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<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R8A</td>
<td>$999.95 + $14 UPS</td>
<td>CBS-1000 AM/SSB Base Call</td>
</tr>
<tr>
<td>R8B (new)</td>
<td>$1159.95 + $14 UPS</td>
<td>CBS-500 AM Base Call</td>
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<td>SW8</td>
<td>$779.95 + $10 UPS</td>
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<td></td>
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<tr>
<td>ICF-2010</td>
<td>$349.95 + $7 UPS</td>
<td>CBS-1000 AM/SSB Base Call</td>
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<td>AH-27 Walkie Call</td>
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<tr>
<td>ICF-SW10000TS</td>
<td>$469.95 + $7 UPS</td>
<td>CBS-1000 AM/SSB Base Call</td>
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ON THE COVER: Here's the tower of radio station WKLG, 102.1 FM, "Star 102." Key Largo, FL. Warm weather months are prime time for FM and TV DXing. Beat the heat — try your hand at DXing using E-skip and tropo. Check out this month's "Broadcast DXing" column on page 63. (Photo by Larry Mulvehill)
The Drake SW-1 sets the stage for worldwide shortwave listening with ease, simplicity and clarity. The SW-1 offers superb sensitivity, selectivity and full audio. Coverage from 100 through 30000 kHz provides solid coverage of longwave, medium wave and shortwave in the AM mode (no SSB). This makes it an ideal broadcast receiver for the desk or bed-stand. Tuning is a snap via the keypad, manual tuning knob, Up/Down buttons or 32 programmable memories. The LED display is positively huge for easy accurate frequency readout to 1 kHz. Antenna input is via a 50 ohm terminal or SO-239 jack. A 1/8" mini jack is provided for use with earplug or headphones (not supplied). Includes AC wall adapter for operation from 120 VAC 60 Hz. 10.675"x4.375"x7.625" 4.7 Lbs. One year limited warranty. Proudly made in Ohio, U.S.A. A limited time offer.

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Changing Face

Want to see someone's face change really quickly? Mention CB to them. Whether they're a fellow ham, scanner user, friend, relative, or neighbor, their face will change, and it isn't pretty. It's similar to the look one gets from eating a pickle, followed quickly by a whiff of Washington politics. "You're a CBer?" they might quip. Or "CB — don't they use it on the highway and to talk skip?" are common responses.

I saw more than one face change when introducing this topic, but just last week I witnessed another change first-hand at a recent hamfest. One otherwise jovial ham, complete with hat, name tag, and HT strapped to his hip, began talking with me about recent changes in our spectrum, saying, "... yeah, we've got plenty of yahoos on the repeater now-a-days thanks to the No-Code Tech license ..." I couldn't let that shot across the bow go unanswered, and proceeded to politely inform the fellow that in my humble opinion, it's people — not any particular license class — that ruin the party for everyone. Plenty of the antics I hear on repeaters in my travels involve a fair cross-section of operators from all license classes, I told him. But the icing on the cake was when I said something about doofus operators not being unique to ham frequencies, but even ruining it for the good operators on 11 meters as well. Suddenly his face contorted, his mouth dropped open, and his head swiveled and gyrated as if mounted on a Slinky when I said this, and, that regardless of the service, radio is radio, people will be people. I was hoping, as his face got redder by the second, that I wouldn't be charged with homicide if he died on the spot! I can see the headline now: "Man Killed With Words — Editor Given The RF Chair."

When he recovered, I got the speech my high school math teacher used to give me, "Man, something's very wrong here ... you don't get it, do you?" or some such nonsense. He then proceeded to educate me about how the amateur community "lost" 11 meters, and how there's nothing but trash on CB.

But, truth is, I always get it, and so do millions of other good CB operators who aren't just CBers — many are hams, too. And darned good ones, at that. And, truth be known, these CB operators out there are darned good operators, too. Fact is, one bad apple doesn't spoil them all. That's true on CB, and it's true for any other radio service, hobby, or endeavor that involves large cross-sections of our population. Because of the numbers alone, it makes sense that there will be a few hundred doofuses on CB running illegal power, cursing, and wreaking havoc on the channels. The more folks in the pool, the better your chances of getting deliberately splashed by a wise guy.

But think about the relatively small-by-comparison amateur community that prides itself on self-discipline. For the most part, let's face it, it's a highly-disciplined service, but there are a few bad apples in this barrel, too. They're the repeater kerchunckers, over-powered operators, and folks who pedal the off-color, on-air humor. And please don't tell me these characters are all ex-CBers or unlicensed operators, because I don't buy it for a minute! Sure, everybody does things differently, but that doesn't make it right. And certainly, there's plenty wrong with CB that will probably never be fixed to everyone's liking; everyone's got a plan for 11 meters, but until you can change really quickly? Men-

"And please don't tell me these characters are all ex-CBers or unlicensed operators, because I don't buy it for a minute!"
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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, N2RL, SSB-596, Editor, Popular Communications, 25 Newbridge Road, Hicksville, NY 11801-2909, or send E-mail via the Internet to <popularcom@aol.com>.

Something For Everyone

Dear Editor:

I recently celebrated the 40th anniversary of taking and passing my first FCC license exam at age 11, so I can speak with some level of experience about some segments of that population. Certainly there are the “Big Guns” that are evident on the 75-meter SSB portion of the band with their “Full Gallon” rigs and impressive antenna arrays. There are the DX types, operating the pile-ups looking for country #347. These are apparent to anyone with a SW receiver.

However, another group that I associate with are the CW operators. The operation of CW operators is polite in the extreme. These are not the “I can blow you right off the air” types at all. I would never be embarrassed to transcribe the contents of any CW QSO for a Sunday school class. A sub group that seems to be growing rapidly is the QRP operator. These people operate with power levels of 5 watts or less and many use less than 1 watt! I personally have been operating QRP in the 20- and 30-meter bands mobile for the past five years. It has been amazing to me the number of fine QSOs, both ragchew as well as DX, yes DX, that I have had with 5 watts and an antenna that is at most eight feet tall. I have worked Japan, New Zealand, numerous European and Caribbean stations with an MFJ transceiver and a set of keyer paddles fastened to the ashtray lid on the console. Forget the preconception that CW is hard or a “special language.” If my mom and I could learn the code on our own when I was 11 and pass a test on it, it just cannot be tough.

QRP operation is attractive because the equipment for it can be much, much less expensive. There are a number of popular little rigs available in kit form for under $100 giving the beginner some experience in electronics, as well as operating. This seems to be a rapidly growing segment. I subscribe to the Internet QRP-L listserver (a type of bulletin board) which has about 2,500 subscribers. Check out the QRP-L Web site at <http://qrp.cc.nd.edu/QRP-L/index.html>. For other ham radio Web sites, you might start with <http://www.yahoo.com/News_and_Media/Radio/Amateur_and_Ham_Radio/> and go from there.

There are numerous other ham radio groups that are not readily apparent to the SWLer, such as the digital mode operators, the satellite operators, the experimenters, the “boatanchor” collectors, etc. In summary, Gary has pointed out a few of the stereotypes, but, in my humble opinion, has just scratched the surface. Ham radio is a hobby with something for almost everyone. Thanks for your time. 73

Roger B. Whitaker, K9LJB — QRP-1 #1403 ck9ljb@4u.net

Send In The Doofuses

Dear Editor:

A total disgrace of amateur radio with the vulgar language from people who truly belong in the insane house! Is this why we need a license to operate ham radio? If the newcomers listen . . . they won't get into the hobby. If you don't find it on 14.300, it'll be on 14.313. No license is required if it is OK to operate this way. The FCC and ARRL are laying down on the job. Need fast action.

73,
Gene, KA1LWR

Dear Gene:

People will be people, like we've said, regardless of the radio service. It's truly unfortunate, but the same folks who want to be heard above everyone else in a room full of people are the same arrogant folks giving our hobby in general a bad name. Remember, what the general public hears and remembers about our hobby isn't always the help we provide during disasters, parades, and local/regional events, it's the baloney they hear first-hand as young Johnny or Susie tunes across the bands, whether using a scanner or shortwave rig.

Can You Say “Outmoded?”

Dear Editor:

I just had to respond to Ted Lisle’s assertion (May 1998) that the code requirement for amateurs is imposed by rules of the International Telecommunications Union. Although the U.S. is a signatory to that agreement, the FCC is not obligated to obey the ITU; they are obligated to follow the directives of Congress which created the FCC back in 1934.

In fact, the FCC has already established a precedent of ignoring ITU rules at least once. Remember the CB service? Last time I checked, CB was definitely within the HF spectrum, yet there is neither a code nor a licensing requirement — in direct violation of not one, but two ITU rules! And don’t give me that “blanket license” crap, there’s no such thing. How about I buy a car and automatically get a “blanket license” to drive? Try it!

No, the real reason there isn’t a no-code HF amateur license, and likely won’t be anytime soon, is because the good-old boys at the ARRL are vehemently opposed to it. After all, they had to learn the code, so everybody else does too. It’s become nothing more than hazing — a rite of passage. They are afraid of change, even when it’s for the better. With the military and Coast Guard dropping CW use, it’s just not a necessity anymore. Can you say “outmoded?” How about “obsolete?”

One day the ARRL will have to wake up and smell the coffee. They still claim to represent all amateur radio operators, even though only 20 to 25 percent of all U.S. hams are members. If they don’t update their policies, soon they’ll wind up as a shell of an organization that nobody pays attention to — and that would be a pity.

John T. Arthur, N2YQM
Belfast, New York
The ASTATIC EchoMax 2000 is the next generation base station CB microphone with microprocessor controlled digital echo.

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If you're like many radio hobbyists, you bought your first scanner so you could listen to the local police, fire fighters, and paramedics. Or maybe someone gave you an old shortwave radio that had been sitting around gathering dust. And, if you're like most, you've never progressed beyond the basics of cops and robbers, or foreign news and music. But what if I said that you could be listening in on dramatic rescues at sea, or to fighter pilots twisting and turning through the sky? With a relatively modest investment — perhaps even with the equipment you already own — you could be monitoring U.S. and other military forces from around the world. Interested?

Perhaps the easiest of the services to monitor is the United States Coast Guard. The “Coasties” use VHF marine frequencies — available on all but the most basic of scanners — as well as HF (shortwave) frequencies, making them easy to monitor from nearly anywhere. They also use the occasional UHF airband frequency, plus government land mobile frequencies (but more on those later).

The Coast Guard operates 46 Group and two Section offices whose responsibilities include listening for distress calls over VHF maritime channel 16 (156.800 MHz). Approximately 20,000 to 25,000 distress calls are made over this VHF system each year. On the Pacific, Atlantic, and Gulf coasts, these stations also listen for distress calls over the international radiotelephone distress frequency of 2182 kHz. These Group and Section offices also make voice broadcasts of weather and navigational warnings over VHF channel 22A (157.100 MHz and 2670 kHz, respectively).

But, I Don’t Live Near The Ocean!

Don't think you have to live near the ocean to hear Coast Guard action. The Great Lakes, the Mississippi, the Ohio and other major rivers, and even land-locked bodies like Lake Tahoe on the California-Nevada border have a significant Coast Guard presence. In fact, of the 25 largest U.S. cities, 80 percent are near navigable waterways and within range of the Coast Guard’s distress network.

If you do live within 20 miles or so (more with a good outside antenna) of a major lake, river, or other waterway, program 156.800, 157.050, and 157.100 MHz into your scanner’s memory banks. The first frequency, 156.800 MHz (Ch.16), is the international marine hail-ing and distress frequency. Communications here can be heard for thousands of miles. On HF, the frequency 2.182 MHz is used for hailing and distress, much like 156.800 MHz

A Couple Of Shortwave Tips

If you don't live near a major lake, river, or ocean, then dust off that old shortwave radio and tune to 5.696 MHz upper sideband. This is one of the two primary Coast Guard aviation search-and-rescue frequencies (the other is 8.983 MHz USB). Communications here can be heard for thousands of miles. On HF, the frequency 2.182 MHz is used for hailing and distress, much like 156.800 MHz.
Aerial refueling communications can be easily monitored by most hobbyists with the right equipment and frequencies.

on VHF. There are many other frequencies used, but these will get you started.

What, you say you don’t have a short-wave radio? Or perhaps the one you have doesn’t receive single-sideband transmissions? Well, maybe it’s time to make that modest investment we spoke about at the beginning of this article.

Small, portable shortwave radios with digital tuning and single-sideband capabilities are available new for $250 or less. The Sony 7600G, the Grundig YB400, and the new Sangean 909 are just a few examples. The Sangean is also sold as the RadioShack DX-398, and, by most reports, it’s an excellent radio.

While these radios certainly aren’t in the same league as today’s $1,000-plus tabletop receivers, they do offer features and performance previously found only in top-of-the-line receivers of just a few years ago.

Spend $500 and you can get a new Drake SW-2, or a used Yaesu FRG-100. Both are table model receivers that offer excellent performance and a lot of value for the money. Invest in one of these and a good antenna, and you’ll be listening to action on the other side of the world. Shortwave’s also a good place to start listening to other military aircraft besides the Coast Guard. There are several frequencies — 11.175 MHz USB, for example — that carry a lot of traffic, and you don’t have to be near a military base to hear it. These frequencies are part of the U.S. Air Force’s Global High Frequency System (Table 1). Signals here travel thousands of miles.

In addition to the GHFS network, the Air Force also operates the HF Mystic Star VIP communications net. Air Force One, transporting the President, is regularly heard on Mystic Star frequencies.

**The Civilian Aero Band And Internet Resources**

Another good place to start monitoring military aircraft is on the VHF “civilian” aero band, from 118.00 to 137.00 MHz. All but the most basic of scanners cover the civilian air band, and virtually all military airfields have both UHF and VHF control tower frequencies. Some have VHF approach and departure frequencies as well, although these are often shared with nearby civilian airports.

A good place to look for frequencies...
Airshows give you a chance to get up close and personal with exotic aircraft, such as this A-10 Thunderbolt II, and the men and women who fly them. Airshows are also a great place to hone your monitoring skills.

for your local airport or military airfield is on the Internet at <http://www.airnav.com>. This site lists not only frequencies, but lots of other handy information as well. There are plenty of frequency directories on the market, too. But recent base closings and unit relocations make their usefulness suspect.

One of the best sources I know of for up-to-date military monitoring information is <MilCom@qth.net>, an Internet E-mail listserver. MilCom has members from across the U.S. and overseas, and most members regularly post loggings with callsigns and frequencies heard. For more information on this free service contact the list administrator at <JMayson@mindspring.com>.

Other Internet information sources not to be overlooked are the services themselves. Each branch of the U.S. military has its own Web site, as do many individual bases or units. Particularly interesting are the Coast Guard, U.S. Air Force, and Navy sites at <http://www.uscg.mil/dotinfo/uscg/welcome.html>, <http://www.af.mil>, and <http://www.navy.mil>, respectively. While you won’t find a lot of specific frequency info here, you will find a lot of good background information that will help you understand what you’re hearing on the radio.

Any scanner that receives the VHF-Lo band from 30.00 to 50.00 MHz, the VHF airband of 118 to 137 MHz, VHF marine frequencies from 156.275 to 157.425 MHz; and government land mobile bands from 138.00 to 144.00 MHz, 150.075 to 150.345 MHz, 162.00 to 174.00 MHz, and 408.00 to 420.00 MHz can be used for some military monitoring.

New trunked systems (Table 2) are being installed at many military bases, but with only five to 10 active frequencies, and generally just a handful of users, they’re much easier to monitor than large civilian public safety trunked systems. Many large U.S. Navy vessels also have trunked systems.

A large military base is like a small city, usually with all the problems of a civilian community. Thus, support agencies, like law enforcement, crash/fire/rescue, and medical (EMS), respond to many of the same types of calls as do their civilian counterparts. Many of these ground support communications are “in the clear,” for anyone to hear, if you’re tuned to the right frequency. Search the 30.00 to 50.00-MHz and 162.00 to 174.00-MHz ranges for these comms. Police Call Plus, available at RadioShack, lists support frequencies for some military bases.

To get really serious about military aviation monitoring, you need a scanner that covers the 225.00 to 400.00-MHz UHF military airband, and that allows you to manually select AM mode in the 138.00 to 144.00-MHz government land mobile range. Generally, only top-of-the-line scanners include these features. Popular current models include the Uniden BC9000XLT base and BC3000XLT handheld; the PRO-2042 table model from RadioShack; and the AOR AR8000 handheld. These radios aren’t inexpensive, but for $350 to $500, you’re buying a lot of capability.

If you’re really on a tight budget, Sporty’s Pilot Shop in Batavia, Ohio (1-800-LIFTOFF), is marketing a new, 20-channel, air-band-only scanner that covers both VHF civilian and UHF military air bands and sells for just $150.

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these scanners for a few weeks. The JD-100 Air-Scan, as it's called, is solidly built and worked quite well. The only weak spot appeared to be the antenna, which seemed tuned for VHF, but not particularly sensitive to UHF frequencies. Replacing the stock rubber duckie with a flexible Watson broadband antenna brought an immediate improvement in reception. Watson has also recently introduced a new antenna especially for the aviation monitoring enthusiast. The W-901 "Air-Gainer" is also a flexible antenna, just 8.5-inches long, that's tuned for both civil and military airbands.

Used at home with my Uniden 9000XL the "Air-Gainer" pulled in aviation signals nearly as well as my external groundplane. One note, however: this is not a broadband antenna. Even strong public safety frequencies in the 155.00-MHz range can be attenuated almost completely. Use this antenna only if you want to maximize your airband reception.

Experienced scanner users may be a bit frustrated by the JD-100 as it's very susceptible to intermod in high signal strength areas, and there's no channel lock-out feature. Problem frequencies must be deleted from the memory completely. Still, for the price, it's a nice radio, and the audio is the best I've heard on any handheld scanner, as might be expected for a radio meant to be used in the high noise environment of an air show.

Tactical Communications

Some of the most exciting military monitoring is the air-to-air and tactical communications found in the 138.00 to 144.00-MHz range of the land mobile band. I listen regularly to F-16 "Fighting Falcons" from the Homestead Air Reserve Base as they practice bombing and strafing at the Avon Park range south of Orlando. I also hear them as they practice aerial combat maneuvers high over the Gulf of Mexico. You'll need to be able to set your scanner to AM mode to receive the aircraft, so when buying a radio for military monitoring, make sure it has manually adjustable receive modes.

While it’s not a rule, military cargo and transport aircraft use VHF frequencies much of the time, just like their civilian counterparts. Fighters and bombers, on the other hand, tend to use military UHF frequencies in the 225.00 to 400.00-MHz range when talking to air traffic controllers. There are military operations areas and practice ranges scattered all over the country. Couple that with the fact that radio signals from aircraft at high altitudes can often be heard for more than 100 miles, and you'll see that you don't have to live near a base to tune in the action. There's an old saying that goes along the lines of "flying is hours and hours of sheer boredom, punctuated by moments of stark terror." Well, military monitoring is much the same, particularly for the newbie. Sort of "monitoring is hours and hours of stone silence, punctuated by moments of sheer elation," when you finally log your first B-2 stealth bomber or SR-71 spy plane.

Military Aircraft Callsigns

One of the most challenging — and frustrating — aspects of military aviation monitoring is figuring out exactly to whom you're listening. Military aircraft use callsigns, not registration numbers or flight numbers as do civilian aircraft. Generally, callsigns are either static, mission-oriented, or tactical. Static callsigns use aircraft belonging to a specific unit, say a squadron or wing. For example, when training here in Central Florida, the F-16s belonging to the 482nd Fighter Wing at the Homestead Air Reserve Base use the callsigns MAKO and SHARK. When I hear these callsigns on the air I know who's talking.

Common static callsigns include REACH (Air Mobility Command freighters and tankers), JOSA (Joint Operational Support Aircraft, VIP transports), EVAC (medical evacuation flight), SAM (Special Air Mission, very high-level VIP transport), SENTRY (Airborne Warning And Control System, AWACS), and SPIRIT (B-2 "stealth" bomber).

Mission-specific and tactical callsigns can change every day, or even every few hours. The challenge is to catch the pilot identifying the aircraft on the radio, perhaps in conversation with air traffic controllers, or more likely with a command post, base dispatcher or weather briefer.

An excellent callsign resource is the 1997 Military Aircraft Callsign Guide, published by Dean Charnley, 113 Kelsey Crescent, Cherry Hinton, Cambridge, CB1 4XX. The guide can be ordered at the above address, for about $15 (depending upon the currency exchange rate).

**Accessories**

Buy a tape recorder. Like most aviation comms, military transmissions are generally very short and cryptic. Until your ear gets used to the sound of a pilot speaking into an oxygen mask while pulling nine "Gs," a tape recorder will let you go back and review what you heard and pick out information, like frequency changes and callsigns, that you may have missed. A Y-connector will let you plug a VOX (voice-operated) recorder and an external speaker into the earphone jack on your scanner so you can listen and record at the same time.

There's no substitute for a good antenna mounted high up on a tower. The Diamond discone and Grove Scannerbeam work well. But even if you live in a ground-floor apartment like I do, you're not out of luck. I cut the elements on an inexpensive groundplane to match the center of the 225 to 400-MHz range. A second groundplane covers the 30 to 50-MHz and 138 to 144-MHz ranges. Both are mounted on the same five-foot-tall mast which sits on my patio.

My HF (shortwave) antenna is a 50-foot length of clothesline wire that snakes around the patio roof. Ideal! Of course not. Would I like to have a discone 100 feet up and a nice dipole stretched across the yard? Darn right! But the point is, even with my far-from-ideal situation, I still tune into some pretty exciting listening, and with a little effort and ingenuity, so can you.

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WTAG Picked Its Own Frequency!

These Early Newspaper-Owned Stations Were Really Shifty!

By Alice Brannigan

On April 29, 1924, the Radio Division of the Department of Commerce awarded a new broadcasting license to the C.T. Sherer Co., Worcester, Massachusetts. This was for WDBH, a 100-watt station to be operated on 268 meters (that is, 1120 kHz). WDBH went on the air two days later from the C.T. Sherer Co. department store at 50-52 Front Street, corner of Commercial Street, in downtown Worcester. The Western Electric transmitter had been installed atop the building.

By the beginning of the following year, a new Western Electric 1-B 500-watt transmitter had been installed, although WDBH remained licensed for 100 watts. Also, at that time, WDBH became one of the several scattered East Coast stations to link up with New York’s WEAF for occasional rebroadcasts in an early networking experiment.

