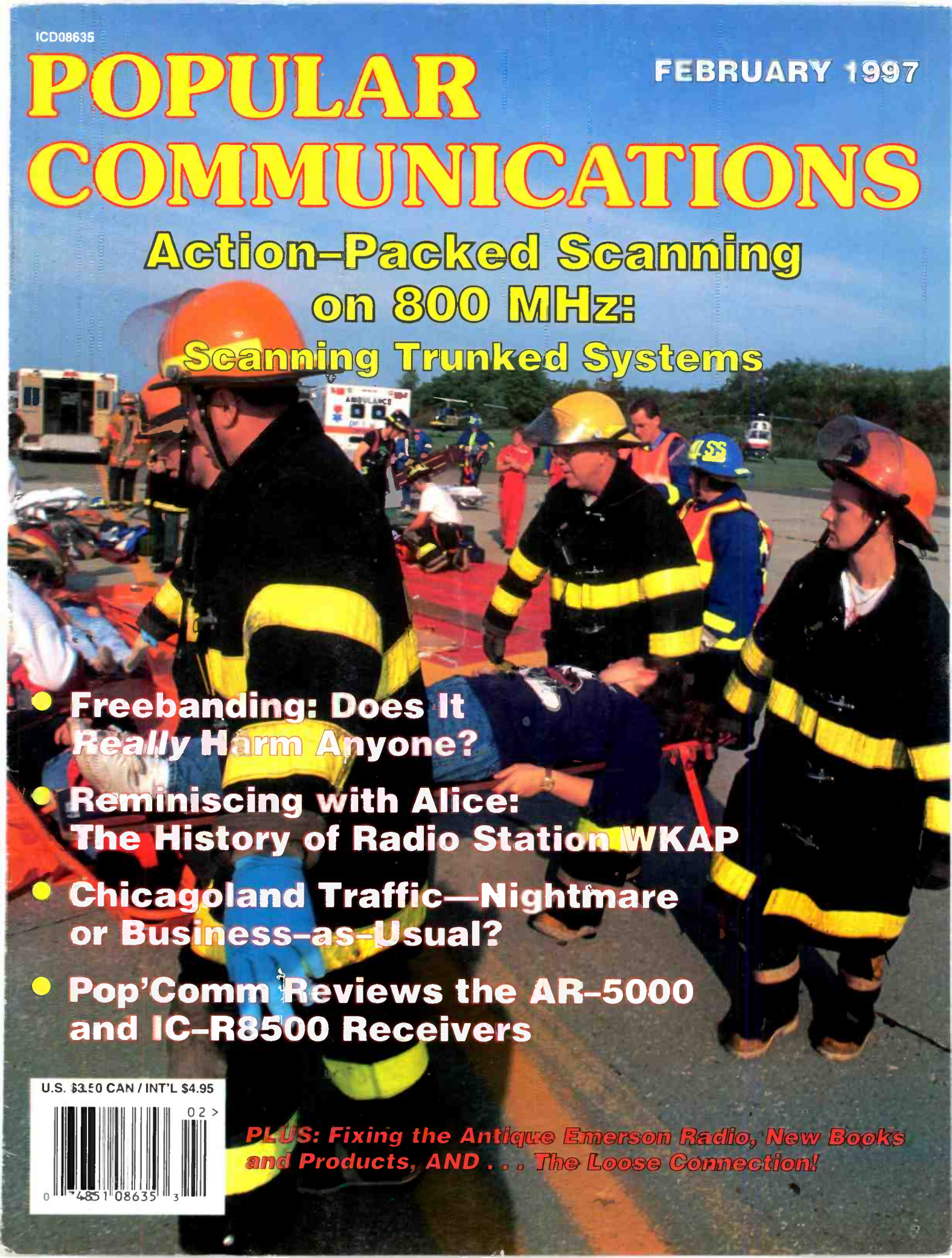

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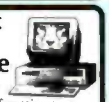

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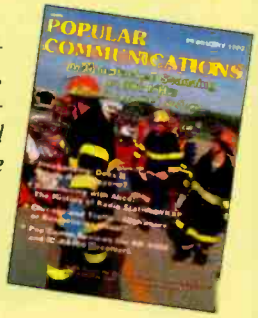
page 8

ON THE COVER: *Fire and emergency medical personnel at a preparedness drill at Stewart Airport, Newburgh, NY. More and more public safety agencies, cities and counties are switching to the new trunked 800 MHz band. Find out more about trunked systems . . . check out "Scanning The Globe" on page 30. (Photo by Larry Mulvehill).*



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Tuning In

AN EDITORIAL

BY HAROLD ORT, N2RLL, SSB-596

The Caller ID Double Whammy

Technology is a wonderful thing, isn't it? We can pick up a microphone and talk down the street, around the world or even out of this world through satellites. Few of us really understand how any of it really works. It just does. Then there's the office computer, home computer, modems, pagers, faxes, call waiting, the Internet, fancy voice mail systems with long tiring menus, and a myriad of other electronic wonders including Caller ID.

But the downside of technology is the ease with which we can snoop, and yes, be snooped upon by others. Don't get me wrong, I've been a snoop since I learned to pronounce the word "scanner." And Uncle Sam has been snooping on folks before the word "secret" was used in the free world.

Call me old-fashioned or paranoid, but you won't be reaching me on a cordless or cell phone. Besides, my life isn't so hectic where I even need the tethered-to-a-phone existence, whether it's wired or cordless! Get your party on the phone, say what you've got to say and get off the phone—that is if they want to talk to you in the first place. Somehow I've missed something when it comes to this money-making scheme known as Caller ID. My phone numbers are unlisted. I pay to have it that way. This reduces the number of pizza delivery calls, "is your refrigerator running?" and other calls at 3 a.m. In today's nutty society, it makes sense to remain unlisted.

It also makes sense for some folks to have a Caller ID box. It's perfect if you've been plagued with nuisance calls or if you merely want to avoid talking to telemarketers or your son's latest girlfriend. This neat device displays the caller's number (and in some areas that offer the service, even the caller's name and address). You can "see" who's calling before you answer the phone. If it's the neighborhood prankster, you simply don't answer the phone. If the calls continue, the proper authorities can take action.

So many homes and businesses have these Caller ID systems today that when the friendly phone company sent us a letter offering a "block" to the Caller ID system, we accepted the offer. After all, we pay to remain unlisted, so why should someone I've never met or anyone else for that matter, have our phone number every time we make a call?

My life was complete. The folks with the Caller ID boxes would be baffled by a string of zeroes, dashes, "Ps" or whatever the phone company does, but they wouldn't see my number on their box. True and false. Don't you just hate those "true" or "false" questions? The fact is that some Caller ID-equipped homes and businesses block your block. This sort of double whammy is what's happening when the phone company offers those customers with Caller ID boxes the ability to reject your call because you've chosen to protect your privacy. Their phone won't ring and you'll hear an automated message something like "We're sorry, the person you're calling does not wish to talk with persons who block their numbers." If you still wish to talk to this person, you've got to hang up and before re-dialing their number, add a couple of additional keypresses, and the system will permit your call to go through. Now think about it for a moment. You've gone the extra mile in an attempt to keep your number "unlisted and protected," you're not making obscene, prank or otherwise illegal calls, so why is this happening? What gives the other guy the right to in effect say, "Hey, if I can't see your phone number, I don't want to talk to you?"

We scanner *users* are forever griping about public safety agencies and others that scramble their communications. And cellular manufacturers, through high-power lobby groups, complain loudly about supposed privacy rights, resulting in federal regulation prohibiting monitoring cellular phone frequencies. I'm not sure if cellular users are all that concerned about privacy. They're openly using their high-tech marvels in shopping malls, on public transportation, walking down the street and sitting at the next table in your favorite restaurant discussing all manner of things; tomorrow's hot date, business deals and scams—the list is endless.

So it seems that a handful of folks sit there, eyes glued to their Caller ID boxes, viewing your number regardless of what you've done to protect your privacy. Doesn't it seem that we scanner users should have the same privilege when it comes to tuning cellular frequencies? After all, isn't it our right to freely listen to the public airwaves?

POPULAR COMMUNICATIONS

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Pop'Comm P.O.

LETTERS TO THE EDITOR

Each month we select representative reader letters for our Pop'Comm P.O. column. We reserve the right to condense lengthy letters for space reasons and to edit to conform to style. All letters submitted must be signed and show a return mailing address or valid e-mail address. Upon request, we will withhold a sender's name if the letter is used in Pop'Comm P.O. Address letters to: Harold Ort, N2RLL, SSB-596, Editor, *Popular Communications*, 76 North Broadway, Hicksville, New York 11801-2909, or send e-mail via the Internet to <popularcom@ aol .com>.

Getting His Communications Fix

Dear Editor:

I have to also agree with Trevor Fletcher, that the mailbag section could be longer. It is also the piece that I read first. Your magazine is THE BEST; it covers all that I crave for my radio communications fix. Hey, I admit it, I am a RADIO JUNKIE. I have scanners, shortwave receivers, CB radios, commercial VHF, two-meter hamstuff, cell phones and a few other wiz-pop gadgets. Thanks to your excellent magazine I can keep up-to-date with what's new and improved with all this gear, and stuff that I don't have yet! Keep up the great work, Harold!

Randy Swain
Farmington, BC, Canada

Dear Randy:

Many thanks for your letter. How about a big round of applause for our fine writers, editorial staff and art department who are ALL doing a really super job!

The Next Best Thing to a Police Helicopter

Dear Editor:

I write to you as a fan of the magazine, scanner buff and 14-year police officer in Paducah, KY. Reading "Scanning the Globe" in the November issue, let me say that as a police officer in a relatively small town (approx. 31,000) where nearly everyone knows something about nearly everyone else, I cannot name the number of instances in which scanner-land dwellers have called to assist in apprehending a suspect who eluded us in a foot chase, locating a wanted person, identifying a hit-and-run vehicle, and other helpful info. It's the next best thing to a police helicopter, and much cheaper!

We realize that the bad guys have the same access to scanners; so the PPD uses digital encryption with Motorola Spectra series radios operating in the 800 MHz band. However the law-abiding citizen listening in the privacy of his or her home is more likely to be tuned in. I'm no attorney . . . but I would think that outlawing the monitoring of police radio traffic would violate the Freedom of Information Act. After all, reports filed by police officers, except those that are part of on-going investigations, are open for public viewing. Why shouldn't what we say remain open to the ears of the public? When I pick up the mic in cruiser No. 64, I have nothing to hide.

Stefan P. Jagoe
Paducah, KY

(Continued on page 74)

WORLD ENTERTAINMENT KNOWS NO BOUNDARIES

FORTUNATELY NEITHER DOES THE DRAKE SW1.

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DRAKE

CIRCLE 126 ON READER SERVICE CARD

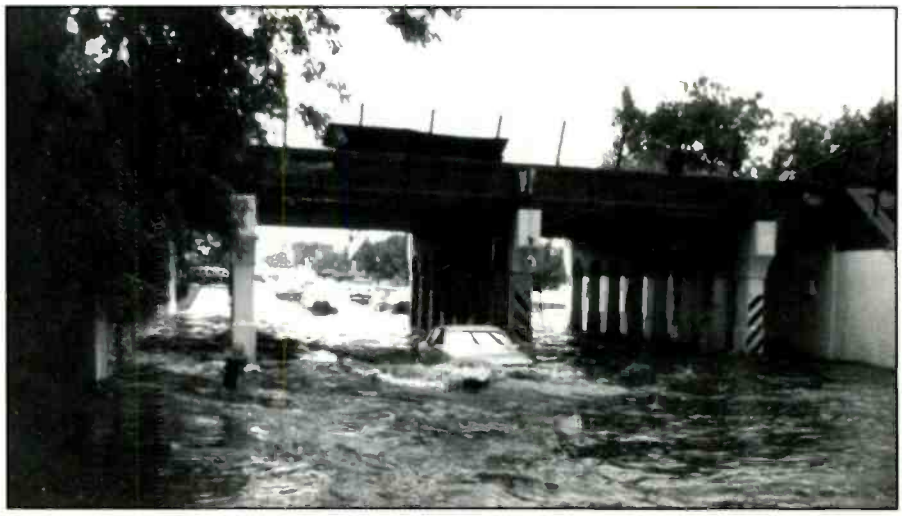
Reporting on Chicagoland Traffic

Most Folks' Nightmare is Business-as-Usual for Some . . .

BY BILL SIMPSON

"The outbound Kennedy is 25 to the junction, 50 minutes to O'Hare; inbound is worse—nearly 65 minutes from O'Hare to the loop. An earlier accident in 'Hubbard's Cave' is now off to the side, but everyone's stopping to look. The outbound Edens is clear, but the inbound is tied up from Dempster to the Kennedy merge, because of the accident near the loop."

Did you ever wonder how the traffic experts find out where the wrecks and backups are, or how long it takes to drive from here to there? In most major metropolitan areas, the answer is big business. It involves mobile ground units, almost enough aircraft to create an air force, computer sensors, and large numbers of volunteer scanner buffs, and cell phones!



After a severe rainstorm in Chicago streets were flooded and accidents were everywhere. (Photo by T.J. Andrew)

The TWO Rush Hours

In the Chicago area, nearly every radio station carries traffic reports during the two rush hours—seriously folks, there are only TWO, not just one all day long! Most of the info concerning the expressways comes from sensors buried in the pavement at strategic locations, which sends the numbers concerning traffic density and flow to computers located in the Illinois Department of Transportation (IDOT), headquarters in the northwest suburbs. The information is also available—at a price—to entities such as radio/TV stations, or traffic reporting services. In the works is a plan to place video cameras at "choke points" where traffic normally stacks, to provide real-time visual monitoring of the area as the backups occur.

Accidents, and other incidents are reported to IDOT dispatchers who undergo special training. They're able to contact the emergency services: the Illinois State Police; the nearest ambulance service; Emergency Patrol Vehicles (EPVs); the lime-green wreckers which will help clear any problem along the area expressways including accidents, stalls, rolled over semis or vehicles with flat tires.

Motorists traveling through the Chicagoland six-county area cannot utilize the 911 emergency system from their cell phone, since it could access ANY 911 system in any town in the area. Instead, the Illinois Department of Transportation has developed the *999 system, which can be accessed by any cellular user at no charge, connecting the caller directly to the IDOT dispatcher.

The Radio Stations and Services

Two radio stations in the Chicago area have their own traffic reporting depart-

It isn't always the expressways that experience problems. City streets get their share of wild times, too. (Photo by T.J. Andrew)

Just a few radios inside T.J.'s vehicle.

A traffic helicopter checks out an expressway near Chicago.

ments, with all-day reports every 10 or 15 minutes. WBBM on 780 kHz, uses a facility in the Sears Tower, along with the IDOT information and the WBBM news chopper, to create traffic reports on the "eights", while WGN on 720 kHz depends on the IDOT info from the sensors and volunteer callers to keep them apprised of the road conditions. Ann Maxfield and Evelyn Holmes handle the broadcast duties for the morning and afternoon rush hours, along with Mike Mathis, who flits from jam-up to jam-up in the WGN helicopter; and Larry Shriner, who usually handles the major fires and crash scenes.

The two major traffic reporting services in the Chicago area are Metro Traf-

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Optoelectronics pioneered the frequency recorder with its introduction of the Scout. The Scout is ideal for any serious monitoring station. After a day of capturing frequencies in the field, you can download the Scout's 400 frequencies into your PC* and create scanning band plans, or match up recorded data with the Spectrum FCC database (Optional).

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- Beeper and vibrator mode to alert you when a frequency has been logged.
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*Download recorded data to PC using optional OptoLinx interface

What they're saying about the new Xplorer

"We weren't disappointed. Within a second, the Xplorer latched onto near-field signals".....Bob Grove, Monitoring Times Magazine

"I just tell them that it's a radio James Bond would be proud to use".....Ed Griffin, Popular Communications Magazine

"I was able to replace three test instruments and carry just the Xplorer".....Luis Libin, Director of Technology, NBC Network

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For the ultimate in Nearfield detection the Optoelectronics Xplorer stands alone. If you are looking for an all in one hand-held Receiver, Decoder and Frequency Recorder, look no further than the Optoelectronics Xplorer. Fitted with the maximum sensitivity available in a Near-field device, the Xplorer takes monitoring to a new level.

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3. The OptoLinx

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The OptoLinx is all you need-Whether it's computer control of your AOR AR8000, ICOM CI-V receivers, or downloading Scout data to your PC. The versatility of the OptoLinx also allows for datalogging of frequencies with the Optoelectronics M1, or datalogging CTCSS tones and DCS codes with the Optoelectronics DC440.

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- OS456 (Decoding included for the Pro 2005/6).... $199.
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No receiver or monitoring station is complete without a DC440 Decoder. See what you are missing when you connect the DC440 with any scanner or receiver and instantly decode all the standard CTCSS, DCS, and DTMF data. Connect the DC440 to your OptoLinx and PC for datalogging all tones and codes with time and date stamp. The DC440's easy operation contains six modes; All Mode Decode, CTCSS Decode, CTCSS Period, DCS Decode, DTMF Decode, and DTMF Recall. Automatically decode 50 CTCSS tones, 106 DCS codes, along with 106 DTMF characters. The serial interface on the DC440 conforms to the CI-V interface standard, allowing it to be connected to a PC for remote control with the optional OptoLinx

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CIRCLE 150 ON READER SERVICE CARD

T.J. Andrew, an on-road reporter for Shadow Traffic's network in Chicago near I-94. He uses a cell phone for his broadcasts, a UHF radio to talk to the base station and aircraft, three scanning radios for VHF, UHF and 800 MHz, along with two scanners and a CB radio. (Photo by Bill Simpson)

fic, a relative newcomer to the traffic show, and Shadow Traffic, the senior member. Chicago Metro uses a combination of IDOT reports, a couple of aircraft, and some volunteers to provide reports primarily for WMAQ radio, 670 kHz. Shadow Traffic depends on the IDOT reports, three aircraft, on-the-road reporter T.J. Andrew, and a well-developed host of volunteer "eyes", equipped with a combination of two-way radio and the free *778 cell phone number, to report directly to the Shadow Traffic assignment/dispatch desk.

How It Works

Shadow Traffic coordinators accept the information from *all* the contacts, and create reports which are used in almost constant feeds to any of the 65 AM and FM radio and TV stations by several different personalities during the drive times. T.J. Andrew, for instance, will air reports on one or two stations, while Dorothy Humphrey or Rick Federicki will be heard on other stations, as will the seemingly endless lineup of traffic voices in the Shadow stable. In many cases, the traffic reporters will interact with the radio host, possibly providing anecdotes, or acting as the target of the host's jokes.

We followed T.J. Andrew for several hours as he buzzed up and down the area expressways in that hotshot Shadow vehicle, which as T.J. jokes, does NOT run on battery power alone, despite the logo on the side. His reports included a minor schoolbus accident on the South side of Chicago, a traffic pickle in the Northwest suburbs, an accident on another expressway (which he found via scanner), and then the scene of a major accident which closed an expressway for several hours.

I was impressed with his professionalism and his ethics. Rather than charge into an accident scene with his media badge displayed, T.J. would tend to watch from the sidelines. "My job is to watch for the traffic problems, not to report on the pain and suffering of the injured, or to try to figure out what happened. That's for other professionals. I've been first on the scene of several accidents, and have been able to provide the necessary first aid, and have felt that I have been able to contribute significantly in saving a couple of lives, or lessen the extent of injuries, but that's part of the Red Cross training I took years ago," he said.

T.J. is probably one of the most effective scanner buffs we've ever seen; most people use one scanner, but "T" uses three, plus a Colt CB radio, a scanning UHF radio for the GMRS, a scanning radio for the VHF high band, another for the low band, an amateur dual-bander, and his cell phone for on-the-air reports. As we listened in on his radio traffic, he'd call Mike Nygard, one of the Shadow coordinators and spout off the location of a traffic mishap, then another and a third, each heard from a different scanner or scanner bank. On occasion, he'd chat with one of the pilots to make sure that they were seeing the same thing on a traffic backup. During this incident, which involved closing a major expressway for several hours, using CB he was able to contact a trucker on the scene. He was able to make consistent reports to the radio stations while reporting on several other incidents. He never interfered with the traffic flow or placed himself into the official atmosphere.

"I try to keep my reports upbeat and positive. One of my favorite lines is 'STOP GAPING, people . . . let me do the gaping for you . . . after all, I AM a professional!" as he laughs, continuing, "Every day's a holiday, every paycheck's a fortune, and every traffic jam is a parade!" His professionalism has just won him second place in the UPI Spot News Award category for his reports of a school bus/train accident in Illinois in which several high school students were killed.

In the afternoons, Chris Habermill spends his time in his light plane, prowling the Chicago skies for the traffic problems . . . or a fire or an accident. Chris is the aerial equivalent to T.J.'s road reporter efforts, and has the capability to provide real-time reports from the aircraft via radio. During the day Chris is available for duty in the air for major incidents.

As drivers, we spend our time trying to locate traffic jams in order to avoid them. Here are a couple of guys who dive into the middle of them simply to find out why they are there! Thanks for being such professionals and helping us avoid those nightmare traffic problems which are your meal ticket. ■

"The Illinois Department of Transportation has developed the *999 system, which is accessed by any cellular user at no charge, connecting the caller directly to the IDOT dispatcher"

Offbeat Frequencies in the Chicago Metro Area

Shadow Traffic	450.2875
City Wide One	460.125
WGN/Shriner	462.100
Ambulance S	460.625
IDOT EPV	453.700
Ambulance N	460.600
NIFERN	154.265
ISPERN	155.475
Fire	154.13, 153.770

CB Scene

BY JOCK ELLIOTT, SSB-734
and ED BARNAT, TCA44

27 MHz COMMUNICATIONS ACTIVITIES

SSB's Dirty Little Secret, Part I

Hi, my name is Ed, and my call is TCA 44. As Jock mentioned last month, I will be his co-author here at the "CB Scene". Some of you may recognize me as the author of the "Sidebander's Shack" column in the all-too-soon defunct *CB Radio* magazine. Harold was apparently impressed by the quality of reader's response to "The Shack," so he invited me here to work with Jock. So, here we are. I am pleased to be working with Harold again and am excited about writing with a professional such as Jock. But most of all, I'm looking forward to hearing from you; either by snail (first class) mail or, because of its speed and immediacy, e-mail. My address is <edbarnat@global2000.net>.

Indeed, of the few short months that I was privileged to write "The Shack", my fondest memories are that of the correspondence I had with CB and SSB enthusiasts across the country and around the world, almost all of which was in the form of e-mail, much of it asking questions. These were many questions that I had put off answering; questions that I am now glad to have an opportunity to address.

Ask the Question, Get the Answer!

Many of these questions were about things that you and I aren't supposed to know about. But they are questions, however, that anyone who has spent any time on CB, especially SSB, knows a great deal about. You might say that they are questions about SSB's dirty little secret. Truth is, it isn't really dirty, it is not little and it is certainly no secret. It's about life—a lot of life, over 40; CB channel 40, that is.

Disclaimer

Let me say a few things right up front, before Jock, the editors or the FCC get unnecessarily excited. First, these are not the true-life confessions of "Ed the Skip Shooter." Ed isn't a skip shooter. Further, the following material is presented for "educational" purposes only. It is not my intention to endorse or encourage "illegal" activity. In other words, "Don't try this at home."

Many of these older Realistic CBs are still in use today.

My main goal is to present the current state of SSB operations as they really are today. Finally, the information that follows has been obtained, for the most part, from numerous SSB operators on the Internet, both in the United States and from a number of foreign countries. As you might imagine, the names and locations of contributors have been changed for their protection.

Questions? I Got Questions!

Almost from the beginning, questions started arriving in my e-mail box about something called the "Freeband." Typical of many was a note from Carl in California. "Hi Ed," began Carl. "Will you be allowed to discuss Freebanding?" Well . . . er . . . yes, I think I can. "I found it quite amusing," he continued, "when some other communication magazines would condemn Freebanding in print and then show QSL cards with Freeband frequencies on them, right on the same page!" Well, Carl, you are of course quite right, that does seem a little duplicitous. You must understand, however, that covering the "Freeband" presents us with quite a dilemma: how to cover SSB activity above channel 40 without appearing to endorse it. You see, our editor doesn't want to upset the "Commission" and I don't want any pre-dawn raids on my radio shack.

"It's about life—a lot of life, over 40; channel 40, that is."

On the other hand, I can't condemn it. Judging from the mail that I have received, "Freebanding" is an extremely popular and, apparently, enjoyable form of long-range SSB communications, both here in America and around the world. I would guess that it may be more popular and enjoyable than SSBing on the "legal" frequencies. If it is, then the "Freeband" is one of the main reasons that we have such a hard time populating the SSB set-aside on standard CB channels 36 through 40.

A good general coverage communications receiver is all you need to receive the Freeband.

"Don't try this at home."

Inevitably, SSB operators learn about what is happening "upstairs." Before long, they find a way to get there. Many never return. It seems that in the eyes (or perhaps more accurately, ears) of others, SSB and the Freeband are indistinguishable and synonymous. If that is the case, then any study of SSB, that did not cover the Freeband, would be woefully inaccurate and misleading.

Where Is It?

For the uninitiated, the Freeband is often referred to as the Outband or Uppers. It covers the frequencies from just above CB channel 40, 27.405 MHz, to just below the 10 meter amateur band 27.800. It is an area that covers about 60 standard CB channels worth of radio spectrum. I say 60 channels worth, but the term "channel", in the classical sense of the word, is not used there. In practice, this translates into several times "60 channels" worth of usable space.

Officially, these frequencies are allocated for a variety of uses including military, business and government. It has been said that even NASA has a few here. "Ah, Houston, we have a real problem here! Ola, CQ?" So far, however, I have only heard from one person who has ever heard anything but Freeband activity there. That was an errant shortwave broadcast or possibly an image of a signal.

Listening In

While it is indeed illegal to transmit on these frequencies, it is quite legal to listen to them. All you need is a general coverage shortwave receiver. Most operators on the Freeband run fairly low power transmitters (CB radios). Therefore, a good antenna and maybe even a pre-amp can really snap up reception. I use a Bearcat DX1000 attached to either a long wire, an Antron 99 or a PDL II beam. Tuning around in the Freeband is more akin to working the amateur bands than CB, both in style and range. Channels, per se, are not used. Instead, the Freeband is navigated by frequency. You should start listening at 27.410 and tune in 5 kHz instead of the standard 10 kHz increments up to 27.995. That means, for example, that you would tune from 27.625 to 27.630, instead of to 26.635 to get from one "channel" to the next frequency.

You might hear some AM traffic. These, however, will usually be just renegade truck drivers or local AMers, not true Freebanders. Occasionally you may also come across some FM, packet (digital) and even SSTV (slow scan TV).

The most popular and acceptable form of transmission, however, is SSB (single sideband). The dominant mode of operation, by far, is USB (Upper Sideband).

"You must understand, however, that covering the "Freeband" presents us with quite a dilemma."

USB is mostly used for long distance, nationwide or international, communications. LSB (Lower Sideband) is popular for QSO or conversation type communications, especially among the locals. These are usually small groups who like to use a "private" channel to chat with a few friends with little or no interruptions. LSB is also where long-distance Freebanders move when the USB (Upper Sideband) frequencies are crowded.

For many, long-distance communications is what the Freeband is all about. Long distance communication depends on skip. Currently we are just leaving the low in the 11-year skip cycle. So, for the most part, unless you have some local activity—and many areas do—you will probably be listening to a lot of dead air. Don't get discouraged. Keep listening because skip can and *does* happen, and will increase over the next few years. When it does, just tune to 27.555 USB, the Freeband Calling Frequency.

With operators from all over the world anxiously trying to contact each other, this frequency fills up fast. Not to worry, Freebanders have developed techniques to cope with the crowds.

As you listen, you will hear them give their call signs, location, and a "standby" frequency where they will be listening. It goes something like this "This is WW 133, Birmingham, England calling anyone in the United States and standing by on 27.475." So, just tune to 27.475 (usually USB) and listen. You'll be amazed at what you hear.

Well, that's it for this month. Next time we'll take a look at some of the reasons why the Freeband is so darn attractive. We'll meet some of the folks that operate there, and we'll also check out their equipment and see what dangers, drawbacks and problems they face. In the meantime, I look forward to hearing from you. Please send your comments, questions and suggestions to me in care of the magazine or directly on the internet where my address is <edbarnat@global2000.net>. Better yet, if you can, catch me on the radio.

73, Ed

Tuned In On Yesterday

A Phantom Station, Created by Its Successful Partner

BY ALICE BRANNIGAN

As new large, low-powered hometown and front-room broadcast stations flooded onto the airwaves during the early 1920s, it wasn't long before listeners began complaining about the jumble of voices. The band was expanded to include more channels, and stations were forced by the government to repeatedly shift to new allocations in order to fit in as the broadcast service continued to expand. Eventually, in continuing efforts to keep the frequencies suitable for decent reception, some stations were told to share time with other co-channel broadcasters, while the government declared many minor stations in big cities superfluous, forcing them off the air completely.

During the sorting-out process, it was often the case that two local stations combined forces in order survive and best serve their community. Here's one example.

On May 24, 1923, the government issued a 5 watt broadcasting license to Charles W. Heimbach of the Camegraph Radio Repair Shop, 1015 Allen Street, Allentown, PA. This was station WCBA on 1070 kHz, and it operated daily. In late 1924 WCBA went to 10 watts and switched over to 1180 kHz, then in early in 1925 upped its power to 15 watts.

Rev. B.B. Musselman, of the Bethel Mennonite Brethren, bought an interest in the station during 1927. Not long after, he purchased the entire station.

WCBA wasn't Allentown's only station. Only a week after WCBA went on the air, the Allentown Radio Club received a license for station WSAN to operate with 10 watts on 1310 kHz. Eighteen months later, WSAN was running 50 watts and was soon purchased by the Allentown Call Publishing Company. In the spring of 1925, WSAN increased power up to 100 watts.

". . . the government declared many minor stations in big cities superfluous, forcing them off the air completely."

In June of 1927, the newly formed

The old WSAN location at 41 North Tenth Street, Allentown. Photo taken in 1976 by Jan D. Lowry.

The WSAN transmitter site as it appeared in 1976. Photo courtesy Jan D. Lowry.

THANK YOU!

The Management, Staff and Artists of
RADIO STATION WCBA

Thank You for your recent communication and wish to express their sincere appreciation of your kind comments.

We are always glad to hear from you and hope you will continue to be a WCBA Booster.

RECEPTION VERIFIED

J. H. MUSSELMAN,
MANAGER

This undated WCBA veri was sent out some time between 1932 and 1937.

Federal Radio Commission told WCBA and WSAN that Allentown could best be served on a single frequency. WCBA and WSAN were both ordered to move to a new frequency, 1350 kHz, where they would share time. In November of 1928, both stations complied by shifting to 1500 kHz, then later to 1440 kHz.

In late 1928, WSAN upped its power to 250 watts. Soon it was located in the Americus Hotel, 101 North Sixth St. on the 10th floor. Its "T" type antenna was located on the roof. WCBA had also increased power to 250 watts. Its new digs were in the Dime Savings and Trust Company building, 529 North Eighth St (now known as the Center Square Building).

In 1930, a unique arrangement for two sharetime stations, each under different ownership, was instituted. The WCBA transmitter was established at Mizpah Grove, Allentown. This consisted of a 100-foot single wire suspended between two 70-foot poles spaced 120 feet apart. WSAN also located its own transmitter at this site, but was allowed to feed its output into WCBA's antenna system.

In the summer of 1931, WSAN moved its studios from Sixth St. to 39 North Tenth St, which happened to also be the location of WCBA's new studios. By 1932, WSAN was leased from the Allentown Call to the Allentown Broadcasting Co., controlled by Rev. B. B. Musselman, WCBA's owner. At this time WSAN and WCBA shared all facilities with the exception of their own separate transmitters using the same antenna. In mid-1932, J.H. Musselman was made WCBA's station manager.

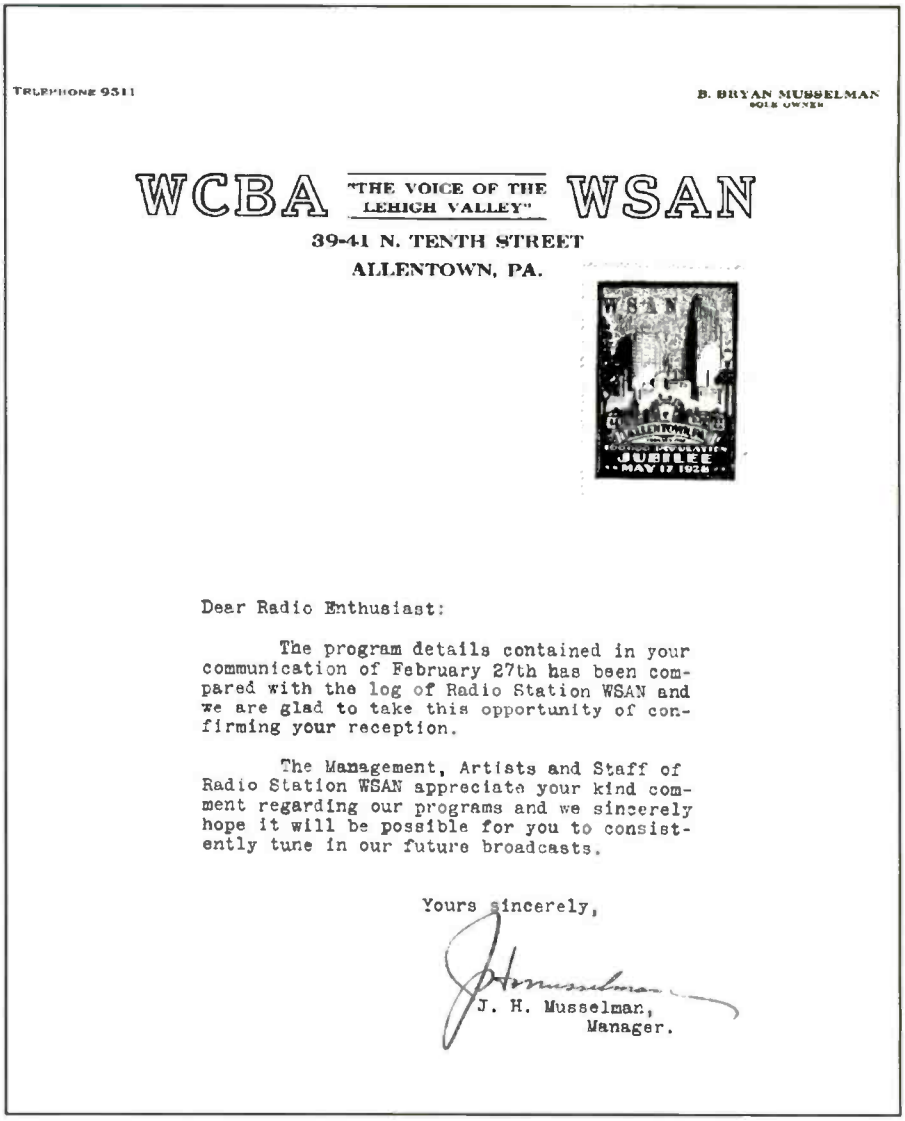
In April of 1933, WSAN was granted voluntary assignment of its license to WSAN, Inc., owned by Rev. Musselman. The station was granted special authority to operate temporarily with 500 watts during the day. This was made permanent in 1935.

