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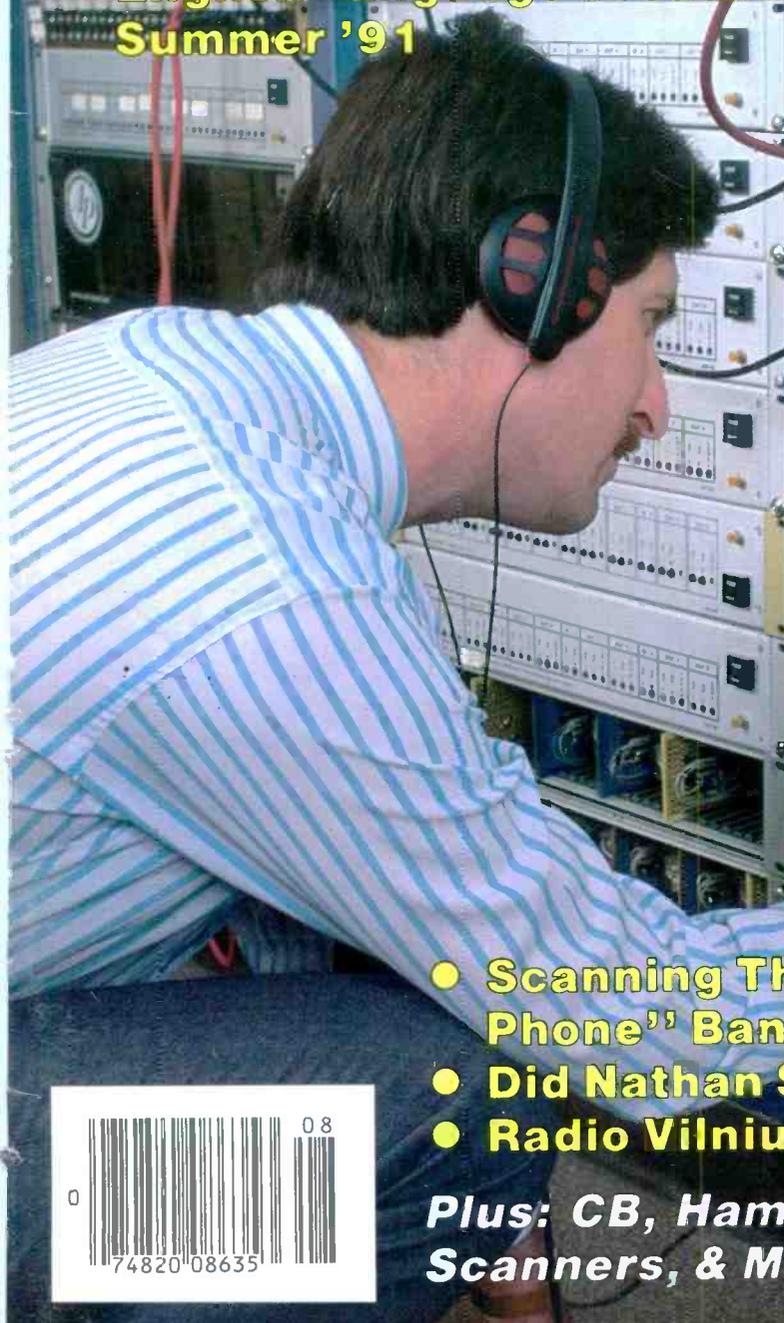
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POPULAR COMMUNICATIONS

AUGUST 1991

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This month's cover: Mark Smith, national correspondent for the Associated Press Broadcast Service in Washington, DC, tunes a Kenwood R5000 at patch rack. Photo by Larry Mulvehill.

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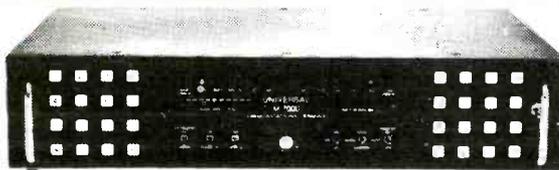
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An Unusual Year in Radio

It was just about a year ago that Iraq marched into neighboring Kuwait and took over. As if the Mideast hadn't already been enough of a political hot spot for several years, that move turned the simmer into a fast boil.

In many areas of the world, the Iraqi/Kuwait situation set up monumental reverberations in terms of political, military, and diplomatic situations, as well as the human condition. On a less earth-shattering level, probably the only hobby to be significantly affected by all of these doings has been communications.

By now, the public has figured out that when major international situations get hot, the war of words is the first way to get a good indication of the temperature. All it takes is a shortwave radio receiver. For those who didn't already know this, it was pointed out in the media that the broadcasters in the Mideast were buzzing away with impassioned rhetoric. Of course, the international broadcasters in other nations chimed in with their own opinions. That made for very interesting listening.

Dealers in shortwave receivers quickly noted a rise in demand. By January, when Allied bombs and missiles began raining down on Baghdad, the domestic demand for shortwave receivers was at an unprecedented level. Towards the end of January, one large dealer told me that his shelves had been just about picked bare of all receivers selling below \$500. Everybody wanted to tune in on the war of words.

Moreover, it changed the listening habits of many hobby regulars. Those who had spent many years devoting the majority of their efforts to chatting on the ham bands or monitoring the two-way utility bands, tuned over to hear what all of the fuss was about on the international broadcasting bands.

Similarly, many who had long spent all of their monitoring time DX'ing shortwave broadcasters took time out from those pursuits. They tuned to the MARS frequencies above/below the 20 meter ham band to hear the human drama of *Operation Desert Storm*, as military personnel placed phone calls to their Stateside families. And they tuned to the many frequencies, such as 11176 kHz, that were buzzing away with air/ground communications with military aircraft flying between the USA and the Mideast.

At the POP'COMM offices, we received loads of phone calls asking for frequencies. People who had just purchased their very first receivers wanted to know how to tune

in Iraq, Israel, Saudi Arabia, Jordan, the BBC, Germany, Spain, and Cuba. They wanted to know where to listen to the military aircraft flying to and from the Mideast.