In March of 1925, WDBH changed its call letters to WCTS, and within weeks the station began mailing repeated complaints to Washington about its 1120-kHz frequency assignment being unsuitable, and asking for a new assignment. Meanwhile, as of April, the power was upped to 500 watts.

In September, the station was still operating on 1120 kHz and had ended its pleadings for assignment to a new frequency. That was about the same time WCTS was sold to the Worcester Telegram newspaper. A month later, the newspaper acquired some broadcasting equipment from the former WTAG, a deleted station in Providence, Rhode Island. In fact, WCTS even changed its call letters to WTAG, which stood for Worcester Telegram and Gazette, although there was no actual relation to the former Providence station.

As of the fall of 1926, WTAG’s new owners were again asking Washington for another frequency assignment. At some point around that time, the station simply elected to shift to 695 kHz, even though it was still licensed for 1120 kHz. During that era of no radio regulation, it was common for stations to change frequency or power levels at will, hoping to stake a claim on more favorable facilities once new legislation became enacted. In November of 1926, rebellious WTAG became a charter member of the NBC Network, being one of the first 25 NBC Red Network affiliates. The station’s studios were relocated to the newspaper offices at 18 Franklin Street, though the transmitter and antenna masts remained back on Front Street.

In 1927, the newly-empowered FRC assigned WTAG to 580 kHz and the power was cut back from 500 to 250 watts. The station became known as The Voice from the Heart of the Commonwealth. In early 1931, a new RCA 1-B transmitter was installed at Front Street, with the old Western Electric 1-B relocated to Franklin Street where it was to serve as a stand-by unit. The antenna on the roof above the penthouse at Front Street was a four-wire L-type. This stand-by antenna remained in place into the 1980s.

As of April, 1932, the power was brought back up to 500 watts. During the summer of 1934, the main transmitting location was changed to 20 Franklin Street. One of the antenna towers was installed on top of the four-story Telegram Building there, and the other was placed on the nearby Bancroft Hotel.

Authority to move the transmitter to Shrewsbury St., Holden, Massachusetts, and to increase power to 1 kW was granted in May of 1936. One 254-foot-high
"Tex" Perham, shown at the transmitter he designed and built for WJAM for the Cedar Rapids Gazette. The photo was taken the first day WJAM went on the air in 1922. This station later became WMT.

Blaw-Knox vertical radiator and two 354-foot-tall towers comprised the full-time directional antenna system. These were self-supporting steel towers. New studios on Franklin Street were opened in May of 1937.

WTAG was known as The Voice from the Heart of New England as the end of the 1930s approached. In 1939, the station was granted permission to increase its daytime power to 5 kW (1 kW at night). In 1941, authority to run 5 kW at night was granted, and, by the end of that year, WTAG was a full-time 5-kW station. Two Blaw-Knox towers were added to provide for different day and night directional patterns.

Thanks to Broadcast Pro-File for granting us permission to excerpt material from their lengthy research report on WTAG. B-PF is a professional service that can, for a reasonable fee, furnish highly detailed histories about all American AM and FM stations, past and present. A complete catalog is available for $1. Their address is Broadcast Pro-File, 28243 Royal Road, Castaic, CA 91384-3028.

KWCR evolved from WKAA, another early Cedar Rapids station financed by a newspaper. It was eventually sold to the owners of the Des Moines Register and Tribune moved there to become KRNT. (Collection of the late Joseph Hueter, in the Pop'Comm archives.)

THE MONITORING MAGAZINE

September 1998 / POPULAR COMMUNICATIONS / 15
KSO was a station in Clarinda (when this 1932 QSL was issued) that was purchased by the owners of the Des Moines Register and Tribune and moved to that city in early 1933. This QSL states that KSO was running 500 watts, which was double the power for which KSO was licensed at the time! (Courtesy Tom Buckley, Washington, D.C.)

Minnesota to near the Missouri border. WJAM helped build its local audience by awarding $30 and $40 radios as prizes to citizens who signed up various numbers of new Gazette subscribers.

WJAM’s schedule, like many early stations, didn’t include a lot of daily air time. Still, it made good use of what time it had. In 1922, it scooped the Chicago stations by 10 minutes with World Series results. Once, the police chief got on the air to warn local residents of a swindler. The station was proud to announce the name of the winner (from 6,000 entrants) of a contest to devise a slogan for Cedar Rapids.

As of 1927, WJAM had moved to 780 kHz with 100 watts, and the following year it had increased its power to 250 watts after shifting to 1250 kHz. But 1928 saw even bigger changes for the station, when it was sold to the Waterloo Morning Tribune. WJAM was moved to Waterloo and its call letters changed to WMT (to represent the new owner’s initials). Once in Waterloo, the station was assigned to 600 kHz and authorized to double its power to 500 watts (250 watts at night). It became a CBS affiliate and, as of September, 1934, was running 1 kW.

By 1926, WKAA, Harry Paar’s Cedar Rapids station, had changed its call letters to KWCR and was running 500 watts on 1080 kHz. With WMT moved to Waterloo, KWCR had become Cedar Rapid’s only radio station. A year later though, KWCR had to shift to 780 kHz and drop to 250 watts, then it was told to shift to 1250 kHz. By 1929, continuing federally imposed reallocations and regulations had ultimately reduced KWCR to a 100-watt so-called “one lung” station on 1310 kHz splitting time on that frequency with small stations in Boone and Fort Dodge, Iowa. In late 1931, NBC Blue Network affiliate KWCR was sold to John and Mike Cowles of the Des Moines Register and Tribune, who were getting into radio. In February of 1933, they would buy 250-watt (100-watt nights) KSO, an NBC Blue affiliate, change its location from Clarinda to Des Moines, and shift it from 1380 kHz to 1370 kHz.

In 1932, the Cowles brothers quickly...
moved their new Cedar Rapids acquisition, KWCR, onto the 7th floor of the attractive Hotel Montrose, replacing Harry Paar's old homebrewed transmitter with a new one. They brought in two broadcasting professionals, brothers Sumner and William B. Quarton, to run KWCR. It was a first-class operation. By May of 1932, Sumner Quarton had gotten KWCR shifted to 1420 kHz where it didn't have to share time, and, less than a year later, approval to shift to 1430 kHz where KWCR could run 250 watts during the day (100 watts at night). By September of 1934, Quarton had been able to get KWCR a 500-watt daytime (250-watt night) license. But, after all was said and done, KWCR remained no more than a 500-watt daytime voice trying to serve a big city.

Waterloo was smaller than Cedar Rapids, yet it had WMT, a station with an enviable frequency and a 1-kW full-time license. So, the Cowles purchased WMT, and, in March of 1935, shifted its location from Waterloo back to its original home in Cedar Rapids to replace KWCR as the local NBC Blue outlet, turning WMT into the most powerful NBC Blue affiliate in Iowa. At the same time, Cowles moved KWCR to Des Moines, where they renamed it KRNT, to still operate with 500 watts (250 watts at night) on 1430 kHz. After WMT left Waterloo in 1935, that city didn't get another station all its own until 50-kW KXEL opened in 1942 with an NBC Blue affiliation. In 1943, the FCC told NBC to divest itself of one of its two networks. NBC then sold its Blue Network and the former Blue Network affiliates joined the newly created ABC Network. WMT continued to maintain its studios in Waterloo (at the Russell Langdon Hotel) until 1947.

When KRNT arrived in Des Moines, it was still officially an NBC Blue affiliate, but since Cowles' KSO was already the established local NBC Blue outlet, Cowles changed KRNT's affiliation to CBS. CBS' primary competition in Des Moines was WHO, a 50-kW clear channel giant, and the only Iowa station carrying the NBC's premium Red Network's programs. By early 1935, KSO, was running 1 kW (500 watts at night) on 1320 kHz. In June of 1935, Cowles had swapped their two Des Moines stations' frequencies. Now, KRNT, with its preferable CBS programming, could run at 1 kW on 1320 kHz. KSO, with its less desirable NBC Blue Network programming, was relegated to 1430 kHz, where it was stuck with only 500 watts.

Think about the sequence of events surrounding WMT, KWCR, KSO, and KRNT and marvel at the amount of foresight, planning, logistics, resources, and paperwork that went into it all.

In 1944, WMT was purchased by American Broadcasting Stations and its power was raised to 5 kW. As of 1946, WMT had its transmitter in Marion, with studios in Cedar Rapids' Paramount Building. WMT continues on the air, under new ownership, with 5 kW on 600 kHz from 600 Old Marion Road, N.E.

As for the Cedar Rapids Gazette, in 1947 the newspaper got back into broadcasting when it opened station KCRG on 1600 kHz. This popular 5-kW station now competes for listeners with Cedar Rapids' three AM other stations, including WMT, the station the Gazette itself created 76 years ago!

We want to hear from you. Please pass along your old time radio QSLs (good copies will do), station photos, picture postcards, newspaper clippings, station directories, memories, etc. Our E-mail address is <Radioville@juno.com>, or you can use regular mail, sent to Popular Communications, 25 Newbridge Road, Hicksville, NY 11801.
Radio Resources

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Enhanced Signal Propagation

OK class, it’s time for a pop quiz. Put away all of your reference materials and get set for a series of questions with multiple-choice answers. We’re going to see who knows why late summer VHF and UHF radio signals travel over greater distances than they normally do in the winter and spring.

Everybody ready? Here comes your first question:

Q. What summertime and early fall seasonal factors may enhance the distance from which you can pick up very-high-frequency and ultra-high-frequency radio waves?
   a. Sporadic-E skip
   b. Increase in solar cycle activity
   c. Atmospheric anomalies
   d. All of the above

Sporadic-E skywave “short skip” will regularly prevail from June through September. While the months of August and September are on the down side of the sporadic-E June 23 peak, August and September still receive their share of VHF skywave reception.

E-skip is characterized by exceptionally strong FM signals that break squelch and provide full quieting reception for about 10 seconds. They then take a quick nosedive into the noise for about three seconds, and then come back in again, full signal strength and full quieting, for another 10 to 20 seconds . . . and then take another nosedive. This goes on for hours. E-skip is caused by heavily ionized patches within the E-region of our ionosphere reflecting VHF low-band and high-band signals over a path of approximately 800 to 1,000 miles. Occasionally, double E-skip may occur, yielding 2,000-mile reception results.

E-skip may sometimes occur as high as 160 MHz, but reception on VHF high-band may only last for five or 10 minutes. Reception down on low-band should last for several hours, and may extend up to 8 p.m. local time. After 8 p.m., there is generally no reception until the next morning. If you’re a scanner listener, public safety calls from 30 to 50 MHz should roll in every afternoon in July and August, with morning and evening two-hour events in September.

We ARE increasing up to the peak of solar cycle 23. The peak should occur around the millennium. The solar cycle has the most influence on the F-layer of the ionosphere, which, this summer and fall, may provide us with low-band 30 MHz to 50 MHz reception up to 3,000 miles away. These signals generally last 20 to 30 seconds before they take their quick nosedive. The total duration of the “opening” may only last for five or 10 minutes. Unlike E-layer skip, F-layer skip is more influenced by the solar cycle than by ionospheric E-openings created by wind shears and ultraviolet radiation within the E-region.

Atmospheric conditions may also trigger longer-than-usual conditions on all VHF and UHF frequencies. So let’s get started with our next question and see how much you know about what’s happening in the atmosphere. All of the above answers were correct.

Q. What weather condition triggers long-range VHF/UHF signal reception on both scanner frequencies as well as ham radio frequencies?
   a. Sunspots
   b. The 11-year solar cycle
   c. A high pressure system
   d. Surface winds

Our local weather is not necessarily influenced by the solar cycle or the number of sunspots—at least, not that we can prove at this time.

Surface winds won’t push a VHF signal any further than it naturally goes: 4/3 over the horizon. Four-thirds is a natural VHF horizon range from normal weather refraction phenomena.

Your answer should have been a high-pressure cell system. When high pressure forms over a region, the upper air is heavier, so it sinks down. When it squashes the air below it, this lower layer of air heats up, stratifies, and caps a region with a dome of air that locks in smog, haze, and smoke. August and September are good months for stable high-pressure sys-
Tropo inversion hanging over the Great Plains.

items to sit over the United States triggering longer-than-usual VHF/UHF transmission and reception.

Q. What is the atmospheric phenomena that creates a radio duct?
   a. Surface cohesion
   b. High cirrus clouds
   c. Ionospheric propagation
   d. Temperature inversion

What happens when you squish air in a tire pump? It gets warm, doesn’t it? Subsiding air gets compressed when it meets the surface of the Earth, and this leads to a temperature inversion. When the temperature inversion becomes great enough, it will create a radio duct that may cause VHF and UHF radio waves to travel hundreds, and sometimes thousands, of miles along that super-heated stratified air boundary layer.

Q. What temperature change can trigger a VHF/UHF duct capable of supporting long-range, two-way communications and reception?
   a. 10 degrees
   b. 1 degree
   c. 30 degrees
   d. 2 degrees

Studies have shown that signals from 50 to 10,000 MHz may be refracted along the surface of the Earth hundreds and thousands of miles from temperatures within a tropospheric duct that are 10 degrees higher than air below and air above. Experts disagree whether the VHF signal is trapped within this temperature inversion, or if it rides along the top or the bottom of the inversion. However, all experts agree that 10 degrees is the magic number that can usually trigger super-refractive conditions to keep the VHF signal within the stratified warm air boundary layer.

Q. What emission modes may be supported by a tropospheric duct on VHF and UHF frequencies?
   a. Any and all
   b. CW and SSB only
   c. Narrow-band direct printing
   d. Pulse width only

Once the tropospheric duct forms, any type of emission on VHF and UHF may be supported within the duct. This includes television signals at 6 MHz bandwidth. In fact, monitoring your local VHF TV channels 2 through 6 should show you signs of a tropospheric duct, especially on those unused channels in between your local channels. When the duct is well formed, 5-kHz FM signals will sound crystal clear, and so will any other modes, too.

Q. How can you determine that the 800-mile-away police department on 154.805 MHz is coming in from ducting rather than sporadic-E skip?
   a. The signals go up and down about every 10 seconds
   b. The signals remain steady for many hours and sometimes days
   c. The signal regularly “rolls” from phase distortion
   d. Every 10 seconds the signal takes a quick fade and return

Atmospheric tropospheric ducting will remain in place in the presence of a high-pressure cell sitting over you and the distant receiving and transmitting station. If there is little wind to disturb the cell, the temperature inversion remains stratified for hours on end, yielding almost no change in signal quality and signal reception. However, as the duct begins to “blow out,” the signal will gradually get weaker and weaker until it finally disappears.

Q. What antenna polarization is best for tropo ducting reception on public safety frequencies?
   a. Vertical
   b. Horizontal
   c. Circular
   d. Polarization is not important

If you were receiving an ionospheric
A directional VHF antenna will improve your tropo results on 2-meters.

Q. What is a good frequency to tune in to discover distant tropo stations coming in from a duct?
   a. WWV time signals
   b. National weather channels
   c. Local TV signals
   d. Local FM signals

To discover a tropo duct, you need to tune OFF of local signals and listen in between them to discover weaker signals. In fact, during a good tropo duct, if you listen long enough, what you thought was a strong local station might actually be a very strong distant station! Always know what channels are active in your area, and stay away from them for tropo reception.

A great way to discover tropo ducting is to tune in unused local TV channels, or unused VHF FM weather channels. If 162.550 MHz is active in your area, try 162.400 MHz or 162.475 MHz. If you have TV channel 2 and 5 in your area, try TV channels 3 and 4 using an outside TV antenna.

Q. Tropo ducting only occurs during summer months.
   a. True
   b. False

Tropo ducting usually occurs during summertime periods where stable high-pressure systems form, but it can occur anytime. This includes the Pacific High allowing California and Hawaii stations to enjoy FM stereo reception both ways, the Bermuda High for those of you down in Florida wanting to pick up foreign TV and VHF/UHF broadcasts, and the Atlantic High that ultimately might give us a shot on tropo ducting across from the U.S. to Europe. And, if you live in the middle of our country, expect good tropo conditions anytime you can spot a stable high-pressure system and the air outside is hot and smoggy.

Q. What outside weather condition may indicate good tropo conditions?
   a. High clouds and breezy
   b. Hot and windy
   c. Hot, muggy, and smoggy
   d. Cold, undisturbed air

When do you see a mirage out in the desert? It's usually on a hot, windless day. The same thing is true for tropo ducting, which usually forms when the local weather gets stagnant and there is nary a breath of wind around. When this condition extends over several hundred miles, it will surely trigger a VHF/UHF opening.

Q. Tropo ducting decreases with an increase in frequency.
   a. True
   b. False
   c. Undecided

Amateur radio operators tune into propagation beacons down at the bottom of their 50-, 144-, 432-, and 1296-MHz bands. There are also X-band beacons at 10,000 MHz. During periods of tropo ducting, I have observed simultaneous beacon reception on four different ham bands, and I have NEVER experienced higher bands going up in signal strength where the lower bands have decreased. Rather, I find that they all proportionately go up and down together in signal strength as the tropospheric duct undulates over a several thousand or several hundred mile path.

But other hams may disagree, indicating they can sometimes hear a 432-MHz beacon 800 miles away, and not hear the 2-meter beacon at all. Maybe. But I bet their 2-meter antenna is broken. So I would suggest starting at the bottom, and working up!

Q. On what group of frequencies is tropo ducting most pronounced?
   a. 30 to 50 MHz
   b. 140 to 170 MHz
   c. 430 to 470 MHz
   d. 800 to 1000 MHz

As we go lower in frequency, wavelength becomes longer. The longer wavelengths require a larger tropospheric duct aperture. Most temperature inversions are confined to within a 100- to 200-foot band of stratified air. Somewhere within this band of warmer air is an area that captures the VHF or UHF wave front and carries it along the entire route of the duct.

The most popular frequencies for enjoying rock-solid tropo ducting results are in the VHF high band, from about 100 MHz to 170 MHz. While strong FM music stations are a good target for reception, try public safety frequencies in the 154- to 155-MHz region, too. You may be surprised by how far they can travel during a high-pressure cell.

You have about 30 days left to enjoy the effects of predictable summertime and early fall tropospheric ducting. While tropo ducting can form whenever there's a high-pressure system, that 10-degree temperature inversion usually occurs only in late summer. But there are surprises when it comes to tropo ducting, and if you have a good outside scanner antenna, you, too, can capture signals from literally hundreds of miles further than you might normally hear.

Has anybody out there heard something from further than 100 miles away via tropo ducting? If so, drop me a QSL card or postcard here at Pop'Comm, and I'll publish some of the best catches that have ridden along that stable high-pressure system for more than a couple hundred of miles!
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Some Days It Pays To Get Out Of Bed!

Summer is almost over. I've done my share of running to tag sales, yard sales, church bazaars — anyplace I could spend the better part of a Saturday morning enjoying the fresh air and uncovering vintage treasures. Alas, pickings have been slim. Old radios just don't seem to be popping up as often I as remember from just a few years back. Or, perhaps I am just becoming pickier about what I take home these days. And, I do really have enough radios in my collection at this point.

My wife also likes tag sales, but usually refuses to take me along since I am most likely to buy "junky radios." Of course, all too often I hear "Gee, I saw one of those pointy-topped radios you like earlier today," upon her return late in the afternoon. "What, Where, and When?" usually brings "I don't know, I forgot," or "Real early, it's gone now" for responses. I spend weeks digging up nothing; she ferrets out treasures with unfailing regularity. Life isn't fair. Last Saturday the ritual repeated itself. "I saw one of those pointy-topped radios" (read: like the ones you have too many of already). "Oh. Where was it?" I asked, feigning indifference. "About one mile from here, sitting on a table by the road." "When did you see it?" "Real early this morning" (read: I'm only telling you since its probably long gone). Then she adds, "I'll drive you there" (read: I like to see grown men cry). Sure enough, five minutes later we drive to a home in a fairly new development, and there it sits on a table in the driveway. The folks are packing up the leftovers since it's nearly 5 p.m.

I have to be cool and look at other junk. I feign interest in a used water ski. (I always thought they traveled in pairs?) Then, looking at the old radio, I say: "My, what an old clunker! I need a radio for the garage, does it play?" The owner looks at me like I am from outer space, and gives me a lecture on the value of antique radios. After some haggling, I part with a $50 and haul the radio to the car as my wife grumbles. Another Philco 89 cathedral has joined the fold. It's a slightly different model than the 89 we've been featuring over the past few months. I'll do some photos of this radio for upcoming issues, and show some of the differences between the two sets. It's in pretty nice shape, only needing a little veneer work and a new grille cloth — restoration topics I'll feature in upcoming columns.

This month's column is going to take a break from the Philco topics I had originally planned to cover, because I don't like to let reader contributions sit for too long. I hope you find the following interesting.

A Gift To Remember

I imagine most of you folks who follow this column have some love for vintage radios and the nostalgia associated with radios that glow in the dark. Last year, I received a very nice letter from Dr. Edward Engelken along with several nice photos he had taken of his Hallicrafters S-40A receiver. Ed had this to say: "Enclosed are the pictures and description of the Hallicrafters S-40A receiver. I have had a life-long interest in radio and have been building sets since age 11. I recently retired after 35 years of biomedical research, and plan to expand my radio-related activities. My main collecting interests are communication receivers and the big multiband radios from the mid-1930s. I have a vintage 'listening post' with Hallicrafters, Collins, Hammerlund, and National receivers, all assembled on an eight-foot-long desk. Perhaps I can send you a picture of my listening post sometime in the future."

Yes, Ed, Popular Communications would love a photo of your listening post! Please send one in!

Ed also mentioned that the radio was to be a Christmas gift to his grandsons. This was something I had to run in my column! He added in a subsequent letter: "Enclosed are the photos of the Hallicrafters S-40A with my grandsons. Blaine (left, age 12) is just learning the art of SWLing. He is being watched closely by his brother Mark, age nine. Hopefully, the second 'life' of this Hallicrafters radio will inspire a career in electronics, or at least a rewarding hobby, for one of my grandsons."

Many years from now these young lads will fondly remember their Granddad's Christmas gift, and hopefully that old
Hallicrafters will still be plugging along thanks to Ed’s hard work! It’s important to get youngsters involved in our hobbies and interests. Blaine and Mark will be receiving a complementary one-year subscription to Pop’Comm.