In early 1936, WSAN merged facilities with WCBA, although separate licenses continued to be maintained, and the stations remained operating on a sharetime basis. In November of 1936, a vertical radiating tower was installed at a new location at the junction of Route 309 and West Catasaugua Road, Allentown, and was used by both stations.

The owner of The Allentown Call, Major J.C. Shumberger, Sr., acquired an interest in WSAN, Inc. in 1937, but Rev. Musselman took over as station manager. In 1939, the company's name was changed to the Lehigh Valley Broadcasting Company. A new 170-foot Lehigh tower was erected on North Seventh Street Highway in 1940.

In March of 1941, WSAN/WCBA shifted to 1470 kHz in accordance with the FCC's North American band plan agreement. The hyphenated WSAN-WCBA call letters were then changed to WSAN. Three years later, WSAN was granted unlimited use of the frequency. WCBA remained licensed, though they

"Today, WKAP is Pennsylvania's 16th oldest continuously-licensed AM broadcaster."



TELEPHONE 9511

B. BRYAN MUSSELMAN
SOLE OWNER

WCBA "THE VOICE OF THE LEHIGH VALLEY" WSAN

39-41 N. TENTH STREET
ALLENTOWN, PA.

Dear Radio Enthusiast:

The program details contained in your communication of February 27th has been compared with the log of Radio Station WSAN and we are glad to take this opportunity of confirming your reception.

The Management, Artists and Staff of Radio Station WSAN appreciate your kind comment regarding our programs and we sincerely hope it will be possible for you to consistently tune in our future broadcasts.

Yours sincerely,

J. H. Musselman,
Manager.

WSAN's 1947 QSL came three years after WCBA was sent to its reward. This card was signed by R.H. Musselman, Technical Supervisor. (Courtesy Tom Kneitel)

never again used the call letters on the air after March of 1941. WCBA continued to exist, but only as a "phantom" station. In March of 1944 the license WCBA was returned to the FCC for cancellation.

In 1946, WSAN received a permit to up its power to 5 kW. A three-tower night directional array and RCA transmitter were installed at the Catasaugua Road site. Afterwards, the company was reorganized and sold several times.

There was a very serious fire that destroyed the WSAN studios in 1962. In the early '60s, the offices and studios were moved to new facilities at the tower site at 1183 Mickley Road (same as old Seventh Street Highway), Whitehall Township, Allentown.

In mid-1985, WSAN became known as WXKW when it changed program formats. By 1988, the station's studios had moved into the Hotel Traylor in downtown Allentown. In 1992, WXKW entered into an LMA (Local Marketing Agreement) with Allentown's WKAP, and the studios were moved to 1541 Alta Drive, Whitehall Township. In 1995, WXKW changed its call letters to WKAP.

Today, WKAP is Pennsylvania's 16th oldest continuously-licensed AM broadcaster. It operates on 1470 kHz with 5 kW.

Thanks to Broadcast Pro-File for permitting us use of their detailed histories of WCBA and WKAP in preparing this material. B-PF is a commercial research service that provides historical reports

". . . the many stations that have come and gone over the years have made both an impact and contribution to pop music and culture in the U.K."

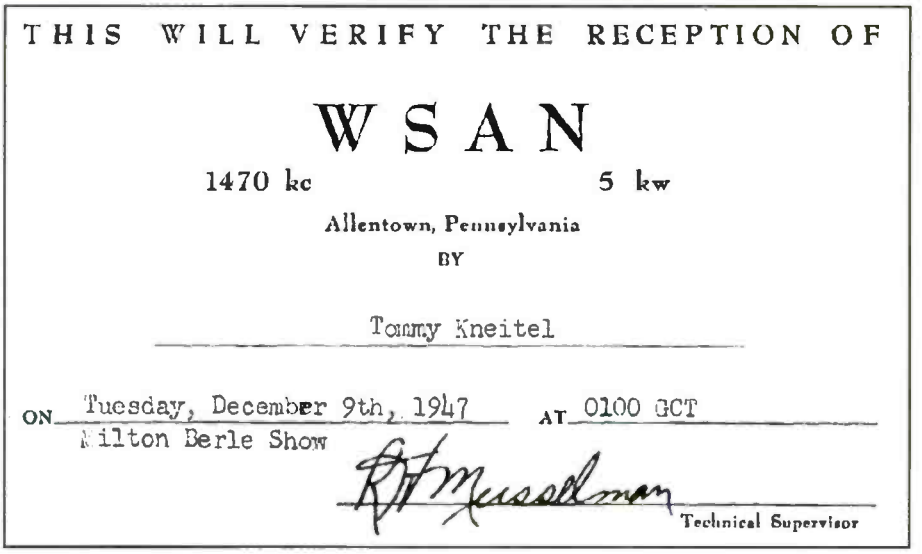
about all American AM/FM/TV stations, past and present. A reasonable fee is charged for their services, and a complete catalog is available for $1. For more information, contact Mr. Jan D. Lowry, Broadcast Pro-File, 28243 Royal Road, Castaic, CA 91384-3028.

Europirates, Ahoy!

Things have never been the same offshore in Europe since the AM and FM pirates arrived about 30 years ago. From ships and abandoned radar platforms, they have continued making themselves known. Say what you will about them, but the many stations that have come and gone over the years have made both an impact and contribution to pop music and culture in the U.K.

For fans of this unique broadcasting phenomenon, there's a company that has assembled tons of historic material on Radio Caroline, Radio London, Radio Essex, Laser 558, Radio Veronica and scores of other historic offshore pirates dating back to the '60s, '70s, and '80s. They have audio CDs of actual broadcasts, including jingles, commercials, deejays, music (such as live Beatles performances). They also offer books and videos. Really great and sharp looking catalog covers a huge number of items for all Europirate buffs.

This bounty comes from East Anglian Productions, Studio House, 21–23 Walton Road, Frinton-on-Sea, Essex, CO13-0AA, United Kingdom. Ask them for a copy of their catalog, or see it at their Web site at <http://www.eastangprod. com>.


THIS WILL VERIFY THE RECEPTION OF

WSAN

1470 kc 5 kw

Allentown, Pennsylvania

BY

Tommy Kneitel

ON Tuesday, December 9th, 1947 AT 0100 GCT

Milton Berle Show

R. T. Musselman

Technical Supervisor

Another undated veri displays both the WCBA and WSAN callsigns and is probably from about 1936 or 1937.

We are always seeking input from readers relating to old time radio and wireless. That includes station photos, picture postcards, news clippings, QSL cards and letters, station listings and directories, memories, questions, and suggestions. Hope you have a happy 1997! See you on the road to Radioville. ■

Radio Resources

BY BILL MAULDIN, WG4R
e-mail: 75750.1331@compuserve.com

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Emergencies Via Pager

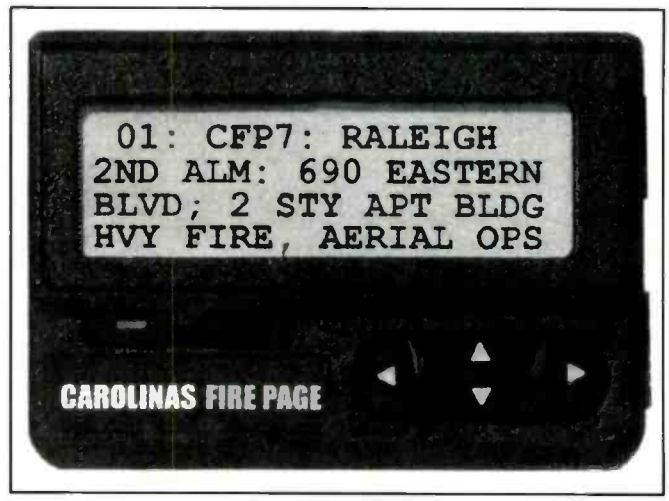
There is a new service out there, and it is growing by leaps and bounds. The service is called "pager notification", and as a subscriber, you can get lots more than just a page from your mom, wife, or boss on your pager. One or more of these pager notification services is covering your area, you can bet on it.

The new pager notification services offer the members or subscribers information on all kinds of subjects. Perhaps the one with the largest subscriber list is the growing fire pager network. There are other services available too, paging you with information on major crimes, disasters, stock quotes, news bulletins of interest, and severe or special weather alerts.

To join the information distribution you need to sign up with one of the local, commercial paging services used by your local notification service and request an alphanumeric pager. Next, you need to contact the notification service providing the information that you want, and sign up as a customer or join the group. Some services provide the information as a business. Other notification groups operate as a club with member volunteers providing the alert messages. These volunteer members use scanners, news broadcasts, and other means to collect information on fires, disasters, and severe weather. Once they have the information, a simple computer program and an input alphanumeric phone number to the paging service allows them to instantly send a message to the subscribers or members. A "group page" only requires one simple information entry. It is quick, easy, and inexpensive.

My first exposure to this exciting service came when I was contacted by Jeff Harkey of Carolinas Fire Page. Although Jeff is the leader of the local service, he is assisted by many of the local member volunteers who man their scanners and quickly enter information into the system through their computer modems. Carolinas Fire Page notification service uses PageNet as their primary paging company. I called my local PageNet customer service representative and asked about becoming a customer. I mentioned that I was interested in an alphanumeric pager, state-wide service, and then mentioned Carolinas Fire Page. The representative knew about the notification service, and, much to my surprise, offered me a discount because of the service. I'll have to say, I was surprised. Most commercial paging services charge more when you are a high-volume message user. PageNet was obviously not only willing to offer the service of Carolinas Fire Page, but was willing to discount the normal monthly fees to encourage membership.

As I write the remainder of this column, I am going to base it on Carolinas Fire Page. I am doing this to show you what I would be getting as a member of just one of the notification services, and not necessarily to promote the local notification group. I realize that most of you reading this article reside in other areas of the country. The information notification service would cost me, as a member, $20 a month for the PageNet pager and wide area coverage. Keep in mind that this fee also covers normal paging from your friends or customers, unrelated to the notification service bulletins and messages. The notification service from Carolinas Fire Page, a Raleigh based group, is an additional $5 a month anywhere in the Carolinas. Most of the services offer free service or discounts if you spend time as a "volunteer dispatcher", monitoring your local area on a scanner and inputting bulletins into the system when local emergencies take place. More on this later.



Alphanumeric pager. (Courtesy Carolinas Fire Page)

Good News— Many Are Linked!

One of the interesting things about emergency notification services and groups is the fact that they are linked to many of the other groups across the country. As a subscriber to Carolinas Fire Page, for example, I would not only be beeped when there is a major fire in the Carolinas, but I would also get a page and information display on major fires in such places as New York, Los Angeles, Chicago, Atlanta, Miami, Denver, St. Louis, Boston, Detroit, San Francisco, Seattle, and many other major cities. These informative pages are exchanged between most of the systems nationwide on a cooperative basis.

How do you know if there is a service serving your area? That is a good question. To the best of my knowledge, there is no universal, master list relating to these groups. I would assume since my local customer service PageNet representative was aware of the service, you could just start calling the local paging services listed in your Yellow Pages and ask if they had such a customer or notification service using their system. Check out the companies that provide state-wide coverage or wide area local service first.

"One or more of these pager notification services is covering your area, you can bet on it."

Here is a listing of just a few of these services: Breaking News Network, Chicago FireNet, DC Fire Com, Fire Notification of Michigan, East Coast Paging Systems, FirePage Columbus, FirePage California, FirePage New Jersey, FirePage Northwest, Gold Coast Fire Net, Hot News Alert Network, Incident Command Page, Incident Net, Knoxville Fire Net, Mountain News Network, New Orleans Fire Net, St. Louis Fire Net, Twin Cities Fire Net, Tri-State Fire Net, Carolinas Fire Page, and Virginia Fire Net. There are many others. Remember too, not all of the information provided relates just to fires.

WAS (Weather Alert Service), a division of Intelligent Information Inc., 1-800-633-0020, is a good example of a professional information provider. As a subscriber to WAS you would get information relating to severe weather warnings, when the weather at selected airports goes below 2000 feet and three miles visibility, local weather reports and forecasts, temperature reports and so on.

Lots of Other Info Too

Intelligent Information also serves those interested in stock quotes, breaking news stories, and other information even going as far as horoscopes and the joke of the day. This information would be sent to you on your alphanumeric pager display or on your digital display on your cellular telephone. A professional service such as Intelligent Information, Inc. provides nationwide service through a variety of cellular and paging systems. Rates for such a professional service would probably be higher than through a volunteer group, ranging from $5 a month to $15 a month, plus the cost of your cellular phone or paging service.

The address for this provider is Intelligent Information Inc., One Dock St, Suite 500, Stamford, CT 06902. Another service offering weather warnings and related weather alerts is WeatherPage. They can be reached at 1-800-845-0383. They have been rated as quite good by users.

Many of these notification services have been around for several years. Recently, word has spread about their wide range of subjects, geographic areas of coverage through national or regional paging systems, and low costs. As a result, the number of systems and the variety of material has exploded. Just about every area of the country is now served by one or more regional services such as Carolinas Fire Page. National, professional services such as Intelligent Information, are also offering extensive information at very low cost. You can bet there is one or more service covering your location, even if rural, offering whatever information you desire.

When I first heard of pager notification services, I expected two things—the rates for such a constant flow of information to be out of sight, and the information to be of an amateur nature and not really useful. After all, who would want such information? Of course, when it comes to fires and disasters, a notification service of this nature is made to order for news media reporters. We all know about the lawyers, their representatives, insurance people and so on. The service is also desired by those who are just curious and want to know what is going on. Photographers who sell photos to the news media have found the service of fantastic use. And, don't forget the hobby user who just enjoys the flow of information.

The subscribers to the weather related services certainly include farmers, pilots, DOT personnel and many others. For what you get, the rates are very reasonable, and the information is good, presented in a nice, compact format, and exceptionally timely.

If you are interested in joining the ranks of those who are "in the know," you'll need to find the name of a service in your area. Contact the paging services in your Yellow Pages. You'll also need an alphanumeric pager. There are quite a few different models available. Some offer better range and can display larger text mes- sages. Ask your paging service about the models that work best with their system. Some paging systems do have a message length limitation. You can normally rent or buy the pager that you'll need. If you are new to all of this, I suggest that you rent the pager initially. Later, if you become a devoted notification service customer, you should probably buy your pager and reduce your monthly rates. This is something you should discuss with the pager service that you use, and with the notification service that you select for your desired information source.

Here are the addresses of some notification services with their addresses on the Internet:

Breaking News Network (BNN):
<http://breakingnews.com>
East Coast Paging Systems (ECP):
<http://members.aol.com/ECPSfireecps.htm>
Fire Page New Jersey (FPNJ):
<http://www.fpnj.com/>
Illinois Fire Buffs (IFB):
<http://synrgsm.com/fb/>
Mountain News Net (MNN):
<http://www.frii.com/~rmedic/>
Incident Command Page (ICP):
<http://www.disaster.net/icp/>
Incident Net (IN):
<http://www.wco.com/~eplatt/incidentnet.html>
Carolinas Fire Page (CFP) e-mail address:
<box222@aol.com>

For those of you who are interested enough in this subject to become a volunteer dispatcher, you will need a computer, a data entry program that will allow you to enter the brief, formatted message into the paging system, a scanner, and a phone line. Most paging services such as PageNet can provide you with software.

There is also some shareware on the Internet that will perform the same services. Being a volunteer dispatcher will allow you to obtain lower rates for the service in most cases. Some suggested software programs are: PageNet paging software by SilverLake Software (for Windows 3.1 and Windows 95 format) and PageNow! by MarkSpace (for MAC format). Others are WinBeep and WinPage.

A typical pager notification message would look like this on your pager display:

01: CFP7: RALEIGH 2ND ALARM:
690 EASTERN BLVD; 2 STY APT
BLDG HVY FIRE, AERIAL OPS

Before I close this article, I would like to make a request for information. If you are a user of the Internet and know of an interesting Web site related to radio listening, communications monitoring, frequency lists, or other information, please send me these site addresses for a future article. My e-mail address is <75750.1331 @compuserve .com>. We will be listing some addresses in future articles! ■

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AR8000 "the NEW concept"

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A new breed of radio receiver which combines full computer compatibility with advanced wide-band receiver technology.

The Ultimate Handheld Receiver! "WELCOME TO THE WORLD OF THE AR8000" . It incorporates the latest PLL technology and offers a multitude of features including true carrier re-insertion SSB (CW) demodulation with 50Hz frequency steps. 4 level alpha numeric LCD indicates the frequency, signal strength, band scope and more. Selectable squelch system, auto-mode, auto-band-plan, serial communication port are all standard. Internal ferrite antenna offers high performance reception below 2MHz..

When frequencies are entered, ALPHANUMERIC comments may be stored along with frequency, mode & attenuator status simplifying the job or recalling and identifying memory channels. There are a variety of scan/search commands to link banks, scan by mode, programmable delay scan, priority, auto memory store, step offset and a programmable power save circuit to increase the duration of operation from the NiCads. Keypad illumination extends to the side panel keys and may be switched in a number of ways. Illumination "Permanently On" for mobile operation is possible, a specially selected heavy duty regulator has been fitted to ensure the receiver will continue to operate reliably even with the illumination permanently On.

Main Features

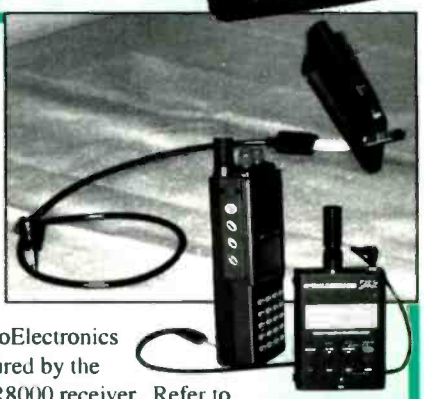
- Frequency Coverage 500 kHz - 1900 MHz • All mode reception AM, NFM, WFM, USB, LSB & CW
- True carrier reinsertion and specific SSB filter with non-offset frequency readout • 1000 memory channels
- 20 search banks • Priority channel • Frequency pass • Rotary tuning dial • Step sizes programmable between 50 Hz & 999.995 kHz in 50 Hz increments • Scan & search speed up to 30 increments per second • Signal strength meter
- Band scope • Backlit LCD, Keypad & Side panel • Battery save facility • Separate controls for volume, squelch & dial
- Attenuator • Keypad beep on/off • Keypad lock
- Top panel 3.5mm earphone socket • Monitor switch
- Password protected banks • Programmable scan & search including free, delay, audio, level & mode • Select scan list
- Computer control • Eprom memory backup (no battery required).
- Two users modes: Beginner and Expert

Selectivity: SSB 4 kHz (-6dB), 15 kHz (-50dB), AM/NFM 12 kHz (-6dB), 25 kHz (-60dB), WFM 180 kHz (-6dB), 800 kHz (-50dB)
Antenna Impedance: 50 ohm BNC
AF Output (at 4.8V): 120mW (8 OHM) THD 10%
Power Consumption: 160mA (nominal), 110mA (stand by), 20mA (power save) MEMORY
Pass channel: 50 channel x 20 bank - total 1000
Size: 6.12" (H) 2.76" (W) 1.6" (D) excluding projections

Supplied with: NiCads, AC Charger, Hand strap, Belt Clip, Semi-flexible antenna, DC lead with cigar plug, Comprehensive operating manual with over 50 LCD illustrations.
Options: SC8000 Soft Case, AR8000INF interface, SAC8000 (Scout Adaptor Cable), Desk stand, DS8000 (Speech Inversion descrambling chip), MA500 antenna, ScanCat GOLD Software, RCSS8000 Software, RCSI-SoftControl 2.0, ScanStar, TEXSCAN8000 Software, LA3000 active loop antenna, QS Mobile bracket

Purchase an AR8000 and buy a SAC8000 for just $9.95...save $20!

SAC8000 Scout Adapter Cable



The SAC8000 is a connection kit for the AR8000 scanner. Once the SAC8000 is installed, the AR8000 can easily be connected to the OptoElectronics Scout™. Any frequency captured by the Scout™ instantly tunes the AR8000 receiver. Refer to operating instructions supplied with the Scout for actual operation of the unit. No modification to the AR8000 is required.

Operation: AR8000 & Scout

- No special controls are needed for the operation of the AR8000 with the Scout. Once the Scout captures the signal, it transmits the instruction to the receiver so that the signal can be heard from the unit. The AR8000 remains in REMOTE mode until [LOCAL] key is pressed to resume the manual mode.
- Be sure to check that the Scout displays AR8000 followed by the Scout power on message. If there is no AR8000 power on message is displayed, refer to the Scout's manual for switch setting. Make sure that the Scout's FILTER switch is in the ON position.

AVAIALBE AT THESE PARTICIPATING DEALERS! SALE ENDS FEBRUARY 28, 1997

- CB City - Westhaven, CT - 203.933.3827
- Radio City Comm. - Terryville, CT - 860.585.9751
- EEB - Vienna, VA - 800.368.3270
- MetroWest, Inc. - LaGrange Park, IL - 800.657.1475
- Scanners Unlimited - San Carlos, CA. - 415.573.1624
- R&L Electronics - Hamilton, OH. - 800.221.7735
- Lentini Comm. - Newington, CT. - 800.666.0908
- Jun's Electronics - Culver City, CA. - 880.882.1343
- The Ham Station - Evansville, IN. - 800.729.4373
- Ham Radio Outlet - All Locations - 800.854.6046
- Quement Comm. - San Jose, CA. - 800.998.8070
- Pas Ham Enterprises - Pascagoula, MS. - 601.762.8070
- Mike's Electronics - Ft. Lauderdale, FL. - 800.427.3066
- Michigan Radio - Warren, MI. - 800.878.4266
- Eli's Amateur Radio - Ft. Lauderdale, FL. - 800.780.0103
- Spy Supplies Int'l - Norcross, GA. - 770.446.2636
- Ham Central - Poughkeepsie, NY. - 800.721.4426
- Honolulu Electronics - Honolulu, HI. - 808.593.8777
- Advanced Specialties - Lodi, NJ. - 800.926.9426
- Amateur & Advanced Comm. - Wilmington, DE. - 302.478.2757

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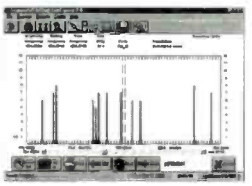
- *AOR 3000/3000A/8000 with Radio Shack PRO 2035*
- *ICOM R7000/R7100/R9000*



- Memory banks include 100 channels per bank with frequency, description and mode.
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- Spectra analysis uses search ranges or displays logged data
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- **Alabama Radio** - Anniston, AL. - 205.235.1917
- **Big Boy's Toys Unlimited** - Albuquerque, NM. - 505.298.1023
- **RT Systems** - Huntsville, AL. - 800.723.6922
- **Ray's Amateur Electronics** - High Point, NC. - 800.845.5338
- **Gilfer Shortwave** - Park Ridge, NJ. - 800.445.3371
- **North Olmstead Amateur** - North Olmstead, OH. - 216.777.9460
- **Hirsch Sales Corp.** - Williamsville, NY. - 800.888.8797

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Popular Communications Reader Survey

February 1997

Congratulations to Joan Oberman of Concord, NH, the November winner of a free one-year extension to her *Pop'Comm* subscription. Be sure you send in your Reader Service Card, circling the appropriate numbers corresponding with your survey answers in order to be eligible for our random monthly drawing. You could be our next winner!

We're finding out a lot of very interesting information about our readers, including the fact that professionally, many of you are high-tech professionals who are also employed by Uncle Sam. A great majority of you, however, are retired men who are involved in communications at least a couple of hours every day—mostly evenings. Many respondents, when reporting on their listening habits, indicated they are dedicated dial twisters and button pushers by listening every day from two to five hours. And not surprisingly, many of our readers are public safety professionals—more than full-time students and professional middle managers, combined.

A great many of you own a PC, while still many others plan on buying one, undoubtedly for use in the shack, where a majority of respondents indicated computer use in logging stations and in ham radio. Interestingly, using a computer in the shack is still something most folks think long and hard about. Nearly the same number of readers who said they were thinking about buying a PC, conversely said they had no plans to buy one.

We're still compiling the hundreds of responses to our questions. And as we move along with our survey, each month we'll give you an inside look at our *Pop'Comm* family and how you view our radio hobby. Don't forget to **circle the numbers on your Reader Service Card** that correspond to your answers below. Thanks for your participation!

Here are this month's questions:

1. I live in:

The Northeast	30
The Middle Atlantic	31
The Southeast	32
The Midwest	33
The Southwest	34
The South Central	35
The Pacific Northwest	36
The Central Pacific	37
The North Central	38
A Metropolitan area	39
A Suburban area	40
Canada	41
Mexico	42
Other	43

2. I collect and/or restore vintage radios 44

3. I collect and/or restore vintage CB radios 45

4. During the past year I've spent the following amount on my radio hobby:

Over $2000	46
$1500–$2000	47
$1000–$1500	48
$700–$1000	49
$500–$700	50
$250–$500	51
Under $250	52

5. In general, I view our radio hobby as:

Prosperous and ever-growing	53
In a significant state of change	54
Maintaining a slow, but steady growth rate	55
Having minimal growth and expansion	56

6. Please indicate your interest in QSLing stations (broadcast, utility and ham):

Very interested	57
Somewhat interested	58
No interest	59

7. Please indicate your interest in satellite communications:

Very interested	60
Somewhat interested	61
No interest	62

CB/Scanners/Weather Stations

COMMUNICATIONS ELECTRONICS INC.

New...radios available from CEI

For over 28 years, thousands of radio operators have depended on police radio scanners, digital voice loggers, CB/GMRS radios, VHF transceivers, weather forecasting equipment and more from Communications Electronics. Your **free fax-on-demand catalog** is instantly available by calling 313-663-8888 from your fax machine.

Weather Stations

The Weather Monitor II (7440) comes complete with an emometer with 40 feet (12.2 m) of cable, external temperature sensor with 25 feet (7.6 m) of cable, junction box with 8 feet (2.4 m) of cable, AC-power adapter, detailed instruction booklet and one year limited factory warranty.

Now you can be your own weather reporter with the Davis Weather Monitor II. Our top-of-the-line weather station combines the most advanced weather monitoring technologies available into one incredible package. Glance at the display, and see wind direction and wind speed on the compass rose. Check the barometric trend arrow to see if the pressure is rising or falling. Push a button, and read indoor and outdoor temperature, wind chill, humidity and barometric pressure. Using the Weatherlink with Weather Talker option and your computer, you can issue your own spoken weather report. Ideal for issuing Skywarn or APRS mission critical emergency messages. Call 313-994-9000 for a demonstration. Our package deal includes the new ultra high resolution 1/100 inch or 0.2 mm rain collector part #7852, and the external temperature/humidity sensor, part #7859. The package deal is order #DAV1-A for $479.95 plus $17.00 shipping. If you have a personal computer, when you order the optional Weatherlink computer software for $134.95, you'll have a powerful computerized weather station at an incredible price. For the IBM PC or equivalent order part #7862-A. Apple Mac Plus or higher including PowerBook, order part number 7866-A.

Davis Weather Talker 7861-A - Call 313-994-9000 for demo $334.95
Davis Solar Radiation Shield 7714-A, protects temp. sensor $54.95
Davis Weather Monitor II 7440-A $334.95
Davis Weather Wizard III 7425-A $149.95
Davis Perception II Indoor stand-alone weather monitor 7400-A .. $124.95
Davis Remote Display Unit 7815-A $84.95
Davis Rain Collector Heater 7720-A, excellent for winter use $99.95
Davis aluminum Rain Collector Shelf 7704-A $29.95
Davis Rain Collector II 0.01" 7852-A $59.95
Davis Rain Collector II 0.2 mm 7852METRIC-A $59.95
Davis Rain Gauge Stand-alone 0.01" 7520-A $79.95
External Temperature/Humidity Sensor 7859-A $99.95
Davis Weatherlink Software for IBM PC-Version 3.0 7862-A $134.95
Davis Weatherlink Software for Apple-Version 3.0 7866-A $134.95
Davis 4-Conductor 40' (12.2 m) extension cable 7876-A $17.95
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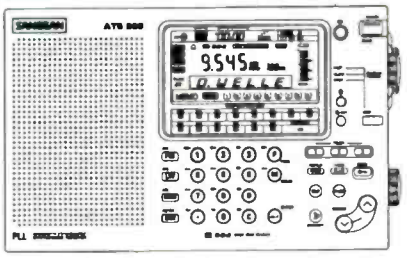
Shortwave Radio



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Books You'll Like

BY R.L. SLATTERY

Transmitters Galore

How many readers remember the Johnson Viking I transmitter? What about the Heath DX-100 or Hallicrafters HT-44? These were three of the better known American amateur radio service HF transmitters produced during the heyday of the vacuum tube, 1930–1980. Of course, there were also transmitters like the Lettine 240. Did anybody ever buy one during the 10 years they were made?

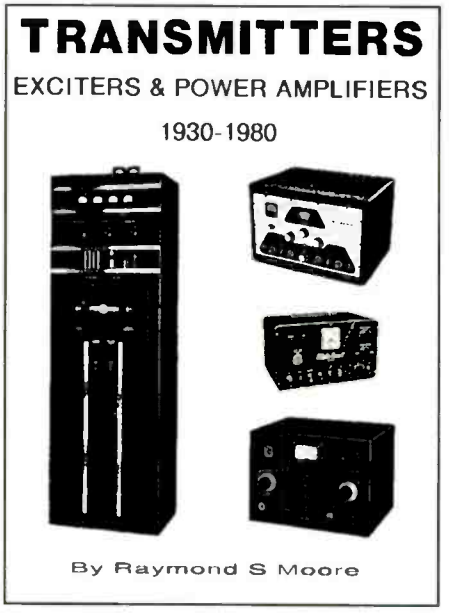
Author Raymond S. Moore spent three and a half years researching HF ham transmitters during the 1930–1980 era. He painstakingly combed through stacks of old catalogs, manufacturers' literature, ads, manuals, brochures and other literature. Ray located model names and numbers, design variants, tech specs, original prices, and other information. At the end of his research, he had accounted for 118 manufacturers ranging from the famous like Hammarlund, WRL, Gonset, Drake, Harvey-Wells, McMurdo Silver, RME and Collins to the obscure such as Eagle, Pierce, Wescott and Palco.

Ray has now published all of the information he obtained. His book is aptly titled *Transmitters, Exciters, & Power Amplifiers, 1930–1980*. Here is a comprehensive, concise, accurate, and exhaustive reference to an entire era. It covers 561 transmitters, showing 470 photos.

Manufacturers are arranged alphabetically, usually with some comments about each such as, the company's location, general operating information, and ultimate fate. Transmitters, exciters, and amplifiers are individually shown and listed with model names and numbers, years of production, price for wired/kit, bands, modes, power output, tube line-up (type/ function), also special features, power requirements, antenna output and often additional remarks.

In the front of the book there is an informative section explaining transmitter development over the years, including a (mostly) year-by-year breakdown of the high points between 1930 and 1980.

This volume was prepared as a follow-up and companion to Ray Moore's earlier reference, *Communications Receivers*,



also covering the vacuum tube era. Whether used individually, or in combination with Ray's earlier work, *Transmitters, Exciters & Power Amplifiers, 1930–1980* remains the most complete and authoritative reference about those magnificent boat anchors we have ever seen.

Transmitters, Exciters & Power Amplifiers, 1930–1980 is available in the U.S. and Canada for $21.95 plus $3 shipping/handling. Residents of Florida please add $1.65 tax. Order from RSM Communications, P.O. Box 1046, Key Largo, FL 33037. Phone: (305) 853-0379.

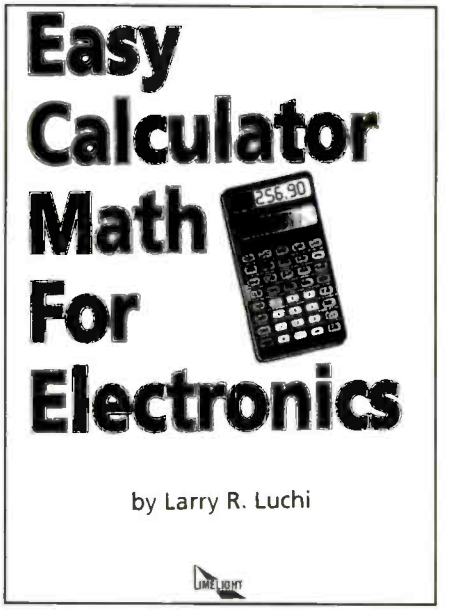
Punch Up Those Good Numbers

As we all know, the pocket calculator has freed us from having to deal with the tiresome math computations people had to perform by means of pencil and paper back in the vacuum tube era. Troubles can arise when we must unexpectedly calculate specialized math problems, such as those used in electronics.

Larry R. Luchi's (W7KZE) new book, *Easy Calculator Math For Electronics*, takes the reader step-by-step through more than 30 formulas commonly used in the field of electronics. This includes things like Ohm's Law, dB power gains and losses, series and parallel-resonant circuits, voltage and current, component values for resonance and others that leave some of us wondering which number button to push while searching for the one labeled "Panic."

The book opens with a section that does a good job of explaining the use of a calculator in the field of electronics. It details the Algebraic Operating System, display formats, the keyboard and display, and coordinate systems. Then, the book gets down to the business of solving specific electronics math problems.