We got mail, too. Some wrote (or sent tape cassettes) to describe especially exciting or dramatic things they had picked up on shortwave. Several very angry letters arrived from well meaning but uninformed people, expressing rage at our being so stupid and unpatriotic as to publish, reveal, and disseminate military HF channel information during wartime. Fact is, all known military HF frequencies used during *Desert Storm* had been in active use and openly and continually published in numerous sources (including POP'COMM) for many years prior to the recent Gulf crisis. Moreover, none of those channels were used for sensitive or classified traffic, all of which is encrypted or scrambled, anyway.

One poor soul, who didn't realize this, concocted and then went to surprisingly exhaustive lengths to nationally propagate the disinformation that I had just been busted, arrested, or fined by the FCC for revealing these supposedly classified *Desert Storm* frequencies during wartime.

Not feeling any compunction to be responsible for the integrity of the traffic they pass, many BBS' and packet services willingly permitted themselves to be misused for spreading this drivel originated by someone using a counterfeit ham callsign. I was later told that it was "nothing personal." Supposedly the disinformation was an attempt by a self-appointed do-gooder to frighten, intimidate, and discourage ute monitors from openly discussing and exchanging military frequency information during *Desert Storm*.

A handful of horrified readers contacted the POP'COMM offices to ask if there was any truth to the tale. I appreciated their concern. But four or five other folks were little interested in my personal fate. Mostly, they were very persistent in their pressing me to quietly slip them "those" frequencies, which they promised never to reveal to anyone else if I would only trust them with this volatile information. It was a case of, "What is the frequency, Kenneth?" Nothing I said could really convince them that they had fallen prey to someone's hoax. The big secret was that there was no secret.

Still, it appears that only a very few who heard the story regarded it with any seriousness at all. I received a wonderful stack of tongue-in-cheek and jocular FAX'es, telegrams, and letters from fellow hobbyists ex-

pressing either boundless joy or mock concern at the prospect of my getting busted. A few readers sent me hacksaw blades. Bob Grove, of *Monitoring Times*, rang me up to say it was the best laugh he had in weeks. One shortwave equipment company had FEDEX deliver me a pizza containing wire cutters and a large rusty rasp file, garnished with IC's and I.F. cans and a picture of the *Teenage Mutant Ninja Turtles*. The pizza box was covered by QSL's from each of their employees.

The way it turned out, even on the military frequencies that everybody had known about for years, ute monitors got an earful of all kinds of traffic one doesn't normally get to hear. Everybody exchanged frequency information, anyway. The government didn't lean on anybody; the thought that they might have done so had been preposterous right from the start.

The MARS frequencies buzzed away in all modes. I, for one, would like to offer a hearty "well done" to all of the military and civilian MARS operators who worked so tirelessly throughout the *Desert Shield/Storm* period, handling traffic. The morale boost they provided overseas and on the home front by linking service personnel with their families went a long way towards making a tough situation measurably less tense.

Those ute monitors who could copy CW and RTTY modes, as usual, had an extra dimension added to their armchair participation in the Gulf's events. One RTTY monitor reported plaintext English traffic (SITOR A mode) on 11241.7 kHz most evenings, consisting of telegrams from the Egyptian Ambassador in Cairo to Washington. One was addressed to President Bush and discussed the then secret Soviet peace plan, and Egypt's thoughts on the plan.

Newspapers ran some feature stories publicizing international shortwave broadcasting during the peak of the hostilities. Some of the stories contained actual shortwave frequencies and skeds. One story in the *Cleveland Plain-Dealer* was especially good in this regard. But, in general, I felt that with the public's interest in international monitoring so high, newspapers missed the boat by not running a small box every day containing the English language skeds of at least the easiest-to-hear stations.

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(Continued on page 76)

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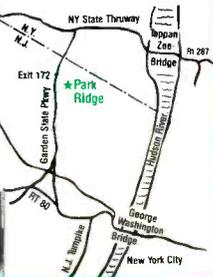
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Each month we select representative reader letters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons. All letters submitted for consideration must be signed and show a return address. Upon request, we will withhold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

And The Beat Goes On

Last January, thanks to the review in POP'COMM, I first learned of the Uniden scanner directories. I have two of them and have been well satisfied. They deserve their increasing popularity. Therefore, when I saw the comments in the June issue from the people who didn't like the Uniden review, I had to respond. The gentleman who puts out another directory was angry because you wrote good words about the Uniden books? Uh huh. The gripe from the other fellow made just as much sense. I appreciate that POP'COMM had the thoughtfulness to attempt to satisfy these people with a response, but that space really would have been better used in presenting additional reviews.

(Name withheld by request.)
California

TV Topics

On the "60 Minutes" TV program they had a segment about the BBC Monitoring Service. It was mentioned that this organization has a newsletter containing the results of their shortwave monitoring. Sounded interesting. In the current World Radio TV Handbook there is an ad from the BBC Monitoring Service that names this weekly publication as "World Broadcasting Information." The ad claims that the BBCMS will send a sample copy and an order form upon request. I've written to them twice at the address given. No response. What gives?

Howard Martingale,
Houston, TX

Simple. It looks as though the BBCMS doesn't honor their generous sounding offer. After receiving similar inquiries from other readers, we tried writing to the BBCMS ourselves to request this material. Wasted postage. We received no reply. You can at least take cold comfort in knowing you aren't alone. — Editor.

Saw you on TV (Jane Pauley show). You looked almost exactly like what I thought you would except I didn't picture you with a beard. They ought to give you your own show!

Ron Bruckman,
Registered Monitor KMD3GJ,
Radio Monitors Newsletter of Maryland,
Hampstead, MD

Enjoyed seeing you on TV with Jane Pauley. The demos given were interesting and should be insightful to anyone who is thinking about buying a car phone, cordless phone, or baby monitor. I've warned people about these things for years, but we know how people can be, don't we!

Mark F. Henning, N2DUJ,
Hamburg, NY

Caught the "Real People, With Jane Pauley" program (NBC-TV) and their report on eavesdropping on cellular telephones. I always wondered what Tom Kneitel looks like. My only complaint is that they devoted only 15 minutes to the eavesdropping segment. It was a topic that they barely covered. With Kneitel, Grove and the others they had, the report could have been extremely revealing.