The Restoration Of The Hallicrafters S-40A

We are taking some leeway with the use of the term “restoration” in this month’s column. However, as Ed pointed out, the radio is very common. Sets in good condition often sell for $40 at radio meets. Basket case sets are often cannibalized for parts, or discarded. So, for the purists, allow us a little slack on this particular radio! Sure, it could have been put back to “original” condition to sit unused on some collector’s shelf. I can’t imagine a better use for an old radio than what Ed has done, however. There are quite a few photos, so Ed’s restoration will continue into our next column.

Ed continues with his story: “The radio was given to me by a friend. It was in sad shape when he got it as a gift, and he never
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CIRCLE 75 ON READER SERVICE CARD

Not happy with the sloppy paint job, someone added some varnish splashes over the front panel.

put it into operation. It had been in his attic for 25 years. The set was rusty, dusty, and quite a mess. One photo shows the radio as it was given to me. The dirty warped object in the front of the main tuning dial is the dial cover. It had shrunk and fallen out! The good news was that the green tuning dials were still in great shape. The cabinet had been painted with about five coats of gray enamel. Note the heavy rust on the top edge of the front panel. [In the head-on shot of the receiver, the brown stuff on the front panel was varnish. What a mess!]

"The chassis was covered with layers of dust and grime. The 6SA7 converter tube had been replaced with a 6BE6. [Note: This involved replacing the octal socket with a miniature seven-pin socket.] The original antenna and ground strip had been replaced with a small box with a BNC connector. There were a number of other wiring and component changes under the chassis as well.

Rusty tubes, dirt, and grime — certainly a sad condition for a once-proud receiver like the S-40A.
With some loving care and elbow grease, the chassis shows its original luster.

“...I cleaned up the chassis with paint thinner (mineral spirits) using a stiff brush and paper towels. [Note: This probably is a very effective method, but remember that paint thinner is flammable. This sort of cleaning is best done outdoors, away from flames. Wear latex gloves when handling strong chemicals.]”

“...With the power cord replaced, and the tubes removed, I slowly applied power using a Variac. [Note: Variac is a trade name for a variable auto transformer, which permits applying the voltage to the set in small increases.] Nothing smoked. Measurements showed that a lot of AC was leaking to the chassis. The leakage persisted after removing the line bypass capacitors. I finally decided the safest option was to replace the power transformer. The set had seen some water in its distant past. All the metal tubes were rusted, some were rusted to the sockets. Most of the trimmer capacitors were frozen with rust. A liberal soaking with tuner cleaner and a not-so-gentle twisting with a screwdriver loosened all but two of them. Those had to be replaced. A lot of the original caps had been replaced, and a lot of wiring and component changes had been made. The original owner was a ham, need I say more?”

“I’d offer a few comments on what Ed mentioned earlier. I’ve had quite a few heated discussions on the Internet regarding replacing wax capacitors. Some folks feel they only should be changed when proven defective. I personally would never trust a 40-year-old wax capacitor placed across the AC line, or one whose failure would place deadly voltages on a chassis. Always replace line bypass capacitors with properly UL rated components. Many early transformers have developed AC leakage currents to the transformer shell. When you start to see a few mA of leakage current, you have a problem. Often running the transformer for several days will drive out the moisture, and the leakage currents will subside to safe levels. Such a transformer must be used frequently to keep moisture out. It’s always best to use a three-wire cord on those sets to prevent any possibility of shock hazards. Most of the capacitors I see in this set are molded plastic. These are wax capacitors in a plastic shell. It would seem reasonable that the plastic casing would fair far better in keeping out moisture. Not so. This style of capacitor has an unusually high failure rate.

We’ll continue the Hallicrafters S-40A restoration next month. See you then and please send in your stories and photos!
**Scanning The Globe**

**MONITORING THE 30 TO 900-MHz "ACTION" BANDS**

*BY KEN REISS<br>armadillo1@aol.com*

**Scanning Vacation!**

Well, it's that season again — lots of folks pile into the family car and zoom off for the annual family vacation or maybe just for the weekend. (Hmmmm... that reminds me, I'm gonna have to speak with Harold about when I get to do that!) If you're among them, don't leave your scanner behind, because there's plenty of good listening out there even though you may not be intimately familiar with the territory or the frequencies in use.

### Getting Equipped

We'll deal with putting in a permanent mobile installation at a later date, but right now I'm assuming that you want to do something temporary to take on your trip. There are about as many variations on mobile equipment as there are mobile scanning enthusiasts. Simple installations, like using a handheld in the car, may turn out to be the perfect traveling arrangement for you. Let's face it, it's supposed to be a vacation, and, hopefully, you'll have other things to focus on besides the radio most of the time. Still, having a scanner in the car can be helpful for those long drive times and in places where you might encounter traffic. Having a handheld can also prove convenient for times when you'd like to scan in the hotel room or around the campfire at night.

You can also install a small base unit or mobile scanner in your car on a temporary basis. A simple cigarette lighter plug is about all you need for power (make sure the adapter you get is compatible both with the voltage and current of your radio) and, of course, watch the polarity. Most car cigarette lighters use a positive center (negative ground) and most scanners are wired that way too, but once in a while you come across one that doesn't work as expected. This is a good way to ruin a radio if you're not careful.

As far as antennas go, the sky's pretty much the limit. The metal body of the car makes a great ground plane, so any 1/4 wave whip, or gain antenna on a magnetic mount should provide reception for several miles. You can also compromise on rubber duck antennas for handhelds, and if necessary, use suction cups mounted on the inside of the glass. They don't work as well as an external antenna, but something is better than nothing. If you're going to use an "internal" antenna, I've found that longer tends to be better. Those 1/4 wave telescoping antennas work quite well, and there are a number of other models that offer some gain on the higher frequencies. One that's long enough to stick up above the dashboard or window when the radio is in place can improve reception considerably.

You can also use the same method car manufacturers use to keep from having to "spoil the lines" of the car with the likes of an antenna: the old wire on the windshield trick. Solder one end of the wire to an appropriate connector for your radio, then run the other from where the radio will be positioned and around the edges of the front or back window. You can build a dipole this way by hooking a second wire to the other side of the connector. Usually, the single wire proves effective. For maximum effectiveness, try to make it an even multiple of a 1/4 wave for the frequencies you're interested in. Remember, $2832 / \text{Frequency in MHz} = 1/4$ wavelength in inches. As long as you don't pick up too much engine or computer noise from your car's electronics, this antenna will work fine.

### What To Listen To

Here's where things tend to get a bit complicated for vacation scanning. You're likely to be driving through many areas that you're unfamiliar with and don't have detailed frequency information for. Or perhaps you're flying into an area and want to concentrate on that city's system. While it's not absolutely necessary, programming your radio in advance is very helpful here and will let you make the most of the time you have.

Excellent resources like *Monitor America* and *Police Call* (available at RadioShack) can help considerably. The guides will probably give you way more information than you can deal with effectively anyway. Concentrate on the big ones: state highway patrols or police, major metro area police dispatch, fire alarm frequencies, etc. Pick out the services that you're most interested in, and punch those into your scanner. I try to keep each geographic area in its own bank. It can also be fun to plug in the itinerant frequencies if you have room. Also, keep your schedule in mind. If you're likely to be traveling at times...
when the noise from the radio would disturb others, you’re not likely to listen at those times. If you’re in a resort or other area with lots of other things to do, again, you won’t be listening as much. Think about when during the trip you might be able to listen without getting into trouble with family members, or otherwise taking away from the vacation. Remember, you’re supposed to be having fun.

Here’s one place where a computer-programmable radio comes in extremely handy. All you have to do is hook up the computer, back up the current data (if your radio has that option), and then download the new stuff. If you make the same trips on a regular basis, this is worth its weight in gold. I’ve used my ham handheld (Yaesu FT-50) for this purpose for some time, and more recently have switched to using the PRO-64 from RadioShack. It’s very quick and easy to connect the computer and download a new frequency file. Those 400 channels can be programmed in just a few minutes; most of that time involves getting the thing connected and starting the download software.

Finally, I’d dedicate at least one bank on the scanner, if not more, to the destination. I’m assuming you’ll be spending a big part of your trip in one spot, and there you’ll have a chance to learn a little about local frequency usage, etc. You’ll also have some quiet time, so if you have to, reprogram the radio a bit is not out of the question. You might want to do this as you learn more about what’s used in the area, or because you’ve just filled up the available banks with frequencies for use enroute. Don’t forget to reprogram it for the trip home before it’s too late!

It’s worth leaving all of your banks on for a little while when you get to your destination. If you’re in or near any relatively large metropolitan area, lots of frequencies are likely in use. In fact, if you’re in a major metro area, there are probably very few unused frequencies. You might find something you hadn’t planned on hearing on one of those frequencies you used somewhere else along the way. I’ve found some very interesting listening quite by accident.

You can also search for frequencies using the scanner’s search modes if you’re so inclined. It’s helpful to have search ranges pre-programmed into the scanner if you have that option, or take along a reference page or two regarding ranges where you can expect to find things. If nothing else, you’ll get a feel for how much two-way radio traffic is around you, just waiting to be captured.

Computer-Controlled Mobile Scanning

OK, you have to be pretty dedicated, and probably traveling alone to get away with this little trick, but I do know of a couple of people who actually run computer control systems in their cars while on vacation.

One person, we’ll call him John (because that’s his real name, and he’d probably appreciate that more than other things we could call him) hooks his PRO-2006 to vehicle power and then uses a laptop on an adapter sitting on the passenger seat. He says he really doesn’t use the computer to look at the display much (a good idea while driving), but rather to switch banks in and out of service as he travels from county to county and state to state. He also logs all of the activity along the route so he can see what frequencies were active and to fine tune the system after he’s done with the trip. He makes the same trip several times a year, so hopefully he’s getting better and better as time goes on.

Scanner Laws!

You’ll need to do a bit of research before your trip to make sure you’re not opening a can of worms by carrying your scanner in the car. Some states prohibit any kind of public safety receiver in the car, while others have virtually no restrictions. Some of the states that do have restrictions also have exemptions for amateur operators and others, so you’ll want to look into the situation before you find yourself on the wrong end of an innocent traffic stop. If in doubt, pack the scanner in the trunk and don’t use it until you get to your destination.

Your Input Needed

We welcome your input and questions regarding scanning. If you take a trip and find some cool new frequencies, send them in! E-mail suggestions and questions to <armadillo@aoi.com>, or via official federal mail to: Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126. Complaints should go to Harold Ort. Until next time, good listening!
Simple Linear Combiner/Splitter

Figure 1 shows the circuit for perhaps the simplest form of combiner/splitter. This device uses three resistors in a Y-network to provide three ports. They are shown here as a single input (IN) driving two outputs (OUT). They could just as easily be two inputs and one output, hence the name "combiner/splitter." In one mode, a single antenna can be used to drive two receivers; in the alternate mode, two antennas can be used to drive a single receiver. In the latter case, you will want to use the antennas on the same channel, of course. One application might be combining vertical and horizontal polarization antennas (but more of that later).

The resistors inside the shielded box are all carbon composition and metal film, and can be quarter-watt types. The values of the resistors are one-third the system impedance. Huh? What's that mean? All RF systems have a standard system impedance of one value or another. In the HF and VHF/UHF bands, the standard impedance is 50 ohms for most systems, and 75 ohms for television systems. Thus, the values of the resistors are:

75-Ohm Systems: \( R/3 = 25 \) ohms
50-Ohm Systems: \( R/3 = 16.67 \) ohms

Neither of these resistors is a standard value, although they can be purchased in precision 1 percent and 0.1 percent values. However, unless you buy about 50 of them, you won't be able to obtain them easily. Fortunately, the values are not terribly critical. In 75-ohm systems, you can get away with 27-ohm resistors, and in 50-ohm systems, with 15-ohm resistors.

If you want to be a little more precise, then grab an ohmmeter and select three values that are close to the ideal. Ten percent tolerance resistors (silver color code tolerance band) will come close if you look hard enough. If you find 20 percent tolerance (no color code tolerance band), then it's even more likely that a handful of resistors will yield three of them close to the correct value.

Alternatively, you can combine resistors. For example, you can put two, 51-ohm resistors in parallel and come up with a decent approximation of 25 ohms, even with 5 percent (gold color code tolerance band) resistors. Similarly three 51-ohm resistors in parallel is close...
If you hand-select 51-ohm resistors, you will find it easy to obtain a small collection of 50-ohm values. After all, the tolerance on 5 percent resistors is ±2.55 ohms, so the actual values will fall between 48.45 ohms and 53.55 ohms. Of course, there is a point where the attempt becomes ridiculous; for instance, a 51-ohm resistor (which is a standard value) is a close enough match (1.02:1 VSWR) for practical purposes and the resistors are easy to get.

Now for the downside. There’s a -1-dB loss (power), or -2-dB loss voltage. Of course, this is not a lot, all things considered, but let’s take a look at what it means in practical terms. Most receiver S-units are calibrated 6-dB/S-units. Each S-unit is a subjective measure of the smallest change in volume that most people can perceive, given a standard 10-dB signal-to-noise ratio for comfortable listening. In other words, for most "standard human ears," an S-unit (6-dB change) is about the smallest change that has practical significance. Doubling or halving the power causes a 3-dB change; quadrupling or quartering the power causes a 6-dB change. (In both cases, an increase is positive and a decrease is negative; i.e.-6 dB is a four-fold loss.) So where does a 1-dB loss (power) fit into the scheme? It is 5 dB less than a single S-unit and represents only a relatively small change.

Here is another perspective. When we are calculating system performances, the coaxial connectors are usually assigned about 0.5- to 1-dB loss, and at UHF the coaxial cable has a much higher loss than the combiner/splitter.

**Improving Performance**

Now that we’ve finished talking about losses, let’s take a look at an example of where this system can improve performance. Antenna polarization is a very important parameter. The polarization of a radio signal is the direction of the electrical field vector. A vertical antenna produces vertically polarized signals, while a horizontal antenna (such as a half wavelength dipole) produces horizontally polarized signals. Antennas being reciprocal, the same polarizations hold true for both receive and transmit. But if you cross-polarize (i.e., receive vertically polarized signals on a horizontally polarized antenna, or vice versa), then you will sustain a loss of -20 to -30 dB.

If everything is equal, then you can use a coaxial switch to select between a vertically polarized antenna and a horizontally polarized antenna. That works best if the incoming signal is truly either vertically or horizontally polarized. But in the HF region of the spectrum, skip signals tend to be mixed up as to polarization because of what happens to a signal as it passes through the ionosphere. It is likely to arrive at a polarization that contains a mixture of both. In that case, the combiner circuit of Figure 1 will make it easy to connect both vertical and horizontal antennas to the same receiver.

For mixed polarization situations, where you are likely to see vertical, hor-
horizontal, or odd angle polarization, the best solution is to be able to select either a vertical or horizontal antenna, or the combined version.

Another Combiner/Splitter

Figure 2 shows a somewhat better form of combiner/splitter circuit. This circuit can be used from 500 KHz to over 1000 MHz if the proper transformers and capacitor are provided. In this discussion, let’s concentrate on the high-frequency shortwave bands since they’re the easiest form of combiner/splitter for most readers to actually build.

The power splitting function is performed by coil L2. This coil is center-tapped, with the input signal applied to the tap and the outputs taken from the tapped, with the input signal applied to the tap and the outputs taken from the tapped. The transformer is tapped, but not at the center. The inset detail in Figure 2 shows the relationship of the tap to the winding: it is located at the one-third point on the winding. If the bottom of the coil is grounded, then the tap is at the two-thirds point (2N turns), and the input is at the top (N + 2N turns).

The capacitor typically has a value of 10 pF, although people with either a sweep generator or a CW RF signal generator — and a lot more patience than I’ve got — can optimize performance by replacing it with a 15-pF trimmer capacitor.

Figure 4 shows a somewhat better form of combiner/splitter circuit. This circuit can be used from 500 KHz to over 1000 MHz if the proper transformers and capacitor are provided. In this discussion, let’s concentrate on the high-frequency shortwave bands since they’re the easiest form of combiner/splitter for most readers to actually build.

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Figure 4 shows an alternate toroid core winding.

Adjust the trimmer for flattest response across the entire band.

It is important to use toroid core inductors for the combiner. The most useful core types are listed above, although for other applications other cores could also be used. Figure 3 shows one way the cores can be wound. This is the linear winding approach, using a single coil of wire. The turns are wound until the point where the tap occurs.

At that point, one of two approaches is taken. You could end the first half of the winding and cut the wire. Adjacent to the tap, start the second half of the winding. Scrape the insulation off the ends at the tap, and then twist the two ends together to form the tap. Or you can loop the wire (see detail inset to Figure 3), and then continue the winding. The loop then becomes the tap. Scrape the insulation off the wire and solder it. Although the tap here is a center tap (which means L2), it also serves for L1 if you offset the tap a bit to the left or right. An alternate method for L2 is shown in Figure 4. This is superior to the other form for L2, but it is a little more difficult. Either wind the two wires together side-by-side, or twist them together before winding. Make a loop at the center-tap, and scrape it for soldering.

Conclusion

Now also consider the many hams who use CB, either in their emergency communications, especially in areas typically hard-hit by hurricanes and tornadoes, when traveling our nation’s interstates, or at home on their trusty base station when they want to be treated to a different kind of radio fun.

Sure, there are more wise guys on CB than anywhere else, but I’ll take the few ounces of bad with the pounds of good. And, as a parting thought, consider this, please: Which radio service, for whatever reasons you want to believe, do you think will be around for our children’s children to enjoy, long after other services have changed faces dozens of times? 10-4.

Tuning-In (from page 4)

been on the planet for more than a few months. Who doesn’t know someone who has either experienced the CB craze of the 70s, or uses CB to stay in touch on long trips, or uses CB while hunting, fishing, biking, or camping? And who doesn’t compare CBers and truckers, who for the record, are one of the hardest working, least understood and appreciated groups of professionals around — despite the goings-on on Channel 19?

“CB, like our amateur service, has a lot going for it . . . .”

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A New Costa Rican Station Takes To The Airwaves, Plus VOA At Rhodes, Greece, To Be Eliminated . . .

Radio 88 Estereo is a new one from Costa Rica (actually, it made a very brief appearance about a year and a half ago) operating on 6071, although it's assigned 6075. The 1.5-kW station relays a local FM outlet on 88.5 in Perez Zeledon. Send reception reports to Aoartado 827-8000, Perez Zeledon, Costa Rica. The shortwave schedule runs from 1000 to 0500. You can expect to have to fight a bit for this one due to CFRX on 6070.

A new Brazilian religious station is Radio Nova Visao in Santa Maria, on 9530. Some of its programs are produced by Trans World Radio. The operating schedule hasn't been determined, but you can try for them in mid to late afternoon, and perhaps into the early evening hours. The programming is assumed to be in Portuguese.

The latest relay site for Adventist World Radio is the Radio Netherlands facility in Madagascar. AWR is using a 7.5-kW communications transmitter, now modified for broadcasting. Catching it will be a tough job, though. It operates on 3215 from 0300 to 0330, so it's blocked by WWCR. The other usage, at 1530 to 1600 is not propagationally possible for North American reception. Eventually — probably quite soon — the power will be increased to 25 kW.

The still-new Voz Cristiana in Chile continues test broadcasts — of varying length, sometimes for more brief periods — using slightly variable 21550. The tests include Christian contemporary music and IDs in both Spanish and English. The signal is often very good.

The Voice of America relay at Rhodes (Greece) is not long for this world. It will be eliminated as soon as the transmissions it now carries can be picked up by other VOA outlets. As of this writing, your only remaining shots at hearing this one are from 0400 to 0600 on 9865 in Arabic, 1700 to 2100 in Arabic, and 2100 to 2200 in English on 6040.

Remember that we always welcome your informational input. Log reports should be listed by country, double-spaced between items, and tagged with your last name and state abbreviation. Besides reports on what you're hearing, we always need info about station address changes or QSL policies. In addition, we especially need illustrative material, including photographs of shortwave stations or personalities, photos of you and your shack (or, if you're the shy type, of just your shack), spare/sample QSL cards, station brochures, schedules and any other informative or illustrative items you care to send. Thanks so much for your continued interest and support! It is very much appreciated!

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

ALBANIA — Radio Tirana, 6217.29 at 0130. Off nominal 6220 and parallel to 7160. (Alexander, PA)

ALGERIA — Radio Algiers Int'l, 11715 at 2000 to 2100 in EE with news, commentary, local music, ID. Covered by VOA at 2059. Parallel 16160 not bad. (Alexander, PA)

ARGENTINA — RAE, 11710 at 0246 in EE with music. (Alexander, PA)

AUSTRALIA — Radio Australia, 9500 at 1230 with ID, EE language class. 9580 at 1250 with talk show. (Northrup, MO) 9770 at 1602 with news from National Radio. (Miller, WA) 11880 at 0745 to 0800 close. Parallel 13605. (Alexander, PA)

AUSTRIA — Austria Radio Int'l, 9655 at 0233. (Miller, WA)

BRAZIL — Radio Nacional Amazonia, 11780 at 0154 in PP with Brazil pops. (Miller, WA) Radio Educacao Rural, Campo Grande, 0251 at 0251 in PP with pops. ID, PP announcements, commercials. Covered by Vatican at 0229. Parallel to 6090 and 11925. (Alexander, PA) 11925 in PP at 2324. (Miller, WA) Radio Anhanguera, Goiania, 11830 in PP at 2248. QRM from BBC. (Miller, WA)

BULGARIA — Radio Bulgaria, 11720 at 0136 in FF with folk music. (Miller, WA)

CANADA — Radio Canada Int'l, 9640 heard at 1225 in EE and 9650 at 1225 in FF. (Northrup, MO)

CHILE — Voz Cristiana, 21549.95 at 0000 to 0045. Excellent signal with contemporary Christian music in SS. SS IDs at 0001 and
As noted on this QSL from West Coast Radio Ireland, they are temporarily off shortwave.
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**Testing Frequencies**

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This Voice of Turkey QSL was received by C.C. Scott nine years ago.

You can’t get this one any longer: VTVN — Radio Vietnam confirmed a report from Dr. Adrian Peterson back in 1974.