Arguably, you may have scant occasion to take advantage of Luchi's advice for using Thevenin's Theorem. That's OK, because Thevenin isn't using [your] theorem, either.



On the other hand, you may find it useful to have the information Luchi provides about antenna gain and loss calculations. Each of his instructions is carefully explained, with one or more step-by-step examples presented in a very clear format. Terminology and theory explanations are also included, along with diagrams and schematics, to further aid in understanding the material.

(Continued on page 69)

Catch MORE Listening Excitement!

PC Programmable for Total Scanning Control!

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Scanning The Globe

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

Scanning 800 MHz Trunked Systems

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

A friend of mine recently told me that his county switched over to the new 866–869 MHz public safety band and was using a trunked system. He asked me about how the system works and wanted to know when scanner manufacturers will come out with radios capable of tracking trunking conversations.

I think many of us hobbyists, especially those who live in cities and counties with trunked public safety systems, myself included, can't wait until scanners are made to follow trunked groups. It's bound to happen soon. In the meantime, you have to cope with regular 800 MHz capable scanners to monitor these trunked systems. Not all scanners have the 800 MHz band, however, since it is used primarily in metropolitan areas. Scanner users in rural areas that may not have any 800 MHz users have no need for this band on their scanners; at least that's what the scanner manufacturers seem to believe.

In a trunked system, fire department personnel, detectives and even sanitation departments share the same system. (Photo by Bill Simpson)

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

Those who try to monitor a trunked system on their scanner may claim to receive some transmissions, but not a complete dispatch and reply. That's because of the trunking. In order to get maximum use of the system's frequencies, each frequency is not reserved for a *specific* use, much like VHF and UHF systems. For instance, in conventional VHF and UHF systems, your police department may use 460.075, while the street crews use 156.195. In trunking, each time a mobile transmits, it grabs an available frequency in the group, sending out a coded digital signal instructing all the other units in the same fleet to tune in the same frequency. Thus, if a police officer transmits from his car radio, it sends out a coded signal to all the other patrol radios in the district to receive the same frequency while he or she is transmitting. The dispatcher locks onto the same channel and each of the other patrol units can hear the exchange because their mobile radios are automatically tuned into the frequency in use.

The same applies for other fleets using the trunked system. The animal control units only hear each other, fire department units only hear fire communications, while street crews can talk among themselves. There may even be a common fleet within the trunked group that would allow, for instance, a street department supervisor to call the police dispatcher for help at a job site. There also may be citywide or county-wide mutual aid groups where all public safety units at the scene of a large-scale event can communicate with each other off their respective groups.

In some trunked systems, each time a radio transmits, it switches the communications to a different frequency within the trunked group's available frequencies. For instance, when a police officer calls in a motor vehicle stop, it may come out over 866.2125; when the dispatcher acknowledges the officer, it may come out on 867.450; when the dispatcher relays motor vehicle registration information to the officer, it may come out on 866.9125; when the officer replies to the dispatcher it may come out on 868.675 and when the officer tells the dispatcher he or she is back in service after the car stop, the message may go out on 866.750. The point is that you may miss the entire exchange of communications unless you are tuned in to all the frequencies within

a trunked group. Here's one tip: *Disable any "delay" features on your scanners when listening to trunked systems.* If the frequency changes each time someone transmits, you need your scanner to go into the "scan" mode immediately to lock on the next frequency where the conversation resumes.

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

Trunking Primer

What trunking does is set aside a group of five to 30 channels or more and assign frequencies as they are needed by agencies. Thus, a city's police, fire, ambulance, rescue and municipal operations such as sanitation, streets, health, animal control and more all can operate on the same frequencies without stepping on each others' toes.

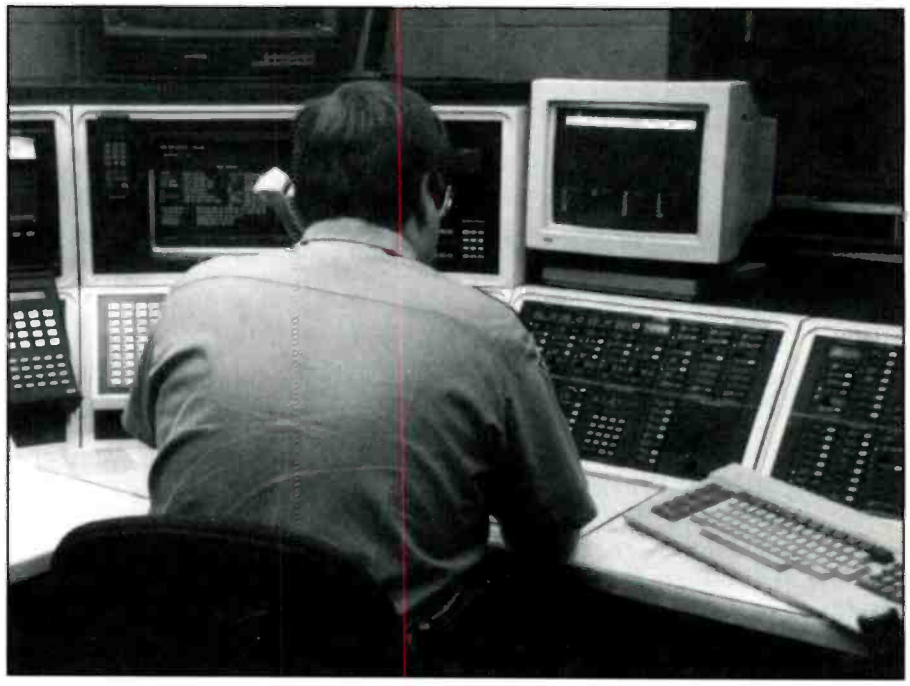
At each repeater site is a computer that identifies each unit as it transmits and assigns it to one of the available repeater frequencies within the licensed group. Not only does it carry out that task, but it also automatically sends out a data signal that instructs all of the other units in the same fleet to tune their radios to the exact same frequency.

For instance, the controller at the tower may pick up a detective who is ready to transmit a message. The computer assigns it to a frequency, such as 856.7125 MHz. At the same time, it will assign radios used by all other detectives in the same group to tune to the same frequency so they hear the message. The groups may even be broken down into further subfleets, too. For instance, within the detective group may be a subfleet that handles communications for north and south detectives, and maybe even vice units. The detective tells his or her radio (by what might be called a channel selector, usually alphanumeric readout that says something like DET-SOUTH) what group or subfleet he or she wants to communicate with and the controller at the tower site does the rest. If the detective wants to communicate with a vice unit, the controller will make sure all vice units hear his or her message. Likewise, patrol units may have their radios set up so they cannot hear communications from internal affairs, for instance.

That would create a problem, of course. In fact, patrol units may have their radios set up so they can communicate only with dispatchers and other patrol cars. On the other hand, they also may be set up so that a mutual aid group or a patrol car can call a responding ambulance to advise paramedics directly of a patient's condition.

In most trunked systems, the frequency used by the various groups changes each time the microphone is pressed, or at least waits until the end of a conversation. Following trunked communications takes a bit of patience, especially when you want to listen only to emergency services, but clearly everyone from the mayor to garbage trucks and ambulances are all using the same frequencies day in and day out. Everybody seems to have their own tricks for listening to trunked conversations, so you'll have to experiment if your city or county goes to this system.

In the trunked systems that some cities are installing, digital encryption is being used by police services. Thus, all you can expect to hear is what sounds like a rush of static over your radio each time a law officer transmits to other units. It can be



More and more public safety organizations are going to trunked systems. They can be monitored! (Photo by Steve Adams)

annoying, but you'll need to determine whether the encryption is being used on a full-time basis or only selectively by certain units. For instance, trash trucks don't have much need for encryption, however, detectives working a drug bust probably do. If the police department uses encryption on a full-time basis for all communications, you are out of luck, unless you happen to work for the news media. In these cities, the police usually have provided a trunked radio to each newsroom so that their conversations can be eavesdropped on by assignment editors. You can bet the juicy groups, like drug and vice units, won't be programmed into these news radios. And the radios usually aren't offered to the news media until after they start complaining about the right to know in news columns.

The Old Channels

If your local department switches to 800 MHz, don't give up listening to the old frequencies. While some 800 MHz frequencies require the licensee to surrender to the Federal Communications Commission its lower VHF and UHF frequencies, some do not. Thus, the old frequencies might be used on an occasional basis (after all, the equipment still may be hanging around station houses), or another surrounding town may get FCC permission to start using the agency's former lower VHF/UHF frequencies.

"I think many of us hobbyists, especially those who live in cities and counties with trunked public safety systems, myself included, can't wait until scanners are made to follow trunked groups."

Tune in those trunked systems. They aren't as hard to hear as you might imagine. And don't forget to unlock those data channels after they switch frequencies. You'll know what I'm talking about if you try to hear trunked systems. The data channel sends out the tuning instructions to each radio in the fleet so they know which group to tune in.

Mailbag

Do you have any scanner-related questions? Do you have any listening tips worth passing along to your fellow readers? How about sending in a photo of your listening post or antenna farm? Write to: Chuck Gysi, N2DUP, Scanning the Globe, Popular Communications, 76 N. Broadway, Hicksville, N.Y. 11801-2909, or e- mail to <SCAN911@aol.com> via the Internet. ■

BY JOHN T. WARD

Product Spotlight

POP'COMM REVIEWS PRODUCTS OF INTEREST

The AOR AR-5000 and ICOM IC-R8500

One of the most exciting developments in radio monitoring in recent years has been the development of all-mode, all-band wide-coverage receivers that will pull in nearly any signal from longwave to microwave, and at a price the hobbyist can afford. One of the first of this new generation of mega-receivers was the AR-3000 (later the AR-3000A) from AOR of Japan. This extremely compact receiver covers 100 kHz to 2036 MHz with 400 memory channels, offers computer-control, AM/FM/SSB reception and sells for about $1,000.

AOR followed up on its success with the phenomenal AR-8000, a handheld scanner capable of receiving international shortwave broadcasts, high frequency military communications, VHF/UHF public safety communications, civilian and military aircraft, domestic commercial AM and FM radio stations, TV audio and more.

The AR-8000 was readily embraced by monitoring fans and remains one of the most popular—and most capable—handheld scanners on the market today. But the engineers at AOR weren't content to rest on their laurels. In the summer of 1995 the company introduced the AR-5000, a table model receiver with frequency coverage from 10 kHz to 2.6 gHz, 1,000 memory channels, AM/FM/SSB mode reception, 50-channel-per-second scan, two antenna inputs and computer-control capability.

AR-5000 Entrance Was Delayed

The AR-5000 generated tremendous interest in the hobby radio community, but problems in receiving FCC approval delayed the first sales until mid-1996, more than a year later after the radio was first announced. These delays cost AOR what could have been a tremendous marketing advantage. By the time the AR-5000 was approved for sale it was no longer the only choice available.

Hot on the heels of the AR-5000 came the ICOM IC-R8500. Like the AOR, the R8500 offers 1,000 memory channels, computer-control, AM/FM/SSB receive modes and a respectable scanning speed—in this case, about 40 channels per second. The ICOM does have a narrower frequency range than the AOR, starting at 100 kHz and ending at 1999.999 MHz.

Both radios retail for about $2,000. While that's not chump change in anybody's book, neither is it unreasonable for a premium receiver with as much to offer as do these radios. Let's take a look!

AOR's AR-5000 receiver.

The Physical Differences

When comparing the AR-5000 and the R8500, the most noticeable difference is in their size and physical appearance. The AOR is quite compact given its wide capabilities, measuring about 8.5 × 3.75 × 10.25 inches. Finished in medium grey, the AR-5000 has a pale green display panel with relatively narrow LCD numerals. With its compact size and bottom-mounted speaker, the AR-5000 is an ideal do-it-all receiver for mobile use.

The ICOM is much larger than the AOR, measuring about 11 × 4 × 10.5 inches. Finished in flat black, the R8500 has a large, pale orange display panel with easily-readable black LCD numerals. The ICOM lends itself to desktop use, and it's larger size allowed ICOM's engineers to use larger buttons and other controls (when compared with the AOR radio) making it noticeably easier to use.

Both radios use SO-239 and "N-type" antenna connectors. With the AOR, either antenna jack can be selected, regardless of frequency. Through the use of expansion boxes, up to eight antennas can be connected to the AR-5000. The ICOM, on the other hand, automatically selects the SO-239 for frequencies below 30 MHz and the "N" connector for frequencies above 30 MHz.

The Nitty Gritty!

The AR-5000 isn't an easy radio to figure out. Unfortunately, the owner's manual for the AR-5000 wasn't ready when AOR began shipping the radios to consumers. The draft copy supplied by the manufacturer was rife with errors, including reference to an "EDIT" button that was on the prototype radio, but not the production model. Even the folks at EDCO, the U.S. distributor, had trouble answering some of my programming questions. It took many days of fairly intense study and experimentation before I was able to

perform anything but simple programming chores on the AR-5000.

AOR's engineers seem to have decided never to use one keypress when six will do. For example, to program a frequency into a memory channel on the AR-5000, you must first press the VFO button, enter the frequency, press the MODE button, rotate the small tuning dial to select the desired receive mode, press the FUNCTION key and then the ANT/ATT key to select the proper antenna input, press the ANT/ATT key again to select the attenuator setting (if desired) then press the ENTER key. Next, you must press and hold the ENTER key for two seconds to activate the memory-store feature, then use the numerical keypad to enter the bank number and channel where you want the frequency saved, then press the ENTER key twice more to save the frequency to the designated channel.

An AUTO mode offers a shortcut in programming, as long as the frequency, mode, etc. conform to the international bandplan. But even then, to change any of the parameters of a stored channel—the antenna or attenuator settings, for example—you must first press the MHZ key to place the stored info into one of five VFOs, press and hold the ENTER key for two seconds, then enter the bank and channel number again, then press ENTER twice to make the change permanent.

By comparison, the ICOM R8500 is a breeze to operate. Saving data into a memory channel on the R8500 is much like programming a Uniden or RadioShack scanner. First you select the bank and memory channel you want to program. The frequency and parameters are entered via the keypad and mode buttons and the MW (Memory Write) key pressed and held for one second until two "beeps" tell you the information has been stored properly. Changing any of the settings is simply a matter of pressing the desired button, then pressing MW for one second to make the change permanent.

One interesting programming note on the ICOM is a copy-and-paste feature. This allows you to duplicate the setting of one memory channel into a different memory channel. If you wish to delete the info from the original channel, you must still do that manually.

Operational considerations aside, the bottom line question on any radio is "how well does it work?" The answer for both the AOR AR-5000 and ICOM R8500 is "very well indeed."

Of course, this should be no big surprise. Any radio that sells for $2,000 better work very well indeed, or risk the wrath of consumers.

ICOM's IC-R8500 receiver.

In a field test at my home in central Florida, the AR-5000 often pulled in weak signals that both the ICOM and my Uniden 9000XLT missed. According to AOR, the AR-5000's sensitivity specifications are as low as 0.5 microvolt on AM and 0.25 microvolt on NFM.

Such sensitivity is a double-edged sword, however. Within two miles of my home is an antenna farm with about a dozen commercial AM, FM and TV station transmitters, plus a National Weather Service transmitter and a TV weather radar site. This makes for tremendous problems with intermod and images with virtually any receiver I've ever owned, and the AOR is no exception. Fortunately, the channel-selectable attenuator (10 or 20 dBs) virtually eliminates the images and intermod. Please note that I had to use the attenuator on every VHF-AM civilian aviation frequency (118 to 136 MHZ) that I tried. Of course, using the attenuator also reduces the radio's ability to receive weak signals.

The ICOM, with its slightly lower sensitivity, doesn't exhibit the same degree of interference problems as the AOR, but then again, the ICOM, which exhibits VHF/UHF sensitivity similar to the popular Tandy PRO-2006, was completely deaf to some distant signals that the AOR pulled in satisfactorily.

Selectivity on the ICOM is superb, at least in the Wide FM mode. Neither the AR-5000 nor my Uniden 9000XLT (or my RCA home stereo, for that matter) can separate the signal of a distant "oldies" FM station on 92.5 MHz from the hash caused by a nearby "heavy metal" FM station transmitter on 93.3 MHz. The ICOM, on the other hand, had no problem rejecting the stronger signal and pulling in the oldies station clearly.

Audio on both radios is good; 1.7 watts on the AOR, 2 watts on the ICOM, although I found the Audio Peak Filter on the R8500 to be easier to use, and more effective than the three audio filters on the AR-5000. AOR's designers have developed a reputation for innovation, and on the AR-5000 they showed that the reputation is well-earned by using a wave guide to channel the sound forward, making the radio well suited for desktop use despite the bottom-mounted speaker.

The squelch control on both radios allows either normal noise squelch or s-meter squelch operation. S-meter squelch on the AOR must be selected through a keypress routine. The ICOM shifts into s-meter squelch automatically as the control is rotated through the 12 o'clock position. As a side note, the AR-5000 I tested for this report exhibited a significant and annoying squelch "tail" at the end of each transmission, regardless of how tightly the squelch was set. However, two other AR-5000s I've been able to use briefly had no such tail, so I assume it's a problem unique to this radio, and hopefully something that EDCO's technical folks can fix with a simple adjustment.

One problem that I did notice with each of the AR-5000s I've used has been erratic tuning. When using the VFO to tune from one frequency to another, the display will often show movement *opposite* the intended direction. The display also has a tendency to skip back and forth from one frequency to another when the VFO is being turned. This skipping is usually no more than a Hertz or two, so it's more of an annoyance than a malfunction.

The only major flaw I've found in the ICOM is its inability to scan selected banks of memory channels. With my Uniden 9000XLT I like to program local pub-

lic safety frequencies into one bank, military aircraft frequencies into another, and civilian aircraft into a third, and so on. Do this with the R8500 and you can scan any single bank, or all 20 banks at once, but you can't scan, say, just military and civilian aircraft if you have them in separate banks. Try scanning all the banks at once and the radio invariably locks up on shortwave broadcasters or on HF utilities frequencies because of their relatively high background noise level. The AOR, on the other hand, offers a "bank link" capability to allow scanning of multiple banks.

Why ICOM didn't design the radio to allow scanning of multiple—but not all—banks is beyond me, since even the most modest Uniden and Tandy scanners offer this capability.

ICOM Shines on HF

While the AR-5000 offers excellent performance in the VHF/UHF range, it's on HF where the ICOM really shines. The R8500 has both a Noise Blanker circuit and Intermediate Frequency Shift that really help reduce or eliminate interference on shortwave frequencies. The AR-5000 offers neither. The ICOM's Audio Peak Filter is also very effective at helping voices to "pop out" of the HF background noise.

The Similarities

While there are distinct differences between the two radios, there are also many similarities. Both offer computer-control capability, both have tape recorder activation functions, both have sleep timers, clock display, alphanumeric display, quarter-inch headphone jacks, AC/DC operation, analog S-meters, direct keyboard entry or VFO tuning, priority channel scanning, channel lockout, voice scan (skips "birdies" or unmodulated carriers), band search and more.

Both also offer some attractive options, including video output and rack-mounting. The R8500 can be fitted with an optional voice synthesizer module, while the AR-5000 can be equipped with CTCSS decoder and synchronous detection modules.

In a nutshell, the AR-5000 is an extremely sophisticated scanner that offers respectable shortwave performance as well. The ICOM, on the other hand, is a high-quality shortwave receiver with the added bonus of VHF/UHF coverage. ■

Washington Pulse

FCC ACTIONS AFFECTING COMMUNICATIONS

New Experimental Stations

The Federal Communications Commission has granted the following experimental applications:

WA2XAS, ACER/Datastar, Inc. New experimental station operating on 401.65 MHz to use mobile remote ground transmitters in conjunction with Argos satellites for tests in the oil industry relating to monitoring pipeline rectifiers, compressors and flow meters. Mobile: Central United States.

WA2XAF, State of California. New experimental on 401.7025 MHz for remote transmitters used in GOES/DCS satellite data collection system. Fixed: El Nido (Merced), CA.

WA2XAN, State of California. New experimental on 401.8105 MHz for remote transmitters used in GOES/DCS satellite data collection system. Fixed: Comptche (Mendocino), CA.

WA2XAK, Alenco Communications, Inc. New experimental operating on 459.75 MHz and 459.975 MHz to establish the feasibility of sharing air-ground service frequencies with BETRS. Fixed: Freer (Webb), TX.

KA2XBG, Arraycomm, Inc. New experimental to use the 824–849, 869–894, 1865–1870, 1885–1895, 1945–1950 and 1965–1975 MHz bands for testing and demonstration of new technologies. Fixed and mobile: Santa Clara and San Francisco Counties, CA.

WA2XAB, Diablo Research Corporation. New experimental to operate in the 833.0125–865.9875 MHz and 917.0125–949.9875 MHz bands to test equipment for export. Fixed: Sunnyvale (Santa Clara), CA.

WA2XAP, Sacramento Metropolitan Air Quality Management District. New experimental for wind profiler radar on 915 MHz to collect data concerning airborne pollutants. Fixed: Elk Grove (Sacramento), CA.

FCC Hits $20 Billion Mark In Auctions

The FCC has reached the $20 billion mark in total auction revenues to be deposited with the U.S. Treasury. The agency has completed a total of six spectrum auctions and two others remain in progress. These auctions include nationwide narrowband PCS.

Interactive Video and Data Services, regional narrowband PCS, broadband PCS (A and B blocks), Direct Broadcast Satellite, Multipoint Distribution Service, 900-MHz Specialized Mobile Radio and broadband PCS (C Block).

In 1993, Congress gave the FCC authority to conduct spectrum auctions. At that time, the House Budget Committee estimated that auction receipts over a five-year period would reach $10.2 billion. In 1994, the Congressional Budget Office estimated five-year auction receipts at $8.1 billion, while the Office of Management and Budget estimated auction receipts at $12.6 billion.

"We have exceeded all expectations," FCC Chairman Reed Hundt said. "Auctions have proven once again to be a success not only by awarding licenses to those that value them the most, but also by decreasing the national debt."

Satellite Dish Zoning Preemption Clarified

The Commission has acted to revise its 1986 rule preempting certain local regulations of satellite earth station antennas to ensure that all Americans are able to have as many choices as possible for delivery of video programming and to facilitate access to all satellite services.

This action was taken, in part, in response to evidence that some local jurisdictions were inhibiting the growth of satellite services by enforcing overly restrictive and unreasonable zoning laws. In addition, Section 207 of the Telecommunications Act of 1996 directs the Commission to preempt non-federal restrictions that impair reception by antennas used in certain direct-to-home video services including direct broadcast satellite services.

In crafting the new rule, the Commission carefully considered the important interests of state and local authorities in managing land use in their communities. Against those interests, it balanced the federal interest in ensuring easy access to satellite-delivered services, which have become increasingly important in the last few years and are dependent upon rapid and inexpensive antenna installation. The revised preemption rule adopted accommodates both federal and state and local interests and provides the FCC with a method of reviewing disputes that will avoid excessive federal involvement in local land-use issues.

The newly adopted rule makes several changes in the Commission's preemption policies. The FCC said it will review local disputes after exhaustion of only non-federal administrative remedies, not all litigation remedies as was previously required. It also adopted new standards to determine reasonableness of non-federal regulations, and created two categories of rebuttable presumptions against regulation of small antennas.

These categories include antennas 1 meter or less in all areas and those 2 meters or less in commercial areas. Under the new rule, local jurisdictions would be limited to enforcement of justifiable health and safety regulation of these smaller antennas. It also adopted procedures by which non-federal authorities can request waivers of the rule in cases where unusual circumstances are shown.

The Commission tentatively concluded that its adopted rule is a reasonable way to implement Section 207 insofar as governmental restrictions are concerned. It seeks comment on whether there is any procedural mechanism that might further Congress' special concern with DBS even more effectively than the presumption approach it has adopted. It also proposed to add a new paragraph to the preemption rule in order to implement Congress' intent with regard to private, non-governmental restrictions on satellite antennas.

Commission Affirms Forfeitures Assessed

The FCC has upheld two Compliance and Information Bureau decisions denying reconsideration of monetary forfei-

tures assessed against John B. Genovese, WB5LOC, of New Orleans, La., and Vernon A. Paroli, KA5OWW, of Gretna, La., ordering them to pay forfeitures of $500 and $700 respectively.

The Bureau imposed the forfeitures against Genovese and Paroli for interfering with communications of other operators in the amateur radio service.

In both proceedings, the licensees filed applications for review. In affirming the bureau's decisions, the Commission noted that the applications raised arguments that previously were considered by the Bureau and properly decided.

Rules on Telephone Number Portability

The Commission took an important step toward bringing competition to local telecommunications markets by adopting rules that will permit both residential and business consumers to retain their telephone numbers when switching from one local service provider to another. The rules adopted governing number portability will remove a significant impediment to the development of vigorous competition in the local exchange markets.

The rules adopted implement provisions of the Telecommunications Act of 1996 more than one month prior to the statutory deadline. In fact, the action represents the culmination of a rulemaking process that the Commission began last July—seven months before enactment of the new law. Adoption of these rules completes the first portion of the Commission's implementation of Section 251 of the new law—the portion that governs local competition.

The provision of number portability is one of the obligations the 1996 Act imposes on all local exchange carriers (LECs) in order to promote a pro-competitive, deregulatory national telecommunications policy framework. Congress recognized that number portability will lower barriers to entry and promote competition in the local exchange marketplace by enabling customers to switch to a new local service provider without having to change their telephone numbers. Once number portability is implemented, consumers will be able to select a local telephone company based on service, quality and price, rather than on a desire to keep a particular telephone number.

In the action, the Commission ordered all LECs to begin the phased deployment of a long-term service provider portabil-

ity method in the 100 largest Metropolitan Statistical Areas (MSAs) no later than October 1, 1997, and to complete deployment in those MSAs by December 31, 1998. Number portability must be provided in these areas by all LECs to all requesting telecommunications carriers, including commercial mobile radio services (CMRS) providers. After December 31, 1998, each LEC must make number portability available within six months after receiving a specific request by another telecommunications carrier in areas outside the 100 largest MSAs in which the requesting carrier is operating or plans to operate.

Rather than mandating a particular technology for the provision of long-term number portability, the Commission assumed a flexible, technology-neutral approach by establishing performance criteria that any long-term portability method selected by a LEC must meet. The Commission determined that it is necessary to mandate a particular technology because there is sufficient momentum in the industry toward the deployment of compatible methods nationwide.

Pursuant to the requirements of the 1996 Act, the performance criteria adopted by the Commission require that any long-term number portability method: 1. support existing network services, features and capabilities; 2. efficiently use numbering resources; 3. not require end users to change their telecommunications numbers; 4. not require telecommunications carriers to rely on databases, other network facilities, or services provided by other telecommunications carriers in order to route calls to the proper termination point; 5. not result in unreasonable degradation in service quality or network reliability when implemented; 6. not result in any degradation of service quality of network reliability when customers switch carriers; 7. not result in any carrier having a proprietary interest; 8. be able to accommodate location and service portability in the future; and 9. have no significant adverse impact outside the areas where portability is deployed.

The Commission did not decide in this proceeding whether CMRS providers must provide number portability as LECs under the 1996 Act because this issue is being considered in the on-going proceeding on interconnection issues. Instead, the Commission will require cellular, broadband PCS, and certain "covered" Specialized Mobile Radio (SMR) providers to provide long-term service provider portability under the FCC's independent authority in the Communications Act of 1934. All cellular, broadband PCS, and covered SMR carriers must have the capability of delivering calls from their networks to ported numbers anywhere in the country by December 31, 1998, and to offer service provider portability, including the ability to support roaming throughout their networks, by June 30, 1999.

The Commission enunciated principles that, consistent with the new law, ensure that the costs of currently available measures are borne by all telecommunications carriers on a competitively neutral basis, and concluded that states may employ various cost recovery mechanisms, so long as they are consistent with these principles.

The FCC declined to require provision of either service or location portability. The Commission determined that the new law requires LECs to provide number portability for 500 and 900 numbers, but directed the Industry Numbering Committee (INC) to address the technical feasibility of LECs providing 500 and 900 portability. The INC is to report its findings to the Commission within 12 months of the effective date of the Order

FCC's Toll-Free Information Service

As part of its ongoing commitment to make information available to the public expeditiously, the Commission has inaugurated the first phase of its toll-free information line. Consumers can reach the FCC's National Call Center, located at the Commission's Gettysburg, PA facility by calling 1-888-225-5322 (1-888-CALL-FCC). TTY facilities for persons with disabilities are available at 1-888-835-5322.

The toll-free service will be staffed between 8 a.m. and 4 p.m. EST, Monday through Friday, and will also provide automated information 24-hours a day, seven days a week. This service, which originally began on a regional basis, is reported to be available nationwide.

The FCC's new centralized call center will be able to respond to queries abut such specific issues as telephone rates or charges on your phone bill, answer questions about long-distance carriers, or provide information on obtaining a license or form, filing a complaint, or expressing a concern about what a local radio or television broadcast station aired. When Commission subject matter experts must be consulted, the call will be electronically transferred directly from the call center to FCC Washington Headquarters at no additional cost to the caller.

With the enormity of changes expected by the implementation of the new Telecommunications Act of 1996 into law, the Commission is encouraging more public participation and anticipates a growing number of inquiries. "This is a giant leap for consumers," said FCC Chairman Reed E. Hundt. "Consumers now have one place they can call to ask questions or voice concerns or complaints about communications services, programs or companies. This center will help consumers get information to make informed choices," he said.

FCC Announces Office Closings

The FCC announced that effective immediately it will close 12 of its High Frequency (HF) Spectrum Monitoring stations in the following locations: Belfast, Maine; Powder Springs, Georgia; Vero Beach, Florida; San Juan, Puerto Rico; Allegan, Michigan; Kingsville, Texas; Grand Island, Nebraska; Anchorage, Alaska; Douglas, Arizona; Livermore, California; Honolulu, Hawaii; and Ferndale, Washington.

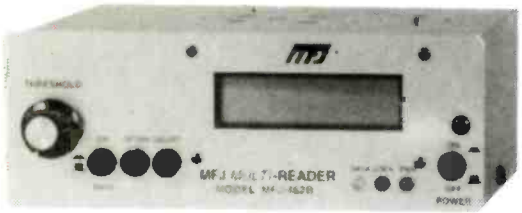
Also, the Commission will close six FCC District Offices in the following locations: Buffalo, New York; Norfolk, Virginia; Miami, Florida; Houston, Texas; Portland, Oregon; and Saint Paul (Maplewood), Minnesota. The action is part of the FCC's restructuring of its Compliance and Information Bureau (CIB).

A downsized professional staff will remain in the following nine locations affected by this action: Buffalo, Norfolk, Miami, Houston, Portland, Saint Paul, Anchorage, Honolulu, and San Juan. Resident agents will be available in those locations to resolve enforcement and interference complaints.

The CIB is replacing its current radio spectrum monitoring technology at its HF Monitoring stations with advanced, automated equipment. Once the new equipment is installed, tested, and approved for service, these monitoring sites will be remotely controlled from the FCC/CIB Operations Center in Columbia, Maryland. To better serve the needs of the general public the FCC is installing a new, nationwide centralized toll-free call center that will provide toll-free service for information or assistance from anywhere in the United States. ■

Tap into *secret* Shortwave Signals

Turn mysterious signals into exciting text messages with this new MFJ MultiReader™



MFJ-462B **$169.95** **Plug** this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack.

Then *watch* mysterious chrips, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR(FEC) turn into exciting text messages as they scroll across your easy-to-read LCD display.

You'll *read* interesting commerical, military, diplomatic, weather, aeronautical, maritime and amateur traffic . . . traffic your friends can't read -- unless they have a decoder.

Eavesdrop on the World

Eavesdrop on the world's press agencies transmitting *unedited* late breaking news in English -- China News in Taiwan, Tanjug Press in Serbia, Iraqui News in Iraq -- all on RTTY.

Copy RTTY weather stations from Antarctica, Mali, Congo and many others. Listen to military RTTY passing traffic from Panama, Cyprus, Peru, Capetown, London and others. Listen to hams, diplomatic, research, commercial and maritime RTTY.

Listen to maritime users, diplomats and amateurs send and receive error free messages using various forms of TOR (Telex-Over-Radio).

Monitor Morse code from hams, military, commercial, aeronautical, diplomatic, maritime -- from all over the world -- Australia, Russia, Hong Kong, Japan, Egypt, Norway, Israel, Africa.

Printer Monitors 24 Hours a Day

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

Printer cable, **MFJ-5412**, $9.95.

MFJ *MessageSaver*™

You can save several pages of text in 8K of memory for re-reading or later review .

High Performance Modem

MFJ's high performance *phaselock loop* modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly improves copy on CW and other modes.

Easy to use, tune and read

It's easy to use -- just push a button to select modes and features from a menu.

It's easy to tune -- a precision tuning indicator makes tuning your receiver easy for best copy.

It's easy to read -- the 2 line 16 character LCD display with contrast adjustment is mounted on a sloped front panel for easy reading.

Copies most standard shifts and speeds. Has *MFJ AutoTrak*™ Morse code speed tracking.

Use 12 VDC or use 110 VAC with MFJ-1312B AC adapter, $12.95. 5¼x2½x5¼ inches.

No Matter What Guarantee

You get MFJ's famous one year *No Matter What*™ *unconditional* guarantee. That means we will repair or replace your *MFJ MultiReader*™ (at our option) *no matter what* for a full year.

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Order an *MFJ-462B MultiReader*™ *from* MFJ and try it in your own setup -- compare it to any other product on the market regardless of price.

Then if you're not completely satisfied, simply return it within 30 days for a prompt and courteous refund (less shipping).

Order today and try it -- you'll be glad you did.

Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a "first rate easy-to-operte 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 to 30 MHz.

Receives strong, clear signals from all over the world. 20dB attenuator, gain control, ON LED. Switch two receivers and aux. or active antenna. 6x3x5 in. remote has 54 inch whip, 50 ft. coax, 3x2x4 in. 12 VDC or 110 VAC with MFJ-1312, $12.95.

$129.95 MFJ-1024

Indoor Active Antenna

MFJ-1020B **$79.95**

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

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as preselector with external antenna. Covers 0.3-30 MHz. Has 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, $12.95.