L. R. Wilbur,
Bullhead City, AZ

They interviewed me for more than five hours. I'm sure that everybody else in the segment was interviewed for at least an equal amount of time. Some who were interviewed weren't included in the material that aired. From the questions they were asking, my impression was that their original concept was to give the type of lengthy "investigative report" presentation you would have liked. That interview was made before the Pauley series began on the network and nobody was exactly certain as to what the series was going to be like once it started running. The story had originally been scheduled to be aired two weeks earlier than it appeared, but it was moved back almost at the last moment in order to make room for a late breaking story about returning military personnel. I think that in the ensuing weeks, and for whatever reasons, the producers may have had second thoughts as to just how much of a hard edge they wanted to give this story. My guess is, at that point, the segment may have been re-edited, possibly shortened, and turned into the rather pleasant, generally informative, albeit lightweight

(Continued on page 76)

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Display	10 Digit LCD w/Function Annunciators	10 Digit LCD w/Function Annunciators	10 Digit LCD	10 Digt LCD	8 Digit LED	8 Digit LED
RF Signal Strength Indicator	16 Segment Adjustable Bargraph	16 Segment Adjustable Bargraph	16 Segment Adjustable Bargraph	.	.	.
Price	\$579.	\$375.	\$325.	\$225.	\$199.	*\$99.

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The Monitoring Professionals

How News Services Tune The Shortwave Bands For Fast Breaking Stories!

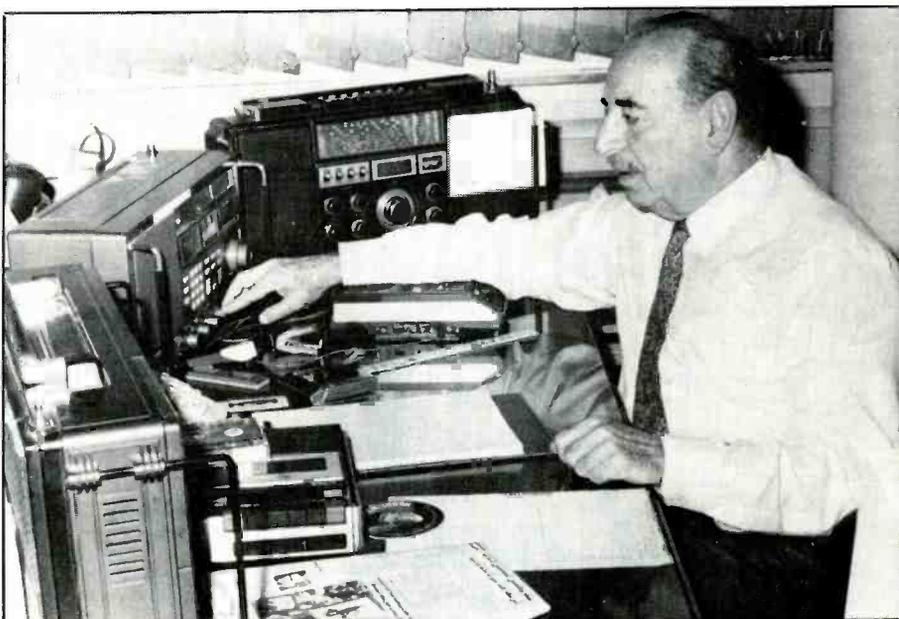
BY ED TOBIAS, KR3E

The war in the Persian Gulf, and the difficulty in obtaining information from parts of that region, brought shortwave listening into broadcast newsrooms around the country. Though most newsrooms are familiar with VHF scanners, few, even on the network level, were equipped to receive HF broadcasts. That began to change in August, when Iraq invaded Kuwait. By the time the air war began in January, monitoring selected shortwave broadcast stations became routine at several news organizations, including AP Network News.

Radio Baghdad

The Iraqi government lost no time in disseminating its message to the world, using its own broadcast facilities. At first, messages from Saddam Hussein were transmitted almost daily on Iraqi TV and, on the shortwave bands, on Radio Baghdad. On television, viewers around the world watched "Guest News," produced by Iraq's government. Broadcasts included pictures of Saddam visiting Western "guests" who were not permitted to leave the country and interviews with some of those hostages. After the war began these broadcasts were used to transmit videotape of American prisoners of war. As the war intensified, however, these television broadcasts ceased and the news media turned to Radio Baghdad to obtain statements from the Iraqi government.

Starting shortly after its invasion of Kuwait, and continuing for the first several days of the air war, Radio Baghdad regularly broadcast anti-American and anti-Israeli statements, in English, on its regular frequencies, beamed toward North America. These broadcasts could be received fairly easily on the East coast between about 5:00 p.m. and 10:00 p.m. daylight time. On 13660, 11860, 11830 kHz and other frequencies Arabic songs could be heard interspersed with rhetoric critical of the United States, George Bush and other nations tak-



Veteran shortwave monitor Khazan Abboud at the monitoring position in the Associated Press bureau in Nicosia, Cyprus. The Kenwood 5000 is not visible. It's on another table being used to receive RTT copy in Arabic from the Iraqi news agency.

ing part in operation Desert Shield. The signal was frequently strong and clear enough to be tape recorded for broadcast on our network newscasts.

These English language broadcasts ceased several days into the air war, though there were reports of Radio Baghdad being heard Stateside in Arabic on several frequencies for several days after the English broadcast ended. Eventually, the only Radio Baghdad activity to be heard was in Arabic on 4600 kHz which, except when propagation was unusually good, could not be heard in the United States.

The Associated Press was able to monitor and translate these 4 MHz band broadcasts from its bureau in Nicosia, Cyprus, where it maintains a full-time listening post. It was from this monitoring position that AP first received word of Saddam's intention to re-

lease his remaining Western hostages, of his agreement to abide by all United Nations resolutions, and of his order to Iraqi troops to stop shooting. These shortwave broadcasts triggered bulletins such as the one that moved on the AP Broadcast wire at 3:14 a.m. Eastern time on February 28:

IRAN HAS ORDERED ITS SOLDIERS TO STOP FIGHTING IN THE GULF WAR THEATRE OF OPERATIONS.