Mayo, 6811.6 at 0210 to 0238 sign-off. SS talks, ID. Off with anthem. (Alexander, PA) 15190 in Tagalog at 1733. (Miller, WA) Far East Broadcasting Association, 9440 at 1825 in Farsi with IS and short newscast. (Miller, WA)

Monitored at 1545 in unidentified language.
(Miller, WA)

PORTUGAL — Radio Portugal Int’l, 11710 in PP at 0246. (Miller, WA)

RUSSIA — Voice of Russia, 9845 at 1130 in unidentified language.
(Northrup, MO) 11815 (Costa Rica) at 1641 and 15345 in AA at 1451. (Miller, WA)

SWEDEN — IBRA Radio, 12020 (via Costa Rica) heard at 1942 in FF. (Foss, AK)

RUSSIA — Voice of Russia, 9845 at 1130 in unidentified language.
(Miller, WA)

SWEDEN — IBRA Radio, 12020 (via Costa Rica) at 1641 and 15345 in AA at 1451. (Miller, WA)

SEYCHELLES — Far East Broadcasting Association, 9440 at 1825 in Farsi with IS and sign-off at 1827; 11745 in unidentified language at 15445 in unidentified language at 1459.
(Miller, WA)

SPAIN — Radio Exterior de Espana, 9630 (via Costa Rica) heard at 1225 in SS. (Northrup, MO) 11815 (Costa Rica) at 1641 in SS. (Miller, WA)

SWEDEN — IBRA Radio, 12020 (via Russia) at 1942 in FF. (Foss, AK)

SYRIA — Radio Damascus, 12085 at 2237 in AA with music. Into SS at 2315. (Ziegner, MA)

TANZANIA — Radio Tanzania, 11880 at 1932 and believe the Philippine nation — monitored at 1932 with sports interview. (Foss, AK)

PHILIPPINES — VOA relay, 15180 monitored at 1517 and 15445 in unidentified language at 1459.
(Miller, WA)
at 0958 in CC ending breezy talk program, time beep, theme music, ID by man, into news. (Quaglieri, NY)

TURKEY — Voice of Turkey, 9655 at 0303 with news. (Miller, WA)

UKRAINE — Radio Ukraine Int’l, 12040 (new) at 0056 ending EE broadcast with schedule and ID. Off at 0059. (Alexander, PA)

UNITED ARAB EMIRATES — UAE Radio, Abu Dhabi, 9770 at 1558; 11885 at 2206 and 15265 at 1736, all in AA. (Miller, WA) 13605 in AA at 1643. (Foss, AK)

VATICAN — Vatican Radio, 9605 at 0231 in FF and 15585 at 1503 in EE. (Miller, WA)

YUGOSLAVIA — Radio Yugoslavia, 7130 at 0430. //6100 not heard. (Alexander, PA)

ZIMBABWE — Zimbabwe Broadcasting Corp. (presumed), 4828 at 0300 sign-on with choral anthem, vernacular/EE talk, African choral and folk music. Separate programming on 3306 (ex-3396) (Alexander, PA)

And that’s the show for this time. On your feet now, to applaud the following good folks who came through for us this time: Marty Foss, Talkeetna, AK; Brian Alexander, Mechanicsburg, PA; Elmer Wallesen, La Grange Park, IL; Tim Taylor, Erie, PA; Al Quaglieri, Albany, NY; Sheryl Paszkiewicz, Manitowoc, WI; Tricia Ziegner, Westbrook, MA; Lee Silvi, Mentor, OH; Mark Northrup, Gladstone, MO, and Mike Miller, Issaquah, WA. Thanks to each of you!

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

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

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<td>6260</td>
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<td>Radio Moldova Intl, via Romania</td>
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<td>Radio Vilnius, Lithuania, via Germany</td>
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<td>CC</td>
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<td>Radio Jordan</td>
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**Notes:**
- AA: Arabic
- CC: Chinese
- DD: Dutch
- EE: English
- Farsi
- FI: Finnish
- FF: Finnish
- languages
- German
- Hebrew
- Hungarian
- Italian
- Japanese
- Korean
- Malay
- Mandarin
- Polish
- Portuguese
- Russian
- Spanish
- Tamil
- Thai
- Turkish
- Urdu
- Vietnamese
C. Crane Company

Announces "The Ultimate AM/FM Radio"

The company announces their new CCRadio, which has been specifically designed for talk radio, news, sports, and weather reception. The audio has been tailored for what they refer to as "a full rich sound of the human voice." And with special circuitry for the AM band, they say this radio has "the best AM reception of any radio ever made."

More than 20 years of planning, engineering, and prototypes went into the development of this radio, which features full digital controls and a microprocessor, giving accurate tuning and memory storage of five stations on each band.

The radio also receives TV audio of channels 2 through 13, and with the built-
in weather band, you can tune in NOAA weather reports. A special weather alert feature sounds an alarm to notify you of emergency weather updates.

Additional features include adjustable bass and treble controls, lighted display (LCD) with an on/off control, one-touch memory recall, rotary tuning knob, clock with alarm, five-inch speaker, auto-scan stop, and built-in headphone jack.

The radio operates on four optional "D" cells or plugs into 110 Vac with the included AC cord.

Specifications (measurements at 1000 kHz): usable sensitivity, 43dBuv/M; maximum sensitivity, 53.5dBuv/M; image rejection, 48dB; selectivity, ±10 kHz greater than 70dB. Radio tunes in ±1 kHz steps.

Audio output power is 2 watts on AC. Total harmonic distortion 1.7 percent, and IP rejection is 58dB. The radio measures (HWD) 7" x 11" x 3" and weighs 7 lb.

Delivery on the new radio is expected by October 1. The new C. Crane Company CCRadio, sells for $159.95 (which includes shipping to the 48 contiguous states) is available from C. Crane at 800-522-8863. The company tells Pop'Comm readers they can take $10 off the price if an order is placed by their first delivery.

You can also visit the C. Crane Company Website at <http://ccraneco@aol.com>. They're located at 558-10th Street, Fortuna, CA 95540-2350. The company, which sells a multitude of radios, accessories, and high-tech lighting and security items, offers a 30-day satisfaction guarantee on all products, and they publish a new catalog annually.

K40 Electronics Offers One-Of-A-Kind Gold CB Antenna

To commemorate 20 years of providing drivers across the country with top-of-the-line, guaranteed products and services, K40 Electronics has created a special limited edition 20th Anniversary Gold Edition CB Antenna. The company news release says they've added "a generous layer of 24-karat gold to a limited run of K40 antennas." Production has been limited to 8,000 units.

The manufacturer's suggested retail of the Gold Edition antenna is $199. For more information on this mobile antenna which features a quarter-turn quick-release theft deterrent, easy universal mounting, and K40's five-year guarantee, contact K40 at 600 Tollgate Road, Elgin, IL 60123 or call them at 847-888-7200. Be sure to check out the K40 Website at <http://www.k40.com>.
Kenny Just Called, And WEAK Radio Heard In Arkansas

We've got another huge pile of logs this month! I'll get to as many as I can.

Free Hope Experience, 6955 sideband at 0322, talks about UFOs. Off at 0359. (Dave Jeffery, NY)
Radio Kiddie, 6955 AM at 2229, TV show themes, Chipmunk music, off at 2248. (Jeffery)
Voice of the Pharoah, 6995 sideband at 0353 with rock. Off at 0419 with no address. (Jeffery)
K2000, 6955 SSB at 1344 with pirate radio talk, DX show parody, funny movie reviews. Off at 1426. (Jeffery)
Radio Three, 6955 SSB at 1630. Heard another time at 2316 to 2346. (Jeffery)
Radio Atlantica, 6955 SSB heard at 1806 with ID, talk, no address. Off at 1823. (Jeffery)
WPN — World Parody Network, 6955 AM at 1909 sign on. Huntsville address. Off at 1944. (Jeffery)
WMPR, 6955 AM at 0108 with techno-pop. Another time at 2257. (Jeffery)
Radio Titanic Intl, 6955 SSB at 2317 with items about the Titanic. (Jeffery)
WEAK Radio, 6955 USB at 0447 with IS and “testing.” Sign on with “Old Roadhog” and “live” from the 2nd annual Hoedown Roundup Show in someplace known as Rainbow Valley. (Joey Gillihan, AR)
WKND, 6955 AM at 1334 with Dr. Ricoche, Blue Ridge address. (Tim Taylor, PA)
Anteater Radio, 6955 USB at 1701, Belfast address. (Taylor)
WLIS, 6955 USB at 1930 with 8th anniversary show. (Taylor)
WUNH, 6955 USB at 0000, various music numbers, Providence address, off at 0036. (Taylor)
WBIG, 6955 SSB, with “The big Guy” at 1632. Off around 1700. (Taylor)
KNDS, 6955 SSB, various talks, skits, fake commercials to 1746. (Taylor)
WBAT (“Whiskey-Beer-America-Texas”), 6955 SSB heard with testing to 0530. (Taylor)
Radio Kitty, 6955 AM at 2215. DJ with falsetto voice and LPs played at 45 rpm. (William T. Hassig, IL)
Radio Nonsense, 6955 USB at 0158, DJ Joe Mamma with fake ads and celebrity interviews. (Hassig)
WLIQ, 6955 LSB at 0215 with rock, mailbag. (Hassig)
KBLK, 6955 USB at 2305 with rap, phone call, “shortwave voice of Black oppression.” Frequent use of offensive words. Relayed via Free Hope Experience. (Hassig) 2300 with racial/ethnic slur exchanges from simulated phone calls, offensive language, many obscene lyrics (Jennifer Ellis, RI)
WREC, 6955 USB at 2300 with heavy metal, relays of Titanic and another, unidentified station (Hassig)
One Voice Radio, 6955 USB, 2025 with health topics such as anorexia and bulimia. (Hassig)

Radio Shishkabob, 6440 at 0257 with excerpts from Tequila, Nutcracker Suite, Charlie Brown. No address announced. (Coleen Coleman, WY)

Voice of Hell, 6955 USB at 0255 program of "Hell Hits" with Stan Lucifer. (Marina Pappas, SD)

Take It Easy Radio, 6955 USB heard at 0400 and 0409 with two, five-minute broadcasts; "Desperado" repeating station ID. (Pappas)

WORD, 6955 USB at 0059 "broadcasting the Civilian Nationalist Information Report." Said they would be on weekly. (Pappas)

KORN, 6955 USB at 0222 with country music, comedy segments, many IDs, asking for requests. (Pappas)

WLIQ, 6955 USB at 0057 with "Worn Out Record Show." (Pappas) Jerry Rigged Radio, 6954.8 USB at 0109 to 0114 close. (Daniel Jackson, FL)

WMER (or WNER) 6955 at 1604 with "Dance Party." (Tom Delfratte, PA)

Voice of Anarchy, 6955 at 0025 with polkas. (Delfratte)

Steady Breeze (or blues) Radio, 6955 at 2210 with Sonny Bono, Tiny Tim, Betty Boop. (Delfrate, PA)

Reefer Madness Radio, 6955 SSB at 2210. (Delfrate)

FHX, 6955 at 1808. Wants to remain anonymous, but considering a mail drop. (Glen Sadowski, NJ)

Delivery Radio, 6955 USB at 0312. (Silvi, OH)

Radio Beaver, 6955 USB, at 2159. Grated version. (Silvi)

Radio City relay, 6955 USB at 0002. Wupperatal drop. (Silvi)

Area 51 — Gatekeeper, 6955 USB at 2324. (Silvi)

Radio Azteca, 6955 USB heard at 2304. (Silvi)

Mystery Radio, 6955 USB at 2333. "If you don’t like us, push the button." (Silvi)

Deliverance Radio, 6955 USB at 0130 signing on and off a few times. (Silvi)

Yamaha Keyboard Music, 6955 USB at 0214 discussing playing on a Yamaha keyboard. (Silvi)

Southern Music Radio, 6955 USB at 0328. (Silvi)

Voice of Free India, 6955 USB at 0203. (Silvi)

Radio Kenny, 6955 USB at 2220, reports to ACE. (Silvi)

The Fine Is Right, 6955 USB at 2254 with game show format on FCC pirate fines. (Silvi)

CSIC, 6955 USB at 0342, Road Kill Café bit. (Jerry Coatsworth, ON)

Argosy Magazine, 6955 USB at 1656 with War of the Worlds. (Coatsworth)

Altered States Radio, 6955 USB at 2004. (Coatsworth)

XEROX, 6954.8 USB at 0203 with Bart Sambo. (Coatsworth)

Thanks for the superb support ladies and gents! Keep them coming and I’ll have more for you next month.

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**THE MONITORING MAGAZINE**

September 1998 / POPULAR COMMUNICATIONS / 45
The EICO 772 CB was a big, heavy, and bulky rig, but was very popular.

Transforming The EICO 772

It was big, heavy, and bulky, but popular. It was the EICO (Electronic Instrument Component) 772 CB radio and was introduced in late 1962.

Keep in mind that, in 1962, most CB radios were tube-type and only had a few features. Things that we take for granted today were not always available then, and few radios had very many of the "extras," let alone all of them. I am referring to "extras" such as push-to-talk microphone, a dual-voltage power supply, multi-channel transmit and receive, automatic noise limiter, and last but not least, a squelch circuit.

Admittedly, the PTT mic and squelch had become fairly standard, but a lot of sets still used by CBers didn't have these features. Some top-of-the-line units, such as the Johnson Messenger I, the Polycomm, Sonar, Utica, and others had all the features listed above and more, but the EICO 772 still got its market share. Why? The answer is very simple: price! The top units listed above all sold for $175 to $350 each, while the EICO sold for just under $100, as I recall. This was at a time when the average take-home pay was less than $100 a week.

If EICO used good quality components, had many of the desired features and performed reliably, how were they able to cut the price in half? It was because they left out a very expensive cost of manufacturing: labor. You built the unit. When you consider that there were a lot of people who bought used sets with few, if any features, plus the many who also wanted a CB unit, but couldn't afford a $200 radio, there was a large market for a build-it-yourself radio. Also, you had the pride of using something that you'd built from scratch.

There were a number of manufacturers that offered "kit" radios, but the market was dominated by two: Heath Company and EICO. EICO made a lot of kit products, but specialized in test equipment. I started my business in 1958 with mostly EICO test equipment that I built, some of which is still in use today. I had an oscilloscope, an audio signal tracer, a capacitor tester and more. Their products were always easy to build, with good instructions. I found them to be a good value.

But the introduction of the transistor, IC, printed circuit boards, and automated parts inversion, spelled the end for many of the kit manufacturers.

The EICO 771(6-volt and 117-volt) and the 772 (12-volt and 117-volt) gave you PTT, squelch, dual power supplies, and multi-channel capability. On transmit, you had room inside the set for any four of the 23 channels. On receive, you had a crystal socket inside the unit for any one channel, and then tunable for all 23 channels. With the channel selector switch in position #1, all the way counter-clockwise, the unit was set to receive on the crystal-control channel. With the selector switch in position 2, 3, or 4, you transmitted on whatever was plugged into that crystal socket, and received wherever the tunable receiver was adjusted.

The 772 was a natural for field modifications, and it was legal to make them. Radios manufactured at that time did not require FCC type acceptance as long as the modification did not result in off-frequency operations. You could change the channel selector however you wished. Most of these units were changed to provide for more transmit channels by "remoting" one of the transmit crystal sockets through the front panel. As you can see in the photo, a crystal socket has been added just above the two function lights. Then a pair of stiff, solid wires ran from the new "external" socket down to, and plugged into, one of the regular internal crystal sockets. You could now plug a crystal outside the set, which was the same as putting it in that internal socket. Which of the four sockets you connected to depended on whether you were going to use crystal, or tunable receive to use in that external socket.

If you were going to use crystal-controlled receive with this new transmit socket, but ran the unit with the case on, the receive crystal socket also had to be modified. This was done by reversing the socket so that the crystal plugged in from the bottom, instead of the top, of the chassis. Then a small access hole was made in the case so that the receive crystal could be plugged in from the bottom without removing the case. To do this, the receive crystal socket was mounted on a
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small standoff bracket. As you can see in the photo, the crystal socket has been so-modified but, when I checked the case, an access hole had not been provided. We can only suppose that the owner decided to use the tunable receive with this remote transmit socket. That’s what I would have done, as it works just as well, costs less because half as many crystals are needed, and is less trouble to use.

The EICO 772 used in this month’s article came from Kevin Horn. We purchased it to add to our collection, and I thank him for the good deal.

Changing the subject for just a minute, Popular Communications Editor, Harold Ort, is just about to get his Johnson Messenger I back in mint condition. I think Harold got it from the Midnight Auto Salvage. All jokes aside, all we need is final tune-up and he’ll have a classic radio ready to hit the airwaves. It is always pleasing to hear an old unit operating with all of it’s original authority. It’s kind of like when you rebuild the engine of an antique car and first start it up.

Rebuilding the 772

If you are rebuilding an EICO 772, what you end with and how hard the road was to get there is determined to a great extent by the quality of the original assembly. Many of the units were brought to us for tune-up and alignment after assembly, and the quality varied considerably from factory quality, to something a gorilla with a propane torch put together. If you are going to purchase one at a garage sale, take the time to open it up and see if the workmanship is reasonable. Some readers have told us that they save all our articles, so if they purchase a unit at the flea market, they will have a guide to rebuilding the rig.

As with any unit, first we examined it for any obvious problems. Then we cleaned it with careful use of air and Windex™. Next we checked the tubes, and replaced all that didn’t meet our level of performance. Before applying power, we checked the fuse to insure that it was the proper size. At this point it would be helpful to insure that the proper tube is in the proper socket. A full set of service information can be obtained from Sam’s for about $25. Sam’s alignment required a signal generator. EICO provided two ways to align the unit, with and without a generator. If you send me an SASE, I will send you a copy of their instructions, but be sure to tell me what you want. You need pages 11 and 12 of their book.

I am not going to cover the minor problems we found in this unit because your problems, if any, will be different. If you are not good at troubleshooting, you may need outside help at this point. It depends on your level of skill, and the test equipment you have available. Remember, this is not a transistorized unit, but a tube unit with some dangerous voltages present on the bottom side of the chassis. Unless you wish to glow in the dark, be careful where you put your fingers, or get the help of a qualified person.

EICO, unlike any other kit manufacturer that we know of, wanted you to have a legal unit. Therefore, they pre-assembled the transmitter stages, so all you had to do was adjust the radio to your antenna. While we think about it, let us mention that 1/4 inch jack on the rear of the chassis, next to the SO-239 antenna connector. That is NOT an external speaker jack. It is provided to measure the plate current of the transmitter’s final amplifier. You connect
With the 772, the transmitter stages were pre-assembled by EICO, so all you had to do was adjust the radio to your antenna.

a millimeter across its terminal and adjust for about 27MA current.

Readers' Questions

Previously, our main problem with reader questions was the lack of an SASE sent along. Many of you, once you realized why you had not received an answer, wrote back a second time and included the envelope. I'm glad you gave me a second chance. Mail your questions to Don Patrick, 3701 Old Jenny Lind, Ft. Smith, AR 72901. Now we have a new problem. Quite a few of you are using E-mail for your questions. That's great, except be sure that your address is correct. We just use the "reply" to answer you and we've had some that were rejected due to "addressee unknown." If we were entering your address, I would assume that we had it wrong, but using "reply" ensures we don't goof up. I had one question last month about the Johnson Messenger 125 units from a reader named Robert which was rejected as "addressee unknown." So, if Robert will send his question again, but with a correct address, we will try to answer him. If you are going to use E-mail, send your questions to me at <Oldestimer@AOL.com>.

Until next time, this is the Oldestimer saying thanks for your letters and questions, 73.

The hole on the back of the unit is NOT an external speaker jack; it's provided to measure plate current of the transmitter's final amplifier.
S. 608 Is Dead, But . . .

For some time now we have been watching a pair of bills working their way through Congress that would allow local authorities to enforce a limited number of FCC regulations that pertain to CB radio. Wisconsin Senator Russell D. Feingold introduced the original bill, titled S. 608, in April 1997. By the following October, a similar bill, H.R. 2612, was introduced in the House by Michigan Congressman Vernon J. Ehlers. Neither bill generated much interest, nor attracted many sponsors. It seemed, for a while anyway, that they both bills might die in committee.

All that has changed. S. 608 has gained a new lease on life. It has been attached as an amendment to Senate bill S. 1618. The original goal of S. 1618, introduced on February 9, 1998, by Senator John McCain of Arizona, was to curtail "slamming," the irritating practice some telephone companies have of switching your long distance service to a different provider without your permission.

By the end of May, S. 1618 had acquired three amendments. One requires truth in billing procedures for telecommunications carriers. The second modifies the exception to the prohibition on the interception of wire, oral, or electronic communications to require that all parties to communications with health insurance providers consent to their interception. The third was S. 608, which authorizes the enforcement by state and local governments of certain Federal Communications Commission regulations regarding the use of citizens band radio equipment. On May 12, 1998, S. 1618 was passed, as amended, by a vote of 99-0 and sent to the House of Representatives where similar legislation (H.R. 2612 and H.R. 3888) is pending.

Why Worry?

As John from South Carolina put it, "We think, that as written, these laws will be subject to abuse. Many operators here are expressing fears about our local police enforcing CB regulations. One of them (police) was heard to say that they could hardly wait to get the go-ahead because it would not only give them some new radio equipment, but most of all, more operating funds from all the revenue generated by fines."

The impetus and stated goal of these laws is an admirable one: to reduce interference to home electronic entertainment equipment caused by CB radio. In other words, RFI (radio frequency interference) and TVI (television interference) to stereos, VCRs, telephones, and the like (not CB radios). Although interference between CB stations is specifically avoided, the CB community knows that legislation like this is long overdue. For the most part we welcome and encourage the concept.

The problem is that while these laws are aimed at reducing radio interference, they do not specifically mention that. Instead, they target the possession of unauthorized equipment. While it's true that most of the operators causing interference possess and run unauthorized equipment, most owners of unauthorized equipment are not causing interference. Confused? Read on, please.

Baring any unforeseen problems, these bills could become law by the time Congress adjourns for the year on October 9, 1998. If passed as written, it may not be very long before anyone displaying anything remotely resembling a CB antenna might expect to find the police knocking on their door or to be pulled over for "a little inspection." When all is said and done, most of the people that these laws will subject to prosecution may actually be the best operators on CB. These are the very people who are least likely to cause RFI. It could be that while these laws purport to target the bad guys, they could actually be aimed directly at YOU!

Why Should You Care?