Compact Active Antenna

MFJ-1022 **$39.95**

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

Also improves scanner radio reception on VHF high and low bands.

Detachable 20 in. telescoping antenna. 9 volt battery or 110 VAC with MFJ-1312B, $12.95. 3⅛x1¼x4 in.

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. Pushbuttons let you select 2 antennas and 2 receivers. Cover 1.6-30 MHz. 9x2x6 inches. Use 9-18 VDC or 110 VAC with MFJ-1312, $12.95.

High-Gain Preselector

MFJ-1045C **$69.95**

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. Pushbuttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18VDC or 110 VAC with MFJ-1312, $12.95.

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.

Easy Up Antennas Book

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.

MFJ-38 **$16.95**

Covers receiving antennas from 100 KHz to almost 1000 KHz. Includes antennas for long, medium and shortwave, utility, marine and VHF/UHF services.

Receive *Color* News Photos, Weather Maps, RTTY, ASCII, Morse Code

MFJ-1214PC **$149.95**

Use your computer and radio to receive and display *brilliant full color* FAX news photos and incredible WeFAX weather maps with all 16 gray levels. Also RTTY, ASCII and Morse code.

Animate weather maps. Display 10 global pictures simultaneously. Zoom any part of picture or map. Frequency manager lists over 900 FAX stations. Automatic picture capture and save.

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

Super Hi-Q Loop™ Antenna

The *Super Hi-Q Loop*™ is a professional quality remotely tuned 10-30 MHz high-Q antenna.

MFJ-1782 **$269.95**

It's very quiet and has a very narrow bandwidth that reduces receiver overloading and out-of-band interference.

High-Q Passive Preselector

MFJ-956 **$39.95**

The MFJ-956 is a *high-Q* passive LC preselector that lets you boost your favorite stations while rejecting images, intermod and other phantom signals. Covers 1.5-30 MHz. Has preselector bypass and receiver grounded position. 2x3x4 in.

Mobile Scanner Ant.

Cellular look-a-like. Covers 25-1300 MHz. High - est gain on 406-512 and 108-174 MHz, 19 in. Magnet mount. MFJ-1824BB has BNC/UHF plug; MFJ-1824BM has Motorola plug.

MFJ-1824BB/BM **$19.95**

MFJ 12/24 Hour LCD Clocks

MFJ-107B **$9.95**

MFJ-108B **$19.95** MFJ-105B **$19.95**

MFJ-108B, dual clock displays 24 UTC and 12 hour local time *simultaneously*. **MFJ-107B**, single clock shows you 24 hour UTC time. *3 star rated* by *Passport to World Band Radio*!

MFJ-105B, accurate 24 hour UTC quartz *wall clock* with large 10 inch face.

MFJ Antenna Switches

MFJ-1704 **$59.95**

MFJ-1702B **$21.95**

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 device. Good to 500 MHz. 60 dB isolation at 30 MHz.

MFJ-1702B for 2 antennas.

World Band Radio Kit

MFJ-8100K **$59.95** *kit*
MFJ-8100W **$79.95** *wired*

Build this *regenerative* shortwave receiver *kit* and listen to shortwave signals from all over the world with just a 10 foot wire antenna.

Has RF stage, vernier reduction drive, smooth regeneration, five bands.

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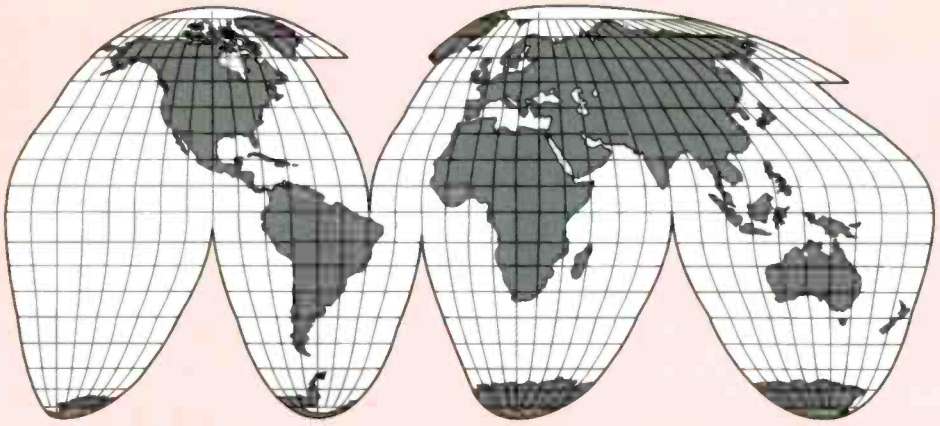


Pop'Comm's World Band Tuning Tips

February 1997

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 UT equals 7 pm EST, 6 pm CST, 4 pm PST.

UTC	Freq.	Station/Country	Notes
0000	5995	Voice of America	
0000	6020	R. Netherlands via Bonaire	
0000	7150	Radio Ukraine	
0000	9580	R. Yugoslavia	EE
0000	9705	R. Mexico Int'l	SS
0027	6055	VOIRI, Iran	sign on
0030	4980	Ecos del Torbes, Venezuela	SS
0030	5965	R. Havana Cuba	SS
0030	6065	R. Sweden	
0030	6120	Radio Vilnius, Lithuania (via Germany)	
0030	9540	Radio Exterior Espana, Spain	
0030	9990	Voice of Hope, Lebanon	AA
0050	11800	RAI, Italy	
0100	4835	R. Tezulutlan, Guatemala	Quechua
0100	4840	R. Andahuaylas, Peru	SS
0100	6025	Radio Amanecer, Dominican Republic	SS
0100	6135	Swiss Radio Int'l	
0100	6235	Radio Quisqueya, Dominican Republic	SS
0100	7250	V of Vietnam, via Russia	
0100	7345	R. Prague, Czech Republic	EE
0100	9560	R. Norway	EE Sun
0100	9695	UAE Radio, Abu Dhabi	AA
0100	9745	HCJB, Ecuador	
0100	9835	Radio Budapest, Hungary	
0100	9955	WRMI, Miami	EE/SS
0100	17510	KWHR, Hawaii	
0130	5960	R. Japan, via Canada	
0130	5981	AWR/Union Radio, Guatemala	SS
0130	7290	Radio Sweden	
0130	7448	Voice of Greece	GG/EE
0145	6140	Radio Tirana, Albania	
0145	7290	R. Sweden	
0200	4880	Radio Nacional Espejo, Ecuador	SS
0200	4955	Radio Nacional, Colombia	SS
0200	4985	Radio Brazil Central, Brazil	PP
0200	5077	Caroco+C511, Colombia	SS
0200	5385	Radio Huamarca, Peru	SS
0200	5930	R. Prague, Czech Rep.	
0200	5950	Voice of Free China via USA	
0200	6000	Radio Havana Cuba	EE
0200	6095	R. Portugal	
0200	6150	Adventist World Radio, Costa Rica	SS
0200	9475	R. Cairo, Egypt	
0200	9735	R. Nacional Paraguay	SS
0200	11710	RAE, Argentina	
0230	4419	Radio Bambamarca, Peru	SS
0230	4775	Radio Liberal, Brazil	PP
0230	4895	Radio Bare, Brazil	PP
0230	7160	Radio Tirana, Albania	
0230	9655	Radio Austria Int'l	
0245	7305	Vatican Radio	
0250	7200	Republic of Sudan Radio	AA
0300	3210	Radio Exterior de Espana via Costa Rica	SS
0300	3220	Channel Africa, South Africa	
0300	3306	Zimbabwe Broadcasting Corp	
0300	4800	Radio Lesotho	
0300	4919	R. Quito, Ecuador	SS
0300	5895	Croatian Radio	
0300	7115	R. Sweden	
0300	7465	Radio Norway International	NN
0300	9665	Voice of Turkey	
0300	9700	Radio Bulgaria	
0325	7085	V of Broad Masses of Eritrea	
0330	4760	Trans World Radio, Swaziland	GG

UTC	Freq.	Station/Country	Notes
0330	4930	R. Internacional, Honduras	SS
0330	7520	R. Moldova Int'l, via Russia	vern.
0400	3330	Christian Voice, Zambia	
0400	3390	BBC, via South Africa	
0400	4910	Zambia National Broadcasting Corp.	local
0400	4915	R. Cora, Peru	SS
0400	5020	Ecos del Atrato, Colombia	SS
0400	5975	BBC via Antigua	
0400	9790	Radio France International	FF
0430	4770	R. Nigeria, Kaduna	sign on
0457	7185	Channel Africa	PP, sign on
0500	4832	Radio Reloj, Costa Rica	SS
0500	4990	Radio Nigeria, Lagos	
0500	6110	Radio Japan	EE
0500	6185	R. Educacion, Mexico	SS/EE
0500	7480	R. Bulgaria	
0500	9675	Channel Africa, South Africa	
0530	4750	CRTV, Bertoua, Cameroon	FF
0600	4870	ORTB, Benin	FF
0600	6165	Swiss Radio Int'l	
0600	9425	Voice of Greece	
0630	5047	RTT, Togo	FF
0630	6015	R. Austria Int'l, via Canada	
0630	9645	Vatican Radio	
0700	5025	Radio Rebelde, Cuba	SS
0700	6070	CFRX relay CFRB, Canada	
0700	11615	HCJB, Ecuador	
0730	5985	Radio Vlaanderen Int'l, Belgium	
0800	3935	Radio Reading Service, New Zealand	
0800	6090	Radio Bandeirantes, Brazil	PP
0800	6100	R. New Zealand Int'l	
0800	9445	HCJB, Ecuador	EE
0900	3280	La Voz del Napo, Ecuador	SS/Quechua
0900	6030	Radio Marti, USA	SS
1000	4935	Radio Tropical, Peru	SS
1000	21605	UAE Radio, Dubai	
1030	4950	Radio Baha'i, Ecuador	SS/local
1100	3360	La Voz de Nahuala, Guatemala	SS
1100	4780	Radio Cultura Coatan, Guatemala	SS s/on
1100	6175	Faro del Caribe, Costa Rica	SS
1100	9580	R. Australia	
1130	5050	Voice of the Strait, China	CC
1130	6120	R. Japan via Canada	
1130	7160	All India Radio	
1130	9650	R. Korea, S. Korea, via Canada	
1130	11680	Korean Central Bc System, N. Korea	KK
1200	4725	Voice of Myanmar (Burma)	BB
1200	6400	Radio Pyongyang, North Korea	KK
1200	6570	Defense Forces Broadcasting, Myamar	Burmese
1200	7270	Polish Radio Warsaw	
1200	9510	R. Australia	
1200	12005	HCJB, Ecuador	
1200	13790	R. Bulgaria	
1200	13800	Radio Norway	
1200	15400	R. Finland Int'l	Finnish
1200	15445	FEBA, Seychelles	or 15480
1215	15295	R. Tashkent, Uzbek	
1230	4950	Voice of Pujiang, China	CC
1230	9370	KSDA, Guam	CC
1230	9548	Radio Bangladesh	Bengali
1230	11900	Radio Finland Int'l	
1230	12085	R. Ulaan Bataar, Mongolia	
1230	13610	R. Vlaanderen Int'l, Belgium	
1230	13740	Radio Sweden	
1230	15640	Radio Bulgaria	
1230	17630	Africa No. One, Gabon	
1300	6155	Radio Singapore One	
1300	7405	China Radio International	
1300	9590	R. Norway	NN
1300	9625	CBC Northern Service, Canada	
1300	11850	R. Thailand	NN
1300	17745	R. Romania Int'l	
1320	21520	RAI, Italy	sign on; Sun.
1330	9830	Radio Sweden	
1330	11650	R. Sweden	
1330	15060	BSKSA, Saudi Arabia	AA
1330	15340	Radio Denmark, via Norway	DD
1330	21455	Radio Canada International	
1400	9355	Monitor Radio - KHBI, No. Marinas	
1400	10260	CPBS, China	CC
1400	11705	Radio Japan via Canada	
1400	11720	R. Norway	NN
1400	11800	Radio Australia	
1400	11895	R. Japan, via Fr. Guiana	
1400	12077	Kol Israel	
1400	17780	RAI, Italy	II
1430	12080	Radio Australia	
1430	13710	All India Radio	
1430	15325	R. Canada Int'l	
1430	21515	Radio Portugal Int'l	
1500	11785	Radio Republik Indonesia	II
1500	11890	Radio Oman	AA
1500	13635	Swiss Radio Int'l	
1500	13785	Radio Pyongyang, North Korea	
1600	21560	Deutsche Welle, Germany	GG
1630	15395	UAE Radio, Dubai	EE
1630	21700	R. Japan	JJ via Gabon
1700	9610	VOIRI, Iran	
1700	13610	Radio Damascus, Syria	AA
1700	15215	Radio France International	
1730	11970	R. Jordan	AA
1800	15160	Radio Algiers Int'l, Algeria	
1800	15244	Voix du Zaire	FF
1800	15265	Radiobras/Radio Nacional, Brazil	
1800	15495	R. Kuwait	AA
1830	11645	Voice of Greece	
1830	11990	Radio Kuwait	
1900	15345	RAE, Argentina	
1900	15540	HCJB, Ecuador	
1900	17875	Voice of Russia via Armenia	
1930	15505	Radio Kuwait	AA
2000	12085	Radio Damascus, Syria	
2100	6205	R. Kuridat (anti-Nigeria clandestine)	part EE S.Africa
2100	9550	R. Havana Cuba	
2100	9910	All India Radio	
2130	15415	R. Jamahiriya, Libya	AA
2145	11760	R. Havana Cuba	
2200	9200	Republic of Sudan Radio	AA
2200	9388	Kol Israel	Hebrew
2200	9570	R. Portugal	PP
2200	11585	Kol Israel	Hebrew
2200	11945	R. Canada Int'l	
2230	5945	Radio Austria Int'l	
2230	6090	Radio Nigeria, Kaduna	Hausa
2230	7210	ORTB, Benin	FF
2230	9430	Radio Prague, Czech Republic	
2230	9505	R. Havana Cuba	
2230	9605	UAE Radio, Abu Dhabi	
2230	9855	Radio Kuwait	AA
2230	11600	R. Prague, Czech Republic	
2300	3245	Radio Clube, Brazil	PP
2300	5100	Radio Liberia	EE/FF
2300	9720	Radio Yugoslavia	
2300	11915	R. Gaucha, Brazil	PP
2330	7105	Radio Romania Int'l	
2330	7125	Voice of Russia	
2330	7215	RTVI, Cote D'Ivoire (Ivory Coast)	FF
2330	7285	Radiostanisya Belarus	Belorussian
2330	9485	Radio Denmark, via Norway	
2355	9925	R. Vlaanderen Int'l, Belgium	GG

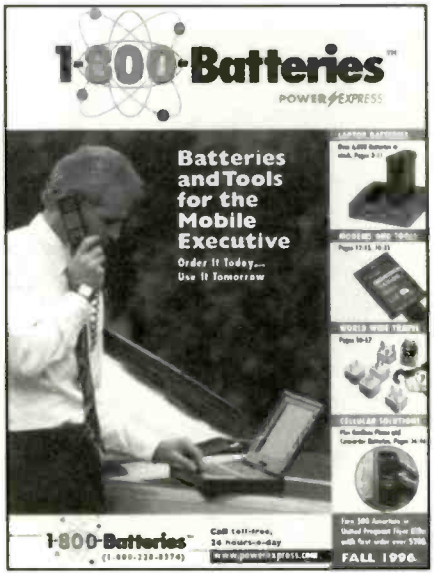
BY NANCY BARRY

Product Parade

REVIEW OF NEW, INTERESTING AND USEFUL PRODUCTS

1-800-BATTERIES Offers Batteries and Tools for the Mobile Executive

1-800-BATTERIES (formerly Power Express), has increased its inventory to more than 6,000 batteries for laptops and notebooks, and expanded its line to include portable power, travel, cellular phone and camcorder accessories. 1-800-BATTERIES (1-800-228-8374) delivers any battery overnight. They can also locate the correct battery for a specific unit if the user is unsure what type is needed. If a battery is no longer in stock, the 1-800-BATTERIES team will open the battery pack's exterior casing, remove the spent batteries, replace any defective safety components, such as thermal fuses or thermistor charge control devices, weld a new set of battery cells, re-assemble all components, test the battery, then re-seal it into the old plastic case. If the battery is "shrink wrapped," they will construct a fresh seal. They offer a one-year guarantee on rebuilt battery packs and charge between $30 and $125 depending on the model, and will have it back to you within five working days.



1-800-BATTERIES is now accessible via the Internet at <http://www.powerexpress.com> and also offers a 48 page mail-order catalog. A discount of $2 is given when ordering through the Internet.

New NEC MessageMaker™ Pagers

NEC America, Inc. has unveiled its new line of MessageMaker pagers. This new MessageMaker line is a series of front display, numeric pagers that offer users a variety of features and options, including multiple color choices, case designs and graphic symbols which convey common messages such as "urgent,"

"phone home," "medicine," "office," "voice mail" and "meal."

There are three MessageMaker pager models available in both FLEX™ or POCSAG formats with features ranging from basic to mid-range to high-end. MessageMaker I offers entry-level features and provides first-time pager users a basic easy-to-use unit.

The MessageMaker II provides more advanced features, including a built-in clock with time stamp and alarm, increased message capacity, a variety of alert choices and nine communication icons.

The MessageMaker III is a full-featured model with complete numeric message capabilities, including message protection and deletion, expanded message storage capacity and nine icons.

Each MessageMaker is available in traditional black, steel blue, translucent cool mist, arctic blue and real teal. To learn more about the MessageMaker Pagers or accessories, contact NEC America, Inc., 3100 Monticello Ave., Sixth Floor, Dallas, TX 75205; phone 214-520-1200.

New "Nitelogger II" Recorder Activator

Benjamin Michael Industries, Inc. of Caledonia, Wisconsin announces an upgraded and enhanced version of the "Nitelogger." The original "Nitelogger" was introduced in the early '80s. Installed between a scanner or other eight ohm audio source and a tape recorder, the unit starts the recorder when audio is present at its input. When the audio is no longer present, the "Nitelogger II" deactivates the recorder and waits until the channel becomes active again. Proper audio matching is provided to assure clean, crisp tape recordings.

The "Nitelogger II" is unique because it provides a speaker allowing the user to hear what's happening on the channel while recording. A volume control is also included for silent recording. "Audio Present" and "Record" lights are featured as well as a control to adjust the drop-out delay time. Other improvements include a "Bypass" switch to return control of the recorder to the user without the need to disconnect any cables.

The "Nitelogger II" comes complete with all necessary cables and wall charger power supply. The suggested retail price of the unit is $69.95. You can get further information by contacting BMI at P.O. Box 91, Caledonia, WI 53108 or phone 414-835-4299 or fax 414-835-4298. Stay tuned—In an upcoming issue of *Pop'Comm* we'll be reviewing the BMI "Nitelogger II."

The ACARS Downlink

YOUR LINK TO DIGITAL AIRCRAFT COMMUNICATIONS

BY BOB EVANS

OOOI Event Recording

OFF and ON events are typically recorded through sensors in the aircraft's landing gear. IN and OUT Events are usually triggered by the closing or opening of passenger doors, or the release or application of aircraft brakes. Separate Event Sensors are used which automatically record the event condition and the GMT time. Event times can then be called up on demand by the pilot as well as being automatically transmitted to the ground station without the need of aircrew intervention. To ensure that the sensors have not recorded a false event, ARINC has specified that these event sensors must record the event condition for a period of 10 seconds before the event condition can be declared to be "true".

Time Off the Block

An OUT event normally refers to the time the aircraft is "Off the Gate", or when the aircraft is pushed back by the tug. The term "time off the block" has also been used to describe this procedure —as this is generally the time when the wheel blocks are removed. Technically, for many airlines, it is recorded when two conditions are met: 1. All the passenger doors are closed and 2. The aircraft's brakes are released.

The OFF or "Wheels-Off" event is linked to performance of the landing gear. ARINC standards specify that an OFF event is to be initiated when the aircraft's landing gear switch first annunciates extension of the strut. It is declared as true after the strut has been extended continuously for the required time frame. Variations of this procedure may be utilized. For example, Boeing 767s operated by Air Canada capture the Start of Take-off (STO) when the RH landing light is switched on. The OFF time is captured at the nose oleo extension. Both events are recorded automatically.

The "Wheels-On" Event

An ON or "Wheels-On" event is started when the landing gear first annunciates compression of the strut following the OFF event. It is declared as true after 10 seconds of continuous strut compression. For the Boeing 767 used in the above example, the datalink system captures the ON time automatically as the nose oleo compresses on landing.

At The Gate Event

An IN or "At-the-Gate" event is generally declared when the aircraft has stopped at the gate and the passenger doors are opened. After gate arrival, a complete flight profile showing operating times, times leaving flight levels, fuel burns, etc., is generally printed automatically. ARINC standards provide for the transmission delay of OOOI events until the appropriate VHF ground station is capable of receiving the signal. I often monitor the OUT and OFF event messages of transatlantic flights from Europe to eastern North America from my Toronto location. Since VHF cannot propagate over this distance, the obvious conclusion is that these messages are transmitted only when the aircraft is within VHF range of North America (New York, for example).

The OOOI "Q" Labels

Here's a look at Downlink Message Labels "QA" through "QM" which are used to record standard OOOI events.

QA—Out/Fuel Report

.N9017U QA 4020 UA0267
ATL0440021440225

In this case, United Airlines flight has departed Atlanta (ATL), the time it left the gate was 0440 UTC, with 02144 pounds of fuel boarded for a total of 22,100 pounds.

QB—Off Report

.N9030U QB 3646 UA0560
ATL1033

Here, United Airlines flight has departed Atlanta (ATL) with a "wheels up" time of 1033 UTC.

QC—On Report

.N857US QC 9 0114 US0260
ATL2301

U.S. Air flight 260 has landed at Atlanta (ATL) at 2301 UTC.

QD—In/Fuel Report

..N795N QD 4 4033 PI0252
ATL224000972/CA 01

Piedmont flight 252 arrived at the Atlanta gate at 2240 UTC with 9,700 pounds of fuel onboard. The Captain/ First Officer Identifier (2) indicates the copilot (FO) landed the airplane. If the Captain landed the plane, the value would be "1".

.N557AN QD 7 3349 AA1988
ATL033300701OS ATL /OPN0037

In this variation of the QD message label, American Airlines flight 1988 arrived at the Atlanta gate at 0333 UTC with 7,000 ponds of fuel on board. The Captain (1) landed the airplane. The "Free Talk" portion of the message indicates Other Supplementary (OS) information—the aircraft's doors were opened in Atlanta at 0037 UTC.

QE—Out/Fuel/Destination Report

.N717AA QE 9 3607 AA1791
ATL1735 0318MIAOS MIA /AHM7792D/LIF

American Airlines flight 1791 left the gate at Atlanta at 1735 UTC with 31,800 pounds of fuel onboard. Flight destination is Miami (MIA). Other Supplementary (OS) information Miami —APU Hour Meter (AHM) reading = 7729D (Hexadecimal format) and no Load Information (LIF) given. (The AHM reading is used to schedule aircraft maintenance requirements)

.N942VJ QE 0 0653 US1146
ATL1102 0193PIT/DC 1101

U.S. Airlines flight 1146 left the gate in Atlanta at 1102 UTC with 19,300 pounds of fuel onboard. Their flight destination is Pittsburgh (PIT). The aircraft received Departure Clearance (DC) at 1101 UTC.

QF—Off/Destination Report

..N795N QF 8 4000 PI0530
ATL2340CLT/FP 035/CO 59659/FO 61212/A1 74169/A2 72151/A3 70258

Piedmont flight 430 took off from Atlanta at 2340 UTC bound for Charlotte (CLT). The employee serial numbers of the Commanding Officer/Captain (CO), First Officer (FO) and three Flight Attendants (A1, A2, & A3) are given.

.N828US QF 9 2431 US0359
BUF1224CLT/FP 126/CO 28860/FO 56130/A1 10002/A2 65812/A3 58230/ A4 11410

QG—Out/Return In Report

.N1458H QG 1 2022 AA0452
ATL11141120

This is a message from an aircraft that has left the gate, but for some reason has returned back to the gate. American Airlines flight 452 left the gate at 1114 UTC and returned in at 1120 UTC.

QH—Out Report

.N235WA QH 1236 WA1121
ATL2312

Flight WA1121 left the gate at Atlanta at 2312 UTC.

QK—Landing Report

.N47332 QK 4 4318 CO0377
ATL0043EWR1017

Continental Airlines flight 377 landed at Atlanta at 0043 UTC. The flight originated in Newark (EWR) and took off at 1017 UTC

QL—Arrival Report

.N73243 QL 3 5810 CO0530
ATL225800721CLE0

Continental Airlines flight 530 arrived at the gate in Atlanta at 2258 UTC with 7,200 pounds of fuel onboard. The Captain landed the aircraft. (See Message Label QD.) The flight originated in Cleveland (CLE) and the Category of Landing Code = 0.

QM—Arrival Information Report

.N73243 QM 4 5826 CO0530
ATL01122CLE10000

Continental Airlines flight 530 arrived at the gate in Atlanta at 0112 UTC with 11,200 pounds of fuel onboard. The First Officer landed the aircraft. (See Message Label QD.) The flight originated in Cleveland (CLE) at 1000 UTC and the Category of Landing Code = 0.

AirCrew Initiated Downlinks

Message Labels 80 through 89 (Aircrew Initiated Downlinks) are also used to mark OOOI Events. Delta and many other airlines use a four-character hexadecimal code at the start of the message to identify the type of report (e.g. 1101, 1102, 1702, etc.)

Other OUT Reports

.N634DL 80 8 0213 DL1217
1001 OUTRP 1217/18 KATL/KDFW .N634DL
/OUT 1102/FOB 0274/BRD 0172

OUT Report for Delta 1217 from Atlanta to Dallas/Fort Worth includes out time, fuel onboard and fuel boarded.

.N1739D 80 4 2400 DL0017
1002 OUTRP 0017/18 KATL/KDFW .N1739D
/OUT 1223/FOB
/CLS 0739 1221 03/OPN 0735 1126 03
/LIT 1223 1223 01/DRK 0735 0735 01

OUT Report for Delta 17 from Atlanta to Dallas/Fort Worth includes out time, but fuel onboard is missing. Times for opening and closing doors indicated. Meaning of LIT and DRK unknown.

.C-FNVV 80 4 4543 CP0991
1001 OUTRP 0991/31 CYYZ/CYVR .C-FNVV
/OUT 1845/FOB 0311/BRD 013880/ UNT LITERS /TYP A1

OUT Report for Canadian Airlines 991 includes out time, fuel onboard and Type 1 fuel boarded in liters measurement.

Other OFF Reports

.N919DE 80 8 2737 DL1044
1101 OFFRP 1044/18 KATL/KGSP .N919DE
/OFF 1427

.N113DA 82 8 M90A DL1728
1102/18 KATL/KEWR .N113DA
/OFF 0258/FOB 0406

The only difference between the 1101-type OFF Report and the 1102-type OFF Report is that the latter includes reported fuel onboard.

.N134DL 80 8 M62A DL0634
1702/19 KMIA/KATL .N134DL
/OFF 1237/FOB

.N983DL 80 1 5922 DL0545
3900 MISCRP 0545/18 KATL/KDEN .N983DL
OFF AT 1053L

The first example is a 1702-type OFF Report (exact meaning unknown). The second example is 3900-type Miscellaneous Report containing the local Off time.

.G-BEBL 10 4 0627 BA0226
OFF012106

British Airways Flight 226 off at 2106 UTC. Meaning of the preceding "01" unknown. May possibly indicate that the Captain performed the takeoff.

.C-FPCA 80 2 3938 CP9909
1101 OFFRP 9909/21 CYYZ/CYYZ .C-FPCA
/OUT 1927/OFF 1939/FOB 0199/ ETA 2024

.C-FPCA H1 3 D001 CP9909
#DFBTKO YYZYYZ9909
19392109P226P0186P0136826225504004
L 10910980P101102581 5P0710116684
R 10910981P1011029824P0717116806
L P0229357P1040167510607501701 00
R P0229358P1060170607617302001 0

Canadian Airlines flight 9909 OFF Report followed by Takeoff (TKO) engine data for (L)eft and (R)ight engines. Notice flight originates and terminates in Toronto (YYZ). This was a charity series of flights for Easter Seals kids that flew to Niagara Falls and back.

Other ON Reports

.N951DL 80 1 2050 DL1250
1201 ONRP 1250/17 KATL/KCVG .N951DL
/ON 0218

Delta 1201-type ON Report.

.F-GHGI 89 1 2830 AF0044
1201 ONRP 0044/21 LFPG/CYYZ .F-GHGI
/ON 1928/FOB

Air France 1201-type ON Report includes fuel onboard after flight from Paris/Charles De Gaulle to Toronto.

.N321DL 80 8 3039 DL0698
1202 ONRP 0698/18 KTLH/KATL .N321DL
/ON 1130/FOB

Delta 1202-type ON Report includes fuel onboard, although it is missing here.

.G-BEBL 10 0 4856 BA0227
ONN011748KATL

British Airways ON Report includes "N01" before the on-time (1748 UTC). The meaning is currently unknown.

Other IN Reports

.N619DL 80 7 2827 DL1191
1301 INRP 1191/18 KLGA/KATL .N619DL
/IN 1428

Delta 1301-type IN Report.

.N718DA 80 0 3714 DL0719
1302 INRP 0719/18 KBOS/KATL .N718DA
/IN 1437/FOB
/CLS 1430 1430 01/OPN 1437 1437 01
/LIT 1430 1430 01/DRK 1436 1436 01

Delta 1302-type IN Report. Notice the mysterious LIT and DRK previously encountered in the 1002-type Out message.

.N132DN 84 3 M58A DL0292
1304/18 KSEA/KATL .N132DN
/IN 0939/FOB /BLK 0406

Delta 1304-type IN Report. The meaning of BLK is unknown.

.C-GLCA 80 0 2225 CP0982
1301 INRP 0982/21 CYVR/CYYZ .C-GLCA
/ON 1911/IN 1921/FOB 0130
Canadian Airlines IN Report includes On and In times as well as fuel onboard.

.G-BEBL 10 4 5627 BA0227
INN011755KATL

IN report from British Airways 227. The characters "N01" appear before the IN time.

.N841AB 84 9 M67A JM1313
1303/16 XXXX/YYYY .N841AB
/IN 1052/FOB 0000/BLK 003926

IN report from Air Jamaica 1313. They never indicate their departure station (XXXX) or their Arrival Station (YYYY). Immediately after this IN message was transmitted, they sent the Summary message below.

.N841AB 80 0 M68A JM1313
3603/16 XXXX/YYYY .N841AB
/OUT /OFF 1041/ON 1042/IN 1052
/FOB /FOB 0000/FOB 0000/FOB 0156
/TKO 0731084/LND 0731084
/PWR ATO-2/ET /FOB 0156/HMF
/HRS /CYC

Summary Reports

In addition to individual OOOI reports, a number of airlines also use summary messages once the aircraft has arrived at the gate. Several examples follow:

.N947DL 80 1 1723 DL2123
3601 SUMMRY 2123/18 KSRQ/ KATL .N947DL
/OUT 1000/OFF 1007/ON 1111/IN 1116
/FOB 0159/TKO B /LND B
/APP N /RWY /RVR /ALT
/ERR /ERR /ERR

Delta's 3601-type Summary Report designates the First Officer as "B" for takeoff and landing. The Captain has a code of "A".

.N303DL 80 7 2544 DL0239
3602 SUMMRY 0239/18 KAGS/ KATL .N303DL
/OUT 1339/OFF 1348/ON 1417/IN 1425
/FOB /FOB /FOB /FOB 0151
/TKO 369159/LND 369159
/APP N /RWY /RVR /ALT
/ERR /ERR /ERR

Delta's 3602-type Summary Report utilizes the employee serial number for TKO and LND as does the Canadian Airlines example below. Air France also uses this same format.

.C-FPCA 83 2 1627 CP9909
3501 SUMMRY 9909/21 CYYZ/ CYYZ .C-FPCA
/OUT 1927/FOB 0246
/OFF 1939/FOB 0199
/ON 2012/FOB 0190
/IN 2015/FOB 0182
/TKO CAPT /CRW 701108
/LND CAPT /CRW 701108
/APP N /RWY /RVR /ALT
/ERR /ERR /ERR
/CPT 701108 /FO 872663
/SO1 711075 /SO2
/CHK

Federal Express OOOI Messages

FEDEX has always been a non-conformist when it comes to ACARS message types. Their OOOI Event messages are no exception.

.N652FE 20 7 M91A FX1221
190601/OFFRPT/DA KATL/DS KMEM/OFF 0334

.N410FE 20 3 M23A FX0016
190801/INRPT /DA KIND/DS KATL/IN 0909

.N410FE 20 8 M03A FX0019
190501/OUTRPT/DA KATL/DS KIND/OUT 0233/IFQ 031360 UTM LB
CMN 0000060955 CPN 1
CMN 0000096983 CPN 2

.N410FE 10 5 M24A FX0016
191501/SUMMRY/DA KIND/DS KATL
/FOB 019000 UTM LB
/LND CAPT 0000060955 ■

The Radio Connection

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

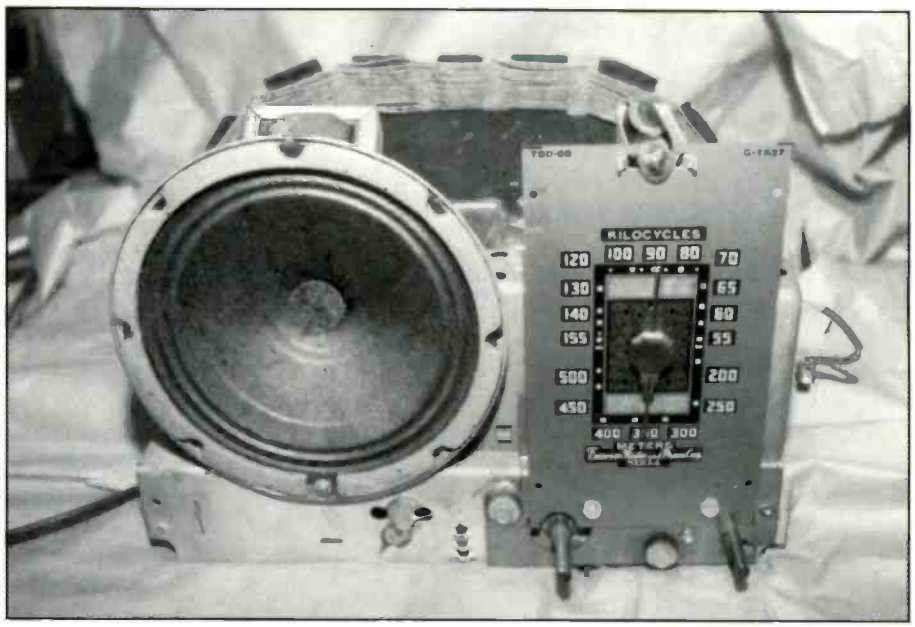
A LOOK BEHIND THE DIALS

Checking Out The Letters

Thomas McWilliams, KI4N writes: "It's too bad the "software" for radio is so lacking. But for a trip back into time, I tune one of my vintage sets into the baseball post-season action! Let the tubes glow, sit back and enjoy broadcasts where little has changed in 50 years—except for the players and teams. CBS Radio Sports does a wonderful job! No annoying musical themes, or brazen self-promotion as found on TV, but only simplicity and truth. And sponsored by who else? Gold Bond Powder! I've no ties to the CBS Radio Network, or Gold Bond Powder, I'm just a happy camper!" (via e-mail, <tgm@netcom.com>).