A live special report on AP Network News followed, which included the sound of that Radio Baghdad announcement. Other news organizations followed with their own special reports, based on the AP's monitoring of that radio report.

Kol Israel

Another source of information for the news media was one easily monitored in the

United States: KOL Israel, broadcasting from Tel Aviv on 9435, 11585, 11605, 11655, 15615 kHz and other frequencies. At AP Network News we found the 11.585, 11.605, and 11.655 frequencies to be the most reliable. Both its North American Service in English and its Home Service relay, broadcasting in several languages, interrupted their programming with the sound of a siren each time there was a Scud missile alert. That would be followed with instructions, in English, for residents in specific parts of Israel to put on gas masks and enter

their sealed rooms. All-clears were also broadcast on these shortwave frequencies. Those of us monitoring in our newsroom in Washington, D.C. received these alerts and all-clears at the same time as Israeli residents and were able to report them immediately.

On the night of Sunday, February 24 (Eastern time) Israel was hit with two Scud attacks within the space of a few hours. But as dawn broke over Tel Aviv a few hours later, there was the man spinning the discs on Kol Israel's Home Service announcing to his listeners: "Monday, Monday. So good to

me," and segueing directly into that late 60's rock and roll hit. That 20 second portion of the Kol Israel broadcast was used several times in stateside radio news broadcasts that morning to help illustrate reports on the war.

News broadcasts on KOL Israel frequently contained eyewitness descriptions of these scud attacks. One "scener," broadcast by a KOL Israel reporter, actually included the sound of a Scud roaring overhead before it hit. This type of information was used to supplement and illustrate reports coming from our own reporters in Tel Aviv and Jerusalem.

Other Broadcasts

For other angles on the Gulf story, AP Broadcast's Washington newsroom also monitored Damascus Radio on 12085 kHz and, during Iraqi Foreign Minister Terik Aziz's visit Moscow, Radio Moscow on several of their numerous frequencies. After Kuwait City was recaptured, Kuwait Radio returned to the air, broadcasting upbeat music and news. Though we could not hear those medium wave broadcasts on 660 kHz stateside, these transmissions were monitored by the AP Bureau in Bahrain, and relayed to the Broadcast News Center in Washington for on-air use.

Equipment

In Washington, all monitoring was all done with a Kenwood R-5000, using either a longwire or a trap dipole on the roof of a fourteen story office building in downtown Washington. The Kenwood was patched into the newsroom's audio switcher system so that it could be monitored at any desk and recorded on any tape machine in the newsroom.

In Nicosia, most monitoring is also done with a Kenwood R-5000. A dipole is stretched 11 meters above the roof of the AP bureau. Other equipment includes a Grundig Satellite International 650, a Grundig Satellite 2400 and a Maro NR94F1 plus a 3.7 meter dish for satellite reception.

In Bahrain they used either a Panasonic or a Toshiba to monitor medium and shortwave.

AP Broadcast staffers frequently monitored the shortwave bands at home, too. Paul Courson, one of our reporters and WA3VJB, recorded Baghdad radio using either a Kenwood R-1000 or an R-309A and dipoles. Brad Kalbfeld, our Managing Editor and ex-WN2JRJ, combs the HF frequencies with an old HQ-100A. Using my Kenwood TS-440 amateur rig with a 40/80 meter dipole I monitored military communications from the Gulf on 7010 kHz several nights toward the end of the war. On one exceptionally good night, I was even able to catch Radio Baghdad's signal in the 4 MHz band, broadcasting in Arabic.

It was exciting listening, available to anyone with an HF receiver and a relatively simple antenna. ■

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CIRCLE 125 ON READER SERVICE CARD

POP'COMM Reviews:

The "Friends Only" Unwanted Telephone Call Blocker

Here's a sure-fire way of signing off all unwanted incoming phone calls. That could include, among others, obscene or other annoyance calls; calls from people harassing you for money; calls from pesky friends and relatives, or former spouses; calls from live and computerized sales pitch nuisances; wrong numbers; calls that come in late at night or at other unwanted times (during meals, while you're watching TV, using the radio, working, relaxing, entertaining, or whatever); calls to a sickroom; calls from your job when you don't want to get summoned for extra hours. Other applications include private lines in government, security, or executive offices, or a doctor's home. You can most likely think up other uses for your own particular needs.

In fact, only those persons you specifically select can ever get through to you. Everybody else is blocked out, unless you decided to open your phone to general access. All of this, thanks to a device known as "Friends Only."

This solid-state electronic unit connects between your phone and the wall jack. It hooks up in seconds to wall-mounted or non-wall mounted phones. You need no tools or technical knowledge. It does not affect outgoing calls made from your phone.

There is a switch-bank of twelve switches located on the front of the unit. Setting those switches according to instructions supplied with "Friends Only," you select a private three-digit code using the digits 1 through zero, and the "star" and "pound" symbols. Then, whenever the "Friends Only" device is turned on, the only calls that can get your phone to ring are ones that are placed by persons to whom you have given your personal access code number. The twelve digits can be set into more than 1,700 different three-digit private access codes.

What happens when someone dials your number? Only the "Friends Only" unit will ring (you can adjust the volume). Your phone and its extensions will not ring. The unit answers your phone in a digital voice and advises the caller that they have reached a limited access telephone, and that they must use a pushbutton phone to enter your private access code in order to get through to you.

If they know your access code, they can use it and get your phone to ring. If they don't know your access code, they can't and don't get past this blocking device no matter what they say or do. An added security feature: burglars who call people's homes to make sure nobody's home will get no useful

information when they reach this machine!

Should it come to pass that your private access code eventually begins to trickle down to people you didn't want to hear from, all you do is devise a new number and program it into the machine. Takes only a minute. You can change your access code every month, every week, or every day if you want! All you need do is tell your "wanted" caller(s) the new access code information. That makes this much better than having a so-called "unpublished" phone company number, which is a big deal to change, and can take a couple of weeks. This feature has made the unit popular with entertainment industry people who carefully screen their calls at home and while on the road.