How, you might well ask, could the most praiseworthy members of the CB community become the primary targets of these new laws? Simply because on CB, the best of the best are most likely either sidebanders and/or Freebanders. Both are extremely likely to possess unauthorized equipment, and therefore would be easy targets for unscrupulous authorities. Furthermore, since they represent such a large percentage of CB owners, random inspections of CB stations will produce large numbers of violators. For the uninitiated to understand who Sidebanders and Freebanders are and why they run unauthorized equipment, it is necessary to know a little history of their cultures and radio technology.

Like your car radio, CB has two modes of operation. Your car radio has AM and FM; CB has AM and sideband (SSB). Sideband uses narrower slices of radio frequency more efficiently than AM. That makes sideband less likely to cause interference, and gives it greater range. This, however, also makes the ability to fine-tune sideband radios rather critical and a little tricky.

Sidebanders may be more akin to amateur operators than classic CBers. They pride themselves on their superior equipment, style, and technique. A sidebander is what a CBer often grows into when they tire of the nonsense and aggravation of classic CB. Sidebanders operate within the legal 40 channels. Mostly, they confine their activities to channels 16 and 36 through 40. They do that so they won't interfere with AM operators.

Early sideband radios (before the opening of channels 24 through 40) allowed you to fine-tune the transmitter and receiver simultaneously. Whatever frequency you tuned your receiver to, the transmitter frequency would follow. So, everyone engaged in a particular conversation could all tune the exact same frequency.

When the FCC authorized the new 40 channel radios, they mandated that only the receiver could be fine-tuned. The transmitter had to be locked. This caused a problem whenever more than two stations tried to engage in a conversation. Seldom would all of them be transmitting on exactly the same frequency. Therefore, participants had to continually fine-tune their receivers as the conversation passed from one station to another. This proved to be very frustrating and incon-
venient. So it soon became common practice for sidebanders to get their clarifiers “clipped” or “unlocked” allowing, once again, the simultaneous fine-tuning of transmitter and receiver. Sanity returned, as everyone on the channel could be working the exact same frequency. Unfortunately, it also means that most serious sideband operators are running unauthorized equipment, and are therefore targets of new laws.

When 40 channel radios were introduced, most manufacturers thought there was a pretty good chance that the FCC would one day expand CB by another 50 or 60 channels. Most radios, especially sideband radios, have the circuitry that, with very little modification, allow them to reach those extra channels. To nobody’s surprise, before very long, sidebanders started finding activity above channel 40 and the Freeband was born.

Over the years, the Freeband has become a truly international phenomenon. It is where most of CBs best and most responsible operators have grown. They have gone there to escape the very problems that make H.R. 2612 and S. 608 necessary. Again, by definition, because their radios can access frequencies outside the legal CB band, they appear to be the main targets of the proposed law, whether or not they are causing interference. Again, most of them don’t.

About Freebanders

Why do so many Sidebanders become Freebanders? To help explain, here is an excerpt from a recent note from Ed in Toronto Canada, a typical Freebander. “I have been exposed to shortwave radio since 1938 when I used to sit with my uncle (an amateur) listening to QNs. Once he even spoke to Haiti. About eight or 10 years ago I bought a 40 channel CB radio and shortly found out about the problems on 11 meters (CB) so I sold it and bought a 2950 (European import model CB capable of getting to the Freeband frequencies). It took me in to a very exciting new world of DXing (long range) when the “skip” was in. My 25-watt (most problem operators run hundreds of watts) mobile took me to Italy, France, Germany, and all over the UK and even Australia . . . “

Obviously, this fellow is having a good time. Most of his fellow sideband/Freeband counterparts are too! They aren’t hurting anyone. They appear to be no other active users on these frequencies.

How Widespread Has The “Freeband” Become?

If you’d like to get some idea of just how widespread and sophisticated the Freeband has become, check out some of these Web sites and related links.

<http://members.aol.com/tristdxtnt/index.html>
<http://localsonly.wilmington.net/~brady/11meterdx.htm>
<http://rob.acol.com/~cb/>
<http://wwwserv.caiw.n1/~robocomp/cbradio/>
Look at the range of frequencies, power and operating modes afforded the amateur radio service, which, by the way, has managed to get themselves exempt from the provisions of the new laws. What makes them so special? Are there more of them than there are of us? No, we outnumber them many times over. Are they better operators? Some are, but they have their share of bad apples. Does amateur radio provide more service to the community? Not necessarily. An argument can be made that CB provides more services directly to more people more often. No, their main asset can be summed up in one word. ORGANIZATION!

As S. 608 slipped from the Senate to the House, my own efforts to get the bill modified shifted from Senator Feingold's office to Congressman Ehlers'. There, I have been in contact with Cameron Wilson. So far, I believe, our conversations have been mutually educational. Mr. Wilson admits that he knows next to nothing about CB radio, other than hearing many of his boss' constituents complain about it. I pointed out, as I have in this column, how and why the proposed legislation misses the mark. He somewhat modified the argument but...

The larger issue is, can we, as a hobby and service, pull ourselves together enough to present some kind of unified front to handle other issues that are bound to come up in the future? It is painfully obvious that present organizations are not up to the task. Any volunteers?

Well, that's it from here. Thanks for writing me here at Popular Communications, 25 Newbridge Road, Hicksville, NY 11801, or via the Internet where my address is <edbarnat@globa12000.net>. And as always, if you can, catch me on the radio! 73, Ed.
A good way to start a debate in scanner crowds is to bring up the subject of banks and how best to organize them. There are probably as many variations on the basic methods as there are scanner enthusiasts, but there are some basics we can cover to get you thinking about what would work best for you. I apologize in advance if I left out your favorite method, but they only give me so much space. In our weekly scanner conference on AOL (every Thursday night 9 to 11 p.m. EST), we've had some lively discussions on this very subject.

Service Or Geography?

Most of the methods I have seen come down to separating the channels by the type of service that uses them — police, fire, medical, ham, etc. — or by area. Put all the "south" frequencies in one bank; "north" in another, etc. Frankly, I hadn't really given it a whole lot of thought until I started messing with computer control systems, and it became possible to reorganize banks quickly and easily.

I had always been pretty much a "service" fan. I'd put all of the county police channels in one bank, city in another, state and outlying areas in another. Then there was a bank for fire, and then it depended on the radio as to how much room I had to put together any others. This method works quite well if you're interested in a particular department or section of scanning, or if you seldom listen to a particular service, but want to have them handy when something does happen (assuming, of course, that you have open banks to store them in). This method also works well for scanning from a fixed location, say, mostly at home.

The primary disadvantage of this method comes to light when you get into an active environment. If you have a busy police department with several channels, it's entirely possible that your scanner can be held up for quite some time plowing its way through, stopping here and there as it goes. Perhaps some of the channels are not of much interest, but if they are grouped together by service, you'll probably have them active. It's also possible that you'll get tied up on some major event in the police bank and miss some other event in another bank. Of course, there's no complete cure for this, but you can mitigate the damages a bit by planning. And another radio doesn't hurt either. Eventually, if there's enough traffic, you'll either have to give up listening to some channels or add another radio just to have a chance of hearing what's happening.

Trunktracker™ radios have made this quite apparent. Of course, Trunktracker receivers from Uniden and RadioShack can only listen to one trunked bank at a time. If you want to listen to one trunked bank at a time, you must have another radio. Of course, there are going to be lots of complaints and dissatisfaction regarding this, but while it would be nice to only have to carry one radio while mobile, there are some good reasons it works this way. The first is from a technical standpoint: the radio would have to re-acquire the data channel every time it re-entered the trunked bank, and you'd lose several seconds while this took place. New products on the horizon may eliminate this concern, but for now, there's no way around it.

The other reason that I've come to appreciate it is that with any sized trunking system, the volume of traffic on that system pretty much precludes using the radio for any serious scanning outside the system. Ours is tied up full-time with just dispatch channels. Even if you don't listen to all the districts, the radio stays pretty busy with dispatch, tac channels, car-to-car, etc., I really don't believe that you would hear much outside the trunked system even if it were possible, and our trunked system isn't all that large compared to some cities.

Geographically Speaking

The other popular method of organizing is by area. Organize all the south-side
stuff in one bank; all of the north in another. This means that probably some channels will have to be duplicated, like mutual aid and point-to-point channels that are in use no matter where you are. Things like fire dispatch and medical services may also not follow clean geographic lines and have to be duplicated as well. This seems like a waste of channels.

Well, back in the old days of four- and 16-channel scanners, I would have agreed. Of course, most of the four and 16-channel radios didn't have banks anyway, so the point was moot. However, with today's 200, 400, and even 1,000-channel radios, some duplication becomes a little more tolerable, and even makes some sense at times.

Another case in point: our county is divided into four precincts. Each of the precincts has its own dispatch channel. There's a detective channel, a car-to-car channel, and an emergency channel that are shared county-wide. As I mentioned earlier, I used to keep all of the police channels in one bank and scan them all full-time.

The problem is that in the car, particularly with a handheld, if you're up in the north precinct, you can't hear much of what's going on in the south one — it's simply too far away to get anything but static. The older I get, the less tolerance I have for static. I have a theory that this has something to do with the static my wife generates, but I haven't been able to come up with any scientific proof.

In addition, there are several municipalities within the county — somewhere around 80 — some of which have their own police departments, and some that do not. Some of the municipalities which have their own departments also have their own dispatch, but some contract it out to other departments, or even to the county. The county has an additional two channels dedicated just to these municipalities: one for north side stuff and one for the west group. So, in addition to listening to the county precinct you're in, you also have to follow these municipal channels, and there may be a bunch.

So I got a bright idea: Why not give each precinct a bank? It could include the precinct channel, any municipalities in that precinct that I care to listen to, the fire dispatch channels that cover that area, and the shared channels that I want to listen to most of the time. In addition, I created a bank of all fire, one for air stuff (when I'm near the airport at lunch time) and one or two left over for experimental stuff or special events.

This works like a charm. I simply switch banks on and off the same way I previously used channels, but now, I'm not missing all the action on other frequencies in the area. The trade-off is that there is a lot of duplication in my scanner, and there are several banks with very few channels in use. Oh well . . .

**Event Scanning**

A friend of mine is a nut for special events. Hmmm . . . come to think about it, even if he didn't like special events, I'd be half right! Anyway, he groups many of his scanner banks by event. He has a handful of channels that he likes to listen to all the time, and he dedicates one or two banks in one of his scanners to that, mostly grouped by geography. It's mostly local stuff that he's interested in tracking. The rest of the banks in his radios are dedicated to one type or another of special events scanning, some of which border on services.

There's a bank for severe weather events. Whenever severe weather threat-
Banks You Might Consider

Here's a "by no means complete" list of ideas to get you started.

Service
- Police
- Fire
- Medical
- Media
- Aviation
- Military
- Ham
- Business
- Malls
- Casinos
- Unknown or experimental
- Schools
- Railroads
- Buses/taxis
- All-the-time stuff
- Mutual aid/shared frequencies
- Maritime, lake, river

Geographic
- City
- County
- Local
- North, South, East, West
- Out-of-state
- Your city
- Neighboring city
- Precinct or district

Special Banks
- Airport problems
- Parade/fair
- Rail accident
- Major vehicle accident
- River/lake/ocean incident
- Industrial incident
- VIP visit
- Jail or prison incident
- Major media event
- Sports event
- Severe weather
- Natural disaster
- Major fire
- Riot or other civil disturbance
- Concert or theater event

You might challenge this type of thinking. Consider an event that is likely to occur in your area. What would happen, say, if the President came to your town? OK, so if you live in the District of Columbia, this won't be very challenging, but if you live somewhere else, think about it. What kind of frequencies might be active because of a VIP visit? Would the person receive Secret Service protection? Their comms are mostly encrypted, so you can't listen to them, but activity on those channels might tip you off that something was about to happen.

Would your local police have a role? Sometimes they're used to provide traffic control and other assistance. What frequencies might they use? How about medical or fire services? News coverage? You can fill up a bank pretty quickly with good possibilities.

Now, depending on where you live, you might have to wait a long time to see just how good your guesses were. But once it happens, it can be quite a lot of fun and will get you in on the action just a bit earlier. And if you have more than one radio and can dedicate a bank to channels you don't need very often, it can be quite a lot of fun to plan. Even if you can't spare a bank, you can think about the frequencies and write them down somewhere. That way, you'll have the planning done if you hear something's happening and you can reprogram the scanner quickly. You do have a list of the frequencies that are normally in your scanner, don't you?

And what would happen if a factory, school, or other major facility near you had a major "event"? This could be a celebration of some sort or a disaster situation. What frequencies would be in use? What outside agencies might be called in? If you're located within listening distance of any large facility, chances are that they use radio during their day-to-day operations, most of which are probably very boring. But if something happens, having those handy might get you information that you wouldn't have until the news at eleven. In the event of a major disaster, such as a chemical spill, that could be very good information to have in advance. Hopefully, you'll never get to test your theory, but it's a good idea to plan. And maybe there'll be a smaller event or drill so you can test your approach.

What Do You Use?

As you can see, there's no one right answer to this question. It depends a lot on the kinds of events you're likely to see in your area, as well as how much you want to listen to. There's a balancing act between scanning so much that you can't really follow anything, and listening only to one channel so you follow all that traffic but miss everything else.

One revelation from a recent AOL conference on this topic is that a lot of people are using multiple radios to overcome some of the limitations of capacity versus time to scan through the list.

I've also discovered that my mobile needs are completely unrelated to what I listen to at home. I've solved the mobile problem with the geographic method. At home, I'm still working on a geographic/event system that works, but I'm getting there.

Your Input Needed

"ScanTech" is your column. If you'd like to see a particular scanning topic covered, or have pictures you think we'd like to see, send them in. We're also looking for trunked system info in YOUR town or area. Send information to Ken Reiss, 9051 Watson Rd. #309, St. Louis, MO 63126. You can also E-mail me at <Armadillo1@aol.com> for a quicker reply.

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Rave Review
Pop Comm
April '96

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Professional 10 Hour RECORDER
BUILT LIKE A BATTLESHIP

• Heavy duty commercial recorder - NOT improvised from consumer models
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I've been around long enough to see stalwarts such as Hallicrafters and National felled in the face of foreign competition. I fondly remember other companies named Heathkit, Eico, Lafayette, and Knight. They supplied electronic kits for almost anything you could imagine, from stereos, TVs, and shortwave receivers, to test gear and ham transceivers. Sigh. While those kit outfitters are now only memories, the special magic of equipment made with your own hands still remains.

TEN-TEC, Inc. has been around for 25 years and has become the primary American manufacturer of world-class amateur HF transceivers. Perhaps this is due to the legendary loyalty of TEN-TEC owners. More recently TEN-TEC has entered the electronic kit market with offerings from their T-KIT division. The newest — and most ambitious — entry so far is the T-KIT model 1254 shortwave receiver kit. When the 1254 was announced last fall, I knew it was something I had to experience first hand.

**The 1254 Receiver**

The 1254 receiver covers from 100 kHz to 30 MHz. Measuring a mere 2.25" x 6.5" x 6.5", it has to be the smallest communications receiver I have seen. The housing is a rugged clamshell steel enclosure with an internal aluminum chassis and a custom-molded front panel. It's coated in a handsome black finish with contrasting white lettering.

The receiver is an up-conversion design, with a first IF at 45 MHz and the second and final IF at 455 kHz. A single 4-kHz Murata ceramic filter is used for both AM and SSB modes. Tuning is in 5-kHz steps on AM and 2.5 kHz steps in the SSB/CW position. A “clarifier,” or fine-tune control allows for precise tuning of SSB or CW signals. For rapid tuning a “speed” tuning rate of 100-kHz steps is selected via a front panel button.

LED front panel indicators show the mode and tuning rate.

The receiver powers up on the frequency and mode it was last used on. Fifteen memory channels are provided. The MW button permits you to store the current frequency and mode to any one of the 15 memory channels. Also, note that pressing MW brings you to the most recently accessed memory location. Hitting MW again will store the frequency in that location, or, if desired, the main tuning may be used to select an alternative memory location for storage.

**Memories**

The receiver powers up on the frequency and mode it was last used on. Fifteen memory channels are provided. The MW button permits you to store the current frequency and mode to any one of the 15 memory channels. Also, note that pressing MW brings you to the most recently accessed memory location. Hitting MW again will store the frequency in that location, or, if desired, the main tuning may be used to select an alternative memory location for storage.

The V/M button toggles the tuning between the VFO and the memory channels. In the memory tune mode, the main tuning dial selects the desired memory channel. Once tuning stops, the display reverts from the channel number to the actual stored frequency after a one-second delay. Also, while in the V/M memory tune mode, the tuning mode LED indicator is off (this is the decimal point to the right of the last frequency display digit). Recalled memory frequencies are not tunable.

**AM Operation**

I must admit, I had some reservations about a receiver that tunes in 5-kHz steps in the AM mode. I hooked up a 100-foot longwire to the receiver and tuned to the crowded 49- and 41-meter shortwave bands. It was early evening, and signals were strong and abundant. I was impressed to see that each tuning step usually produced a new shortwave station, loud and clear, and free of adjacent channel interference. Since it was almost like having “channelized tuning,” I hardly noticed that no signal strength meter was present. The 4-kHz Murata filter did an
excellent job, and I noted no serious overload problems.

**SSB/CW**

For SSB operation, the BFO signal is placed in the center of the AM filter passband. Again, I had some serious doubts about performance. This scheme offers no adjacent sideband selectivity. First, I tried tuning in some CW signals on the 30-meter ham band (10.1 MHz). Several eastern European countries were quickly logged. The beat note was pure and clean, and the AGC action good.

This was followed by a few hours of monitoring aircraft weather on SSB, and also some ham CW and SSB activity on 75, 40, and 20 meters. While certainly not in the same league as a receiver equipped with 2.1 sideband filters, the little TEN-TEC did a credible job. Juggling the main tuning and clarifier to exactly tune into an SSB signal takes some practice, but the same limitations were noted in our review of the Lowe SRX-100 last year. One advantage over the Lowe: in SSB, the frequency displayed on the 1254 is accurate with the clarifier at center tune.

**Display Noise**

One small problem: the multiplexed display scheme generates a lot of RF garbage throughout the receiver’s tuning range. Using an indoor antenna near the receiver can cause problems! Keep indoor active or wire antennas at least 15 feet from the receiver to avoid hearing display birdies.

**Overall Impressions**

Being a $195 receiver, the 1254 has the same limitations as other receivers I have evaluated in this price class. It would be rather unfair to compare it directly against higher-end products.

The 1254 is exactly what I expect TEN-TEC intended it to be: a good quality, extremely portable and versatile SW receiver that is fun to use. It is well worth the asking price.

Power is supplied by a 12-Vdc wallplug power supply (included), so mobile operation is also possible. It is tiny enough to be packed in a suitcase for travel, or taken along on camping trips.

The only "option" available for this receiver is the mobile/under-shelf mounting bracket. This bracket is normally supplied with the VHF radio transceiver kits made by T-KIT; but they share the same cabinet design. The bracket also makes a nifty table stand for the receiver, since no tilt bail is included. At present, the bracket is only available from the parts department, not via the 800 sales-line. The T-KIT 1260 transceiver’s mobile mounting bracket and screws are the same.

I like my 1254. For the past two weeks it has been a pleasant diversion and company while I am working at my computer. Indeed, it is now permanently mounted under my FRG-9600 VHF receiver. I hope that TEN-TEC is considering adding a high-end SWL receiver to their product line.

**Technical Overview**

The front end of the 1254 receiver is two J310 fets in a balanced mixer. There is no RF amplifier, nor is one needed. The 1254 receiver is very sensitive. Out-of-band RF filtering is provided to limit the RF input.
for signals in the 100-kHz to 30-MHz range. No other preselection is included. The first LO is provided by a single-stage synthesizer with an VCO running from 45 to 75 MHz. PIC microprocessor technology is used for tuning, synthesizer, and display control. VCO loop filtering is rather elaborate and above average. A 45-MHz crystal roofing filter is used in the first IF. The second LO is a crystal oscillator; the crystal is warped by the clarifier control for fine tuning.

The second mixer is a quad diode ring using IN4148 silicon diodes. The 455-kHz filter is a good quality Murata 4-kHz BW ceramic filter. Two Motorola MC1350 ICs are used in the 455-kHz IF stages. The SSB detector is a NE612 doubly-balanced IC mixer using a ceramic resonator for the BFO. The overall design is conservative and reflects current design trends.

Building The 1254

If you want a 1254 in your listening post, you're going to have to build one. It is only offered in kit form. Unfortunately, the kit is recommended only for experienced builders. There are over 200 resistors and capacitors, 10 ICs, 26 transistors, and 16 diodes in this kit. I haven't bothered adding up the coils, chokes, and other components. That's a lot of soldering small components on a PC board with high parts density. You might consider one of the simpler T-KIT receivers as practice and a prelude before attempting this receiver.

You will need a good soldering iron - one that has a grounded tip designed for work with static sensitive components. I advise using a high-temperature tip slightly larger than needed. This gives better thermal mass, and allows one to quickly heat the work and do the soldering. A hotter iron also ensures that the solder flows into the work rather than puddling on the surface. I use a 700-degree tip on a Weller solder station. Keep a damp sponge handy for wiping the solder iron tip. A pair of flush cutting side cutters are needed, along with the usual assortment of screwdrivers and other small hand tools.

Getting Started

Before doing anything else, read the manual. Find the Addendum sheets and mark all changes in the manual immediately! Everything you need to know is in the manual. Do not skip steps. Before acting on a step, read one or two steps ahead first. I strongly suggest presetting all of the components.

Make sure all of the parts are there, as you may find a few extra of some values — you can't imagine the sickening feeling of having "extra" parts left over on a supposedly "finished" kit until it happens to you. Are they really "extra," or was a step missed?

A big problem area for me was reading the choke color codes. These little beasts have a sea-blue body, making the color codes extremely hard to read. Reds looked like violet, whites looked grey. Be very, very careful when sorting the choke values! I confess to having at least three chokes in the wrong places.

Do not rush construction. The manual states 25 hours for construction. There are no awards given for beating that estimate. Building this receiver should be as much fun as using the finished product. I limited myself to a maximum of one hour for any one sitting. This permitted me to finish each stage in a leisurely fashion, and gave me time to double- and triple-check my work. When I tried rushing, I found myself prone to making mistakes.

If you have any questions, reread the manual, look a few steps ahead and see if that helps. Don't be embarrassed to call the factory for help if you can't resolve a nagging question on your own. Or ask a more experienced friend for help or to double-check your work.