Amen, Tom! You and I both agree that radio is the best medium for baseball, and that it's best enjoyed on a vintage radio. You've got my mouth watering for some real ballpark franks Tom. Pass the mustard please!

This month we continue with our Emerson kitchen table radio restoration! (The schematic for this set appeared in the January issue.) Let's talk about sources for the most common parts used in old radios—resistors and capacitors. Parts with high-voltage ratings are becoming harder to find; the last major market for these parts began to wane in the '60s as TV sets relied less and less on vacuum tube technologies.



Front view of the Emerson DQ chassis. Note the dial plate has markings for both the frequency in kilocycles; and the wavelength, in meters.

AC Line-Service Capacitors: Safety First!

If your set uses a floating chassis, (refer to the schematic in the January issue for those models that use capacitor C22 and resistor R9) the replacement capacitor for C22 should be rated for AC line service. Most transformer powered sets use a pair of capacitors, typically 0.01 mFd, from each side of the AC line to the chassis. Panasonic type GL capacitors, available from Digi-Key, are both CSA and UL rated for 125 Vac across-the-line and line-bypass applications. Newark Electronics carries similarly rated capacitors that are made by Sprague. The DC rating for these caps is 3000 volts!

Alas, the Emerson calls for a .2 mFd (.2 mFd is no longer a standard value, .22 mFd will do instead) line-bypass capacitor (C22 on the schematic), but the highest value line-bypass capacitor shown in my catalogs is .01 mFd. The good news is this: If you used a polarized line cord as discussed in last month's column, the capacitor will be from the AC neutral to the radio chassis. The power switch must be wired to interrupt the AC hot lead, otherwise there will be a voltage return path back to ground via the tube filament chain! With the polarized line cord, you can safely use a mylar .22 mFd capacitor with a 600 Vdc rating.

The next step is to make a "shopping list" of the wax paper capacitors and the resistor values used in the old set. Changing out the resistors in a radio of this vintage is a judgment call. You might elect to measure the resistors using the ohm-meter function on your VOM, and just replace those that are out of tolerance. Resistors that are discolored from overheat- ing are candidates for replacement. Use a resistor with a higher wattage rating in those instances. For example, if resistor R3, the 140 ohm 1/2 watt cathode biasing resistor for the 50L6 audio stage is off value or discolored, use a 1 watt replacement resistor.

New resistors cost mere pennies apiece; I find it is often easier to just change them all out. One problem you will have with measuring resistors in circuit is "parallel" resistance paths. For example, your resistance readings for R1, R2, R4 and R5 will be lower than normal because of interaction. You will have to lift one lead of each resistor to get an accurate reading. If you're going through this much bother, you might as well clip both leads and change it with new stock. A good tip to remember is that *a resistor will never read higher than normal because of other resistances in the set.* Also keep in mind that your resistance readings can be affected by capacitors that still retain any voltage charge or have leakage.

Near Values—Close Enough!

You're going to find that many of the component values that were standard fare 40 years ago are no longer made in those

exact values. My Emerson chassis sports two .025 mFd wax paper capacitors. The nearest modern standard value is .022 mFd. Likewise, there is also a .002 mFd wax capacitor; a more modern value .0022 mFd capacitor would be used as an replacement. For most routine audio coupling, RF coupling and bypass applications, using the closest available capacitor value is fine.

Critical value capacitors are those used in RF tuned circuits. With some exceptions, these are very low value capacitors under .0001 mFd (1000 mmFd, or 1000 μμFd (1000 micromicro Farads.) Keep in mind that a .0001 mFd capacitor is also equal to the more modern 1000 pF (pico Farad) designation. "Pico" has replaced the vintage "micromicro" method of marking capacitor values. You will find these capacitors used in the RF tuned circuits for the antenna and local oscillator circuits, and possibly as fixed padders in IF transformers. They are also commonly found in the IF detector "filter," where residual IF RF is removed from the recovered AF signal. Be careful here! A common value for this filter is .00001 mFd, or 100pF. It's easy to misread the .00001 value, using a .0001 mFd (1000pF) instead of the .00001 mFd (100pF) capacitor will result in too much bass and low level audio. See capacitors C4 and C15 in January's schematic—they are .00002 mFd (200pF) caps. The Riders parts list shows these may be either paper or the more reliable mica capacitor.

Usually the older mica style capacitors hold up quite well, the mica dielectric and the bakelite housings were not prone to the moisture problems common to wax paper capacitors. It is best to use high-quality dipped mica or NPO disc ceramic capacitors to replace low-value paper or defective mica capacitors when they are encountered in RF circuits.

Almost Fooled Me!

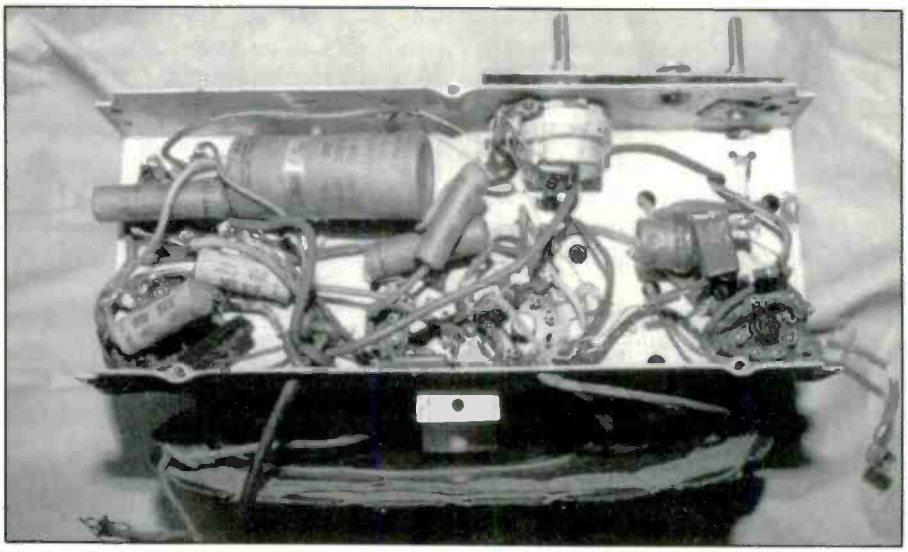
There is a real interesting part in my Emerson radio. The cathode bias resistor (R3) for the audio stage is a 1/2 watt 140 ohm resistor. But, the darn thing looks just like a vintage mica capacitor! It is even labeled "Micamold!" I wonder how many of these strange resistors have been swapped out with capacitors by unwary restorers? It almost fooled me.

I see lots of e-mail in various Internet Usegroups for antique radios. It is very common to see a posting from a distraught set owner—the note usually goes something like this "I have restored two radios without problem, they all played when I turned them on, but radio number three . . ." I want to help you as a newcomer to the hobby so you may avoid the pitfalls many others have fallen into.

Do "Orange Drops" Really Taste Good?

Sprague's "Orange Drop" line of capacitors is the choice of many restorers. Antique Electronic Supply carries them, as does Newark or Allied Electronics. I happen to use less expensive Panasonic metallized polyester film ECQ-F type capacitors from Digi-Key; or similar capacitors from NTE Electronics. The NTE part lines are carried by electronic parts stores and hobbyist oriented mail-order electronic outlets. None of my mylar capacitors has ever failed, so I order common values in 100 lot quantities for the best price. I only use mylar capacitors rated for 630 volts. An exception to this

"You and I both agree that radio is the best medium for baseball, and that it's best enjoyed on a vintage radio."



Under chassis view showing various paper capacitors and resistors that will be replaced. Five wax capacitors are easily seen. The large tubular paper capacitor with the metal mounting band is a dual 20 mFd at 150 Vdc electrolytic capacitor.

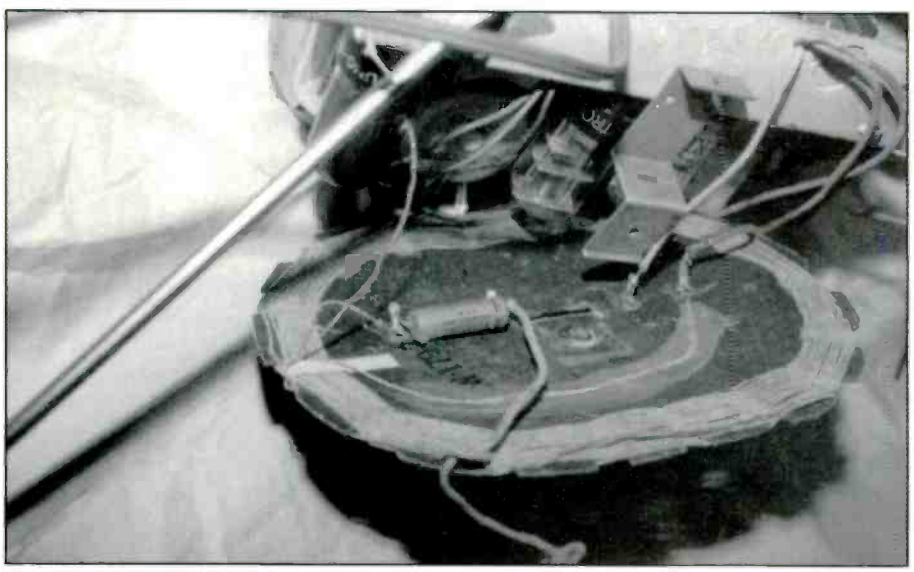
is the plate-to-plate capacitor used in push-pull audio output stages. This will be discussed in a later column. NTE's line includes a .05 mFd value capacitor, while Panasonic's line has the more common .047 mFd value. Either will do when a .05 paper is to be replaced. I also stock Panasonic's line of SU Series electrolytic capacitors in both 250 Vdc and 450 Vdc values. These meet 90 percent of my needs for restoring AC/DC or transformer powered sets. NTE Electronics carries similar capacitors. Again, I have never seen one fail, but I suspect some will argue that American-made electrolytics are better.

Finding Resistors

Allied, Newark, and NTE are good sources for resistors. As usual, Antique Electronic Supply provides a one-stop shopping source for many component needs. RadioShack's 100-piece 1/2 watt resistor assortment (271-306) is a good starting point for the most common values. As with capacitors, I avoid NOS (New Old Stock) resistors like the plague. New production techniques produce resistors that are much more stable and reliable than those made 30 or 40 years ago. In quantity, you can buy 1/2 watt 5 percent resistors for under three cents each. You may find your tube set uses resistors with 1/4 watt ratings. Unfortunately, most modern 1/4 watt resistors are designed for low-voltage solid-state applications, and are not suitable for use in high-voltage tube circuits. They may flash over. Likewise, 1/2 watt carbon composition resistors may fare better under higher voltages, and tolerate overloads better than more modern carbon film 1/2 watt resistors.

Coming Next Month

Next month the Emerson saga continues. We will discuss the color codes used on older mica capacitors, and also the cryptic marking system that is now used on many new capacitors. I will also show you where to find new replacements for the under-chassis paper electrolytic capacitor used in the Emerson and other AC/DC sets, and give you info on a company that specializes in rebuilding old electrolytic can capacitors! ■



That little paper antenna coupling capacitor is easy to miss. But, with a hot chassis, its failure could place deadly AC voltages on an external antenna!

Parts Sources

Digi-Key Corporation
701 Brooks Ave. South
Thief River Falls, MN 56701-0677
1-800-344-4539

Newark Electronics
many sales offices nationwide

Antique Electronic Supply
6221 South Maple Ave.
Temple, AZ 85283
(602) 820-5411
fax (800) 706-6798

Allied Electronics
many sales offices nationwide
1-800-433-5700

NTE Electronics
44 Farrand St.
Bloomfield, NJ 07003
1-800-631-1250
sales are done through your local authorized NTE vendor

The Listening Post

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

BBC Thailand Relay on the Air!

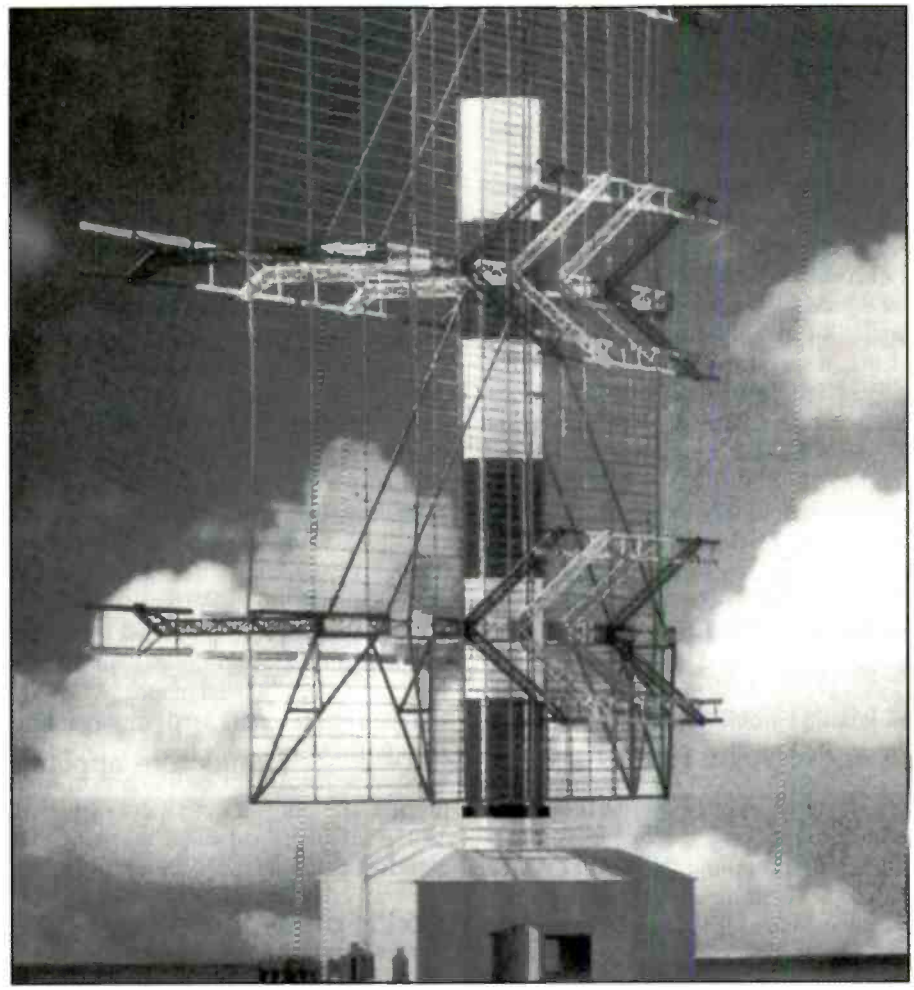
A new station has come on the air from Zaire. Generated by the crisis there, **Radio Agatashya** is operated by Hirondelle, a foundation with headquarters in Switzerland and funded by the Swiss government. The station's programs are aimed at refugees and other victims of the on-going problems resulting from Tutsi-Hutu conflicts in Rwanda and Burundi, which later spilled over into Zaire. Radio Agatashya (which means "Swallow of Hope") broadcasts on **6125** daily from 0600 to 1000 and Monday, Wednesday and Friday from 1300 to 1400. It's also on daily at 1400 to 1800 and on Saturday and Sunday from 1800 to 1900. The shortwave transmitters are in Bukavu, Zaire. Reports go in care of Hirondelle, 3 rue Traversiere, 1018 Lausanne, Switzerland.

Meantime, the government station, **La Voix du Zaire**, which always seems to be in an on/off, up/down, in/out state, resurfaced a couple of months ago and is being heard poorly on its 19 meter band channel of **15244.5** (nominal 15245). Try this between 1600 and 2000. Programming is in French.

The German broadcaster, **Radio Bremen** has left shortwave. The station says shortwave was used mainly to serve listeners in the former East Germany with a relay of the station Sender Freies Berlin. SDR has since discontinued its broadcasts from Bremen, so Radio Bremen dropped the transmissions.

Another silent European is **Radio Renescenca**, a Catholic station in Lisbon, Portugal, which is reported to have gone off the air and put its transmitter up for sale.

The **BBC Thailand relay** is now on the air, starting out with a pair of 250 kilowatt transmitters, to which will be added another pair of 250's which were formerly used at the now closed BBC Hong Kong relay. BBC-Thailand is on the air with the **World Service** plus broadcasts in various Asian languages with the following schedule: 2100–2200 and 2300–0000 on **5965**; 1300–1615 on **5990**; 0900–0915 and 1100–1400 on **6065** and 9580; 0300 to 0500 on **11955**; 0000–0030, 0100–0300, 0330 to 0500 and 0900–0915 on **15280**. North American DXers will, obviously, have the best shot at hearing the Thai relay during our early morning hours. The station is located at a place called Nakhon Sawan, which is about 250 km north of Bangkok.



RAI's International service plans extensive upgrades in the coming year, including 500 Kw transmitters. This is the kind of rotating antenna which will be installed at RAI's new shortwave center.

We've lost a couple of the Canadian non-RCI shortwave stations in the past year or two and now another seems to be on shaky ground. Don Lockhart at the **CBC** is wondering about outlet on **6160** and asking "is there anybody out there?" He'd like some listener response. E-mail him at <dlockhar@nlnet.nf.ca> or you can write to him at CBC Radio Labrador, Goose Bay, Canada. Here's one of those cases where you can do something positive for shortwave!

Another such case is **Radio Australia**, which is reportedly facing further budget cuts. Listener support for Radio Australia in the form of "we love you" letters can be sent to Mr. Bob Mansfield, ABC Review, P.O. Box 1873, Canberra 2601, Australia or to <abcsubmit@mailhost.dca.gov.au>.

Adventist World Radio has received

a license from the Italian government and so will build what AWR describes as a "major shortwave station," which will be located near Argenta. It will provide broadcast coverage from Morocco to India/Pakistan, thereby supplementing the coverage provided by AWR's station on Guam. Eventually more than 30 languages will be beamed from the Italian station. Construction will start sometime this year. The station probably won't be ready to take the air until 1999, so don't start tuning for it anytime soon!

The Voice of the Mediterranean, that joint Libya-Malta operation which broadcast over the now defunct DW relay in Malta, is now carried by Russian transmitters. There is something of a duo personality with this station: the two-country broadcast partnership continues with the Voice of the Mediterranean broadcasts. But also involved is the **Voice of Malta**, a service which does not involve Libya. The following schedule is currently in effect: 0130–0230 (English) and 0230–0330 (Maltese) Sundays on **15550** and 17570; 1900–2000 on **7390** and 7440 in English Saturday to Thursday, Arabic on Fridays; 7390 and 7440 in French on Sunday from 2000–2030, Arabic Monday—Saturday 2000–2100 and German Sundays from 2030 to 2100. The Sunday program is called "Valetta Calling" (Valetta is the Malta capital.) You won't be hearing single sideband feeders of **Voice of America** programming anymore. They've been discontinued. The Kavala (Greece) relay was the last station to have to rely on a shortwave pickup of VOA programming. Now that VOA-Kavala is obtaining its feed from a satellite, there's no longer a need for the shortwave feeds.

If their plans were carried out, **Radio Denmark** has now ended its twice monthly English program, which were aired as part of the 1996 celebration of Copenhagen as the City of Culture in Europe. Write to Mr. Hans Jorgen Skov, Director General of Radio Denmark and ask that English be returned to or kept on the air, as the case may be.

Radio France International has launched a 24 hour news program, called RFI-1, which replaces its all-French world service.

Last fall **The Voice of America** was testing digital broadcasting via its Delano, California transmitters. We don't know if these are still in progress, or if not, whether they might resume at some point in the future. The schedule was 0000 to 0230 on **5902.5** and 1900–2000 on **15235**. Various transmission modes were tested. Without the proper receiving equipment about all we can expect to hear is noise. Deutsche Welle has also carried out some digital broadcast tests, most recently from Julich on **5910** at 1200–1255.

Radio Miami International is trying to expand its coverage. The station has applied for approval to beam signals to Canada with a new antenna. Modifications have also been made to the current antenna to provide a better signal to North America and Europe. We recently noticed vast improvement in RMI's signal strength on **9955**, so those adjustments may have already been made.

If you like listening for those Argentine medium wave stations being relayed on shortwave for Argentine listeners in Antarctica, the current active frequency is **11055** on single sideband. Most of this activity occurs on the weekends.

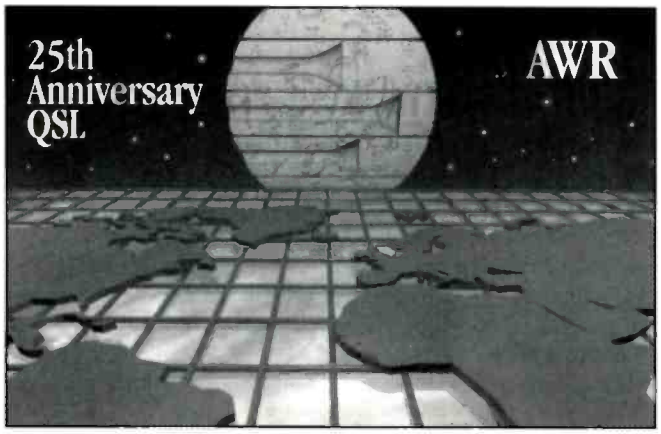
Don't Forget Those Loggings!

Your informational input is always welcome. Logs of stations heard should be double-spaced and listed by country, with your last name and state abbreviation included after each item. Your e-mail reports may be sent to <Popularcom@aol.com>. If you do report via e-mail, please include your regular mailing address since we send acknowledgment cards to each log contributor. We also welcome news about shortwave stations, changes in addresses, schedules, QSL requirements and the like. Also wanted are spare copies of QSL cards, station photos and, of course, photos of you and your shack. Your contributions make the difference! Thanks!

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

Here are this month's loggings. All times are 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, 4 p.m. PST. Languages are abbreviated with the letter with which the language begins given in double caps, i.e. FF = French. If no lan-



Andy Johns in Texas got this 25th anniversary QSL card from Adventist World Radio.

guage is indicated we assume the broadcast was in English (EE).

ALBANIA—Radio Tirana at 1944 with music and talk. (Murray, PA)

ARGENTINA—RAE, **11710** heard at 0100 with music, frequencies, news, tangos. (Pedraza, OH)

ARMENIA—Voice of Armenia, Yerevan, **9965** at 2115 to 2144 with music, talk in Armenian. (Ziegnar, MA)

ASCENSION ISLAND—BBC relay, **15190** at 1050 with Sunday Mass, ID, Newsdesk. (Rausch, NJ)

AUSTRALIA—ABC, Katherine, **2485** at 0949 with reggae-type song. (Foss, AK)

Radio Australia, **5995** at 1205 with news. (Northrup, MO) **6020** at 0810 with sports; **9580//9860** at 1057 with news; **9860** at 0825. (Murray, PA) **9580** at 0930 and at 1717 with QRM from Radio Japan. (Miller, WA)

AUSTRIA—Radio Austria Int'l, **7325** at 0041 with news. (Murray, PA)

BANGLADESH—Radio Bangladesh, on 9548 at 1913 in language, IS, presumed ID by man and talk in southeast Asian language. (Rausch, NJ)

BELGIUM—Radio Vlaanderen Int'l, **13610** at 1235 with "Radio World." (Jeffery, NY)

BOLIVIA—Radio Fides, **4845** heard at 0407 in SS with Andean flutes. Parallel to 6155. (Paszkiewicz, WI)

BRAZIL—Sentinela da Amazonia, **4865** heard at 0145 in PP with religious program at 0225. (Rausch, NJ)

Radio Liberal, reactivated, **4774.9** at 0050 in PP with marimba music, ID "Radio Liberal Belem para Brazil. (Rausch, NJ) 0242 with several IDs, jingles, mentions of Brazil and possible lottery numbers. (Paszkiewicz, WI)

Radio Clube do Para, **4885** heard at 0250 in PP with sports scores, full ID, religious program. (Rausch, NJ)

Radio Record, **9505** at 2314 in PP with talk by man, ID, music. (Jeffery, NY)

Radio Naçional, **4915** at 0240 in PP with music, man and woman announcers. (Jeffery, NY) 0119 in PP. (Miller, WA)

Radio Marumbi, **9665** in PP at 2309 with talk by man, ID. (Jeffery, NY)

Radio Caiari, **4785**, tentative, at 0337 in PP with ID, announcements, echo effects. (Paszkiewicz, WI)

Radio Bare, **4895** at 0255 in PP with vocals, ID, time checks, mentions of onda tropical, Brazil, Manaus. (Paszkiewicz, WI)

Radio Universo, Curitiba, **11765** at 2336 in PP. (Miller, WA)

Radio Naçional Amazonia, **11780** in PP at 2254. (Miller, WA)

Radiodifusora Maranhao, Sao Luis, **4755** at 0102 in PP. (Miller, WA)

BULGARIA—Radio Bulgaria, **7480** at 2300 with news. Also 2112 on **11720** with news. (Pedraza, OH) 9700 at 0145 in BB. (Miller, WA) 2100 in EE.(Ziegner, MA)

CANADA—CHU time station, **7335** in EE/FF heard at 0230. (Banner, FL) 2142. Klavekoske, WI)

CKZU Vancouver, **6160** relay CBC "As It

Happens" in progress at 0257. (Foss, AK)
CFRX/CFRB 6070 with ID at 1200. (Northrup, MO)
CBC Northern Service, 9625 at 2200 with "Canada at Five." (Klavekoske, WI)
Radio Canada Int'l, 5925 and **9805** heard at 2143 with news; **11945** at 2203 with news. (Murray, PA) **9535** at 0100 and **11935** at 2355. (Miller, WA)
CHINA—China Radio Int'l, **5145** at 1005 in CC. Also 7385 at 1846. (Foss, AK)
9690 (via Spain) at 0335 with language lesson, frequencies. (Pedraza, OH)
COLOMBIA—Armonias del Cacueta, heard on **4915.3** at 0754 in SS with Latin music. (Foss, AK)
Radio Naçional, 4955 at 0245 in SS with music, ID. (Jeffery, NY) 0404 to sign off with anthem at 0500. (Pedraza, OH)
COSTA RICA—Radio Reloj, **4832** in SS at 0515 with music, commercials. (Pedraza, OH) Radio Universidad, 6105 at 0438 in SS with ballads, announcements, music of Spain, ID. (Paszkiewicz, WI)
RFPI, 7385 heard at 0717 with DX program. (Foss, AK)
Adventist World Radio, 5030 heard at 1155 with music, ED ID. (Northrup, MO) on **9975** with "Riddles the Clown" and an 800 number and address for transcripts and fan mail. (Wilden, IN)
CROATIA—Croatian Radio, **7165** at 2305 in EE with news of Bosnia and Croatia, ID. (Paszkiewicz, WI)
CUBA—Radio Havana Cuba, **6000** at 1205 in SS, woman with news. (Northrup, MO) **6180** at 0430 in SS. (Hallenbeck, ME) **13715** with news at 2111. (Murray, PA)
DOMINICAN REPUBLIC—Radio Barahona, **4930** at 0235 in SS with talk, mentions of Barahona. (Jeffery, NY)
Radio Amanecer, 6025 at 0224 in SS with talk, ID, man and woman talk. (Jeffery, NY)
ECUADOR—HCJB, **9745** at 0655 with mailbag. Also at 0100. (Klavekoske, WI) **9749** at 0138 with "Computer Corner." (Murray, PA) **15115** at 1305 in EE. (Northrup, MO) 15540 at 2030 with "Classical Favorites." (Jeffery, NY)
EGYPT—Radio Cairo, **9900** at 2123 with music. (Murray, PA) **15210** at 2145 in AA with Mideast music. Distorted signal. (Jeffery, NY)
ENGLAND—BBC, **5975** (Ascension) and **6005** at 0702; **6055** at 0515; **6175** and **11835** at 2201; **6195** at 1011, **9590** at 0052 and **11750** at 0054. (Murray, PA) **6195** at 0450 and **9410** at 1800–1945. (Hallenbeck, ME) **9590** at 2203 and 0101. (Miller, WA) **9515** at 1205; **11865** at 1426; **15070** at 1410 and **15220** at 1220. (Northrup, MO) **9610** at 0347. (Bannar, FL)
EQUATORIAL GUINEA—Radio Africa, **15186** at 2134 in EE with religious programming, ID and various address for the station. (Jeffery, NY)
FINLAND—Radio Finland Int'l, **11900** at 1232 in FF. (Miller, WA)
FRANCE—Radio France Int'l, **15435** (via French Guiana) at 1230 in FF. (Northrup, MO)
GERMANY—Deutsche Welle, **6120** and **6145** at 0524; **9689** at 2131 with promo for a shortwave contest. **6185** at 0515 and **11785** at 2159. (Murray, PA) **6145** at 0134 and **9535** at 0320. (Bannar, FL) **9730** at 2225 in DW. (Paszkiewicz, WI) **15275** at 1155 with IS, into GG. (Northrup, MO)
GREECE—Voice of Greece, **9420** at 0127 in Greek; **9935** at 0153 in Greek. (Miller, WA) 0216 in Greek. (Foss, AK)
GUATEMALA—Radio Chortis, Jacotan, **3380** at 1135 in SS. (Miller, WA)
Radio Tezulutlan, Coban, **4835** in SS at 0109. (Miller, WA)
Radio Cultural, 3300 heard at 1128 in SS. (Miller, WA)
HONDURAS—La Voz Evangelica, **4820** in SS at 0107. (Miller, WA) 0300 in SS with religious program. (Pedraza, OH)
INDIA—All India Radio, Port Blair (Andaman Islands), **4760** at 1120 in language with subcontinental music, ID by woman with mention of Port Blair. "Magnificent 7" theme to start of presumed news. (Rausch, NJ)
11620 (Delhi or Bangalore) at 2139 with EE ID, news, music, frequency schedule and sign off. (Bannar, FL)

FREQUENCY (kHz)	DEG. AZIMUTH	UTC TIME	LANGUAGE
1530	MAIN LOBES	0300–0430	ENGLISH
	332 & 108	0430–0500	PORTUGUESE
		0500–0530	HAUSA
		0530–0600	FRENCH
		0600–0630	ENGLISH
		1600–1730	ENGLISH
		1730–1830	PORTUGUESE
		1830–2000	FRENCH
		2000–2230	ENGLISH
4750	030 (1X1)	0300–0330	ENGLISH
		0500–0530	HAUSA
		0530–0630	FRENCH
4950	030 (1X1)	1930–2100	ENGLISH
5970	138 (4X4)	0430–0500	PORTUGUESE
	020 (1X2)	0500–0630	ENGLISH
6035	335 (1X2)	1600–2230	ENGLISH
6120	000 (1X2)	0500–0530	HAUSA
		0530–0630	FRENCH
7180	076 (4X4)	0400–0500	ENGLISH
7265	114 (4X4)	0530–0630	FRENCH
7290	076 (4X4)	0300–0400	ENGLISH
9585	100 (4X4)	1630–1730	SWAHILI
9780	124 (4X4)	1800–1830	FRENCH
	000 (1X2)	1830–2130	FRENCH
11765	076 (4X4)	1630–1730	SWAHILI
	138 (2X4)	1730–1830	FRENCH
11880	114 (4X4)	1600–1700	ENGLISH
11890	114 (4X4)	1700–1800	ENGLISH
11975	114 (4X4)	1800–2230	ENGLISH
12080	076 (4X4)	1830–2030	FRENCH
		2030–2130	HAUSA

There may be some inaccuracies in this listing as frequent changes are made to our broadcast schedule.

Here's the most recent schedule for the Voice of America's new Sao Tome relay station.