OK, you are asking yourself about what happens when the doctor, or even the man who is going to fix the leak under the sink is supposed to call you, and he doesn't have your access code. Easy. You can just turn off the "Friends Only" unit, and it will pass all incoming calls until you turn it on again. It may well be that your requirements are such that you'll leave it turned off most of the time, but activate the unit only during certain critical periods, such as when you're sleeping or working.

Another approach, if you have more than one phone number, is to attach the "Friends Only" to one of the lines to make that a "hot line" that can be left open for important (emergency, sales, etc.) incoming calls while the other line is left available for routine calls.

The device is about 7 by 6 by 2 inches, and it operates from 9VDC (a 110VAC power converter is supplied with the unit). The unit is FCC certified, and legal to use on your phone. One unit controls all extensions on one line. It is non-polarity sensitive. "Friends Only" comes with a one-year limited warranty.

If you're a person who can think of one or a dozen reasons why there are times you'd like to shut off the world from accessing your phone, except for a selected few callers, this is just what you always hoped someone would invent. It works, it's easy to use. In a world of increasing telephone call pollution, it fills a very real need.

This unit is produced by KES Communications, Inc., 1029 South Loop 250 West, Midland, TX 79703. You can write to them directly for more information, or circle 103 on our Readers' Service card.

Reviewed by POP'COMM Staff



Radio's August Memories

Let's Dust Off Those Archives & See What History Has Hidden

BY ALICE BRANNIGAN

A reader from Illinois (who requests no further identification) sent along some extremely good historic material relating to station WLS, Chicago. This clear channel broadcaster should be familiar to any North American DX'er who has ever tuned across the AM band at night.

WLS commenced its broadcasting activities on April 12, 1924. It ran 500 watts on 870 kHz, with transmitting facilities at Crete, IL. The station's first owner was Sears, Roebuck and Company which announced that the call letters stood for *World's Largest Store*. A secondary (and lesser known) early WLS slogan relating to the call letters was, *Work Better, Live Better, Sell Better*.

WLS, with studios in the Hotel Sherman, 1230 West Washington Boulevard, was an immediate success. Soon WLS upped its power to 5 kW, which considerably expanded its coverage throughout the midwest. By the end of the 1920's, WLS was sold to

Prairie Farmer, a farm newspaper that had started publishing in 1841. *Prairie Farmer* operated WLS under the corporate name of the Agricultural Broadcasting Company. Existing WLS facilities were maintained.

One major change at WLS under its new owners was upping its power, in 1931, to 50 kW which ensured national coverage. Next, WLS embarked on significant changes in its image and programming. The station stressed the basics such as family ties, community service, and the hard work ethic. The WLS image and viewpoint, as well as its programming, was aimed squarely at the station's huge national farm audience.

Programming contained lots of agri news, but mostly entertainment presented by a wonderful assortment of features, personalities and performers. These included Pat Buttram, The Hoosier Hotshots novelty band, The National Barn Dance, Joe Kelly and The Quiz Kids, Eddie Peabody and his

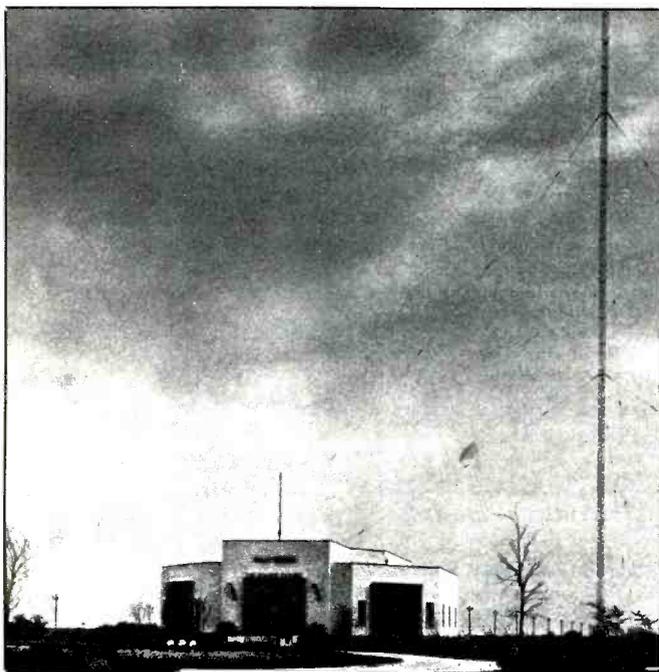
banjo, Red Foley, and dozens of others. The late George Goebel had been a regular on WLS from the time he was 12, and in 1941 (at age 21) the station gave "Lonesome George" his own orchestra, Georgie Goebel's Barn Dance Band.

In 1941, WLS changed its frequency to 890 kHz. Its transmitter site was moved to Tinley Park, IL.

The Hoosier Hotshot days are history now, so is the station's old ownership. Since 1986, WLS has been owned by Capital Cities. Still on 890 kHz with 50 kW, WLS runs mostly a talk format directed at an "above 35" target audience. WLS is a wonderful station with a rich history in radio's golden era.

Old Business

In April we ran a photo and told something about the life and times of station



The WLS transmitting facility as it looked in 1940.

Inside the WLS transmitter building in 1940 showed a 50 kW RCA transmitter attended by a corps of engineers.





Master Control at the WLS studios in 1940. Those are the seven studio engineers that kept the programs sounding so good.

A 1930's cornhusking contest brought out the WLS remote van. This van held the callsign WOEB and ran 100 watts on 1606, 2074, and 2102 kHz. In the mid-1940's, WLS had three remote vans, licensed as WEGA, WEGB, and WEGC. Each could operate on 31.22, 37.02, and 39.26 MHz.



WOCB in Cape Cod, MA, which began operation in 1944 with 250 watts on 1240 kHz. We guessed at the tower's size from the photo at "about 50 ft. tall." You knew I'd never get away with such an approximation.

That brought a letter from H. Scott Killgore, of Station KMPG, in Hollister, CA. Scott advises that he was a consultant in the

construction of WOCB, and the tower is a Lehigh 170 ft. self-supported type. He adds that the transmitter and other equipment was Collins. The building shown in the photo was constructed especially for use by the station. WOCB received its FCC construction permit only after many years of hearings. The original owners were two women

who owned a real estate agency in a community on the Cape. The fellow who owned a newspaper and radio station in New Bedford, MA fought against WOCB getting an FCC license.