One nice feature of most T-KITS is that as each stage is finished, you can power up the kit and check your progress. A minimum of test equipment is needed — a voltmeter is needed for the final VCO alignment. Internal signals are used for many of the tests. The 1254 offers several such progress tests as major subsections of the receiver are completed. Unfortunately, while Progress Test 4B should have allowed me to hear multiplexer noise in the product detector, I detected nothing. A call to the factory technician didn't help. After a few hours of rechecking my work, I concluded that I had no errors and continued. Other than that one small glitch, the receiver worked when completed.

The TEN-TEC 1254 communications receiver is available directly from TEN-TEC, Inc., at 1185 Dolly Parton Parkway, Sevierville, Tennessee 37892. For more information, call TEN-TEC at 423-453-7172 or you can E-mail them at <sales@tentec.com> or visit their Website at <http://www.tentec.com>.
FirstRate For Drake's R8, R8A, And R8B Receivers

By Harold Ort, Editor

There was a time when I wouldn't use a computer for anything except word processing and accessing the Internet. And that was only because my original stand-alone word processor only had enough memory to store 25 or 30 pages of typewritten copy, clearly not enough for any writer. But times change, and I now enjoy the computer and all it has to offer, especially when it comes to radio related software and control. Take for example the recently upgraded FirstRate 3.12 program that makes the Drake family of great receivers even more versatile.

Computer gurus Mark Chalkley and Doug Harvey developed and wrote the first FirstRate program back in 1986, which was one of the first really good, intuitive programs on the market for radio enthusiasts with the Drake R8. The new version of FirstRate combines a huge English-language shortwave station database from TRS Consultants with full receiver control functions for Drake's R8, R8A and R8B receivers. These top-of-the-line receivers, married with FirstRate give radio enthusiasts the combination of a first rate rig and truly first rate software.

About FirstRate

Installing the program on your system is a piece of cake. Insert the 3.5-inch disk, choose “run” from the Windows™ menu, hit enter, and let the computer do the rest. You’ll need to buy and connect a cable from an unused serial port to the rear of the receiver, and then possibly click-on “preferences” in the FirstRate program to ensure your receiver is checked and the correct serial port is enabled. Beyond that, it’s all done for you automatically. Time to sit back and enjoy the benefits of computer control!

If you own a Drake R8, R8A or R8B receiver and a computer, this is the program you need to make your radio sing like a canary! Most folks will perhaps use the many pre-programmed logs (record) from millions of countries, clicking-on and automatically tuning the receiver to that frequency, complete with mode, bandwidth, noise blanker on/off, and other user-selectable receiver functions.

OK, let’s face it, shortwave stations change frequencies and broadcast times as frequently as you change your socks, so being able to change the pre-programmed listings and add your own record would be a great asset. You can even import data from other sources or exchange files with other FirstRate users.

Let’s take a look at how to add a new record to the program. It’s as easy as 1-2-3. Here’s what you do: At the top of the screen, click-on “Edit” and arrow down to ”Add Record.” Press “Enter” or double-click. Then using the tab key to reach each successive field, type in the appropriate data. Everything’s provided from country name, station name, signal quality, frequency time on/off and days of the week. You can even add a few lines of personal notes if you wish. Receiver functions will then be displayed automatically when you call up that station and tell the FirstRate program to tune in Radio Bulgaria, for example.

For me, the beauty of this software is its searching ability. You can search for the country or station of your choice, find all stations on the air at the current time or a specified time, or find stations on a particular frequency. Or you can have the program alphabetically display “all” records, including those you’ve personally added to the program, along with your receiver functions.

Actual Operation

One of the best features of the FirstRate program is its ability, in the manual mode, to allow you to use the pop-up menus on the screen to change the receiver’s settings; the program temporarily connects to the receiver, changes your settings, refreshes all other radio settings on the computer screen, then disconnects from the receiver. Also, by clicking on the R8 icon you can refresh the computer display, or select a record by clicking on it and moving it using the up/down arrow keys on your keyboard. Press the enter key and the FirstRate program will temporarily connect to the receiver, set your frequency from the record, refresh the settings and then disconnect from the receiver.

The FirstRate program comes with two separate and distinct databases; shortwave and broadcast band. After starting the program you’re offered the choice of either of these databases. Simply double-click on the appropriate file and the program loads it for your immediate use. Only because of a quirk with my computer, it took a few phone calls and E-mails to Mark before I was able to activate my computer’s comm port and use the program. I’d try repeatedly to change my R8B’s settings and was prompted “R8 Not Responding.” If this happens to you, it’s likely because the receiver isn’t turned on, your comm port is either defective or disabled or perhaps (don’t think this can’t happen, because it does!) your cable isn’t connected to either the radio or computer. But believe me, the first time you click on a record and it instantly changes your receiver’s settings and the desired station jumps at you, you’ll fall in love with the program!

The FirstRate program isn’t just about adding records and controlling your Drake receiver. Not only can your computer take full control of the receiver in the VFO, Memory and Database mode, but you can also scan all (or selected) records.

Still not satisfied? Check out the Pushbutton mode which is much like the Database mode, except that a series of buttons are displayed on the screen instead of a list. You’ll see one button for each station. So for example if the Voice of Russia is shown at your prescribed time as having eight frequencies active, there will be a Voice of Russia button; each subsequent press will cycle you through each of the eight frequencies. You can even cycle through the stations in reverse order.

This truly professional-operating program doesn’t muddle you down with multiple keypresses to accomplish a function. Using your keyboard’s Function keys you’ll get instant results with a single keypress. For example, if you want to add a record to the database, hit F7. Want to change the preferences, hit F10.

Now, as if the 1,000 memories on my R8B isn’t enough, with FirstRate I can “Save To File” from the Memory menu, which lets me save the receiver’s memory settings to a disk file on the computer and restore them later. It’s a great backup, and way of having several files with different frequencies that can be loaded at your convenience. Like the FirstRate manual says, “It is a way of expanding the number of effective memories the R8 has.”
How I Got Started

Congratulations To Dave Laida of Arizona!

We just couldn’t resist using this photo of Dave’s stepdaughters, Hye Yon and Hye Lim Yi, at their home-built station.

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

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

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to Popular Communications. Address all entries to: “How I Got Started,” Popular Communications, 25 Newbridge Road, Hicksville, NY 11801 or E-mail your entry to <popularcom@aol.com>, letting us know if you’re sending photos.

Our September Winner

Pop’Comm reader Dave Laida of Sierra Vista, Arizona, is a microwave radio communications engineer. He says it was an article in the January 1997 Smithsonian Muse magazine that got him and his Korean stepdaughters interested in shortwave listening. He says, “We bought an MFJ regenerative shortwave receiver kit and the 1997 World Radio TV Handbook from advertisers in Popular Communications. Then I constructed a 55-foot outdoor single-wire antenna and grounding system. I also built a low-pass active filter to attenuate audio noise. Our friend Rob Steele donated a pair of amplified speakers.

Our interests are focused on international broadcast programming. We regularly listen to the British Broadcasting Corporation, Swiss Radio International, The Voice of Free China, and Voice of Russia. We have yet to hear Radio Korea International, so it has become our “rare DX” to chase.”

Congratulations, Dave, for being chosen as our September “How I Got Started” winner. And a special “hello” to Hye Yon and Hye Lim Yi. Enjoy the free one-year gift subscription to Pop’Comm!

Additional Neat Features

Like I said earlier, there’s more to this program than a large database that you can manipulate. How many times have you wished you had a handy world map displaying the gray-line? To find out what parts of the world are in light and darkness, simply click-on “Special” at the top of the FirstRate screen. If you’ve checked “Auto” in the preferences, it will display the gray-line for the current time, and update every minute. You can also enter a specific date and time for which you want to see a gray-line map. Want to find out when your QTH and Papua New Guinea will be in darkness? Do that by using the scroll bar to find when the gray-line will be in a certain position.

Similarly, you can view the Lowest Usable Frequency (LUF) and Maximum Usable Frequency (MUF) between two points on the globe at any time of day. Interested in sunspots? The LUF/MUF screen will plot graphs with specific variables based on your location in latitude and longitude along with the sunspot number (which you can, of course, modify). The program comes complete with sunspot predictions well into Cycle 23, through the year 2006.

Getting The FirstRate Program

Of course I haven’t covered every aspect of this extremely versatile and user-friendly software, but if you get the impression it will open up a whole new world for you and your Drake R8, 8A, or 8B receiver, you’re absolutely correct. I’ve used the R8 and R8B with the FirstRate program, and it certainly does live up to its name! These already-top-notch receivers are enhanced to the max with FirstRate!

Get this great program and you’ll wonder how you ever got along without it in the first place. Not having FirstRate would be like having a luxury car and not wanting electric windows.

If you’ve got additional questions, contact Mark via E-mail at <mark.chalkley @ibm.net> or U.S. mail at Spectrum Systems, P.O. Box 1177, Saluda, VA 23149-1177. It’s only $99 with $5 shipping in the U.S. ($10 shipping foreign addresses). Please specify your receiver brand and model and computer operating system (Mac or Windows) when ordering by calling 800-296-2178.
**Intro To FM/TV DXing**

The warm weather months, when extended daylight and thunderstorm static hinder AM reception, are prime time for FM and TV DXing. There are two primary modes of propagation for FM and TV DX: E-skip and tropospheric. E-skip can occur at any time, although late afternoon through sunset often provides the best openings. TV channels 2 and 3 are most likely to be affected by E-skip. However, less stable sporadic E-skip openings can occur at higher VHF frequencies, typically affecting up to channel 6 and the low end of the FM band. Openings can last anywhere from just a few minutes to a number of hours. And openings will often be from a particular direction or region at a distance of 600 to 1,500 miles. For example, WAVE Louisville, Kentucky; KYTV Springfield, Missouri; and WLBT Shreveport, Louisiana, may appear in one opening on channel 3. But there will be other times when an opening will shift around, resulting in reception of WPBT Miami, and Televisa from Mexico on channel 2 within a few minutes of each other. Transcontinental and transoceanic reception at distances of more than 2,000 miles are rare, but do occur.

Tropospheric DX is typically associated with weather fronts or temperature changes. Reception distances are generally within 1,000 miles. Early morning tropo is common on FM and VHF, as the sun rises and heats the air, producing regular reception of stations within 500 miles throughout the year. As battle zones between tropical and dry air masses or opposing winds develop in the late spring and summer, tropo reception heats up on UHF, ducting signals well beyond normal coverage areas.

Sophisticated equipment is not required to get started with FM and TV DXing. Most televisions will handle DX. Some FM receivers are susceptible to overload and images from strong locals, but the FM reception on most AM/SW DX receivers will do the job. A directional outdoor antenna on a rotor will improve your chances, especially for tropo DXing, or when trying to null a local station. However, when conditions are right, an indoor antenna or portable receiver’s telescopic whip will suffice. Mountaintops and seashore locations will result in different, and perhaps unusual, reception under any conditions. The use of pocket televisions allows for remote-site TV DXing. Discover DXing! by John Zondlo includes an excellent introduction to FM and TV DXing for beginners (available from Universal Radio). The FM Atlas by Bruce Elving is an excellent reference, providing maps and listings for the U.S., Canada, and Mexico. Visit Ultimate TV’s Website at <www.ultimatetv.com> for complete listings of TV stations including mailing addresses and Web page links.

To further enhance your enjoyment, consider joining a club. The Worldwide TV-FM DX Association is the major organization dedicated to FM and TV DXing in North America (P.O. Box 501, Somersville, CT 06072). The Ontario DX Association also provides excellent coverage of FM and TV DXing along with SW, amateur, utility, and AM radio (P.O. Box 161, Station A, Willowdale ON, M2N 5S8).

**Broadcast News/Talk**

WorldSpace and Baygen have teamed up to bring the Baylis generator to digital radio. Although the wind-up spring technology used in the Baygen Freeplay will not provide enough power for the WorldSpace digital radio, Baygen has been working on a more powerful version for laptop computer applications. Alternatives to spring-energy storage, including chemical storage are being investigated. WorldSpace is launching three satellites: AfriStar, AsiaStar, and AmeriStar in 1999 which will each broadcast 80 channels that can be received directly by the WorldSpace portable digital receiver.

Paxson Communications officially launches “America’s seventh network,” the Paxnet Television Network, on August 31. The new network will carry family and Christian programming, including Touched By An Angel and the Worship network. Paxnet will be broadcast mostly by UHF stations across the
Dear Listener:

I am pleased to verify your reception of WNML (AM) operating at 1670 KHZ with transmitter located in Warner Robins, Georgia. WNML operates with a daytime power of 10 kW and a nighttime power of 1 KW. Our antenna system is non-directional. Miscellaneous technical details follow:

Transmitter: Harris DX-10 solid state with AMS-G1 stereo exciter.
Antenna: LBA 6 wire symmetrical folded dipole 92 m high.
Elevation: tower base 125m AMSL
Location: 32 38 19 83 38 33
Initial Broadcast: 4 May 1998
Programming: sports talk simulcasts with WNML-FM 90.5 MHz (Gray, Ga.)

Your reception report is greatly appreciated.

Happy DX'ing

Richard W. Hamilton,
Transmitter Engineer

WNML QSL letter signed by Richard W. Hamilton, Transmitter Engineer.

U.S. While local cable TV providers are not required to carry all satellite networks, there is what's known as a "must-carry" rule which requires cable companies to carry local TV stations. But with the huge number of satellite and local broadcasters already on cable, some providers just don't have room for more without bumping an existing service. This is resulting in some challenges to the must-carry rule.

TV Guide magazine is also experiencing difficulty keeping up with the proliferation of television networks and stations. The cost of maintaining schedule information is becoming prohibitive, such that the elimination of local listings is being considered. Broadcasters and networks would have to include their own listings or schedules in advertisements.

Construction of 100-kW WHRR Dennysville-Calais, Maine, at 102.9 has been approved. The station will serve eastern Maine and southwestern New Brunswick. WBUR Boston is now simulcasting on WRNI (ex-WRCP) Providence, Rhode Island, at 1290, bringing NPR to the Ocean State.

WLTW Lite FM 106.7 is holding the lead in the New York City ratings race, followed by Spanish-language WSKQ Mega 97.9 and WQHT Hot 97.1, with WINS 1010 the first AM station at number nine overall. However, Howard Stern holds the lead during morning drive on WXRK 92.3, followed by WSKQ, and all-news WINS in third.

X-Band Files

After experiencing a number of setbacks, WTDY has finally started broadcasting on 1670, with the 1480 call letters changed to WTDI. The address for reception reports is Mr. Glen Gardner, P.O. Box 2058, Madison, WI 53701. WJDM Elizabeth, New Jersey, has changed calls to WBAH and is broadcasting "Radio Unica" network programs in Spanish.

KSOS Utah at 800 is moving to 1660, Colorado's KAYK at 1690 and KQXI at 1550 have been sold to Radio Disney, and have changed formats accordingly. KKSO Des Moines, Iowa, at 1390 has changed its format to business news, carrying BNN network programs, with construction of KBGG at 1700 in progress. KSMH (Sacramento's Most Holy) Auburn, California, is expected to sign on this fall at 1620, with Catholic programming. The station is actually licensed to Kahi, but leased to a religious broadcast organization for five years, before taking ownership.

QSL Information

710 KDIS Los Angeles, CA, received in eight days for taped report. Assistant CE mentioned that my report was a surprise as they have no more than 25 mv/m at two miles to the north to protect KIRO. Signed by Mike Worrall, Assistant CE. Address: 3321 La Cienega Blvd., Los Angeles, CA 90016. (Martin)

729 R. Sport, Whangarei, New Zealand, received letter in 18 days for taped report, signed by John Howson, GM. Address: PO. Box 3526, 54 Cook Street, Auckland, New Zealand. New Zealand QSL #94. (Martin)

770 KNWX Seattle, WA, QSL card and letter received in eight days from John W. Price, Assistant Engineer. Card is for both KIRO and KNWX. Address: Entercom, 1820 Eastlake Avenue, East Seattle, WA 98102-3711. If you've been trying to QSL the station, John Price has answered all the old reports he could find back to 1993! (Martin)

1150 KXTA Los Angeles, CA, received letter with transmitter information in eight days for taped report, signed Mike Callaghan, CE KXTA/KIIS-FM. Address: 3400 Riverside Drive #800, Burbank, CA 91505. MW QSL #2481. (Martin)

1650 KGXL Costa Mesa, CA, received nice QSL card in 180 days for taped report. Address: KGIL/KGXL, 1500 Cotner Avenue, Los Angeles, CA 90025. (Martin)

1670 WNML Warner Robins, GA, partial data letter received in seven days.
If the synchronous detection is not selectable, as in the Sony ICF-2010, it can be forced to one side or the other by tuning slightly off frequency. Now this month’s logs. All times are UTC.

550 KUZZ Bakersfield, CA with country music, IDs as “KUZZ AM and FM, 107.5 FM.” (Slate)

560 KBLU Yuma, AZ Ided as “560 the news/talk station with the Michael Regan Show in the morning.” (Slate)

660 KZTU Junction City, OR noted with a very strong signal here 140 miles away, parallel KPAM-860. (Martin)

711 RTM Laayoune, Western Sahara monitored at 0052 with talk in Arabic, through tough T-storm static/QRM. (Connelly)

765 Dakar, Senegal at 0049 with male Arabic vocal, over fast sub-audible het that was presumably from Switzerland underneath. (Connelly)

770 WABC New York, NY Ided as “WABC 770, the home of the Art Bell Show.” (Slate)

890 KIS San Diego, CA with information about Cabrillo National Monument, IDs sounded like “KTV-792 The Radio Information Station.” (Slate)

1107 RNE5 Spain, synchronized stations at 0036 with two men in Spanish; loud! (Connelly)

1134 HRT Zadar, Croatia at 0035 initially dominating the channel with a Slavic folk vocal, then it faded under Spain. (Connelly)

1160 KSL Salt Lake City, UT with country music, news, talk, and truckers info, Ided as “1160, a BonnieVille
The Paxnet Television Network

<table>
<thead>
<tr>
<th>Channel</th>
<th>City, State, Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WPXH</td>
<td>44 Birmingham, AL (ex-WNAL)</td>
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<tr>
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<td>51 Phoenix, AZ</td>
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<td>KBPX</td>
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<td>KYPX</td>
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<td>KPXN</td>
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<tr>
<td>WPXG</td>
<td>14 Green Bay, WI</td>
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</tbody>
</table>

Station." (Slate)

1422 Algiers, Algeria at 0012 with Arabic-style violins, poor at first, then the carrier got strong but the audio was still at a low level. (Connelly)

1512 BSKSA Jeddah, Saudi Arabia at 0116 with male Koranic a cappella vocal; excellent signal about equal to WNRB-1510 Boston! The huge strength of this so late in the DX season really surprised me. The 0100-0130 UTC slot seems to be the optimum time for Middle East propagation during spring and summer. (Connelly)

1548 VOA Kuwait City, Kuwait at 0117 with VOA program in English to fair peaks, well over the British stations. It was close to dawn on the Kuwait end of the path. (Connelly)

1620 KYIZ pop music, comedy music, and talk, IDed as "KYIZ-1620, KBIZ-1520, the home of the Z twins." (Slate)

1690 KAYK Arvada, CO in what must have been a test of 1690 with religious music on a tape loop, then talk/preaching, followed by an open carrier. Later IDed as "KQXI 1550 AM Radio" and "1550 Kingdom Radio, Arvada/Denver." (Slate) Seems now it's Radio Disney!