BBC LANCERS GAP TRANSMITTING STATION
LESOTHO

QSL - Confirmation of Reception Report

to: MR EDWARD RAUSCH

confirming your reception report dated: 14/5/96

Thank you for your interest in our station.
Station equipment:

```
Sender 321 : Continental Electronics 100kW SW TX.
Antenna    : TCI Log Periodic, bearing 15deg ETN

Sender 322 : Continental Electronics 100kW SW TX
Antenna    : TCI Vertical Fire Array 45/225 deg ETN

Sender 323 : Continental Electronics 2 X 50kW MF TX
Antenna    : Mast Radiator, Omnidirectional 1197 kHz

Sender 324 : BBC/Eddystone 1kW VHF FM  90.2 MHz
           : Stacked dipole array (3 element) omni.

Note       : Senders 321 and 322 close on 30/9/96
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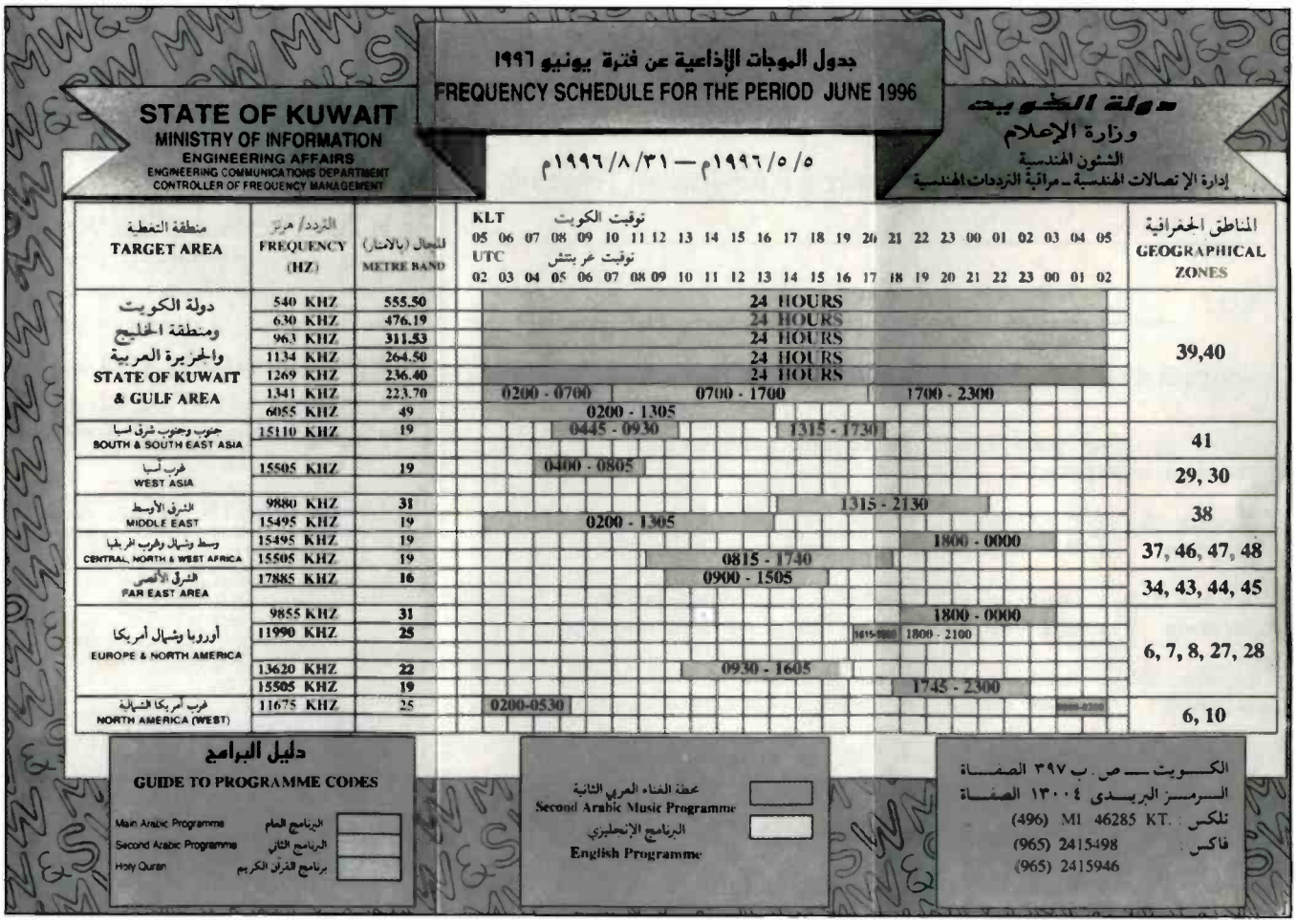
Lesotho National Broadcasting Service broadcast from the same site on 891kHz (Harris DX 50) 50kW MF TX omni mast radiator , 4800 kHz (Continental Electronics 100kW SW TX) vertical fire array, and on VHF stereo.

Yours sincerely,

Martin J.Rigby (GAFUAB) 7P8/G4FUI
BBC Senior Engineer,
c/o British High Commission
PO Box 521
Maseru 100,
LESOTHO
Southern Africa

Ed Rausch QSL'd the BBC Lesotho relay before it left the air.

INDONESIA—Radio Republik Indonesia (RRI) Sorong, (Irian Jaya) **4874.6** at 0854 in II with woman and pops. (Foss, AK) **4875** at 1240 in II. (Miller, WA)
RRI Ujung Pandang, (Sulawesi) in II at 1212. (Miller, WA)
RRI Pontianak (Kalimantan) in II at 1019. (Miller, WA)
IRAN—VOIRI, **9685** at 0100 in EE with discussion of Afghanistan. (Ziegner, MA)
IRELAND—RTE via WWCR/USA, **12160** at 1830 with taped news, report from Ireland. (Hallenbeck, ME)
ISRAEL—Kol Israel, **11605** at 2001 with news, ID, schedule. (Bannar, FL)
ITALY—RAI, **6110** at 0200 in EE with QRM from BBC. (Miller, WA) 9575 at 1945 with features in EE. (Shea, CT) 11800 at 0058 with news and music, ID 0100. (Klavekoske, WI)
JAPAN—Radio Tampa, **9760** at 0657 with man and woman in JJ. (Foss, AK)
Radio Japan, **6135** at 0355 to 0400 close, talk and music, ID. Way over Switzerland on an excellent African night. Site unidentified. (Paszkiewicz, WI) **7230** via Skelton, UK, 0525 in EE. (Pedraza, OH) **9535** at 1917 with



Radio Kuwait's latest schedule.

"Asia Weekly." (Foss, AK) **11705** (via Canada, Ed) at 1400. (Klavekoske, WI)

JORDAN—Radio Jordan, **6005** at 0201 with feature on politics in Pakistan. Also **11970** at 1500 with ID, EE news. (Bannar, FL) 1600 in EE to Europe. (Wallesen, IL)

KAZAKSTAN—Kazak Radio, **9660** at 2300–0000 in KK with Arabic greeting, world news, comment, music. (Ziegner, MA)

KUWAIT—Radio Kuwait, **11990** at 2002 with feature programs. (Shea, CT) 2036 with news, music, ID, sign off. (Bannar, FL)

MALAYSIA—Radio Malaysia, Kuching (Sarawak) **4895** at 1250 in Iban. (Miller, WA)

MALI—China Radio Int'l, **15110** at 2122 with feature on coming assumption of contro lof Hong by China. (Jeffery, NY)

MEXICO—Radio Educacion, **6185** at 0129 in SS. (Miller, WA)

Radio Mexico Int'l, 9705 heard at 0146. (Miller, WA)

MOROCCO—Radio Medi Un, **9575** at 2331 in AA featuring middle eastern music with man announcer. (Jeffery, NY)

NETHERLANDS—Radio Netherlands, **5965** at 0833 with news; **9830** heard at 0822; **11895** at 0820. (Murray, PA) **9895** at 2149 in DD. (Miller, PA) **11665** at 0235 with news. (Foss, AK)

NETHERLANDS ANTILLES—Radio Netherlands relay, Bonaire, **6020** at 1200 in SS. (Northrup, MO) 0413 in GG. (Hallenbeck, ME) **9845** at 0054 in EE. (Shea, CT)

NEW ZEALAND—Radio New Zealand Int'l, **11905** at 0750 with ID, local music. (Foss, AK) **15115** at 2143 in EE with highlights of a Polynesian festival. (Miller, WA) 0206 with weather, pops, "In Touch With New Zealand." (Jeffery, NY)

Radio Reading Service, 3935 in EE at 1148. (Miller, WA)

NIGERIA—Radio Nigeria, Kaduna, **4770** at 2235 with rock. (Paszkiewicz, WI) 0530 in EE. (Pedraza, OH)

NORTH KOREA—Radio Pyongyang, **9345** in RR at 1012. (Foss, AK)

NORTHERN MARIANAS—KFBS, Guam, **9630** in AA at 2253. (Miller, WA)

PAPUA NEW GUINEA—Radio Madang, **3260** at 1001 in local language. (Miller, WA)

Radio New Ireland, Kavieng, **3905** at 1011 in Pidgin. (Miller, WA)

PARAGUAY—Radio Naçional, **9735** at 0132 in SS. (Miller, WA)

PERU—Radio Tarma, **4775** at 1020 in SS with program "La Voz de la Sportador," EE and SS IDs at 1029. (Rausch, NJ)

Radio Huarmarca, 5385.3 at 0135 in SS with huaynos, time checks, communicados and ID. (Rausch, NJ)

PHILIPPINES—VOA relay, **7195** at 0617. Also 11870 at 1912. (Foss, AK)

PORTUGAL—Radio Portugal Int'l, **9570** at 0130 in PP with sports news. (Pedraza, OH)

ROMANIA—Radio Romania Int'l, **11940** at 0740 with Romanian folk music. Presumed in Romanian. (Foss, AK)

RUSSIA—Voice of Russia, **5940** and 7320 at 2149 with letters program. (Murray, PA) **7270** at 0559 with news, music, ID, theme. Also **7345** at 0540 with "Moscow: Yesterday and Today." (Foss, AK) **11675** at 2033 in EE with jazz show. (Pedraza, OH)

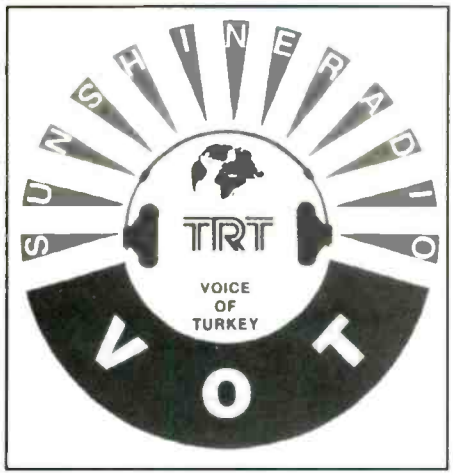
Radio ABC/Denmark via Kalinigrad, 7570 at 0800 in EE with ID, pops and address between songs. (Rausch, NJ) This station is no longer being carried by Kalinigrad, or anywhere on shortwave, for that matter. Editor.

SAO TOME—The direct address for reception reports on the VOA relay here is: VOA Sao Tome Relay Station, P.O. Box 522, Sao Tome e Principe, West Africa. (Rausch, NJ)

SLOVAKIA—Radio Slovakia Int'l, **5930** at 0100 with news in EE, ID. (Pedraza, OH)

SOLOMON ISLANDS—SIBC, heard **5020** in EE with island news. (Foss, AK) (Around 0800? Editor)

SOUTH AFRICA—Channel Africa, **9695** at 0505 with news, sports, politics, business, ID. (Bannar, FL)



BBC via South Africa, **6030** at 0234 with "English by Radio." (Jeffery, NY)
Radio Netherlands via South Africa, **11655** at 1730 with ID, ID, news. (Paszkiewicz, WI)
SOUTH KOREA—Radio Korea, **11810** at 0227 with features. (Foss, AK)
SPAIN—Radio Exterior de Espana, **6055** in SS to Chile at 0417. (Hallenbeck, ME) **9540** in SS at 0059. (Miller, WA)
SRI LANKA—SLBC, **4902** at 1251 in Sinhala. (Miller, WA)
SUDAN—Republic of Sudan Radio, **7200** at 2240 in AA with talk, music, Islamic reading. Also **9200** at 2200 in AA with talk, laughter. (Ziegner, MA)
SWITZERLAND—Swiss Radio Int'l, **9885** at 0632 in FF. (Foss, AK) **9905** at 0150 in SS. (Miller, WA)
SWEDEN—Radio Sweden, **11650** at 1437 in Swedish with news, abrupt signal cut off in mid-program at 1500. (Pedraza, OH)
TAIWAN—Voice of Free China, **5810** (via WYFR) at 2207 with news. (Murray, PA) **5950** (via WYFR) at 0700 with news. (Klavekoske, WI) **9680** via WYFR at 0242 in EE. (Wilden, IN)
Central Broadcasting System, **3335** at 1133 in CC. (Miller, WA)
Voice of Asia on 9280 at 1017 in CC with some type of radio play. (Foss, AK)
WYFR via Taiwan, **6300** at 2300 in CC with music fill to ID by woman, talk and hymns. (Rausch, NJ)
TAJIKISTAN—Radio Free Asia relay (from USA) **6205** at 2300 in CC. IS, EE ID "You are listening to Radio Free Asia. The following program is in Chinese. Then Asian regional news in CC. (Rausch, NJ)
TURKEY—Voice of Turkey, **9460** at 2200 in TT with mostly music.(Ziegner, MA) **9655** at 0305 in EE with address, telephone, news, ID. (Pedraza, OH)
UNITED ARAB EMIRATES—UAE Radio, **13675** at 1435 with AA music and prayers. (Wilden, IN)
URUGUAY—SODRE, **6125** heard at 0251 in SS with man/woman talks, ID, news, music. Blocked by REE co-channel heard at 0300. (Jeffery, NY)
UZBEKISTAN—Radio Tashkent, **7143** at 0200 in probable Uzbek with news. Not heard daily. (Ziegner, MA)
YUGOSLAVIA—Radio Yugoslavia, **7130** heard at 0215 in EE with current affairs. (Paszkiewicz, WI)

That's it! A great big high five to the following who came through for you this month: Bill Shea, Middletown, CT; Bob Murray, Atlas, PA; Sheryl Paszkiewicz, Manitowoc, WI; Tricia Ziegner, Westford, MA; Mark Northrup, Gladstone, MO; Michael J. Miller, Issaquah, WA; Marty Foss, Talkeetna, AK; Ed Rausch, Cedar Grove, NJ; Sue Wilden, Columbus, IN; Elmer W. Wallesen, LaGrange Park, IL; Don Hallenbeck, Pittsfield, ME; David R. Bannar, Ormond Beach, FL; Ryan Klavekoske, Randolph, WI; Miguel A. Pedraza, Jr., Springfield, OH and Dave Jeffery, Niagara Falls, NY. Thanks to each of you.

Until next month, good listening!

BY TIM KRIDEL

Broadcast DXing

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

FCC Tells Silent Stations: Use It or Lose It

Over 200 AM and FM stations could lose their licenses under a provision in the Telecommunications Act of 1996 requiring any station off the air for 12 consecutive months to have its license canceled. Fifty-seven FM and 151 AM stations are on the FCC's hit list, 35 of which have already been scheduled for hearings to review their status.

The reaction of the targeted broadcasters so far has been mixed; some have failed to appear at their hearings, while others have simply surrendered their licenses. The Commission is taking into consideration factors such as pending applications for ownership changes and facilities modifications that may have kept stations off the air. Nevertheless, the mandate is clear: Any station that went silent on or before February 8, 1996—the date the Telecom Act was signed—will have its license expire on February 9, 1997 if it hasn't resumed operations in the interim.

For DXers, the mandate means crossing out the dark stations in directories and treasuring QSLs of the ones that are gone forever. At the same time, it could mean penciling in new stations that apply for the vacated licenses. Another possibility is that other stations might seek to increase their coverage or operating hours when a silent station on the same or adjacent channel is eliminated.

"Variety 97.7" is Jersey Shore, PA's WVRT-FM. (Courtesy Robert Eckard, Cogan Station, PA). Applied For Permit to Construct New AM Station PR, Ponce, 1260 kHz (WISO synchr. xmtr.)

Air That Speaks

KNDN-AM is about as far away from the mainstream as you'll find. It broadcasts in a language than only a couple hundred thousand people worldwide can understand. Its listeners are scattered across an area larger than the state of West Virginia. And its programming staples include chants, prayers, healing ceremonies and even personal announcements such as "Annabel Begay, please come to your sister's home today before 2:30. Your brother is leaving on the airplane tonight."

The Farmington, NM station has spent the last 19 years as the country's only Navajo-language broadcaster, providing a vital link between the 200,000 Navajos scattered across the 26,109 square-mile reservation in the Four Corners region of the Southwest. With most residents living in virtual isolation, far from postal service, the "air that speaks"—the Navajo term for radio—is often the only contact they have with other members of their far-flung community. Less than half have electricity, making battery-powered radios the norm, and with telephone service available to only 10 percent of the reservation's population, KNDN is often the only means of communication. The local hospital, for example, uses the station to inform listeners when their relatives need to be picked up after release from the hospital. The unique format—"All Navajo, All the Time"—even landed the station a bit part in the 1993 novel Sacred Clowns, where a murderer makes a confession on KNDN. "It's so different than traditional radio," one station official said in a Washington Times article sent in by Bob Gilbert, of Portland, ME. "These are not needs shared by most of the population. Usually, you don't have to radio your relatives in the 'boonies' to come pick up your grandma."

Inexact Science

Big Brother may not be watching, but Arbitron will be listening, thanks to an audio-detection system under development by the audience research company. A pager-sized device called the Personal Portable Meter would detect and record the identity of any audio signal, such as radio and TV broadcasts, that the survey participant hears. The PPM is able to identify the signal through a method called frequency addition, which encodes audio signals with a continuous, inaudible ID. At the end of each day, the participant places the PPM in a recharging unit that uploads the information to a central computer. The data are then compiled and made available to broadcast stations, ad agencies and industry magazines.

Although field tests are underway, Arbitron currently has no immediate plans to debut the device as an alternative to "diaries," the current approach to audience measurement that requires participants to keep detailed records of their listening habits. Still, the PPM promises to remedy several problems inherent to the diary system, such as poor record-keeping by participants. Since ratings are determined by extrapolating the listening habits of a small control group of residents, a mistake in one diary can be greatly exaggerated. At the same time, because the PPM is worn by the participant, it can monitor listening habits outside the home, where a significant amount of radio listening is done. And since the data is uploaded over phone lines instead of being mailed in by participants, the information would be available much more quickly to broadcasters and advertisers.

Multimedia

Fans of New Jersey's top-rated morning radio show can now catch Wake Up! New Jersey on their TVs as well. Trenton's WKXW-FM is simulcasting its 6-10 a.m. weekday show on a Comcast Cablevision channel in a move that puts host Jim Gearhart within earshot of the cable

Applied For Permit to Construct New FM Stations

AL	Lisman	107.7 MHz
AR	Eudora	101.5 MHz
AR	Marvell	91.5 MHz 50 kW
CA	Alturas	106.5 MHz
CA	Laguna Hills	95.9 MHz (KEZY booster)
CA	Sausalito	96.9 MHz (experimental)
HI	Hilo	107.7 MHz (KKOA-FM booster)
HI	Honolulu	91.5 MHz 100 kW
HI	Kaneohe	91.5 MHz 50 kW
IL	Flora	88.5 MHz 1 kW
IL	Kewanee	91.1 MHz
IN	Kentland	101.7 MHz
IN	Tell City	105.7 MHz
KS	Colby	97.9 MHz
KS	Dearling	98.1 MHz
KS	Ingalls	96.3 MHz
KY	Owensboro	91.7 MHz 500 watts
LA	Abbeville	89.9 MHz 500 watts
LA	Gibbsland	104.5 MHz
MD	Ocean City	88.3 MHz 50 kW
MO	Neosho	88.1 MHz 2 kW
MT	Great Falls	107.1 MHz
NC	Aurora	91.1 MHz 8 kW
NC	Fayetteville	91.1 MHz
ND	Buelah	97.9 MHz
NE	Albion	92.7 MHz
NE	Bridgeport	101.3 MHz
NM	Las Vegas	96.7 MHz
NV	Mesquite	97.5 MHz
NY	Endwell	107.5 MHz
OK	Woodward	95.9 MHz
PR	Yauco	97.5 (WIOB booster)
SC	Forest Acres	94.1 MHz
TX	Commanche	94.3 MHz
TX	Mason	97.7 MHz
VI	Frederiksted	98.5 MHz
WA	Pullman	97.7 MHz
WV	White Sulphur Spgs.	93.3 MHz

Issued Permits to Construct New FM Stations

AK	Tok	91.9 MHz	200 watts
AL	Anniston	90.7 MHz	
AZ	Prescott	89.3 MHz	100 watts
KS	Arkansas City	102.5 MHz	6 kW
KY	Glasgow	94.1 MHz	6 kW
MN	Nashwauk	102.9 MHz	25 kW
MS	Crenshaw	106.9 MHz	6 kW
MT	Billings	105.1 MHz	6 kW
MT	Ennis	98.7 MHz	50 kW
NE	Kimball	100.1 MHz	6 kW
NE	Winslow	95.3 MHz	5.35 kW
OR	Bonanza	102.9 MHz	790 watts
OR	Depoe Bay	105.5 MHz	6 kW
TX	Clarendon	99.3 MHz	50 kW
TX	Stamford	92.1 MHz	50 kW
WI	Balsam Lake	104.9 MHz	11.5 kW

Canceled

KAHO	Junction, TX	91.5 MHz	2.72 kW
KAJL	Winters, TX	95.9 MHz	3 kW
KAOE	Hilo, HI	92.7 MHz	
KIDH	Eagle, ID	1000 kHz	10 kW
KJNA	Jena, LA	1480 kHz	500 watts
KSSR-FM	Santa Rosa, NM	95.9 MHz	3 kW
KULU	Seaside, OR	98.9 MHz	6 kW

Dark AM Stations Ordered to Show Cause Why Their Licenses Should Not Be Revoked

KRGQ	West Valley City, UT
KRKE	Aspen, CO
WLVC	Fort Kent, ME
WSJR	Madawaska, ME

Requesting AM Facilities Changes

KCMN	Colorado Springs, CO	1530 kHz Seeks increase to 3 kW.
KEZW	Aurora, CO	1430 kHz Seeks increase to 50 kW.
WCCF	Punta Gorda, FL	1580 kHz Seeks day increase to 1.25 kW.

Changed AM Facilities

KSTE	Rancho Cordova, CA	650 kHz Increased to 25/10 kW.
WWJQ	Zeeland, MI	1260 kHz Increased days to 10 kW.

Planned AM Change Canceled

WKPA	Lynchburg, VA	1170 kHz To drop power to 2.5 kW.

Requesting FM Facility Changes

KONO-FM	Fredericksburg, TX	101.1 MHz Seeks to change city of license.
WIRQ	Rochester, NY	94.3 MHz Seeks to change frequency.
WJTD	McArthur, OK	99.7 MHz Seeks commercial status.

Pending AM Call Letter Changes

New	Old	
KMVP	KVVA	Phoenix, AZ
KSHP	KKDD	N. Las Vegas, NV

Changed AM Call Letters

New	Old	
KAIR	KERE	Atchison, KS
KBUL	KBEE	Modesto, CA
KCNR	KAPN	Salt Lake City, UT
KDYS	KACY	Lafayette, LA
KHTZ	KDZZ	Albuquerque, NM
KJJL	KSHY	Cheyenne, WY
KMAX	KRAO	Opportunity, WA
KOWW	KBEQ	Kansas City, MO
KTRJ	KKGO	Frazier Park, CA
WBLZ	WHKW	Louisville, KY
WPHT	WPTS	Philadelphia, PA
WQNN	WXCT	Hamden, CT

New FM Call Letters Issued

KFIX	Plainville, KS
KIYX	Sageville, IA
KKJJ	Ashland, OK
KLPQ	Arkansas City, KS
KNCM	Appleton, MN
KRYR	Sacramento, CA
KSFT-FM	So. Sioux City, NE
KWSH-FM	Wewoka, OK
WYDT	Sundance, WY
WAQG	Ozark, AL
WCPI	McMinnville, TN
WIRN	Buhl, MN
WJZB	Houston, MS
WVHL	Farmville, VA
WXZQ	Piketon, OH

Pending FM Call Letter Changes

New	Old	
KBBB	KBKO-FM	Billings, MT
KZCO	KEWE	Oroville, CA
WLWS	WOCW	Parris Island, NC
WSHZ	WMHG	Muskegon, MI
WTGZ	WBIL-FM	Tuskegee, AL

Changed FM Call Letters

New	Old	
KAWK	KACP	Custer, SD
KBUL-FM	KBUL	Carson City, NV
KCHZ	KZTO	Ottawa, KS
KCLI-FM	KSWR	Clinton, OK
KEHK	KLRF	Brownsville, OR
KIBB	KXEZ	Los Angeles, CA
KJMZ	KIRQ	Lawton, OK
KKND	KLJZ	Port Sulphur, LA
KMHK	KBMJ	Hardin, MT
KMUE	KAKD	Ureeka, CA
KPEK	KHTZ	Albuquerque, NM
KRDG	KHZL	Shingletown, NE
KTNP	KRRK	Bennington, NE
WBLZ-FM	WBLZ	Mt. Vernon, IL
WBTT	WDOL	Englewood, OH
WBZF	WKSY	Marion, SC
WBZU	WVGO	Richmond, VA
WCKJ	WAQA	St. Johnsbury, VT
WINX-FM	WQRA	Warrenton, VA
WKJK-FM	WKJK	Salem, IN
WKSD	WERT-FM	Paulding, OH
WLAM-FM	WVYH	N. Windham, NH
WLJM	WLSK	Lima, OH
WLSS	WFMF	Baton Rouge, LA
WLTM	WGEE-FM	Sturgeon Bay, WI
WMEX	WADQ	Westport, NY
WMYL	WRAK-FM	Salladasburg, PA
WNPL	WAOF	Mt. Juliet, IL
WOVO	WWWQ	Glasgow, KY
WRAT	WADB	Point Pleasant, NJ
WROR-FM	WKLB-FM	Framingham, MA
WRZA	WBUS	Kankakee, IL
WTRI-FM	WRBT	Mt. Carmel, IL
WVGO	WBZU	Crewe, VA
WYXY	WWTE	Lincoln, IL

Ham Column

(from page 76)

Several excellent logging programs are available, and most packages have lots of handy bells and whistles. Check the ads in *QST, CQ* and other amateur radio magazines. Logging programs may also be available through your club or computer user's group. If you enjoy programming, consider writing your own software. I will address logging software in more detail in a future column.

If computerized logging isn't your thing, *The ARRL Logbook* is just what you've been looking for. Used by millions of hams over the years, the latest version is available from the ARRL or your favorite amateur radio dealer for $3.50. It has room for nearly 1,000 QSOs and includes useful information such as Q signals, a time-conversion chart, the ITU phonetic alphabet, an RST chart, international call sign prefixes and more.

"Computers and ham shacks are now inseparable, especially for contesters and DXers."

That's all for this month. And, by the way, Happy New Year! ■

Win a Free Subscription to *Pop'Comm*!

Here's the deal of the century: You want a free one-year *Pop'Comm* subscription (or a one-year extension to your existing subscription), and *Pop'Comm* wants pictures and interesting tidbits from our new-ham readers. So, send your photos and tidbits to me at The Ham Column, c/o Popular Communications, 76 North Broadway, Hicksville, NY 11801. I'll review the submissions for two months, and the entry with the best photograph or the most interesting tidbits will win a free one-year subscription. I'll also publish the winner's photo in the column (along with a runner-up or two). Send those pix in right away! We want to see you in *Pop'Comm*!

company's 1.2 million subscribers. The program already reaches an estimated 400,000 listeners in 18 of the Garden State's 21 counties.

Why put radio on TV? According to the president of WKXW's parent company, "Most people don't watch a morning television show, they listen to it." There's also the benefit for advertisers to reach both the lucrative morning radio and TV audiences at the same time. "We're trying to compete outside our element with other media," WKXW's vice president and general manager told Broadcasting & Cable magazine.

In Brief

"The Best Air in the Adirondacks" is how a pair of Lake Placid, NY stations are promoting their new simulcast format of adult contemporary music, according to a Tupper Lake Free Press article sent in by Jeff Hudson. WRGR-FM in October began carrying the programming of WLPW-FM—the official radio station of the 1980 Winter Olympics—as part of a local management agreement that returned the Tupper Lake station to the air after several months of being silent. "T-102.3" will also carry area news and sports and CBS news on the hour.

High River, Alberta's CHRB-AM has boosted its power to 50 kW days and 46 kW nights. The change, which included a move from 1280 to 1140 kHz, is the result of parent company Golden West Broadcasting's surrendering the license of sister station CFXL-AM, which moved to FM last fall. The increase comes courtesy of CFXL's 50 kW transmitter, which replaces CHRB's 10 kW rig. No programming changes are planned for CHRB.

Fans of Portland State University football got a rare opportunity to hear the uncensored thoughts of the opposing teams coaching staff during a live broadcast of the game on KKSN. A third-quarter PSU rally prompted an obscenity-laced exchange between a couple of Sonoma State coaches in the press box and their colleagues on the sidelines—a conversation that wound up on the air when the two-way radio they were using leaked into KKSN's audio feed. "They were able to switch lines for us between plays and that solved the problem," a KKSN staffer said in a Portland Oregonian article sent in by Craig Foster, of Portland. "We didn't miss a beat."

It takes all kinds: Rocker Ted Nugent is the new morning man on Detroit's WDZR. In New York, meanwhile, Catholic school principal Sister Mary Marguerite Torre was WPLJ-FM's official Yankees correspondent during their World Series run. Her little brother is Yanks manager Joe Torre.

Thanks

News clippings, bumper stickers, station and shack photos and QSLs are always welcome, as are your questions and comments. Send 'em to Broadcast DXing, c/o *Popular Communications*, 76 North Broadway, Hicksville, NY 11801. Until next month, 73. ■

"The Edge" is one of seven Australian expanded AM band stations. They run 400 watts with a format of techno-pop dance music. Pop'Comm reader Gary V. Jackson heard them at his QTH in Sacramento, CA.

CIRCLE 82 ON READER SERVICE CARD

CIRCLE 76 ON READER SERVICE CARD

The Computer Corner

By Ed Griffin <griffined@sprynet.com> and
Bonnie Zygmunt, <BSZ3866@aol.com>

RECEIVER CONTROL, SOFTWARE AND MORE

The Benefits of Computer-Aided Monitoring and Radio Web Sites You Can Access

Hi, and welcome to the Computer Corner column. I've been an avid communications monitor for over 15 years now, starting with scanners and then adding shortwave and other HF listening to my likes. I own 11 receivers, four of which are currently equipped with a computer interface. I will be writing about the use of computers for control of radios, and management of frequency and other related information.

Performance and Features

Many computer-controlled receivers operate at faster rates while under the control of a computer than if used with their built-in scanning or searching programs. This can aid the monitor that either has a lot of channels to scan, or wants to cover more spectrum in the same amount of time while searching. My ICOM R7100 is a much better scanner when under computer control than when it's scanning without it.

The use of computer control may expand the number of memories that can be scanned at a time to many more than the radio's internal memories permit. My Drake R8 only has 100 internal memories, but can easily scan through *twice* that many when controlled by software using a scan file. Software may support grouping of frequencies and the organization of banks and channels in a manner more flexible than that of the internal memories when scanning from a computer file. These variable and nonstandard arrangements may be ideal for a given monitoring application or need. I have a scan file with less than 10 channels that covers my local PD and fire dispatch and car-to-car frequencies, but I can easily scan both it, and another scan file that might contain about 20 new, unknown frequencies I'm trying to get ID'ed.

Computer control may allow additional control on how frequencies are scanned or searched, dependent on things like signal strength, CTCSS/DCS tones, lockout lists, duration of signal, and memory-specific priorities and delays. Some software can even allow a user to set a time-out period, so that after so many seconds the scanning will resume even if a signal is still present. I often set a longer delay time on *simplex* frequencies to allow for a reply. Repeaters usually have a delay before they drop carrier, and thus a smaller amount of programmed delay is needed. In the case of the local highway patrol, whose base is on 42.62 but the mobiles talk back on 42.84, I set the delay on *each* of these to "none" so that as soon as one stops transmitting the scanning can resume and hopefully stop on the other frequency for the reply. I set a maximum monitor time of five seconds on the vehicle extender frequencies I have programmed. This lets me see that they are active, but continue scanning!

Some computer software allows for different alarms and the control of recording devices to be specified on a channel-by-channel basis. Alarms can be used to provide an audible alert to the user when a channel of interest is active. I have set an audio alarm on a seldom-used frequency that I have monitored undercover operations on in the past. If I'm in another room, or not paying close attention, the distinctive alarm sound catches my attention and I don't miss what might have just blended in with all of the other radio traffic.

Some radios can have the internal bandplan which controls what segments of the radio spectrum they can receive, and what the default mode, step, and other settings set via computer interface. These programs may restore frequencies that are not available otherwise, or accommodate local bandplans.

The ability to control multiple radios is supported by some software. Some will allow the work to be shared between multiple radios, or implement other productivity enhancing schemes.

A Search-and-Store program is when the user specifies two frequencies for the program to scan between, storing any active frequencies into a file for saving to disk. The program can usually be set to skip any previously identified frequencies so that duplicates are not stored, and searching can continue and less busy frequencies can be found. I will often run a search-and-store on a range of frequencies for at least 24 hours in an attempt to identify which channels are in use, and which are not. Sometimes unlicensed or unlisted activity can be found that wouldn't have been noticed otherwise.

A "limit search" is when the radio simply scans between two user-specified frequencies, and stops on any transmissions, and then resumes after the transmission ceases. This is handy if you want to perform a certain type of monitoring, say for instance scanning of the UHF airline channels. Instead of programming each one into a scan file, you could program a search that started at 460.650 MHz and went to 460.875 MHz and used a step increment of 25 kHz.

Scanning a computer file with a list of frequencies is similar to scanning the programmed memories, but offers additional flexibility and options in most cases. I have a scan file named "SHUTTLE" that I use with my R8 anytime there's a launch of the space shuttle. I don't have to remove the UTE and SWL frequencies I leave programmed into the internal memory of my R8 for monitoring without computer-control, in order check the NASA HF channels that often have activity during this type of event.

Some computer software supports a combination of different scanning and searching programs to be run at the same time. An example is a search-and-scan, that performs a search-and-store, and then as frequencies are stored, also scans them while continuing the search. Using the airline search above, you could start scanning, and if you found 460.650, 460.775, 460.675, and 460.850 had activity, these would be stored in a scanfile and would then be rescanned while you were still searching for activity on the yet unused frequencies. This is very handy if you are sitting in front of the radio mak-

ing notes on the usage of each newly found frequency, as they are now rescanned more often than if only a search was running.

Some computer-control programs include additional performance features such as a terminal program that can be used with TNC's and packet controllers. Some even feature a birdie lockout feature that lets you build a list of birdies (false signals that stop scanning) for a receiver, and during computer control the system will not stop scanning if it detects a signal on these special locked out frequencies. This is handy because in an unattended monitoring session, you don't want to return to find that during all that time you thought your system was collecting data, it was instead sitting still on an invalid signal!

Memory Management

Most radios with computer interfaces also allow for the reading and setting of their internal memories and receiver settings. This benefits the monitor in many ways. Some receivers can be programmed to display alpha tags next to the channels, but the programming of these memories is usually performed by entering the numerals on a keypad and twisting a knob to select the appropriate letter. Using a computer keyboard for entering numbers and letters can be a much easier and quicker method of programming memories and settings. The reverse of this is downloading a radio's internal memories to a file and it is also a common feature and of great benefit when trying to avoid reprogramming by manual entry.

A typical radio will remember the frequency programmed in memory, but a manual process must be used to reprogram a new frequency. This can become a repeat process when the monitor is programming radios for vacations, business travel, special events, and then having to reprogram the memories back to the original values after the need for different values has passed. When using a computer interface, the programming information can be stored on a computer in the form of a file. This file can be created by reading the contents of a radio's memory, by creating a new file using the computer software's editing capability, by importing information from another source, or by editing an existing frequency file. Files that are on the computer can then be loaded into the radio for programming. Information in these files can also be export-

ed to other files that can be used for other applications. The software used to edit the computer files makes things like sorting, cutting, and pasting information between memories and files possible. Sharing of files is becoming more commonplace as e-mail and other on-line technologies are helping monitors share information and contact folks who live in the area where they'll be traveling. Here's an example of how using scan files works for me, and makes reprogramming many memories by hand over and over a thing I rarely have to do.