Scott added that he used to work at short-wave broadcaster WRUL (on Cape Cod) when it started out as WIXAL, Boston

"The Voice of Agriculture"		
<p>Daily Broadcasting Service on Clear Channel</p> <p>81 Hours per Week Transmitter at Crest, Illinois</p> <p>Mail Station Order Form 1966</p> <p>EDGAR L. BILL Director</p>	<p>RADIO STATION</p> <p>WLS</p> <p>Agricultural Broadcasting Company BURRELIDGE D. BUTLER, President</p> <p>Controlled and Operated by THE PRAIRIE FARMER - Chicago C. F. DICKSON, Advertising Manager 1230 West Washington Boulevard, Chicago, Ill.</p>	<p>Established April 12, 1924</p> <p>144.6 Meters 870 Kilocycles 5000 Watts</p> <p>Telephone regarding Commercial programs in Hemlock 7300</p> <p>J. O. MALAND, Commercial Manager</p>
June 4th, 1930		
<p>Dear Friend:</p> <p>We are glad to receive your report on WLS The Prairie Farmer Station and wish to advise we find it correct.</p> <p>We hope to hear from you again and trust you will continue to be a WLS listener.</p> <p>Yours very truly,</p> <p style="text-align: center;">WLS, THE PRAIRIE FARMER STATION.</p> <p>JM</p>		

In 1930, WLS sent this form-letter veri. (Courtesy Joe Hueter, Philadelphia, PA.)



More information has come in on WOCB from someone who helped put the station on the air.



This mystery photo of a broadcaster in Hudson Falls has now been identified. Although it barely shows, there's a radio tower to the far left in the photo, between the building and the dark vehicle.



The 1961 veri from WLS was an oversized QSL card. (Courtesy Owen Williamson, El Paso, TX.)

World Wide Broadcasting Foundation. It was backed by Harvard University, and the programs came from the classrooms.

Scott also worked at one of the first TV stations on the air in Boston, WIXG, operated by General Television Corp., 70 Brookline Ave. This was an independent station. They sold TV kits so people could pick up

the station, but Scott says that the signal was really hard to receive. Based on WIXG, Scott never thought that TV would make it.

Lost But Found

In the February issue we ran a mystery early-1930's photo of a broadcast station at

the "Colonial Display House" in Hudson Falls, NY. We didn't have any identification on the station, but noted that it was only a couple of miles down the road from WBGF, on 1370 kHz, in Glens Falls, NY.

To the rescue came Jan D. Lowry, of Broadcast Pro-File, of Hollywood, CA. We had been sort of close, but lost the trail. Jan tells us that WBGF commenced in April of 1930 from Glens Falls, NY. In late '32, the callsign was changed to WGLC and the station was moved to the Colonial Display House, Hudson Falls. Its new owners were O. T. Griffin and George F. Bissell. Two self-supporting towers were put up. At first, the station ran 100 watts during the day (50 watts at night), but by late '33 the night power was raised to 100 watts.

WGLC was sold to the Adirondack Broadcasting Company, Inc. in June of 1934. The majority stockholder of this company was also the owner of WOKO, Albany, NY. In October of that year, the FCC authorized WGLC to move to Albany. The move took place in January of '35, and WGLC became known as WABY, operating from the WOKO studios at Albany's Hotel Ten Eyck.

In September of 1935, WABY's studio and transmitter were moved to the Strand Theatre Building, 110 N. Pearl St., Albany. These studios were shared with WOKO. By late '37, the WABY transmitter was moved to Colonie, NY and increased to 250 watts fed into a 179 ft. vertical radiator. By late

WGLC	
1370 K. C.	100 Watt.
COLONIAL DISPLAY HOUSE HUDSON FALLS, NEW YORK	
<p>This is your verification of program received on Feb. 19th, 1933 1:15 Am EST at _____</p>	<p>Schedule _____ Full time station: CBS _____ Remarks: Thanks for your report it checks O. K. _____</p>
<p><i>Alan J. Burgess</i> Signature from Station <i>per m.f.</i></p>	

A QSL card from 100 watt WGLC during the brief period when it was at the Colonial Display House. (Courtesy Joe Hueter, PA.)



Sorry we ever mentioned KVSO. Just after we mentioned KVSO in February, it left the air after a 57 year career!

	<p>ADIRONDACK BROADCASTING CO., INC.</p> <p>STRAND THEATRE BUILDING ALBANY, N. Y.</p> <p>March 12, 1935</p> <p>Mr. Joseph L. Hueter 1613 N. 18th Street Philadelphia, Pa.</p> <p>Dear Sir:</p> <p>Your report of reception of W A B Y on March 7, 1935, from 3:50-4:01 A.M., EST is correct, and this letter will serve as verification.</p> <p>Thank you for reporting our program.</p> <p>We are always glad to hear from our distant listeners.</p> <p>Respectfully, ADIRONDACK BROADCASTING CO., INC.</p> <p><i>Harold E. Smith</i> General Manager</p> <p>HC</p>
--	--

After WGLC left Hudson Falls, it moved to Albany, NY and became known as WABY. As WABY, the station is still an active broadcaster. This veri letter from WABY is dated 1935. (Courtesy Joe Hueter, PA.)



Last of the breed, a KVSQ bumper sticker!
(Courtesy David Stell, Norman OK.)

1939, power went to 250 watts. The 1941 national frequency change saw WABY moved to the new frequency of 1400 kHz.

The ownership of WABY changed in 1945 due to the FCC's mid-40's "duopoly" rule. However, in 1947, sister station WOKO lost its license and went dark—to later be replaced by an all-new station using the old WOKO call letters. WABY was sold to new owners in 1947, and again in 1951 when the studios were moved to the transmitter site at 80 Braintree Street, Colonie, NY.

In 1961, the WABY power went to 1 kW. The year 1970 saw WABY sold again, then another sale in 1978 when the studios were moved to 855 Central Ave., Albany. This

was followed by a 1982 sale, and a 1985 move of the studios to 12 Dennis Terrace, Albany. WABY was sold again in 1986, followed by sales again in 1989 and in February, 1991.