Ch. 3 KTBS Shreveport, LA E-skip heard at 0310, local news with report on jobs. (Conti)

Ch. 3 KYTV Springfield, MO E-skip heard at 0312, KY3 local news, ad for Ozarkland John Deere. (Conti)

Ch. 3 WFSB Hartford, CT tropo at 0310, Eyewitness News Night Beat local news. (Conti)

Ch. 3 WLBT Jackson, MS E-skip at 0325, local news with sports report, mentioning "here on WLBT." (Conti)

Ch. 8 WTNH New Haven, CT tropo monitored at 0320, Newschannel 8 local news. (Conti)

Ch. 55 WLNY Medville, NY tropo heard at 0345, classic Star Trek, "NY55" ID. (Conti)

Ch. 59 WBNE New Haven, CT tropo at 0355, end of All In The Family, visual ID. (Conti)

Ch. 69 WPXQ Providence, RI tropo monitored at 0310, Worship network program parallel local Paxnet channel 60 WPXB. (Conti)

Thanks to these fine contributors: Mark Connelly, John Ebeling, Bob Gilbert, Pat Griffith, Gary Jackson, Patrick Martin, Judith Pryor (WorldSpace), and Ronald Slate. Until next month, 73.
### Applied for Permits to Construct New FM Stations

<table>
<thead>
<tr>
<th>State</th>
<th>City</th>
<th>Frequency</th>
<th>Power</th>
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</thead>
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<td>PA</td>
<td>Shenandoah</td>
<td>91.5 MHz</td>
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<tr>
<td>PA</td>
<td>Youngsville</td>
<td>88.5 MHz</td>
<td>100 watts</td>
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<tr>
<td>RI</td>
<td>Coventry</td>
<td>91.5 MHz</td>
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<tr>
<td>SC</td>
<td>Dillon</td>
<td>90.5 MHz</td>
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</tr>
<tr>
<td>SD</td>
<td>Rapid City</td>
<td>90.3 MHz</td>
<td>250 watts</td>
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<tr>
<td>TN</td>
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<td>500 watts</td>
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<td>Fannett</td>
<td>90.5 MHz</td>
<td>20 kW</td>
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<tr>
<td>TX</td>
<td>Freer</td>
<td>90.7 MHz</td>
<td>20 kW</td>
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<tr>
<td>TX</td>
<td>Plainview</td>
<td>88.5 MHz</td>
<td>3 kW</td>
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<td>TX</td>
<td>Weatherford</td>
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<td>6 kW</td>
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<tr>
<td>VA</td>
<td>Belle Haven</td>
<td>90.1 MHz</td>
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<tr>
<td>VA</td>
<td>Cape Charles</td>
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<td>Chase City</td>
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<td>Eastville</td>
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<td>VA</td>
<td>Heathsville</td>
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<td>Random Lake</td>
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<td>Richland Ctr.</td>
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<td>Cheyenne</td>
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### Granted Permits to Construct New FM Stations

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<tr>
<td>AR</td>
<td>Des Arc</td>
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<tr>
<td>AR</td>
<td>Mountain Home</td>
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<tr>
<td>CO</td>
<td>Grand Junction</td>
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<tr>
<td>GA</td>
<td>Talking Rock</td>
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<tr>
<td>IA</td>
<td>Castana</td>
<td>107.5 MHz</td>
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<tr>
<td>ID</td>
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<tr>
<td>MI</td>
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### Cancelled

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<tr>
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<tr>
<td>KWHN-FM</td>
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<td>WJTA</td>
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<td>WVTH</td>
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### Requesting AM Facility Changes

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### Changed AM Facilities

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<th>City</th>
<th>Frequency</th>
<th>Power</th>
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<tbody>
<tr>
<td>KWTX</td>
<td>Waco, TX</td>
<td>1230 kHz</td>
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<td>WGLB</td>
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<td>Changed community &amp; power</td>
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<tr>
<td>WKBO</td>
<td>Harrisburg, PA</td>
<td>1230 kHz</td>
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## Requesting Changed FM Frequency

- **KKOL-FM** Hampton, AR 106.5 MHz
- **WKTO** Edgewater, FL 88.7 MHz Seeks move to 88.9 MHz

## Changed FM Frequency

- **KVRN** Marvell, AR
- **KZDY** Cawker City, KS
- **WAZD** Savannah, TN
- **WBBI** Endwell, NY
- **WKXK** Pine Hill, AL
- **WLWJ** Masontown, PA
- **WTBB** Gadsden, AL
- **WXXP** Calverton, NY

## Changed FM Call Letters

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<td>WXX</td>
<td>WFG</td>
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<tr>
<td>WW</td>
<td>WMMA</td>
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</tbody>
</table>

## New AM Call Letters Issued

- **KBDB** Sparks, NV
- **KBDF** Brigham City, UT
- **WAZG** Myrtle Beach, SC
- **WAZI** Sussex, WI
- **WAZJ** Atlanta, GA

## Pending AM Call Letter Changes

<table>
<thead>
<tr>
<th>New</th>
<th>Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOC</td>
<td>WKLJ</td>
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<tr>
<td>WOMN</td>
<td>WOTS</td>
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<tr>
<td>WRN</td>
<td>WRCP</td>
</tr>
</tbody>
</table>

## Changed AM Call Letters

- **KAAN** KIRK Bethany, MO
- **KFXX** KKSN Vancouver, WA
- **KKSU** KFXX Oregon City, OR
- **KMSL** KNSE Ontario, CA
- **KRCU** KBCO Boulder, CO
- **KXXT** KLDZ Santa Barbara, CA
- **WBHR** WVAC Sauk Rapids, WI
- **WCHR** WTTM Trenton, NJ
- **WDYZ** WHIM West Warwick, RI
- **WIVR** WNGO Mayfield, KY
- **WJWK** WJPY Seafood, DE
- **WKDY** WMFZ Spartanburg, SC
- **WMDM** WAZC Lexington Park, MD
- **WSTK** WLAS Jacksonville, NC
- **WTEM** WWRC Washington, DC
- **WTTM** WAXK Princeton, NJ
- **WVWL** WBHR Sauk Rapids, WI
- **WWJY** WNL New London, CT
- **WWRC** WTEM Bethesda, MD

## New FM Call Letters Issued

- **KWBE** King City, CA
- **KBDA** Great Bend, KS
- **KBDC** Mason City, IA
- **KBDD** Winfield, KS
- **KBDE** Gatesville, TX
- **KDHD** San Ardo, CA
- **KBTA-FM** Batesville, AR
- **KCSH** Ellensburg, WA
- **KDTL** Dermott, AR
- **KHJP** Leona, AS
- **KHS** Pago Pago, AS
- **KIRK** Macon, MO
ARIA - Advanced Range Instrumentation Aircraft

Often mistaken as “Orion,” the call-sign ARIA - pronounced “Ah-RYE-ah,” which stands for Advanced Range Instrumentation Aircraft, is an Air Force aircraft that records telemetry from space vehicles, such as the space shuttle and ballistic missiles. Often misidentified or unidentified, the ARIA birds have the ability to acquire, track, record, and retransmit telemetry signals, primarily in the S-band (2,200 to 2,400 MHz) from practically anywhere in the world. Normally, the telemetry data is obtained in locations like broad ocean areas and remote land areas, which are outside the coverage of ground stations. During orbital missions, ARIA shadows the path of spacecraft for about 2,000 miles, recording about 9,200 feet of magnetic tape, which equals 15 minutes of data. Selected portions of the data may be retransmitted in real-time, via UHF satellite, to enable the launching agency to monitor system performance.

The ARIA deploys throughout the world, often operating in remote regions, to obtain telemetry data from orbital and re-entry vehicles as well as air-to-air and cruise missile tests. This includes support of tests conducted at Cape Canaveral AFS (Eastern Test Range), Vandenberg AFB (Western Test Range), Hill AFB, Eglin AFB, and from ships and submarines. When bird-dogging air-to-air and cruise missile launches, these flights last longer than most, sometimes requiring five hours of continuous airborne tracking. If a missile accidentally veers off course or otherwise malfunctions, mission commanders can steer the device by remote control with an on-board joystick. For re-entry missions, ARIA traces space vehicles during the last three minutes of flight, from the edge of space to impact. Two EC-18s are equipped with high-speed still and motion picture cameras capable of infrared and spectral photography, which aids in determining vehicle survivability.

ARIA aircraft have a sagging or droopy nose as its most distinguishing feature, earning it the nicknames “Droop Snoot” and “Snoopy Nose.” The “beak” is actually a 10-foot radome housing a seven-foot steerable dish antenna. This antenna subsystem currently has the capability to receive and track telemetry signals primarily in the S-band frequency range from 2,200 to 2,400 MHz, and the C-band frequency range from 4,150 to 4,250 MHz. With additional modifications to this subsystem, ARIA can receive and record L-band and P-band frequencies.

The ARIA also has a probe antenna on each wingtip and a trailing wire antenna on the bottom of the fuselage (EC-135E only) used for high frequency (HF) radio transmission and reception. Three receiver/transmitter sets comprise the system for HF mission communications. Two separate full-duplex links (three over water using the trailing wire antenna) may be used at one time. This system is separate from the flight crew HF radios. Further external modifications include antennas for data retransmission via UHF satellite. A 200-watt UHF satellite terminal permits voice and data retransmission through a 1000-watt UHF satellite terminal. Flight crew communications include two UHF, two VHF, and two HF radios for aircraft operations. The UHF radios are accessible by the mission crew for mission operations. New 1000-watt HF SSB radios are currently being installed on all aircraft allowing for greater ease of operation and maintenance. Inmarsat has also been installed on one ARIA adding clear voice and low bandwidth data communications via the Inmarsat satellite. Voice communications provide a link between the deployed aircraft and the ARIA Operations Control Center (AOCC or “ARIA Control”) at Edwards AFB for flight-following and mission updates during aircraft deployments. Data retransmission to the launch agency via satellite allows instantaneous analysis of critical events on board the spacecraft. The ARIA also uses the FLTSAT (Navy Fleet Satellites), LEASAT (Leased Satellites), LES (Lincoln Experimental Satellites), and UFO (UHF Follow-On Satellites) satellite systems during satellite voice communications and data retransmission.

History

In the early 1960s, the National Aeronautics and Space Administration
NASA realized that the lunar missions of the Apollo program would require a worldwide network of tracking and telemetry stations, many positioned in remote regions of the world. The Department of Defense (DoD) was also faced with similar considerations for its unmanned orbital and ballistic missile re-entry test programs. Since land stations are obviously limited by geographical constraints, and instrumentation ships cannot be moved quickly enough to cover different positions during the same mission, it soon became evident that large gaps in coverage would occur. To fill these gaps, a new concept in tracking stations was developed: a high-speed aircraft containing the necessary instrumentation to assure spacecraft acquisition, tracking, and telemetry data recording. The same aircraft could provide coverage needed for NASA's manned space flight operations, as well as events of interest to the DoD, such as orbital or ballistic missile re-entry tests. The airborne station concept became a reality in what was known originally as the Apollo/Range Instrumentation Aircraft (A/RIA). This "highly mobile" station was to operate worldwide, to receive and transmit astronaut voices, and to record telemetry information from both the Apollo spacecraft and other NASA and DoD unmanned space vehicles. To implement the concept, NASA and DoD jointly funded the modification of eight C-135 jet transport/cargo aircraft. The A/RIA, designated EC-135N, became operational in January 1968, as part of the Apollo program that placed a man on the moon in 1969. During these lunar missions, ARIA's job was to receive, record, and retransmit the telemetry data and voice communications between astronauts and Houston control. When NASA halted the Apollo program in December 1972, ARIA had a hand in helping 12 astronauts set foot on the surface of the moon. The crew of ARIA Four was the first to make contact with the astronauts of the ill-fated Apollo 13 after they re-entered the Earth's atmosphere, a little known fact director Ron Howard left out of his movie, according to the USAF.

The Air Force Eastern Test Range (AFETR) was selected to operate and maintain the system in support of the test and evaluation (T&E) community. The initial fleet of ARIAs, and eight EC-135Ns were based at Patrick Air Force Base, Florida. In December 1975, after seven years of operation by the Eastern Test Range, the ARIA (now re-designated Advanced Range Instrumentation Aircraft following completion of the Apollo program) were transferred to the 4950th Test Wing, Wright-Patterson AFB, Ohio. There, the ARIA fleet underwent numerous conversions, including re-engineering of the EC-135N ARIA to the EC-135E and the acquisition and conversion of used Boeing 707 commercial airliners in 1982. The Air Force bought eight used Boeing 707-320Cs from American Airlines, modifying the jets to the ARIA configuration and dubbing them EC-18Bs. The EC-18B, which is larger than the EC-135N, carries a bigger payload and operates on shorter runways.

ARIA moved again in 1994, relocating to Edwards AFB, California, in the Mojave Desert's Antelope Valley. The 452nd Flight Test Squadron, 412th Test Wing, presently manages the airborne telemetry aircraft, four EC-135Es and three EC-18s — the current ARIA fleet.

**ARIA Frequencies**

The ARIAs can be predicted to be aloft supporting shuttle launches on the East Coast of the U.S. and missile launches from the West Coast. ARIAs frequently make use of duplex frequencies. So if you can hear one part of the transmission, it's a good idea to hunt for another frequency. Here are some previously logged ARIA frequencies to check (kHz in USB): 3029 (duplex with 6889), 3162,
Eddy Waters, Australia, reports having found UA1J, Nak hodka Radio, Russia, sending baudot RTTY messages in Russian on 6407.0 kHz at different times, all 50/170. Eddy has not seen RTTY on this frequency before.

Dave Wright (TX) reports logging LOV3, the Argentine Navy Base Naval Almirante Berisso, Tierra Del Fuego, Argentina on 8318.0 kHz at 0100 also in baudot RTTY, 100/170. They were sending five-figure grouped messages.

While there, we spoke to the crew of an EF-111 and learned that the last flight of the EF-111 was to take place on June 19th from the 429th Electronic Combat Squadron’s home base of Cannon AFB, New Mexico to the Aerospace Maintenance & Regeneration Center at Davis-Monthan AFB, Arizona (aka “the boneyard”). The regular F-111s have long ago been retired by the USAF. So, by the time you read this, the last “Raven” flight will have taken place, leaving (I believe) only the Royal Australian Air Force flying the ‘vark. All in all, a great time overall.

I’m still in line — hi! I met other nice folks and had a great time overall. While there, we spoke to the crew of an EF-111 and learned that the last flight of the EF-111 was to take place on June 19th from the 429th Electronic Combat Squadron’s home base of Cannon AFB, New Mexico to the Aerospace Maintenance & Regeneration Center at Davis-Monthan AFB, Arizona (aka “the boneyard”). The regular F-111s have long ago been retired by the USAF. So, by the time you read this, the last “Raven” flight will have taken place, leaving (I believe) only the Royal Australian Air Force flying the ‘vark. All in all, a great time overall.

Digital News

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Reader Mail

Al Bauernschmidt, N3KPJ (PA) checks
in with some first time logs this month, using a Kenwood TS-440S and an AR-8000 for his primary monitoring setup. His antennas are a Butternut vertical and a 50-foot random wire. Future plans are to add a Drake R8B before the end of this year. Al enjoys monitoring the USCG. To add a Drake R8B before the end of this year. Al enjoys monitoring the USCG.

Also checking in for the first time with logs this month are "RC" from McAllen, Texas, and Simon Denneen from the Gold Coast, Queensland, Australia. Welcome! Ralph Craig sent in several photos of the USCGC Reliance (WMEC-615) when she was homeported out of New Castle, NH. The cutter was later moved to Portsmouth, VA.

Joe Olig gives us a status on the red painting of USCG icebreakers. Joe noted a report that indicates painting of the Great Lakes-based USCGC Mackinaw (WAGB-83) started the end of May and should be finished by now.

Bob Montgomery, logging editor for The Lowdown, the official club publication of the Longwave Club of America, and Steve Ratlaff, also a member of LWCA, each wrote concerning the log of VTX3 on 18.2 kHz and the ID of this station as the Indian Navy, from the Vijayanarayanam transmit site, near the Tuticorin Naval Base in the southern tip of India. Steve started hearing VTX3 from Oregon last November, and also heard it from Tucson over Christmas. Another DXer, John Lauerman, in the Seattle area, also started hearing it about the same time Steve did. He wrote the FCC concerning it, with no reply until recently, when they gave him the city it was located in and the coordinates, same as reported here. Bob says that the LWCA was able to independently confirm in June the same identity for the station.

Steve also sent in these IDs for Jon Van Kay’s unidentified LF beacons in the June issue: 305 PEE, AK, Talkeetna 250W, only one listed near that freq in AK; 314 SPY, AK, St. Paul Island (Pribilof Islands) 1 kW; 356 HHM AK, Kotzebue 1 kW; 382 JNR AK, Unalakleet 1 kW; 390 HBT AK, Sand Point 1 kW; 153/171/180/234/243 are all Russian LWBC stations at several places in Russia, with 250—1000 kW power. SPY and HBT, plus several other Alaskan beacons, and all the Russian LWBC’s are heard on the West coast during the winter Steve reports. Thanks guys.

While I was at it, I snagged a sample copy of The Lowdown. It’s a very worthwhile publication for those of you interested in LF and VLF reception. The Longwave Club of America was organized in January of 1974 to promote both DXing and experimenting on frequencies below 550 kHz and activity on the 1750 meter band. Membership dues are $18.00 a year in the United States, $20 a year in Canada and Mexico, and $26 a year for overseas members. These rates include a copy of The Lowdown. If you’re interested in learning more about the Longwave Club of America, write Bill Oliver at 45 Wildflower Rd., Levittown, PA 19057 or by E-mail at <boliver@blackboard.com>. You can visit the official LWCA homepage at <http://www.anarc.org/lwca/>.

Now, on with this month’s show.

UTE Logging’s SSB/CW/DIGITAL

418: OXZ, Lyngen Radio, Denmark at 2052 in CW w/ID & nwg w/ID (in EE). (HOOD)
445: VID, Darwin radio, Australia at 1110 in CW, clear signal w/wx info. (EW)
1710: SDJ, Stockholm Radio, Sweden at 0748 in USB w/tx forecasts (in EE). (HOOD)
2477: SJPB, M/V United Star at 2327 in ARQ w/situation report. (AB)
2528.6: XVUCA, TKH Lidiya at 1930 in RTTY 50/170 msg to “Radio St Petersburg Alteks” from Kms Kiselev via UHPS. (HOOD)
2984.8: CCHS, Chilean Navy, Santiago, Chile at 0820 in RTTY 100/850 w/SL. (UJ)
2965: Unid std Rptng only “UT” in CW at 1710 w/Queen Radio at 1730 in USB on same freq. (TY)
3106: PCD, Mosaic, ISR at 2300 in CW w/PCD rmx. (AB) Same, std in USB at 2030, also noted on 4270 kHz. (TY)
3216: ZKDC, Deep Cove Outdoor Education center, New Zealand at 0730 in USB w/2 OMs on their evening sked, they specialize in taking school children on outdoor pursuits, tramping & cruises in the Fiordland National Park & Sounds. (IJ)
3261: Cuba? CW net heard very briefly at 1100. (AWH)
3354: ZKCT, Civil Defence, Palmerston North, New Zealand at 2110 in USB w/docks on secondary CH#GOLF. Some stations were having comms problems on their primary 5 MHz channel re earthquake appeared to have knocked some of their Codan HF radios out of alignment. (II)
3371.5: Unid std 4XL Rptng “V BFR” DE 4XL” in powerful CW at 1820, poss from mainland China. (TY)
3470: Stavanger Rescue, Norway at 1057 in USB in rdo ck w/Kinloss Rescue. (AG)
3737: UIW, Kaliningrad Radio at 2209 in CW w/msg to AUUJ: BATM Porfiry Chanchibadze. (HOOD)
4028: Cuban YL/SS w/5F msg in AM heard at 0517. (TS)
4045: VK42 working VK35 at 1057 in USB w/general chatter. (SD)
4055: YJ, RFDS Broken Hill, NSW, Australia at 0825 in USB, YL w/wx forecasts & road reports. (IJ)

Abbreviations Used For Intercepts

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AM</td>
<td>Amplitude Modulation mode</td>
</tr>
<tr>
<td>BC</td>
<td>Broadcast</td>
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<tr>
<td>CW</td>
<td>Morse Code mode</td>
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<td>EE</td>
<td>English</td>
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<td>German</td>
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<tr>
<td>ID</td>
<td>Identification/led/location</td>
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<td>LSR</td>
<td>Lower Sideband mode</td>
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<tr>
<td>OM</td>
<td>Male operator</td>
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<tr>
<td>PP</td>
<td>Portuguese</td>
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<tr>
<td>SS</td>
<td>Spanish</td>
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<tr>
<td>tcf</td>
<td>Traffic</td>
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<tr>
<td>USB</td>
<td>Upper Sideband mode</td>
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<td>With</td>
</tr>
<tr>
<td>wx</td>
<td>Weather report/forecast</td>
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<td>YL</td>
<td>Female operator</td>
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<tr>
<td>4F</td>
<td>4-figure coded groups (i.e. 5739)</td>
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<tr>
<td>5F</td>
<td>5-figure coded groups</td>
</tr>
<tr>
<td>5L</td>
<td>5-letter coded groups (i.e. IGRXJ)</td>
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</table>

4119: Whiskey Bravo November 6510 clg Whiskey Lima Oscar at 2350 in USB, no joy. (RC) [WBN6510 is the Crowley Maritime Tug Sentinel, WLO is the maritime coastal station Mobile Radio. The coastal stn would have been on 4411 — Ed.]
4165: YL/EE, MIW2, Mosaic. Israel, hrd in USB at 2015. Also noted on 6745 kHz. (TY)
4197: UTAH, TKH STK-1231 at 0830 w/CW msg from km Linkevich to AMISCO. Tallinn via UCW4. (HOOD)
4222: XSN, Ningbo Radio at 1805 w/CW ID & ORU. (HOOD)
4228.5: VIM, Melbourne radio, Australia at 1227 in cw w/qrr information. (EW)
4263.3: ZLO, Waiouru radio, New Zealand heard at 1224 in cw w/noisy over-modulated signal. (EW)
4343: RKLX, Arkhangelsk Radio at 2214 w/CW ID (to “4LY”). (HOOD)
4360: Abnormal Mosaic transmission heard in USB at 2045. YL/EE Rptg “Sierra Yankee November Two” for more than 30 mins, also noted on 5629. Another day normal SYN2 hrd at same time. (TY)
4378: WOO, AT&T Coastal Stn New Jersey at 0200 in USB w/computer voice, WOO traffic list. (RC)
4419: Australian tuna fishermen at 1007 in USB talking about the fish’s afternoon feeding habits using remarkably colorful language. (SD)
4445: ZMH31, Russell Radio, New Zealand at 0650 in USB w/check-ins from various boats around the South Pacific for posn reports, etc, also giving out wx forecasts. (UJ)
4460: FJ, Mossad, ISR heard at 2300 in AM //2626 kHz. (AB)
4480: SS/YY w/5F in computer voice in AM at 0330, at 0346 ends w/what sounds like “hello” 3 times, lots of QRN. (If there was a pause between the second & third “hello,” then it was probably “final, final...final,” if the spacing was even, it was probably “zero...zero...zero” — Ed.)
4483: VZX, Penta COMSTAT w/afternoon coastal sked at 0645 in USB w/ZVX receiving posn reports from vessels including Allena, Anitra V, nothing hrd from Diversion & Jasmine, Manutai, Miriama, Rosenkavalier, etc.
5651: USCG CoinmSta New Orleans at 1324 ing 150M from Brisbane. (SD)

5763: Beijing Volmet, China, YL w/flying wx in EE at 1110 in over-modulated USB, noted on 3458 kHz. (TY)

5800: PC145 at 1047 clg Glucksburg Rescue (D). Kinloss Rescue (G) at 1127 wkg Swedish Coast Guard 583 ent to Kinloss for visit. Glucksburg Rescue at 1105 wkg DRNN (D). Air Force 276 at 1144 wkg Swedish Air Rescue (S). Bodo (NOR) at 2009 wkg Sabre 33, req QSY 6666 kHz. M9M4 at 1359 clg Kinloss, Puma helo w/400m ent from EGGO to EGAA 1450z, rqtg radio watch, is over Irish Sea. Rescue 115 at 1525 clg Malin Head Rescue (IRL). Coastguard Rescue Mike Uniform at 1150wen qnm pass for fivehr. "T59 or T4" (dead). India Zero 113 (I) at 1425 in r/cw to Kinloss (believed to be an Italian Navy Atlantic!). Sabre 42 at 2100 in r/cw to Stavanger Rescue (NOR). Stavanger Rescue at 2129 wkg Tromso in nn. SHF 486 at 2151 clg Kinloss for r/watch, adv was a Chinook helo w/15pob a/2 hrs between Great Glen & Ben Nevis. (SHF = Support Helicopter Force). RAIARIF 7475 at 1112 asking for r/watch from Kinloss, was airborne from Bruggen (D) ent to Wattisham, 8 POB. Koksijde Rescue (BEL) at 1253 in r/cw w/Belgian Air Force 94. All in USB. (AG)