I used computer-control software and an interface to read the memories of my hand held AR8000 scanner into a file that I save onto my computer. I named this file "LOCAL" because it's what I want my scanner to have programmed into it's memories when I'm in the area where I work and live. If I add or change the memories, I'll make another updated copy of this file on my computer. I hope it never happens, but if my AR8000 were to be lost or stolen, reprogramming the 1,000 channels into a replacement unit would not be much of a bother at all.

I take a vacation each year and visit both Florida and Georgia, and of course I want to take my scanner with me and have it programmed to all of the things I wish to monitor while I'm there. I did some research and programmed a list of frequencies into a computer file that I named "FLGA". I loaded this file into the memories of my radio while on vacation, but when I returned home I reloaded the "LOCAL" file. This process has been repeated for the last three years and has saved me hours of programming by hand. I can reload 1,000 memories from a file in about five minutes or less. Once the initial investment in entering the data into a computer file is made it's smooth sailing from there on! I also have files named "AIRSHOW", "FLEETWK", "UNABOMB", and "MAUI" that were programmed and saved for a yearly airshow I attend, the yearly Fleet Week festival, the Unabomber task force's likely frequencies, and any vacations to Hawaii. If I return to Maui on vacation, I'll start by updating the computer file "MAUI" with any new frequencies that I might have seen published and then load my radio up with the programming that worked well on my last visit.

Logging and Recording

Computers excel at performing repetitive work tirelessly and computer-control allows a monitor to use those characteristics for logging of data related to the signals that are, and are not being heard. Computer-control builds upon the search-and-store and hit-counter type of features found in some scanners, and adds those features to other radios that did not have them. Letting a computer control a scanner for a long period of time and then reviewing the logs at a later date allows for identification of trends and provides the benefit of time compression when performing an analysis of active and inactive frequencies, signal strengths, duration of signals, and tone usage. The time you spend sleeping or at work away from your receiver could be put to use for checking out what's going on over the airwaves and help you identify signals to monitor during those times when you can sit in front of your radio. Computer control can be a great detective when trying to solve a monitoring mystery!

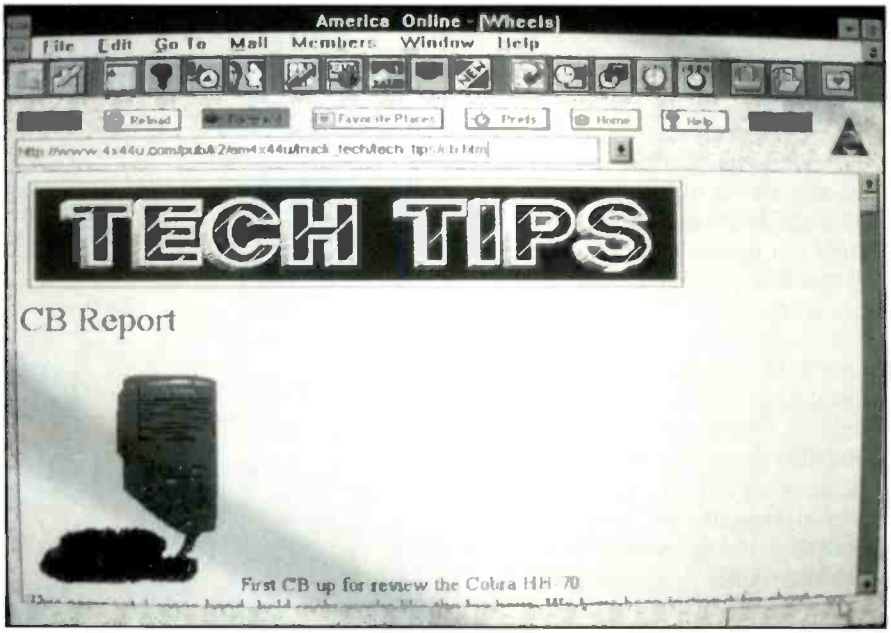
Recording audio is something many monitors do when they can not monitor in person or want to quickly review a days activity in a short period of time. The use of activation only on certain channels can allow a number of frequencies to be monitored, but limit the recorded audio to prioritized or unknown frequencies. This can be used to identify users and analyze traffic. There are systems that allow the recording of audio directly to the disk drive of your computer, eliminating the need for a tape recorder and offering some pretty neat abilities when reviewing your catches! This also can be a solution to most tape recorders' limitations on the amount that can be recorded, and how easily something can be located.

Logging helps build the raw data that can be used for a statistical analysis. Many programs even support the export or saving of logs in a format that can be imported into other software for graphing and charts.

Many computer-control packages support Spectrum Analysis on radios that output signal strength, which lets a monitor plot signals over a range of frequencies, and over time can paint a picture of where signals are located, how strong are they, and how often are they present. A plot of a 5 MHz frequency spread will show peaks where signals were found, and valleys where there were none. It's an easy-to-understand visual representation of radio activity.

Ease of Use

In addition to the ease of use when programming via a keyboard, computer-control can also enhance the controls used for a receiver with point-and-click functionality, and enhance the display seen when monitoring. Radios that do not have an internal alpha display can be used with a computer-control program that will display a user-programmed alpha tag on screen when stopping on a channel with activity. This display may be much larger than that of a radio, and can easily been



"CB Shack" reviews radio equipment and rates it in three categories: installation, performance, reliability.

"You can order fresh Irish fish from a company called Burren Fish Products or fresh Maine lobster from Tide-Land."

seen from across a room when looking at a computer's display. Many users of computer control software prefer the graphically rich interface over the traditional character-based displays found on scanners, and use color to help highlight items of interest or identify different users and/or services.(Red for fire, Blue for PD, Green for city, etc.)

The use of a computer's mouse or other pointing device on visual controls may also be easier to perform than using the knobs and often small buttons of a radio. Some computers can be equipped with wireless keyboards and mice and if running a radio, that could allow you to operate it from across the room just like a TV set can be controlled by a remote control! Manual control of the radio is also commonly supported, so tuning around the dial need not depend on touching the dial. I have been able to use a remote to cause my scanners to PAUSE, SCAN, and LOCKOUT frequencies when running a computer-control program and using a wireless PC remote I picked up at a parking lot sale!

Program features in software are commonly organized in a menu system that is easy to navigate, and using them doesn't require complicated button pressing or the knowledge of how to activate seldom used features in a scanner. On-line help may be available to guide a program user through each step and/or a manual may explain these features in detail. Sample and demo files are often included when software is purchased. Many handheld radio's displays and keypads were a design compromise for size and cost reasons, but the computer controls and displays don't have to be as small thank goodness!

Databases

Obviously a collection of computer-control files can be amassed, but there's also the possibility of using a database of frequencies to drive a scanning system. This database can be something the user has built, something bought, or a combination of both. Swapping of information is commonplace among those that maintain databases.

A scan program can be created which will display information from a database when a signal is found to be active. This combines the power of the radio to receive signals with that of a computer to retrieve associated information from a database, and combine these into a more informative product. A sophisticated system can support a search between frequencies, and when one is found active, consult a database of FCC license information, and then display this information along with a map and locations indicated on screen in a very quick fashion! It's also possible to extract records from a database, perhaps using a location or name-based query for scanning.

Requirements for Computer-Control

A computer interface, most using a serial data link called an RS-232 port must either be included with radio, or added to the radio to be controlled. A cable connecting this to a computer, and a computer running control software is required. Some add-on kits are available for certain scanners that were not manufactured with computer-control capability, but can have this feature added after purchase are sold along with software for controlling the modified radios.

That's the basis for why people use computer-control with their radios, and if you don't do it yourself why you might want to consider it. I'll be covering available hardware and software, as well as strategies, techniques, and examples of how computers and radios are used by monitors to increase their enjoyment of this hobby. I welcome any feedback, comments, suggestions, topics for future columns, and questions from readers. Contact me at *Pop'Comm* headquarters or e-mail me at <griffined@sprynet.com>.

Ed Griffin

The Internet and CB

Communication, in any form, can be incredible. What in life is not enhanced by some form of communication? The concept of communicating is what got me involved in the radio based volunteer organization, REACT (Radio Emergency Associated Communications Teams), over 18 years ago. I've never been awed or impressed by what made a particular radio work. What's inside the case of a radio holds little interest to me. It is what can be done with those radio waves once they are released from that box. That is why using CB, GMRS and amateur frequencies to get help to other people has such a strong appeal. To me it has always been the *message*, not the method that mattered.

I was formally trained to operate computers. I started back when computers took up the space of a typical living room and "floppy??!" disks were a stack of disk platters 14–16" wide and the stack weighed approximately 40 pounds. Now I'm not all that old, but it does show how quickly times have changed in the world of computing, which brings us to how the world has combined two of my interests into one, communicating by computer. The Internet and the World Wide Web have opened up a whole new way to reach others. It has the advantage of bringing the world closer together because there is no range limit like there is with radio frequencies. Yet, people the world over can discuss their interests in radio communications using this medium.

What We'll Be Discussing

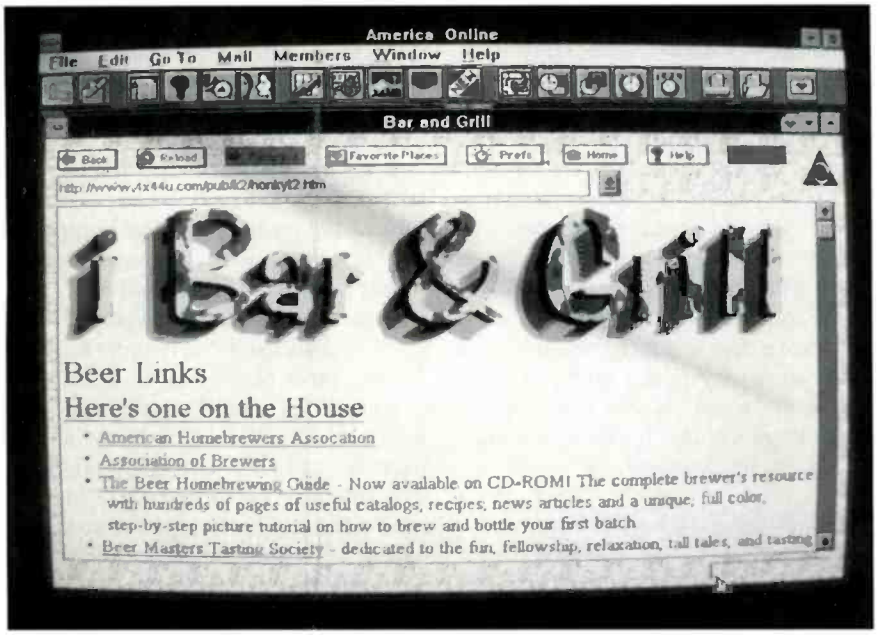
My portion of this column will deal with what is available to those readers who wish to advance their radio hobby into the computer universe. I'll also try to introduce new products or software that will make communicating in years to come easier or more enjoyable. If you're an info junkie like I am, this is an amazing time to own a computer and modem.

Let's start with something I'm most familiar with, Citizens Band Radio. We'll explore some of the Web sites that deal with CB radio.

Sometimes it is hard to stay focused on only one subject when you are surfing the Web. You will get to a page on a topic you are curious about and find other links to subjects that are equally interesting. Before you know it, you've linked and linked and have ended up totally off the initial subject. But it is all so fascinating. It's a bit seductive. I did hold myself in check and restrained myself to exploring fully just one or two related pages.

CB Shack

One of the sites I started with was called the "CB Shack." It is at <http://www.clark.net/pub/k2/am4x44u/truck_stop/cbshack.htm> and is a link from another page called the "Internet Truck Stop." The CB Shack gives reviews of radio equipment and lists many other links to commercial home pages of business'



Search for microbreweries by area code, zip code, city or state at the Internet Bar and Grill.

such as Copper Electronics, Action CB & Electronics and Amateur Electronic Supply. The review that was available when I was there was for the Cobra HH-70 radio which is Cobra's mobile one piece handheld model. This remote-mount CB operates with one hand and stashes away for security. The reviewers rate the radios in three categories: Installation, Performance and Reliability. The installation and performance were described in their report and they rated the reliability at a professional level.

Frequently Asked Questions (FAQ)

One of the links listed on the CB Shack page will take you to CB FAQ (Frequently Asked Questions). There I found articles about "CB radio setups" and "SSB vs. AM." It will link you to the UseNet Newsgroups FAQ. Looking through previously answered questions is quicker than asking a similar question and waiting for an answer. You can also read all the posted messages in the Usenet newsgroup by linking to <rec.radio.cb>.

Truckers on the Web

The other link on the CB FAQ page takes you to an area called Truckers on the Web and a list of Truckers Lingo. If you spend any time listening to the professional drivers while traveling or from your home base radio, you know that they have a whole language all their own. Some of these you may have already heard, but there were a few that struck me as special, such as: What do the truckers call the pieces of tread or recap from a blown tire? An "Alligator." Then there are "Schneider Eggs." Those are all those orange drums the road crews use to block lanes during construction. Once summer arrives again those "eggs" will be all over! Schneider trucks are commonly called Pumpkins and are the same shade of orange that the road crews use. Finally, the one that I thought was the best of the lot. "Haulin' dispatcher brains" when a trucker is pulling an EMPTY trailer!! You think maybe there is a love/hate relationship between the drivers and the dispatchers? The two groups can't get the job done without the other, but I don't think they hangout together after work!

Internet Truck Stop

If you link back to the home page that CB Shack comes from you will be at the Internet Truck Stop. The Truck Stop has many links to areas of interest for travelers and drivers. Those listed are: 4×4 Accessories Shop, Arcade, Cafe & Lounge, CB Shack, Parking lot, Restrooms, Garage, Travel shop, Newsstand, Internet Bar & Grill, Off road stores, Catalog Mall and Offroad & Ralley Times. Clicking on the Cafe will take you to a page that will link to a news area where you can read many newsgroups dealing with food. Clicking on the menu will take you to a list of companies that sell food over the net. When I visited it they were featuring "Surf for Seafood on our Web Menu." You can order fresh Irish fish from a company called Burren Fish Products or fresh Maine lobster from Tide-Land.

Newsstand

When you're not driving, how about reading about the road? From the Truck Stop home page you can link to their Newsstand. From here you should be able to find a magazine that will satisfy your interest in anything automotive. This link will take you to a comprehensive World Wide Web magazine list. Some of the categories were Automotive, Outdoor, Jeep Journal, Sport Utility Vehicles and 4×4 Hardcore Fourwheeler magazines. You can read articles on-line or set up a subscription to be delivered to your home.

Internet Bar and Grill

I checked into the Internet Bar and Grill. The most interesting link off this page is the "What's on Tap" page. There you can find almost all the information you could ever want on homebrewing Beer or Microbreweries. One link has searching capabilities where you type in your area code, zip code, city or state and it will show you all the microbreweries in the area along with their hours and contact information. Just don't mix what Milwaukee is famous for with operating complicated equipment like your CB radio. A number of years ago my husband and I were tuned to channel 9 to do some monitoring for emergency calls and got a real strong splash signal. We didn't have to search far to find a neighbor, on the other side of the hill, broadcasting on channel 10 and splashing a number of other channels. The poor old guy was having a heck of a time. He wasn't actually communicating with anybody and that was his major gripe. It seems that he had a desk mic with a locking feature and since he was transmitting from the bottom of his brown bottle he couldn't figure out why he couldn't hear anybody. I believe the last comment we heard from him before turning off the set for the night was, "What's wrong with this $#*&%$# radio anyway?? hic!!".

If you have a favorite place to read or talk about communications on the Web, contact me through *Pop'Comm* or e-mail me at <BSZ3866@aol.com>.

Bonnie Zygmunt

Books You'll Like

(from page 28)

Larry Luchi has successfully used his teaching techniques for instructing technicians in corporate, vocational and night school situations. His instructions are quite clear and easy to follow, even for complete beginners. Quite a good book.

Easy Calculator Math for Electronics is available for $17.95, plus $3 shipping/handling, from Limelight Books, P.O. Box 493, Lake Geneva, WI 53147. Phone: (414) 248-4845.

Milliwatts Sound Like Killerwatts

If you own a CB radio, you can peak it and tweak it to bring it up to maximum output. Even so, most repair shops still can't get much increase in the actual wattage out of the average CB.

But forget about S-meter readings. Regardless of what your meter reads what you really do with your CB radio is talk and listen. What you're striving for is that elusive factor popularly known on CB as "talk power." What it comes down to is the fact that audio is what it is all about. Consequently, for the average CB radio, increasing its audio is probably the best hope and most effective way you have to soup-up your radio's talk power.

How do you do this? In most modern CBs, by simple peaking of a few adjustments and/or removing limiters.

That's the advice of Randy, author of *CB Audio: Microphone Wiring, Audio Adjustment, & Limiters*. Randy's a professional communications technician with 25 years of experience working on CB radios.

Randy's unique book individually lists 2,970 CB radios, which includes virtually all makes and models ever marketed in the U.S. and Canada between 1958 and 1996. For every set where talk power improvement is possible, Randy tells you the specific components (identified by their parts numbers) to adjust and/or the proper limiter to cut. In addition, you can learn how to properly wire the microphone for each and every one of the 2,970 CBs. That's because Randy provides a large and easy-to-follow mic wiring diagram for each.

This book is a treasure chest brimming over with useful CB reference information. On it's most basic level, it appears to be the most comprehensive listing of CB radios anyone has ever published. From a strictly practical standpoint, the talk power and mic wiring information provided is well done and invaluable.

CB Audio: Microphone Wiring, Audio Adjustment, & Limiters is available for $29.95, plus $5 s/h ($6 to Canada) from CRB Research, P.O. Box 56, Commack, NY 11725-0056. Residents of NY State please add $2.88 tax. VISA/MC welcome. Toll-free phone orders: (800) 656-0056. Canada/AK/HI orders: (516) 543-9169.■

BY RICHARD "RD" BAKER
e-mail <utelistener@msn.com>

Communications Confidential

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

A New Pilot at the Helm!

Howdy all. As you can see from the new by-line I have taken over for Don Schimmel. I've followed Don's work for many years as a "lurker" just reading the column and later as a regular contributor. As far as I'm concerned I have a big pair of shoes to fill. Don's work within the hobby is widely respected and known. I spoke with Don before assuming the job and he spoke of his enjoyment in doing this column for many years, and of the many friends he has enjoyed hearing from. Don reports many new projects underway, so he will stay busy within the hobby. I would be happy to forward any mail anyone wants to send to him.

As for myself, my friends all call me "RD". I live in northeast Ohio with my wife and two sons. I heard my first utility station in 1969 when I caught U.S. Coast Guard Group Galveston working a sinking fishing vessel in the Gulf of Mexico. I have added equipment over the years, and after taking a few years off in the mid '80s, I used this very column to catch up and find some of the latest frequencies of interest. Many of you may know me from my club work for Speedx or for the last two years, the Worldwide UTE News (WUN) Club. My interests within the hobby span the spectrum from beacons and numbers stations right up to the digital stuff and most everything in between. But my favorite area involves 'things that float', such as naval ships, Russian merchant ship RTTY, etc.

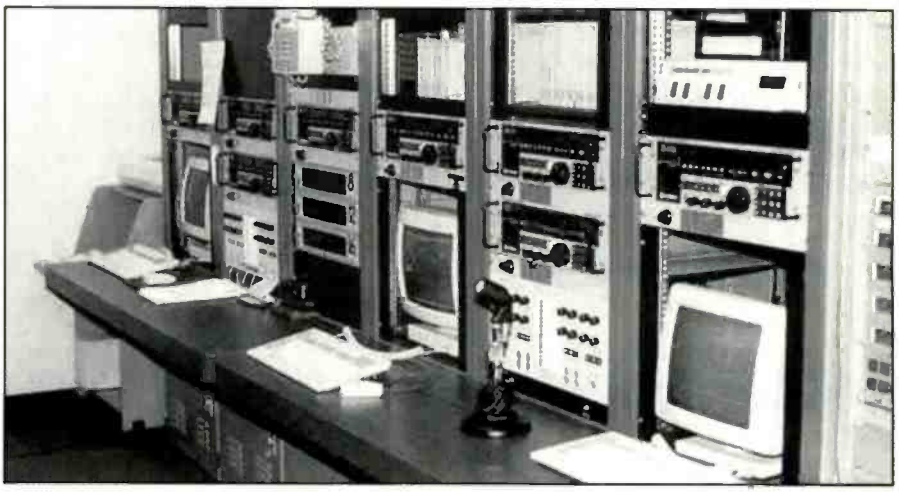
I maintain some extensive data bases for maritime, civil aero, military, etc. (some have called me a 'list maker' and that fits), so if you have a question, we can give it a go. A self-addressed stamped envelope (SASE) is always important if you would like a personal reply. I can also be reached via the internet e-mail address in the column header. Folks with e-mail capability are invited to send logs or news for this column in that manner. Remember that good quality color or B&W photos in any size are welcome, but we can't use Polaroid pictures. If you're sending a PFC or QSL, send a good photocopy rather than the original, for the same reason.

Photo of EC-135C Airborne National Command Post (ABNCP) aircraft taken by Bill Hensley, OK.

I can also use scanned images sent as .TIF, .PCX or .BMP images. My deadline each month is the 10th, so keep that in mind when sending items. Now on with the utility show . . .

EMBACUBA Packet

I recently noted CLP65, the Cuban Embassy reportedly in Managua, Nicaragua working "CLP," Havana, in . . . packet! That's standard 300 baud AX.25 type packet. This was on 13971.5 kHz. This seemed to be a standard packet beacon being sent, then some operator chat was sent in Spanish. Since then, these comms have been noted on 13395, 13964 and 13968 by other listeners as well. This net now appears to operate in a standard packet BBS configuration, possibly with amateur software. This is an interesting development and so far noted only for the embassy in Nicaragua. This move may be revealing about state of the older Russian transmitters previously used. The use of packet by governments is not unique to Cuba. Indeed, government agency packet communications have been noted in use in Italy and Sudan (Khartoum). Right here in the U.S. during the summer training



"NMF broadcast position (l to r) computer on left id for Sitor. Receivers guard on-call Sitor and monitor NMF broadcasts. The three racks below the telephone are the Trane and Trane modems. Middle computer sets frequencies and antennas utilizing CCS. It is also used for NAVTEX. Far right computer was used for the old "LCMP" circuit. Other receivers were used to monitor 2182 kHz and 518 kHz for NAVTEX. LCMP stands for Atlantic Composite Broadcasts, a HF morse telegraphy broadcast of weather and navigational information now discontinued. Control of NMF was remoted to CAMSLANT Chesapeake on Nov. 1, 1996. (Photo courtesy U.S. Coast Guard. Commanding Officer NMF, via USCG Navigation Center web site).

ZCZC
1. REMOTING OF US COAST GUARD COMMUNICATIONS STATION BOSTON MA (NMF). AS PART OF THE USCG COMMUNICATIONS SYSTEM 2000 PLAN, COMMSTA BOSTON (NMF) IS SCHEDULED TO RELINQUISH OPERATIONAL CONTROL OF ALL MF/HF ASSETS TO CAMSLANT CHESAPEAKE VA (NMN) BY 01NOV96. ALL OF THE SERVICES CURRENTLY PERFORMED BY NMF WILL CONTINUE BUT WILL BE PERFORMED REMOTELY BY NMN. THE REMOTING OF NMF CIRCUITS TO NMN WILL BE ACCOMPLISHED IN SEVERAL PLANNED PHASES STARTING 16SEP96. DURING THIS SERVICE-BY-SERVICE CUTOVER, NMF WILL CONTINUE TO MONITOR ALL CIRCUITS AND BE READY TO ANSWER CALLS OR PERFORM BROADCASTS IN THE EVENT THAT NMN CANNOT. AS SERVICES ARE REMOTED TO NMN, CALLS TO COMMSTA BOSTON OR NMF, WILL BE RESPONDED TO EITHER AS CG CAMSLANT CHESAPEAKE OR NMN AS APPROPRIATE. THERE ARE NO PLANNED OR SCHEDULED SERVICE INTERRUPTIONS ASSOCIATED WITH THIS REMOTING. IF UNFORESEEN INTERRUPTIONS OCCUR, NMN AND NMF WILL ENSURE YOU ARE KEPT INFORMED OF THE EXTENT AND ANTICIPATED DURATION OF THE OUTAGE VIA THE MOST RAPID MEANS AVAILABLE. PLEASE KEEP NMN OR NMF INFORMED OF ANY SERVICE DEGRADATION OR PROBLEMS ENCOUNTERED.
NNNN
BRK

NAVTEX broadcast received by Tom Severt announcing the remoting of CommSta Boston, NMF.

cruises, an elaborate packet system is used to maintain comms with the "YP" training boats used at the U.S. Naval Academy, Annapolis. This can be heard on 6262.0 kHz during summer training cruises.

The packet equipment can be "off the shelf," so it's inexpensive, lightweight and efficient. Look for more use by other governments, especially smaller or third world governments, and let me know what you find.

More Hot News

Lot's of news to report. VCS, Halifax Coast Guard Radio, Canada, ceased all HF services effective Sept. 30, 1996. For now, they are still making a MW broadcast. Norddeich Radio, Germany ceased all radio telegraphy as of Oct. 1, 1996. Also affective 1 October 1996 the CW mode of communications was terminated on all Department of Defense MARS (Military Affiliated Radio System) circuits. As a tribute to CW there was a special joint MARS CW broadcast on Monday, 30 September 1996.

According to broadcasts made by Xinhua News Agency, China, shortwave radio transmission of English stories should have ended January 1, 1997. The development of modern telecommunications technology was cited as the reason as Xinhua has adopted the satellite transmission method to release their English stories.

Reader Mail

Tom Severt, KS sent a copy of a NAVTEX intercept he made which refers to the remoting of the U.S. Coast Guards Communication Station (CommSta) Boston, NMF, which took effect Nov.1, 1996. Boston has now joined CommSta Miami in being remoted from CAMSLANT (Communications Area Master Station Atlantic) Chesapeake, NMN. CommSta Guam, NRV, has been remoted for some time from CAMSPAC (Communications Area Master Station Pacific) Point Reyes, NMC. These actions are part of the Coast Guard's "Communications Station 2000 Plan" in which most, if not all, of the remaining CommSta's will be remoted to either NMN, or NMC by the year 2000. This move leaves CommSta New Orleans, NMG: CommSta Honolulu, NMO: and CommSta Kodiak, NOJ as "non-remoted".

Bill Hensley, OK dropped some e-mail updating information provided in the Nov '96 column. Bill reports there have been no KC-135 aircraft at Offutt for some time. There are many RC-135, EC-135 and some other -135 derivative aircraft based there (such as OC-135's and TC-135 trainers). Also the 2nd Airborne Command and Control Squadron (ACCS) which was based at Offutt was disbanded as the airborne command fleet became consolidated. It was superseded by the 7th ACCS, which is now based at Offutt. The 7th ACCS) operates the EC-135C airborne command post (ABNCP) aircraft for Air Combat Command (ACC) and STRATCOM (Strategic Command). In the event of nuclear war, it's the EC-135C's responsibility to pass orders to U.S. nuclear asset's from the National Command Authority. Last, while the 24th, 38th, and 343 Recon Squadrons RC-135's may be tasked by DARO (Defense Airborne Reconnaissance Office), the 1st ACCS and 55th OG (Operations Group) are not in any way controlled or owned by DARO as previously reported. The 1st ACCS operates the four E-4B's, which are owned by the Joint Chiefs, while the 55th OSS is an air Combat Command (ACC) unit tenant at Offutt AFB.

Just as a thought, there is at least one KC-135E at Offutt: it's CASEY 01 (KC-135E tail 57-2589), the aircraft used to transport CINCSTRAT (Commander in Chief Strategic Command) and other STRATCOM and DOD "Distinguished Visitors" (DV's). This aircraft also flies aerial refueling missions.

Don Tomkinson (Ca) has been reporting an unidentified beacon "PYD" on 414 kHz since November of 1993. Don now reports that after two DF trips out into the Mojave Desert, he has tentatively ID'ed this longtime mystery as being at the old George AFB, Victorville, Ca., and now known as Southern California International Airport. Due to the terrain, he couldn't get a view to confirm the actual location. Don also found "LPC" 223 (Lompoc, Ca) now on 400 kHz. Don also sent an interesting article from the September 2, 1996 Aviation Week & Space Technology reporting the FAA has approved a transition plan to eliminate most existing ground-based navigation aids by 2010, and make satellite based GPS "the nation's primary source of guidance for aircraft." The same plan calls for the U.S. to phase out operation of Omega and Loran-C transmitters by 2000.

Allen Renner, PA reports having received 214 returned verification cards to date. Allen's favorite targets are beacons, and he recently received verification of two 20-watt stations: "R" on 403 kHz at Toronto, Canada and "F" on 304 kHz at Moncton, New Brunswick. His favorite

is "ZDX" on 369 kHz from Saint John's Antigua in the Caribbean where he learned the vertical tower there is 140 feet and the power is rated at 1000 watts.

Last, Dave Sabo (S. Korea) checks in reporting a "whole slew" of YL/EE 5F 2X channels numbers activity. These represent 'Lincolnshire Poacher' which broadcasts from Cyprus and sister station 'Cherry Ripe' which broadcasts from Guam. Both are named after old English folk tunes that sound similar and use the same call-up's as well as the same two glockenspiel chimes, one high and the other low, heard three times at the end. Dave also reports several intercepts of the so called "New Star" broadcast station not much is known about yet. This station emanates somewhere in the far east. Logging's of this station have been rare.

UTE Loggings SSB/CW/RTTY/ARQ/etc. All Times in UTC

227: NDB LA, Lakeland, Fl at 1245. (WP)
233: NDB LG, Long Beach, Daugherty Field, Ca at 2345. (BV)
278: NDB OS, Los Angeles IAP, Ca hrd at 2346. (BV)
353: NDB LLD, Lanai Island, Hi at 0940, 2,535 miles. (DT)
365: NDB DYB, Summerville, SC hrd at 0045. (WP)
367: NDB HA, Hao Atoll, French Polynesia at 0950, 3,881 miles. (DT)
368: NDB SX, Cranbrook, BC, Canada at 1055, 1,323 miles. (DT)
370: NDB PAI, Pacoima, Barton Heliport at 2352. (BV)
380: NDB GC, Gillette, Wy at 1210, 988 miles. (DT)
380: NDB ML, Milledgeville, Ga heard at 0030. (WP)
389: NDB XCC, Shell Oil platform, Pacific Ocean at 1105. (DT)
394: NDB ENZ, Nogales, AZ at 1105, 444 miles. (DT)
400: NDB ENS, Ensenada, BCN, Mexico at 1110, 154 miles. (DT)
410: NDB NZJ, Santa Ana, El Toro MCAS, Ca at 2354. (BV)
411: NDB RD, Roberts Field, OR at 1135, 750 miles. (DT)
521: NDB INE, Missoula, MT at 1145, 944 miles. (DT)
526: NDB RWE, Camp Roberts, CA at 1145, 214 miles. (DT)
1905: SAB, Goteborg Radio, Sweden at 2332 in ARQ w/traffic to several vessels. (AB)
2510: DSK, German Navy at 2035 in USB w/LBA and LPG for radio checks, then into 75bd RTTY. (AB)
2538: SQBL, mv Ziemia Krakowska at 2058 in ARQ clg QFKV, QFMV, QFMP (all Norddeich Radio). (AB)

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
ann	Announcement
BC	Broadcast
CW	Morse Code mode
EE	English language
FF	French language
GG	German language
ID	Identification
LSB	Lower Side Band mode
OM	Male Operator
pp	Phone Patch
RR	Russian language
SS	Spanish language
tfc	Traffic
USB	Upper Side Band mode
w/	With
wkg	Working
wx	Weather
YL	Female Operator
4FG	4-Figure coded groups (i.e. 2951)
5FG	5-Figure coded groups (i.e. 29517)
5LG	5-Letter coded groups (i.e. IGRXJ)
	// Parallel

2670: NMA21, USCG Group Saint Petersburg, FL at 0322 in USB w/wx & notice to mariners broadcast. (DW)
2863: Tokyo Volmet at 1341 in USB mode, was YL w/a sort of British accent. (DS)
3116: Russian language Volmet in USB at 2027, didn't catch the ID as this guy was a real number! (DS)