Presently WABY is on 1400 kHz with 1 kW, operating full time with a satellite-fed "big band" music format. The studios remain at 12 Dennis Terrace.

So, our February mystery photo showed this station when it was known as WGLC, and where it was located for only about two years from December of '32 to January of '35. The building shown in the photo is still there on Route 4, according to Criss Onan, of the Northeast Broadcast Lab, Inc., South Glens Falls, NY. According to Criss, the Colonial Display House was connected with the lumber company operated by Mr. Griffin, one of WGLC's owners. For a while after that, the building was the original site of Adirondak Community College. Presently it is the Washington County Annex.

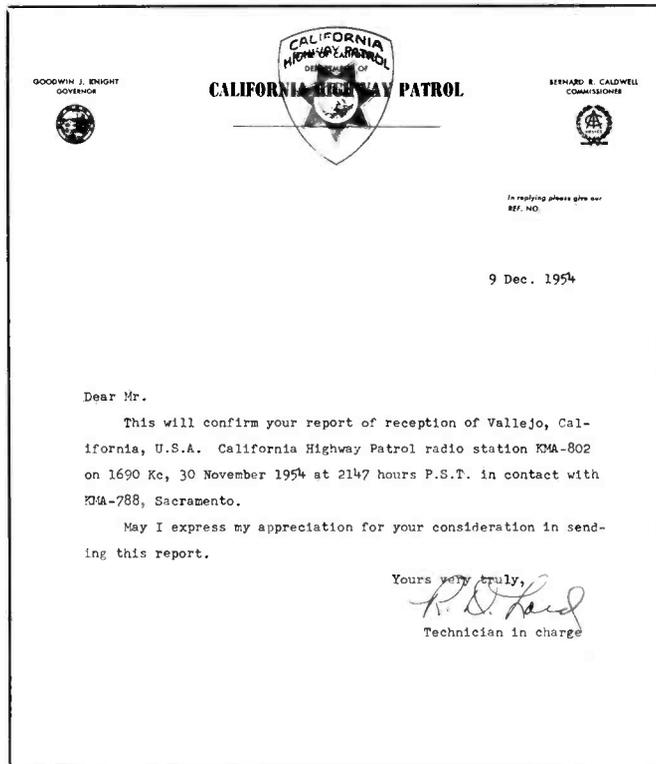
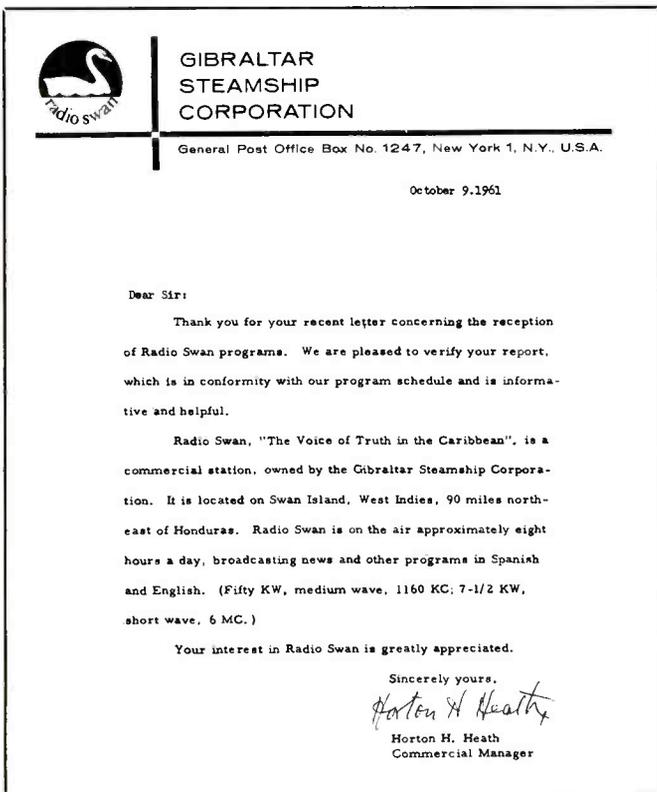
Thanks a heap to Jan Lowry for setting straight on WGLC when we almost had this station view last February but then took a wrong turn. Jan's company, Broadcast Profile, of P.O. Box 982, Hollywood, CA 90078-0982, specializes in researching, then preparing highly detailed histories of past and present American AM and FM broadcast stations. The information Jan sent us on WABY filled three single-spaced typewritten sheets; we had room here only

for a brief synopsis of his lengthy data. Most of Jan's clients are broadcast stations tracing their own backgrounds, although his excellent and very thorough reports are available to anybody who wishes to purchase them. A catalog is available from Broadcast Profile for \$1.

A Station With Only A Past

Our February issue mentioned and showed a photo of KVSQ, Ardmore, OK. This station had survived the Dust Bowl and lots of other disasters in its 57-year history as the *Kind Voice of Southern Oklahoma*. Looks like it couldn't survive our mention of its history. In early March, the owners of KVSQ announced that the venerable old station was soon to be no more.

According to reader David Stell, of Norman, OK, in 1983 the station had been purchased by local FM station KKAJ, but KVSQ had been programmed separately from the FM outlet. Many program formats had been tried from Top 40 to religious, but none produced the results the owners wanted. Ultimately, it was decided that the best approach was to kill the KVSQ call letters, rename the station KKAJ-AM, and simply let it simulcast the programs of KKAJ-FM. As KKAJ-AM, which it became on April 1, it would compete with Ft. Worth AM's like WBAP. No major staff cuts were made because of the change.



Radio Swan sent these QSL letters from New York during the early part of its career. The Gibraltar Steamship Corporation never owned any ships. (Courtesy Owen Williamson, TX.)

Here's a late-1954 veri letter from a low frequency police station (1690 kHz) operated by the California Highway Patrol. By that date, most public safety stations had vacated the 1600 to 2500 kHz band.