5696: At 0138 RESCUE 1503 w/pp re found source of ELT on Czech fishing vsl DOMINO, 43 ft fishing vsl, contacted DOMINO on Ch.16, after hard time communicating problem to Domino, ELT was turned off, continued search showed no further ELT activity in area. Due to no other satellite pass for fivehr, 1503 ordered to RTB. At 0208 pp by CAMSLANT w/AACC ATLANTIC AIR COMMAND CENTER adv 1503 IFE of 757 a/c at 41-34N/056-23W, lost an engine, ent St. Johns, req 1503 head St. Johns from their posn. At 0210 another pp w/AACC, adv 757 c/s Leisure 208, has 33 POB, lost #1 Engine. QSY 5717, contact Halifax military. All in USB. (RM)

5712.4: At 1430 USS Boone w/Cape Radio in USB for radio check in preparation for the launch of the Shuttle Discovery. Prior to this they were on 10780 discussing when the USS Boone would be providing Cape Radio w/wx forecast. (AB2)

5717: At 0215, CG 1503 in USB w/Halifax Military confirming w/ARTCC relevant info re Leisure 208, pp w/ARTCC confirmed that they are in pursuit of a/c. At 0243 Halifax adv a/c is 40 miles from Gander & 1503 can release, as there is a rescue squadron in Gander that can takeoff. (RM)

5745: SESEF Mayport, FL at 1157 in USB w/kg USS Ennis Hinson, heard at buoy offshore Mayport. (AWH)

5841: At 1831 93 ALPHA w/pp w/report for PANTHER. (MF)

5865: Cuban voice net at 1215 inc CLX91, CLX900, passing wx reports, fair. (AWH)

6215: 3DP, Suva Radio w/MARSAR call at 1103 in USB re an overdue 28-ft boat bound for Lova-Lova. (SD)

6284: Naupo Maritime (NZ) at 2115 in USB w/wx reports, warnings, (SD)

6303.5: UAWF, Vetluga (AG-1361) at 1806 in RTTV 50/170 msg to Alesund from Km Yunytis via RKLM (is ex EVZC). (HOOD)

6316.5: KHF, Guam w/ARQ Ready-Signal, signing CW at 1130. Also now on 8420 12629 16869 19687. (FH)

6322: ZSC, Capetown Radio at 2119 in ARQ. idle w/marker. (HOOD)

6330: XSG, Shanghai radio, China at 1109 in CW/wstation marker. (EW)

6343: WLO, Mobile Radio, Al in FEC w/msg to ship re a damaged pumped. (TS)

6550: Coast Guard 01 at 1113 in USB w/CG Center, freq change due to interference by pirates. (AB)

6589.9: Cuban voice net USB, telco fed audio w/num, SSVYL/w tests. Another one on 6979.9. Same audio switching between both freqs, so same source evidently. (AWH)

6604: New York Volmet at 0100 in USB w/aviation wx for Cincinnati. (RC)

6676: Calcutta Volmet, India, OM w/flying wx in EE at 1737 in USB. (TY)

6683: SAM 300 wkg Andrews VP for pp to Gander Meteo at 0500 in USB. (JJ)

6706: GUYW, HMS Guernsey, at 0945 in USB w/Hotel 19. (AB)

6849: Christian Radio Missionary Fellowship Station, Papua, New Guinea at 0750 in USB, GL w/list of items for sale. Items included Inkjet printer, computer monitor, roller blades, speakers & an electric screwdriver. (JJ)

6868: "Bored man," Cuba at 1406 in USB w/"R290" msg // 4106. (AWH)

6900: Bored Man, RUS at 2000 in AM w/id 122 + 5PG. (AB)

7305: JMH2, Tokyo meteo, Japan at 0821 in FAX 120/576 w/wx map. (EW)

7445: YL/EE, SYN2 Mosaic, Israel, hrd in USB at 1545 being heavily QRMed by Thai/BC (V.of Asia) on the same freq. Also noted on 5629, 8641 kHz. (TY)

7465: VJN, Royal Flying Doctor Service, Cairns QLD, Australia monitored at 0900 in USB w/recorded msg "when clg the RFDS operator please use your emergency alarm call button." (JJ)

7535: NSBJ, USS Ponce (LPD-15) at 1250 wkg SESEF Norfolk w/start of HF testing URT-23 #2. At 1515, N1ZI, USS Pensacola (LSD-38) wkg SESEF w/HF testing. (Ed.)

7677: HB9DQ, MFA Bern, Switzerland at 0655 in ARQ w/2Lgs. (U)

7726: Spanish Lady V2 numbers station on 6979.9. Same audio switching between both freqs, so same source evidently. (AWH)

7755: NSW, USS Ponce (LPD-15) at 1250 wkg SESEF Norfolk w/start of HF testing URT-23 #2. At 1515, N1ZI, USS Pensacola (LSD-38) wkg SESEF w/HF testing. (Ed.)

7801: At 1515, N1ZI, USS Pensacola (LSD-38) wkg SESEF w/HF testing. (Ed.)

7867: BB20, MFA Berne, Switzerland at 0655 in ARQ w/2Lgs. (U)

7926: Spanish Lady V2 numbers station on 6979.9. Same audio switching between both freqs, so same source evidently. (AWH)

8016: At 1515, N1ZI, USS Pensacola (LSD-38) wkg SESEF w/HF testing. (Ed.)

8067: BB20, MFA Berne, Switzerland at 0655 in ARQ w/2Lgs. (U)

8117: BMB, Taipei, Taiwan, w/CF w/mkr in powerful CW at 1000. (TY)
8195: QUITO (aka CENTRAL) unid marine stn in Ecuador at 1218 in USB wkg ENRIQUE 2, ops report. (AWH)
8212.7: Unid Tunisian Naval Station at 0430 in ARQ w/"Secret" marked msg #332. (JJ)
8240: NIIW, USCGC Willow (WLB-202) at 2221 in USB wkg NMN, CAMSLANT (on 8764.0) for posn, 32N/62W. (Ed.)
8285: P3UB6, MV Matheos at 1744 in USB wkg Bern Radio for pp. (HOOD)
8318: LOV3, Argentine Navy, Naval Almirante Berissio, Tierra Del Fuego, Argentina w/DELOV3, then into 5LG msg at 0100 in RTTY 100/139. (DW)
8341: RTMS Boris Derevyanko, unk callsign, monitored at 1840 in RTTY 50/170 w/cw Tgs to Odessa addresses, vsl was nr Las Palmas, with msg hdrs for lycovsk but probably wkg UTQ which was QSS 8341 at this time. (HOOD)
8416.5: NMC, USCG CAMSPAC Point Reyes, CA in FEC at 0434 w/wx brdcst. (TS)
8429: CBV, Valparaiso Radio in ARQ w/Ready-Signal, singing CW heard at 0145, new, (FH)
8434: SVN44, Athens Radio, GRC at 2339 in language. (EW)
8713: VZX, Penta Radio, Gosford NSW, Australia at 1340 w/cw msgs from Samara to ULFR, provisional at 2205 in RTTY 75/850 w/RY, line count. (FH)
8734: BVA, Taipei radio, Taiwan at 1057 in CW w/id marker. (EW)
8742: CBV, Valparaiso Radio in ARQ w/Ready-Signal, signing CW heard at 0145, new, (FH)
8834: SVN42, Athens Radio, GRC at 2344 in USB w/voice mirror. (AB)
8900: Cuban Babbler at 1257 in SS/OM "uno uno" repeatedly. (AWH)
I tried to borrow the 6025 for "HF testing" but the crew was too alert . . .

Air, Papua, New Guinea w/AUSSIE 309 at 0640 in USB, had no joy contacting control on VHF. (JJ) Naha Aeradio, Okinawa, Japan, YL opr wkg various a/c in USB at 1056. (TY)
9042: Singapore radio, Singapore at 1204 in USB clg Malaysian 264 re posn report. (EW)
9068: REACH 4670 at 1912 in USB clg Lajes, no joy. (MF)
9238: SS/YL V2 numbers station 0600 UTC to 0625 in USB clg Lajes, of Marine, no joy. (JJ)
9320: SAM 201 w/DV-2 at 0303 in USB, departed Lajes 0315z, wkg Andrews VIP for pp to SAM Command re: windpipe crushed, diverting back to Lajes. (JF talked about, but not declared.) Currently looking into the possibility of transferring the VD onto SAM 681 which is due in at Lajes 0540z. (JJ)
9340: RCH72, Tashkent meteor, Russia tuned to 0805 FAX 120/576 w/very poor/noisy signal. (AWH)
9436: to 9438.2, GXQ London VF 50/170 channels, strong signals at 2145. (FH)
10099: Tashkent Voilet, Uzbekistan, YL opr w/avian wx in heavily accented fee at 0940 in USB. (TY)
10225: Unid U.S. military training stn in ASCII 75/170 and sending 4F, 5F, 6L grp mssgs. /16303.6 kHz. (TS)
10362.3: RFFJD, French Forces, Libreville, Gabon at 2205 in ARQ-E 48/850 w/Controle de Voie on CI. "JFD." (Ed.)
10960.7: RFFVA, F at 2220 in ARQ-M2 200/400, didn't see ckt ID but almost certainly FDX to Sarajevo, seemed /13479.7. fair but difficult in QRN, all SLG tfc ch A. (AWH)
11039: DDH9 Hamburg Meteo, Germany in RTTY 50/400 at 2055 w/GG wx, then RYs, on 147.3 11039, 14467.3, DDH48, DDH9, DDH8. (FH)
11053: PCAF01 wkg Andrews VIP for pp to Eielson AFB at 0007 in USB (also on 0826.0 and 112200). (JJ)
11054: UIW7, Kaliningrad in 50/170 RTTY FY's at 1345. (FH)
11059: SPAR 65, w/DV — General Clark, inbound Jackson Hole, WY wkg Andrews VIP at 2116 in USB. (JJ)
11084: COYOTE (Kirtland AFB) wkg SHADOW 21 at 2005 in USB. (JJ)
11107: RFLI, French Forces Fort de France, Martinique at 2307 in ARQ-E 192/425 idling only. (EW)
11162.5: RS-ARQ 228/170, thought to be, can't read here, quite strong, on & off operation Monitor 2100—2200. (FH)
11167.5: Presumed NATO Exercise MONTI & ESCABEAU 2 at 0540 in USB w/posn Reports, Target, Fire Rounds, High Explosive & mentioned a location Porto something. (JJ)
11175: SOONR 85, C-130, at 1844 wkg Andrews w/pp re had to shut an engine down. At 1620 CODY 620, C-141, WPAPB 445AW 356AS wkg Andrews w/pp to on-base extension 5205. (AS) At 1931 MacDill w/pp for Dark 42 to RAYMOND 37. (MF) At 1658 NIGHTHAWK 10 clg MAINSAIL for a radio check. No joy. At 1701 NT4W w/pp to DSN

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September 1998 / POPULAR COMMUNICATIONS / 75
The Ham Column

GETTING STARTED AS A RADIO AMATEUR

Buy Your Next Rig Over The Phone

O ther differences aside, there are two kinds of hams in this world: those who live near amateur radio equipment dealers and those who don’t. It’s not that simple, of course, but if you live six hours from the nearest radio store, you might be inclined to agree! The Lucky Ones have easy access to all the new gear with all the new bells and whistles. And they can banter endlessly with staffers, raking in equipment tips, inside information, and radio goodwill. Dealers know that local buyers can become repeat customers. And repeat customers aren’t always concerned with finding the lowest prices. In a tight market, intangibles count.

If you’re out in the boonies, however, a round trip to the nearest radio store may take a day or more. No matter how good the service, “buying local” isn’t always an option. The Local Guys probably don’t offer the lowest prices, either. And let’s face it — in these financially trying times, price can be important.

Whatever your reasons, buying your next rig over the telephone from a faraway dealer may be your best — or only — option. Yet, pouring over a stack of magazine ads, dialing a series of 800 numbers and paying by credit card isn’t everyone’s cup of tea.

This month’s column is about dialing for dollars... yours! Here are a few tips on making your telephone purchase a successful one.

Do Your Homework

Before purchasing that rig over the telephone, you have some homework ahead of you. Even if the nearest radio store is miles away, try to check out the gear you’re interested in at hamfests, swap meets, brochures, and your friends’ shacks. Check out product reviews and related columns in amateur radio magazines. If you have access, search the Internet for information and “hands-on” user comments about the rig(s) you’re considering. Every little bit helps.

After you’ve narrowed down your equipment choices, it’s time to research potential dealers. Price, policies, and procedures may make a difference in your situation. Some dealers take equipment trade-ins, some offer generous return policies, and some accept certain credit cards that others don’t.

After you’ve assembled a list of dealers from magazine ads (or whatever other sources you have available), call each one and ask about prices, trade-ins, service, shipping, etc. — everything that’s important to you. Keep notes, or you’ll get things mixed up.

Making price inquiries on the dealer’s 800 number is perfectly OK, but asking technical questions isn’t. Use the regular number for non-sales-related inquiries. If the sales person seems rushed, rude, bored, or otherwise unfriendly, consider moving on.

Trading in your old gear may be challenging. Some dealers welcome most reasonable trades, while others are interested only in late model radios (or don’t accept trades at all). If you can fund your purchase in its entirety, consider selling your rig yourself. You’ll probably get more money for it.

Shipping charges should be fairly similar among dealers. Some dealers, however, “leverage” their low equipment prices with higher-than-necessary shipping charges. If it seems that someone’s charging an arm and a leg for transportation, be extra careful!

Smart Shopping

When you’ve talked to a sufficient number of dealers and put together a clear picture of the prices and services available, be sure to consider the following before finalizing the deal:

- Clarify the details. Before signing on the dotted line, make sure you and the sales rep agree upon the make, model, price, included parts and accessories, sales tax, shipping fee, warranties, and return policies. Have the sales rep repeat everything back to you, or have a copy of the deal faxed to you before making your purchase. Doing so will minimize your risks and maximize your chances of getting exactly what you want at the agreed-upon price.

- Cables and accessories. Make sure you understand exactly which cables, brackets, adapters and accessories are included before finalizing the deal.

- Return policies. In the computer industry, 30-day return policies are standard. With amateur radio products, however, return policies typically range from none to two weeks. Make sure you’re happy with whatever policy your dealer has in place.

- Restocking fees. If you decide to take advantage of your dealer’s return policy by returning your newly purchased rig within the specified period, you’ll likely be charged a restocking fee since the equipment can’t be resold as
new. Restocking fees can range from none to 20 percent of the purchase price. Although there is no standard for restocking fees, be sure you’re comfortable with yours before you buy.

**Tech support.** Be sure you know exactly who will perform warranty service and repairs should your new rig need service. Will the dealer’s in-house techs perform the service, or will the unit have to be sent back to the factory? If your rig is dead on arrival, will you receive a new radio, or will you have to wait months while “major surgery” takes place? Remember, it isn’t always about saving a couple of dollars; consider service after the sale is made.

**Credit cards only.** If at all possible, purchase big ticket items, such as computers and transceivers, with a credit card. Don’t use checks or cash. Credit cards are your only real protection against fraud or wayward vendors. Most credit card issuers allow users 60 days to challenge a “deal gone bad.”

**30 days or bust.** Anything purchased over the telephone or through the mail must be shipped to you within 30 days of the date originally agreed upon. If the vendor can’t deliver — whatever the reason — you must be notified. Even if you agree to the shipping delay, you reserve the right to cancel your order at any time, even after consenting to the delayed delivery schedule.

**Happy trails.** Be prepared for anything by keeping an accurate paper trail of all correspondence, receipts, warranties, invoices, etc. As soon as trouble rears its ugly head, put everything in writing, including statements made during phone conversations, and send a copy to the vendor. When talking to sales reps and technicians, be sure to write down names, times, and a summary of the conversation.

In addition to doing a little homework and being prepared before you buy, don’t forget to ask your fellow ham club members about their mail-order purchasing experiences. Once you’ve found the best deal — and dealer — for your needs, you can make your purchase with confidence.

Do you have a topic you’d like to see covered in “The Ham Column”? Send your suggestions, QSL cards and letters to me at “The Ham Column” c/o Popular Communications, 25 Newbridge Road, Hicksville, NY 11801.

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FOR SALE: To highest bidder. Delivery upon demise. Equipment used in producing “Old CB Shack” column must be retained until I can no longer continue series due to terminal illness. It comes from the oldest CB business (part of a commercial two-way radio business) in the USA and the longest continuing CB operation Sales and Service. radios consist of many units dating back to 1960. Some have been restored per the magazine articles, others restored with modifications. Some are so rare that they are most likely the only ones still in existence. ONE UNIT is so rare (with authentication by Dr. Johnson himself who tried to buy it from me) that I guarantee it is unequalled. The Johnson Co. only built 250 of them including a special box. It is the Gold Award Messenger III. This unit was plated with 24kt. pure gold. This radio has NEVER been fully out of its box. Sale also includes a 100 percent full set of Sam’s CB series radio manuals, plus full factory set of service manuals from the Johnson Co., Polytronics and others. Also, schematics gleaned from many others (customers, trade magazines, etc.) Also included are various items of test equipment for CB radios dating back to the 60’s. The higher will place a 20 percent deposit with payment in full upon delivery in approx. two years or less. An itemized list and some pictures will be provided to serious bidders upon payment of $25 fee. I am not interested in mailing stuff all over the US to curious people! Sale is all or none. All items will be boxed and shipped by UPS to successful bidder at the appropriate time by company personnel, COD cash unless other arrangements have been made. Inspection can be arranged per the magazine articles, others need restoration. wanted until I can no longer continue series due to terminal illness. It comes from the oldest CB business (part of a commercial two-way radio business) in the USA and the longest continuing CB operation Sales and Service. Radios consist of many units dating back to 1960. Some have been restored per the magazine articles, others restored with modifications. Some are so rare that they are the only ones still in existence. ONE UNIT is so rare (with authentication by Dr. Johnson himself who tried to buy it from me) that I guarantee it is unequalled. The Johnson Co. only built 250 of them including a special box. It is the Gold Award Messenger III. This unit was plated with 24kt. pure gold. This radio has NEVER been fully out of its box. Sale also includes a 100 percent full set of Sam’s CB series radio manuals, plus full factory set of service manuals from the Johnson Co., Polytronics and others. Also, schematics gleaned from many others (customers, trade magazines, etc.) Also included are various items of test equipment for CB radios dating back to the 60’s. The higher will place a 20 percent deposit with payment in full upon delivery in approx. two years or less. An itemized list and some pictures will be provided to serious bidders upon payment of $25 fee. I am not interested in mailing stuff all over the US to curious people! Sale is all or none. All items will be boxed and shipped by UPS to successful bidder at the appropriate time by company personnel, COD cash unless other arrangements have been made. Inspection can be arranged per the magazine articles, others need restoration.

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SPORADIC WAVES: If you like SSB, CB, then my newsletter you must see! Free sample issue for all who ask.

I was the best of times; it was the worst of times. I’m talking about my time in the Coast Guard as a Radioman. Today, I remember the best of times. My grey cells are selective and help me forget the worst of times.

I had never played practical jokes before I went into the service. I just wasn’t very good at it. I finally got the hang of practical jokes, though, after spending some time at sea. We filled the hands of countless sleeping sailors with shaving cream, then tickled their noses to simulate a fly walking across the old honker. Just like on TV, every one of them whipped that shaving cream right into their own face. It was beautiful — sort of like ballet, only funnier.

I had been on the ship for a while before I realized that we had a radio beacon. It transmitted our ship’s call sign, NICC, somewhere in the top half of the 400 kc band. When I was home on liberty, I remembered seeing a small fluorescent light tube taped to a 102-inch whip on the back of a ’65 Mustang. The thing lit up for about 10 seconds, then flickered and went off. The look in Johnson’s eyes said, “That’s the trouble. Lift your left foot.”

“I’m trying to make it stay on,” I said. “I’ll try again. Another nod, my partner instructed our third assistant. He lifted his left foot and the light lit instantly, remaining on till he put his foot back down again. “Here, you try,” Pileggi said, holding the tube out to Johnson. Johnson refused, but eventually decided to try it. He lifted his right foot. Nothing.

“You ain’t gonna light no light bulb,” he said. “Not a real one.”

My partners were in place. “Tell you what. Walk in here to the DC shop and ask Pileggi if you can take one of the fluorescent tubes out of his ceiling. Tell him you’ll bring it back.”

“OK,” Johnson said, I watched him ask for the four-foot tube, and sat in the Lotus position at the rail — as close as I could get to the beacon antenna. I pretended to meditate and held the lamp over my head, my arms extended to each end. I looked at my partner and nodded ever so slightly. The light flickered. He told partner No. 3 on the phone. I did not look up.

“Hey! It went! It really flickered!” Johnson said.

“You ain’t gonna light no light bulb,” he said. “Not a real one.”

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“Hey! It went! It really flickered!” Johnson said.

“Yeah, Lean here while I give this tube back,” he said.

He returned the tube, and came back to get me. I let a lot of my weight hang on him as he helped me to my rack.

“Thanks,” I told him. “Don’t mention that to anyone. I don’t think I’m gonna try it again,” I said. He agreed. I told him I thought my keys had fallen off my belt clip, and asked if he’d go look on the fantail for them before they fall over the side. He would. As soon as he left the compartment I jumped up and ran to a hidden vantage point. Pileggi was waiting on the fantail with the same fluorescent tube in his hands. Nothing was happening. “Don’t try that, Pileggi,” Johnson said. “It’s bad. Drained Price. He’s down in his rack now, and he don’t look well.”

“It’s a lot easier for me,” Pileggi said. “All I gotta do is think about the light lighting, and lift my right foot off the deck.”

With that, he lifted his right foot an inch or so off the deck, and the light lit instantly, remaining on till he put his foot back down again. “Here, you try,” Pileggi said, holding the tube out to Johnson. Johnson refused, but eventually decided to try it. He lifted his right foot. Nothing.

“Which hand do you write with?” Pileggi asked.

“Left.”

“That’s the trouble. Lift your left foot.” He did. The light flickered and went off.

“Think harder,” Pileggi said. Johnson probably put every one of his grey cells into play — there was pain on his face. He lifted his left foot and the light lit instantly, this time staying on till he put his foot down again. He repeated the process about 10 times, successfully.

“Hey, think I could have this tube?” he asked Pileggi.

“Sure. I’ll get another one,” Pileggi told him.

Johnson walked off, holding the tube carefully. He never mentioned the incident again, but always had a sort of respect for me after that day — perhaps a little fear — fear that I might point a hexing finger at him and turn him into a toad. We decommissioned the Mackinac soon after that, and we all went our ways. I wonder if he ever found out.
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