3143: CLEANCUT at 0505 in USB clg NIGHTWATCH 01 on "Zulu 115," then checks into the active net. (Ed.)
3146: FDG, French Air Force Bordeaux, France at 1932 in CW w/VVV mkr. (AB)
3196: "R," Russian Navy, Ustinov at 2343 in CW w/Channel marker. (AB)
3455: Tokyo Radio wkg REACH 4838 in USB mode at 1106. (DS)
3832.7: MOD Paris, France at 2020 in 200 baud ARQ-M2 w/msg from RFFBBYM dircen procecurdef Paris to RFFVAY brigfrifor (French IFOR troups in Sarajevo, Mostar, Ploce, Vrapcici, Rajlovac and Hekom). (AB)
4017: Cuban YL/SS 5F stn heard at 0200 in LSB w/CW cut numbers station on at same time. (TS)
4077: WXQ4511: Str Edwin H. Gott at 0527 in USB, a 35,592 DWT self-unloading bulk carrier (United States Steel Great Lakes Fleet), wkg WLC w/wx observation. (Ed.)
4154.5: DRAV: FGS Karlsruhe (F-212) at 0305 in USB, a German Navy type-12 frigate, wkg DHJ59, Wilhelmshaven Naval w/QSL of RTTY msgs. (Ed.)
4179: UBUT, M/V Tsemdolin at 1907 in ARQ w/msg to Novoship Co Russia. (AB)
4195: Swedish Rhapsody numbers station at 1830 in USB, 5N groups in German. (AB)
4210.5: KFS, San Francisco Radio, CA, at 0916 in CLOVER II/400Hz tfc. (SS)
4270: Mossad station at 1900 in USB w/broadcast to "PCD". (AB)
4310: WNU41, Slidell, La at 0352 in CW w/wx re Tropical Storm Dolly. (WP)
4452: Air Force 2 at 0703 in USB wkg Andy (Andrews AFB) for radio check, pp to WATCHGUARD. (DW)
4489: GFL26, Bracknell Meteo, G at 0317 in 50/425 RTTY w/meteo. (SS)
4570: South Korean military broadcast in USB mode at 0854. Similar traffic heard 4 days later at 0443. (DS)
4660: South Korean military broadcast heard variously at 0901, 1025, and 1057 on different days in USB mode. Similar to stuff heard on 4570. (DS)
4715: RAF Volmet heard at 0300 in USB w/aero wx. (AM)
4724: OTIS 625 at 0406 in USB calling Andrews, no joy, then switched to an "any station" call for a HF radio check. No joy. (DW)
4747: FDI22, French Air Force, Aix, F at 0258 in CW w/CW Marker. (AM)
5010: Russian Air Defense station at 2111 in USB w/QRV msg "BT990110??8?????" (Note: time=UTC+4). (AB)
5091: MOSSAD broadcast in USB heard at 1535, was YL w/5LG's // 7540 which started off w/repeats of "JSR". Commonly heard over here. (DS)
5198.5: CZDO, CFAV Quest (AGOR-172), a Canadian Navy hydrographic/ oceanographic research ship at 2005 in USB wkg Halifax Military re hydrolant b/cast. (Ed.)
5397.7: RFFP, MOD Paris, F at 0348 in ARQ-M2 200/425 w/channel a: idle, and channel B - idle. (SS)
5574: Honolulu ATC at 0257 wkg Corsair 9043 w/posn & selcal, hrd both. At 0333 San Francisco ATC wkg Delta 115 w/same, both in USB. (WP)
5630: Mossad, Israel at 2145 in USN w/broadcast to "SYN". (AB)
5655: At 1605 Springbok 299 w/unanswered calls to Ho Chi Minh Radio, followed at 1606 by Singapore radio wkg Japan Air 710 who req flt lvl 370 fm 330, all in USB. (DS)
5670: Dug out of the muck after extended monitoring, "BASS 66 Heavy" (app U.S. military, c/s spelled) wkg "Lumpur Radio" w/posn report in USB. (DS)
5680: Kinloss Rescue at 1222 w/Rescue 11 giving coordinates to look for a missing vessel. At 1639, Plymouth Rescue w/Rescue 122. Radio check. Both in USB. (AB)
5691: Russian language volmet station in USB hrd at 1628, was YL, weak, probably Irkutsk. (DS)
5696: CAMSLANT Chesapeake in USB at 0447 wkg Rescue 6010 who was on scene w/a vessel in Gulf of Mexico that was taking on water at posn 29.04N/82.49W. 6010 dropped two pumps to vessel, which was able eventually to get underway to Ft. Myers, FL. (TS)
5820: "English Man" numbers station hrd at 2100 in USB, ld 274, 5FG's, ends with '00000'. (AB)
6227: Seaboard Maritime net w/10,208 DWT Ro/Ro cargo vsl, M/V Seaboard Intrepid, 3EMV5, at 1108 in USB wkg WHV384 "Miami" w/ETA, then relays tfc for M/V Seaboard Courier (unk c/s): ELRV8, M/V Seaboard Ocean (9200 DWT Ro/Ro): and ELRV7, Seaboard Caribe (9200 DWT Ro/Ro). (Ed.)
6269: WGDB, Overseas Philadelphia at 1640

in ARQ w/AMVER/PR tlx, login 11153 WGDB. (WT)

6273: P3FX2, M/V Crane heard at 0230 in ARQ w/tlx re sailed Savannah, login 29545 AUK. (WT)

6341.5: YLQ, Riga Radio, Latvia at 1935 in 50 baud RTTY w/mv Paveste in CW and RTTY. (AB)

6513: VCS: Canadian Coast Guard, Halifax CG Radio at 0205 in USB w/one of their last HF broadcasts, wx for the maritimes in EE/FF. All HF broadcasts from VCS ceased Oct.1, 1996. (Ed.)

6532: Cathay 880 to Naha Radio in USB at 0912, reported was over posn DELTA (2752N/13031E) at 0904. (DS)

6628: Santa Maria (Azores ATC) at 0333 in USB wkg Liberte 67. (WP)

6676: Sydney Volmet hrd 1603-1604 w/OM computer generated voice. Bangkok Volmet at 1613 w/live OM human voice "Bangkok Radio out" at 1614. Bot in USB. (DS)

6712: Netherlands Air Force 43 heard at 1855 in USB w/Croughton (UK) for phone patch to unid Metro, request wx for EHEH (Eindhoven). (AB)

6727: Extreme weirdness one night starting at 0646 w/a spell of app Japanese aero traffic by unid ground station. Hrd probably the same station wkg "Japanese Air Force 1" at 0916, ground station was using call "J.." but heavily accented EE prevented ID. Mixed in w/the later was some weak RAAF traffic. Between 0943-0949, RAAF activity picked up with a/c 43 ECHO passing exercise traffic, concerning airfield conditions and strike clearance from EAGLE to ground station Alpha 6 Juliet. Nothing hrd since except for weak YL passing 5FG's in either GG or Yiddish at 1919 one night. (DS) (congrats on JAF 1 snag. These add to stations already hrd here including PBV4, Dutch Navy Valkenburg; JWT, Norwegian Navy Stravanger; DHJ59, Wilhelmshaven Naval, Germany w/MAGIC tfc; LBJ, Navy Bodo, Norway and the USAF -Ed.)

6737: Out-of-band fishermen heard at 2230 in USB w/foul language and talk of fishing locations. (WP)

6739: ARCHITECT in USB at 0400 w/RAF airfield wx. (TS)

6779: DRAH, German Navy frigate FGS Brandenburg (F-215) at 0036 in USB wkg DHJ59, Wilhelmshaven Naval, w/RTTY coordination tfc. (Ed.)

6790.7: USAF Yokota Global hrd w/SKYKING tfc at 1027 and 1115; on the same day Offutt w/EAM at 1303. (DS)

6797: YL/SS in AM at 0900 w/" Atencion 25012" & 5F# msg. (TS)

6908: Poss Philippines inter-island police net hrd in USB from 11-1145, mostly in EE w/likely smatherings of presumed Tagalog. Two OM's passing a long list of names (spelled in modified NATO alphabet using Islam for India), poss citizenship card numbers and locations, logged very similar traffic late Oct '91 on 8945. (DS)

6956.5: BROADSWORD wkg Mike Tango Charlie in USB at 0220. Had interference from pirate operators, so changed frequency. (TS)

6990: USAF MARS in USB at 1147, w/AGA80S (Osan AB, S. Korea) wkg morale calls through AFC6RI. (DS)

7335: FDC, Metz, F at 0316 in CW w/CW Marker. (AM)

7535: Following ships hrd wkg SESEF Norfolk: NOTC; USS Caron (DD-970) at w/HF testing: NOTH; USS Halyburton (FFG-40) at 1451 w/texts of transmitter #7, req for TACAN testing: NHTE; USS Elrod (FFG-55) at 1505 w/test of ships URT-23D HF transmitters, ship was 34 miles NW of Cape Henry, Va; "GUNSLINGER" at 1520 wkg SESEF w/HF testing, this is the 3rd time in 2 months this callword has been logged, app a static ship callword: NACK: USS Concord (AFS-5) at 1630 clg SESEF Norfolk, no joy; NRLC: USS Conolly (DD-979) at 1747 w/HF testing of all HF xmitters. (Ed.)

7886: Russian MFA stn WNY in RTTY 75/500 at 0530 w/3 5FL msgs. (TS)

7918: YL weak w/5L phonetic groups in USB heard at 1420, "End of message, end of transmission" heard at 1422, another MOSSAD channel. (DS)

8122: VLRH, Royal Australian Navy patrol vsl HMAS Bendigo (PTF-211) at 0609 in USB wkg Canberra Control, Australia w/immediate msg tfc. (Ed.)

8148: MFA Warsaw, Poland at 0844 in POL-ARQ w/clear and coded msgs to various embassies. (AB)

8225: TCGG, MV Gunay-A at 0535 in USB calling Istanbul Radio. (DW)

8297: VM2PC, Penta Comstat Radio, NSW Australia, w/wx in USB at 0852. (TS)

8300: Presumably "New Star Radio Station," YL/CC passing 4F grps, ea 2x, very strong & clear. AM mode at 1529. (DS)

8375: YL/CC in AM mode at 1526 repeats sequence of short blurbs until 1527 then started passing 4F grps, each 2X. Passed one more blurb of text, probably adv of msg repeat, then repeats 4F 2X again and off at 1529. Very dissimilar to the "New Star" numbers station on 8300. This sort of YL/CC repeating broadcast hrd here occasionally, but was first time w/numbers. (DS)

8386: UGPA, BATM Khotin at 0310 in 50/170 RTTY w/crew TG's. (WT)

8387: DUCT, M/V Eurasian Charm at 2350 in ARQ wkg KPH w/tlx for ETA Columbia pilot station. (WT)

8388: NRCB, USCGC Eagle (WIX-327) at 1536 in ARQ wkg NMN w/unclas traffic, posn 3609N/06729W, this is the CG's 3 masted training barque, "America's Tall Ship" & she was returning home from an extended tour of European ports. (Ed.)

8391: KHRC, SS Matsonia at 0203 in ARQ w/tlx re lost containers. (WT)

8403.5: UBRJ, TR Ulbanskiy Zaliv at 2142 in RTTY 50/170, a 9,360 DWT Russian reefer/fish carrier, w/20106 report (VLD/VTF) to Vostoktransflot (VTF) c/o Vladivostok Radio. (Ed.)

8423: SVT, Athens Radio at 0356 in ARQ w/Sitor free marker. (AM)

8425.5: HEC, Beren Radio at 0358 in ARQ w/Sitor free marker. (AM)

8467.5: JJC, Tokyo Radio at 0844 in 60/576 FAX with a Japanese news chart w/" Epidemic Information" printed in large EE print. (DW)

8481: VIS, Sydney Radio, Australia in CW at 0922 w/nav warnings. (TS)

8483.5: DAN, Norddeich Radio, Germany at 2325 in CW w/ann that DAN is ceasing radio telegraphy Oct.1, 1996. (Ed.)

8540: USU, Mariupol Radio, Ukraine at 1504 in 50/170 RTTY w/wx. (AB)

8555.5: UIW, Kaliningrad Radio, Russia at 0835 in CW wkg vsl "UBCI". (AB)

8559.5: GKB4, Portishead Radio, UK at 1509 in CW w/QSX msg. (AB)

8589.1: HPP, Panama at 0234 in CW w/CQ mkr. (WP)

10551.3: GFL23, Bracknell Meteo, UK at 1522 in 75 baud RTTY w/synops. (AB)

8592.1: CCS, Chilean Navy Santiago at 0805 in RTTY 100/650 with msg for OZMJ regarding "zona de pesca" (Fishing zones) and a list of 60 vessels. (DW)

8602: ZLO, RNZN Auckland at 0751 in CW w/ch mkr. (DW)

8646: FUJ, French Navy, Noumea, New Caledonia at 0743 in RTTY 75/650 w/test tape. (DW)

8754: Aeroflot 818 passes posn in heavily accented EE to Pyongyang (N. Korea) Radio in USB at 0700, ground side was not hrd, 818 clg them again at 0718 but never got answer. (DS) (interesting place to find them in the maritime band -Ed.)

8861: Speedbird 267 (Selcal BP-CJ) at 0405 in USB w/Dakar Radio. (AM)

8903: Manila Radio in USB at 0953 accepting air guard for Air Mike 985C, a DC-10 w/reg N68Z44, selcal FJ-DM. (DS)
8921: Speedbird London at 0240 in USB w/Speedbird 244 en route Miami to Sao Paulo, Brazil. (AM)
8957: Shannon Volmet at 0250 in USB w/aero wx. (AM)
9251: Lincolnshire Poacher lady passing 5F grps, ea 2x, in USB mode at 2028, slight jamming and // 11545. (DS)
10026.7: Egyptian Embassy Havana Cuba at 2206 in ARQ w/5LG's and plain text ATU-80 msgs. (DW)
10090: Khabarovsk Volmet in USB mode at 0906, YL w/accented EE. (DS)
11175: At 0317, Navy RY090, a Navy C-9B Skytrain of Fleet Logistic Support Wing VR-59, "Lonestar Express," at NAS Dallas, Tx, clg Offutt global, then mainsail, Hickam answers but is not hrd. (Ed.)
11214: Trenton Military, Canada, in USB at 1945 wkg BANDSAW INDIA w/pp. (TS)
11396: Brunei 65 wkg Jakarta Radio in USB at 0953, reports posn AVOK (0215.0N/11451.4E) at 0953, estimate ELANG (0056.0S/11449.5E) at 1007, KEVOK (0425.0S/11500.0E) at 1043, FL330, selcal BL-JS, a/c apparently enrt Bali. (DS)
11570: "Cherry Ripe" tune and YL/EE in USB at 1303 w/5F# msg. // w/13866. (TS)
12212.5: YZI234, TANJUG Belgrade, SRB at 2112 in 50/425 RTTY w/nx in EE. (SS)
12574: UDUR, RTMKS Admiral Starkov, a Russian stern ramped super fishing trawler/super freezer ship, at 2055 in RTTY 50/170 w/admin TG's to Murmansk Radio using hull#/ID MA-1812. (Ed.)
12833: SVA, Athens, Greece at 1926 in CW w/traffic list. (WP)
12932.5: Spanish Navy, Madrid at 0831 in 75 baud RTTY w/encrypted msgs. (AB)
13419: Probable BND/Mossad stn heard at 1813 in ARQ-E 288/200 w/encrypted tfc, fol by op chat in RTTY 100/850 "QSY 22 QSY 22". (Ed.)
13533: Mossad lady passes 5L grps in USB at 1433. (DS)
13886.7: RFFA, MOD Paris, F at 1412 in ARQ-E3 192/425, idle. (SS)
13971.5: CLP65: Cuban Emb, reportedly Managua, NCG at 1945 in PACKET 300 bd w/std packet beacon "CLP65," then some SS op chat. (Ed.)
14487: Lincolnshire Poacher lady w/5F 2x broadcast in USB at 1133, // 15682 // 16084 as it often is. (DS)
14912: DFZG, MFA Belgrade at 1413 in 75 baud RTTY w/nx. (AB)
15821.9: SAM, MFA Stockholm, Sweden at 1405 in SWED-ARQ w/msgs. (AB)
15838: V5G, MFA Bucharest at 1420 in ROU-FEC 164.5/400 w/circular ('circulara') tfc. (Ed.)
15942: OMZ, MFA Bratislava, SVK at 0950 in 100 baud RTTY w/nx. (AB)
16313: CLP1, MFA Havana, Cuba at 1559 in RTTY 50/400 w/minrex nx, RYRY, & ID, then into circulars. (Ed.)
16687.5: 3FDP, 14,436 DWT dry cargo vsl M/N Presidente Frei at 1539 in ARQ w/tlx, uses abbrev "DTE FRE," vsl bound Puerto Cabello, Venezuela. (Ed.)
16699.5: LAKW2, M/V Swan River at 2008 in ARQ w/tlx, login 26557 SWARIV. (WT)
23103: YL/EE with 3/2F grps in AM at 0428, // 20011, strong! (DS)

Contributors: (AB) Ary Boender, the Netherlands; (AM) Al Marote, Florida; (BV) B.F. Vaage, California; (DS) Dave Sabo, S. Korea; (DT) Don Thompson, California; (DW) Dave Wright, Texas; (SS) Stan Scalsky, Maryland; (TS) Tom Severt, Kansas; (WP) Walt Petersen, Florida; (WT) Wade Taylor, California; (Ed.) Ye Editor in Ohio. ■

Pop'Comm P.O.

(from page 6)

Five Teenagers, Aspirin and Radio

Dear Editor:

Congratulations and I wish you great success in your endeavors, and good luck to you and the *Pop'Comm* staff. As a woman, wife and mother of five teenagers with almost no one in the family available to assist in the communications hobby, I read the "Radio Connection" with great interest. I really don't want to be just an "appliance operator."

Since I greatly enjoy shortwave, the "Listening Post" is one of my favorite columns. I love seeing the QSL cards, photos and latest developments. The reader's logs are quite fascinating. Friends and family enjoy some of the tidbits I share with them about the international broadcasts. I feel it helps my children become more interested in geography, current events, foreign languages, etc. when they see and hear it LIVE!

Sharon Cenna, KB8VXL
Westlake, OH

Dear Sharon—and family:

What you're doing with your interest in radio communications is very commendable; getting your friends and family interested in not just radio, but their ever-shrinking world. Try listening to shortwave radio for more than a few days without getting the urge to look at a world map. Like many listeners, you've found how to become better informed while learning a great deal more about world geography than some students, and, the lessons are free!

Sharon, speaking of photos and QSLs, why not send in yours so we might use them in an upcoming issue? ■

Pirates Den

(from page 69)

WREC, 6955 USB at 1627 to 1637 with various horror bits.

Christopher White heard **All Average Music Radio** at 1429 on **6955** saying they were the "all average radio pirate station" and playing songs by **Billy Joel** and Michael Bolton.

After two years of trying, Byron L. King of North Carolina finally caught his first pirate—**Radio Delta Tango 306**. This was on **6.95** (6955? Ed.) at 0008 to 0016 hosted by A.J. Michaels from Action Radio, Radio Animal and Little Joe from Peter Built Radio and Fester the Molester. They also identified as **Alliance Free Radio**. They aired a spoof on Dinah Shore for Holis Farms Chicken featuring Hank stuffing a chicken. They gave an address as P.O. Box 1, Belfast, NY 14711.

George Roberts in Pennsylvania had **KAT** on **6955 USB** at 2352 with a variety of rock songs. Supposedly this one comes from the Kappa Alpha Tao frat house at the University of Wisconsin (Madison). Music included numbers by the Grateful Dead, Allan Sherman, Jethro Tull and several others. They announced the Blue Ridge address.

Roberts also had **Mystery Radio** at 0420 on **6955 USB** with "The Shadow "as the announcer, various music selections, weird sound effects and new age type music.

WARR, was heard on **6950** at 0020 with Captain No Beard airing various rock numbers and music bits and supporting the use of pot—"war against the war on pot." (Roberts)

That uses up our space and everything on the desk for now. Keep listening for those pirate signals on 6955 et al and keep sending your logs to this column! As always, your support is important and very much appreciated! See you next month. ■

BY EDWARD TEACH

The Pirate's Den

FOCUS ON FREE RADIO BROADCASTING

Strange Pirate Happenings Including X-Files Soundtracks

Let's dive right into the pirate happenings this month. Miguel Pedraza, Jr. in Ohio logged his first pirate when he heard **Radio Azteca** on **6955** at 0000 with humorous ads, gypsy-type music and "Ask Dr. Radio" featuring listeners' DX questions. Sign off was at 0025 with the admonition "you should never slam the door when you're naked."

Miguel also had **KAOS** on **6955** at 0028 shortly after Azteca signed off, with a special "Blues Episode" with music and a humorous commercial read by Henry Gibson soliciting for the United Appeal for the Dead. They announced the Belfast, NY mail drop.

Kevin Tierney in Rhode Island had **Great Southland Radio** on **6953 USB** from 0040 to 0110. The announcer had an Australian accent and identified himself as John Gagly. Between every few songs he'd say "Grab a beer, mate, this is John Gagly here at the Great Southland. If you would like to write send one dollar Australian, 1.50 UK or $1 American. Send 3 units of first class postage to P.O. Box 293, Merlin, Ontario, Canada N0P 1WO. By the way, that's a beer, mate."

Kevin heard **WAMP** (tentative call) come on the air at 0110 after Southland signed off and continue until 0130, doing a take off on a time station, announcing "Coordinate Alentenisega Time." They also played rock and gave the same address as the Southland station.

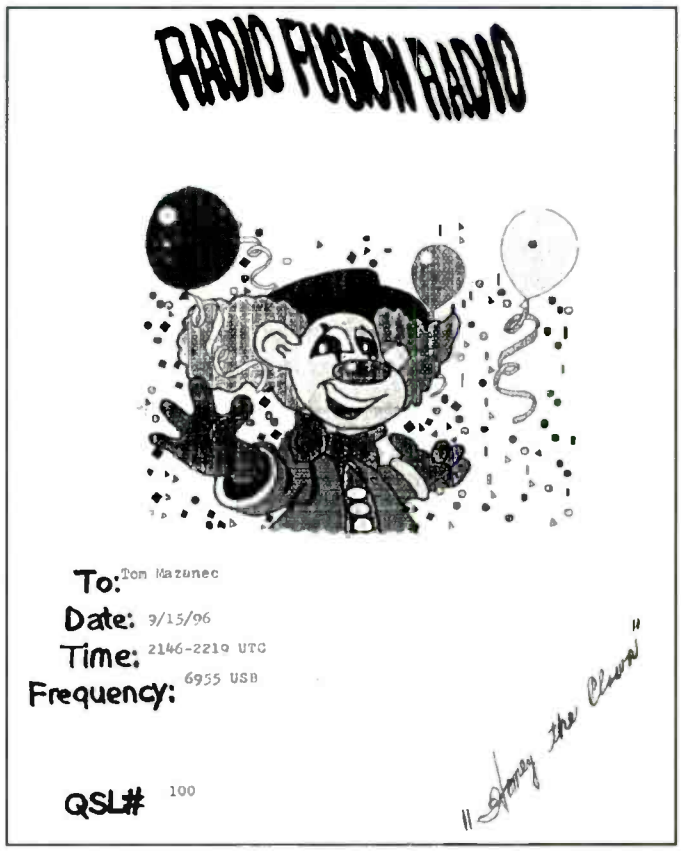
Grateful Dead Radio, dedicated to Jerry Garcia showed up next for Kevin, from 0133 to 0223 playing Grateful Dead music. They gave P.O. Box 28413, Providence, RI 02918 as their address and announced 100 watts USB.

Bob Murray in Pennsylvania had a number of logs, starting with **X-Files Radio** on **6954.2** USB from 1935 tune to close around 2012. They played sound bites from the X Files TV show and what Bob thinks were termed some hidden X-Files tracks. They gave the Merlin address (above).

Radio Free was heard by Bob on **6954.8** to 2058 with various songs. The announcer said reports should be sent to A*C*E. Christopher White of Massachusetts had this one at 1429 with funny country songs and advertisements. The broadcast then switched to **Steel Belted Radio Free** and played rock.

Radio Free Speech, was heard on **6955** at 2100 to 2115 with Bill O. rights offering a bumper sticker, political parodies and so on. They gave the Belfast and Blue Ridge Summit addresses. (Murray) Jim Coatsworth in Ontario had this at 1458 to 1509 with a parody of the Star Spangled Banner at sign off. The program was dedicated to Bob the Blade. Christopher White had them at 1448 sign on announcing as "pirate shortwave for all of America and the world" They aired several humorous commercials and Bill Clinton humor. Wellsville address.

Radio Eurogeek, 6995.7 USB was heard from 2343 with a commercial for Copenhagen's Sex World, a traffic report, comments about EuroDisney, DX report, parodies and humor records. (Murray)



Tom Mazanec in Ohio got QSL #109 from Radio Fusion Radio which he heard on 6955 USB.

RFM was noted at 2035 to about 2110 on **6955** with some rock, a beer commercial, Bill Clinton singing "All Your Money" and a take off on the Beatles. (Murray)

Jim Bailey in Wisconsin heard **Radio Ortega** on **6955 USB** at 0212 in Spanish, giving the Wellsville address.

He also had **Radio Three** on **6955 USB** at 0031 with announcer "Sal Ammoniac" playing things by Barbara Striesand and Jimmy Durante.

More Jerry Coatsworth loggings include **WLIS** on **6955 USB** at 0131 with a salute to Larry Russell, IDs by Bram Stoker and Jack Boggan.

Friday Radio, 6955 USB at 2253 to 2301 with lots of talk about Friday, then the Olympic theme was played and the station signed off. (Coatsworth)

Up Your Radio Shortwave, 6955 at 2236 to 2250 with an Allan Sherman piece. (Coatsworth)

KAOS, 6955 USB at 0006 to close at 0020 with much talk about sheep and "Jo Mama." Pse QSL. (Coatsworth)

(Continued on page 74)

The Ham Column

BY KIRK KLEINSCHMIDT, NTØZ

GETTING STARTED AS A RADIO AMATEUR

Logbooks: Not Required, But Still Necessary

When I was a kid—an eager, DX-crazy, Tempo One-wielding, brand new ham—the FCC insisted that we keep detailed station logs: date, time, mode, callsigns, frequency, power output—the whole nine yards. Every time a QSO ensued, the next blank line in my handy ARRL Logbook was carefully, painstakingly filled in.

Not too many years before the 1977 era I'm describing, in addition to regular QSOs, hams even had to log unfruitful CQ calls. Every transmission, no matter how brief, had to be logged! Look at an old-timer's logbook and you'll likely see pages of unanswered CQ calls trailing down the page.

Thankfully, we're not required to keep such detailed logs these days—actually, hams aren't even required to keep ANY logs, but maintaining an accurate station log is still worthwhile today, and will be priceless tomorrow.

You see, it's been 20 years since I made that first log entry, and I'm amazed at how just looking at that first logbook is like jumping into a ham radio time machine. Without the benefit of the log I can only remember a select few of those early QSOs —the QSOs that shaped my amateur radio career. With the log, however, I can remember those QSOs in "sensurround," just like watching *Star Wars* in a movie theater.

". . . maintaining an accurate station log is still worthwhile today, and will be priceless tomorrow."

With my logbook scrawls and notations I can *hear* the CW coming from the Tempo One transceiver—my prized "first real radio" that I worked a entire summer to pay for. I can *feel* my trusty J-38 straight key—now unused for years—to which I added a drilled-out poker chip "knob enhancer." I can remember the thrill of working countless DX stations that I would have otherwise forgotten.

"Look at an old-timer's logbook and you'll likely see pages of unanswered CQ calls trailing down the page."

The simple act of keeping a station log has kept those memories fresh for two decades. And as long as I have them, they'll stay fresh for as long as I'm around. If you don't keep a station log for any other reason—and there are many present-day incentives for keeping an accurate log, keep it for future nostalgia.

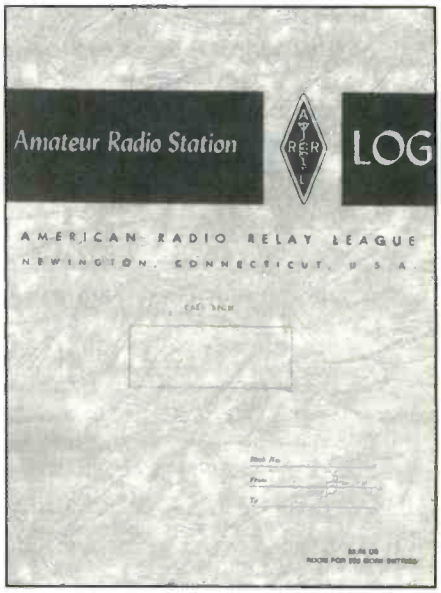
Jeez, when some of you are old-timers, ham radio probably won't even exist in its present form. You can tell your grandkids, "Yep, Junior, I used to talk to other hams with Morse code, or by speaking into a microphone that modulated radio waves in the MF/HF spectrum!" If they don't believe you—and they probably won't—show 'em the log!

To keep you motivated well into old age, here are some compelling reasons for keeping a log today. If you have any ideas or suggestions, let's share them with our readers.

Stats and Station Info

We all have information and "benchmarks" we like to keep track of: states and countries worked and confirmed; information for awards; or the names and addresses of our on-the-air friends. A well-kept station log is invaluable in your quest for the Worked All States or The DX Century Club (DXCC) awards. In addition to keeping a running list of states and countries, your logbook is the perfect place to keep detailed information on a wide range of subjects.

You can track modifications and changes to your equipment. Not only will the information be easy to find, it will be easier to note the effects of such changes by contacts before and after. How does your new tri-band beam compare with your old trap vertical? Check out the signal reports in your logbook and you'll have a good idea!



DXers often refer to their logs when trying to work into specific parts of the world. When is the best time to work Japan in the winter? A quick check of last year's log entries will probably turn up the required information.

Feel free to note other changes in your log, too. When you upgrade, note it in your log. When you get a new rig or put up that long-awaited killer antenna, write it down. This is what logbooks are for—not just recording QSO information!

Computers, Anyone?

Computers and ham shacks are now inseparable, especially for contesters and DXers. If you have a PC in your shack, consider using it to keep your station log—just remember to back up the log data by making archival copies and/or by printing the log to paper. In 30 years, 3.5-inch floppies and DOS-encoded data files will be readable only in museums, while paper will still be paper.

(Continued on page 62)

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Loose Connection

(from page 80)

been severed. Dave appreciated my sense of urgency and went to the back of the house to retrieve my lifeline. Thinking of speed rather than form, he quickly tossed the free end of the rope up and over the peak of the roof, which was pretty amazing considering his throwing arm was in a cast. I couldn't see him, but he yelled to me and told me he was standing on the two-by-four, and since we weighed about the same, it ought to be good enough to

"As a person ages, you'd expect he'd remember how a premonition warned him to take the bus to work the day his commuter train was derailed . . ."

get me down. I took the end of the rope and slid on my belly down toward the gutter, hoping to find the point where the ladder was resting just a foot our so out of sight. I had planned on having Dave there to guide the placement of my feet onto the top rung, but I wanted him staying right where he was, thank you.

The rope didn't yield as I got closer to the edge of the roof, but I was able to hook one toe over the gutter and use it to pull myself downward. I could hear Dave yelling, but now that I was down near the rain gutter, I couldn't make out anything he was saying, and I was scared to death that I'd miss the top rung of the ladder or kick the ladder to the ground and hang there 'til his wife came home to call the fire department.

Old Mrs. Dobrinsky, next door, tells how she watched as Dave slowly rose up in the air holding on to the rope as I inched my way down over the edge of the roof. She thought it was pretty ingenious the way we worked that out—balancing each other like that, but says she couldn't figure out why I just let go of the rope once I got onto the ladder. Dave figures he only fell about 12 feet, but the unexpected release caused him to put his good arm out behind him like that, he says. He tells me the first cast will be off tomorrow.

I bought Dave a new ladder—thought it was the least I could do, and I let him borrow my shortwave receiver too, since he couldn't exactly play the violin for the past few weeks. He just looked at me and shook his head when I offered to put up a longwire antenna for him. ■

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The Loose Connection

RADIO COMMUNICATIONS HUMOR

BY BILL PRICE, N3AVY

A Friend in Need . . .

Those of you who have had the good sense or good fortune never to have walked on a steep, asphalt-shingled roof may think the grit on the asphalt shingles would provide traction. In fact, that grit is rather loose, and not exactly glued into place.

My wife and I were visiting friends, and as we were leaving, we stood in the driveway. His scanner antenna had been bent by last winter's winds, and I suggested we could straighten it without too much effort. He told me it worked just fine, and he wasn't climbing any ladders for another three weeks—'til his arm was out of the cast. "Nonsense," I countered, "With those antenna elements almost touching one another, that thing's got to be detuned.

I'll come over and we can take care of it tomorrow." His heart wasn't really in his "OK."

White Star Lines' Captain Edward J. Smith paid no mind to the near collision as he guided the *RMS Titanic* from the dock on her maiden voyage; I told my neighbor, "We can fix this right up," noting that the hooks that held his extension ladder in the extended position were both broken completely off. "Just get some rope—I'll have it patched up in no time." Smith and I could have both taken a lesson from history.

As a person ages, you'd expect he'd remember how a premonition warned him to take the bus to work the day his commuter train was derailed, but in fact he'll quickly forget what made him pass up his favorite carp-melt casserole at the sweltering July family reunion, only to learn of rampant food-poisoning among his relatives the following day. We often miss a warning shouted through a bullhorn three feet away; so it was that brisk October Saturday.

Dave's rope wasn't really the best for the job, but I lashed the two parts of the ladder together and they held pretty well. The ladder fell short of the roof by a good foot, and that made my climb past the rain-gutter a test of faith. I'd had the presence of mind to run a long safety-rope up and over the peak of the roof from the second floor bathroom window in the back of Dave's house where it was tied to a two-by-four which was too long to fit through the open window.

Standing upright on that roof, even while using the rope, was more difficult than I'd remembered. The grit on the roof turned to ball-bearings beneath my feet, and I felt smug comfort as my safety-rope supported me. When it became obvious that my shoes would not stop slipping, I took them off and tossed them down to the ground. It was then I remembered that when you stand on a steep roof in stocking feet, you must always point your toes downhill—toward the gutter. As I stood there with mine pointed uphill—toward the ridge—my socks gripped the rough surface perfectly and my bare feet slid slowly out of them, onto the rough surface of the shingles, which were colder than I'd care to remember. One sock blew down and landed in the gutter, near where I hoped the ladder was standing. I put the other in my pocket.

I carefully worked my way to the chimney where the antenna was fastened. It was easy to bend the element back the way it belonged; it was difficult holding on to the rope when the oil burner started and blew a puff of diesel-style exhaust into my face.

Dave was more than kind during all this. In addition to begging me not to climb the makeshift ladder, he kept asking if I was alright, and if I needed anything. He was particularly apologetic when his daughter tossed the two-by-four out the bathroom window and closed the window to take a shower. The rope, which was lying by my feet as I leaned against the chimney, seemed to vanish like a startled snake on a hot back porch, and it was just about then that I realized that *two* bowls of bran flakes might have been a tad too much for a Saturday breakfast.

The already urgent need to get down from a cold roof seems to increase dramatically when one's escape route has

(Continued on page78)

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