KVSO began in September of 1935 with a 100 watt transmitter, but increased to 1 kW in 1960. During its early years, KVSO had live talent in its studios that included the likes of Roy Acuff, Gene Autry, Kay Starr, and Rex Allen. According to the *Daily Ardmoreite* newspaper, KVSO had "broadcast nearly every format known to radio during its history."

Swan Song

For those who love underground radio, clandestines, intrigue, and those sorts of things, *Radio Americas* was a dream come true. The station appeared in 1960, calling itself *Radio Swan*, and saying it was located on Swan Island, in the Caribbean, 90 miles east of Honduras. Operating on 1160 kHz and 6000 kHz, the station had offered Spanish language programs with a strong anti-Castro slant.

Swan Island (at that time) was an American possession, yet the FCC claimed it had not issued a license to any broadcast station there. More than that, the FCC kept insisting that it was unaware that such a station even existed. This was odd inasmuch as the 50 kW mediumwave signal could easily be heard across North America every night. KSL and WJJD, on 1160 kHz, were complaining about these signals on their frequency. Castro was livid, and denouncing the station at every opportunity, including at the UN.

Meanwhile, the station was selling commercial time, and announcing mailing addresses in Miami, Boston, and New York. It was gladly mailing out QSL cards to DX'ers around the world. The FCC kept refusing to acknowledge the existence of the station, even though, by announcing cryptic messages, RS appeared to play a vague psywar role in the failed Bay of Pigs invasion carried out by CIA backed Cubans against Castro.

At first, the station claimed to be owned by an entity called The Gibraltar Steamship Company. Checking confirmed the general consensus that the station, under any name, as well as its owning company and operating staff comprised a somewhat gray (and not very carefully hidden) CIA operation. In RA's later years, the Gibraltar "ownership" was phased out in favor of a Miami-based CIA front called Zenith Technical Enterprises.

The station had always claimed that its mediumwave transmitter was on Swan Island and ran 50 kW into two 250 ft. vertical radiators. On shortwave, it ran 7.5 kW into a full wave dipole. Most people didn't question this information. Yet, constant speculation was heard within the DX community regarding the supposed "actual" location of this station. This was because a couple of respected DX'ers who were very vocal flatly insisted that *Radio Swan/Americas* wasn't on Swan Island, had never been there no matter what claims were made by the station. Their inside information, intuition,



This map-type QSL card was sent out after *Radio Swan* changed its name to *Radio Americas*, and began announcing a Miami address.

and/or intricate calculations and signal measurements proved beyond any doubt (to them, at least) that it was in Venezuela, or Mexico, or on a ship, or someplace. Any place other than Swan. They never said why the CIA would have falsely announced a Swan Island location, which had been so easily and often confirmed by numerous land and sea direction-finding fixes, including by Castro's own stations.

The controversy made for lively, although pointless, hobby discussion and debates until 1967. That's when Tom Kneitel and another editor got permission to visit Swan Island to get a look at the station. No easy trick. Swan was both tiny and remote. It was inaccessible except by small boat or by chartered aircraft from Grand Cayman. Also, our government had long ago declared the island "off limits" to the public.

Kneitel confirmed RA's location as being on Swan. He took still photos and 8 MM films of the station's elaborate transmitters, towers, and studios, and interviewed its staff, and also FAA and Weather Service personnel stationed on Swan. Soon after, *Radio Americas* went off the air for good. Two or three die-hard members of the DX community still insisted that the station had never been on Swan Island. They rationalized that Kneitel had been hoodwinked and used in an elaborate CIA scheme to fool everyone. They said that the equipment and personnel photographed were decoys that had been brought to the island strictly for the benefit of Kneitel's visit. In the November and December '85 issues of *POP-COMM*, Tom recalled his visit to Swan Island.

It can't be denied that RS/RA was easily



The Charleston Police Department's station, WPHI, as it looked in the mid-1930's. That's Sgt. T. A. Bird standing to the left. The 50 watt 2490 kHz transmitter is the large dark box at the far right. The Chief is in the white shirt, seated at the desk.

the most arcane, mysterious, controversial, talked about, and written about medium-wave and shortwave broadcaster of the early 1960's. Thanks to Owen Williamson, El Paso, TX for including some fine memorabilia from this famous station in the large collection of valuable QSL material he very thoughtfully presented to the POP'COMM archives.

Charleston Police Radio

About fifty years ago and more, most police and fire radio comms took place between 1500 and 2500 kHz. When the AM broadcast band had its high frequency end extended from 1500 to 1600 kHz in 1941, this 100 kHz of spectrum was reallocated from the public safety band.

One of the early users of the old 2 MHz band was the Police Department in Charleston, WV. In 1935, their call sign was WPHI. This station was licensed to run a 50 watt Gamewell-Westinghouse transmitter on 2490 kHz. Under the direction of Sgt. T. A. Bird, WPHI was heard by DX'ers over a wide area.

As technology rolled on, public safety agencies began vacating the low frequencies in favor of operations above 30 MHz. By 1950, the ranks of public safety users below 2500 kHz had been greatly thinned out. Charleston's WPHI, for instance, had already moved to 37.90 MHz by 1945. In 1950, WPHI installed Motorola equipment and shifted up to 159.15 MHz for dispatching its cars. The cars transmitted on 154.65 MHz.

Interestingly, the agency was not getting the coverage they had hoped for in the 150 MHz band. In one of the few instances of an agency moving lower in frequency, by 1953, the Charleston PD had changed its operations to a simplex General Electric system and gone back to the low band with a new license on 37.18 MHz. Its updated call letters, under the changed call sign FCC format, had become KQC916.

Among the last widely monitored hold-outs in the old 1600 to 2450 kHz band was the California Highway Patrol. Although the CHP had its 42 MHz system operational by 1953, the trusty low band system was still in use for at least several more years. Old habits don't fade easily. We have a CHP verified December of 1954 from KMA802, 1690 kHz, that ran 1 kW from Vallejo. It was received by a DX'er in Ontario, Canada.

See You In September

Drat! We aren't even half way down through the stack of things we had hoped to share with you this time. We got to the bottom of the page before we ran out of words. More next issue. We appreciate the input from readers in the form of old QSL's (originals and good quality copies), station rosters and directories, anecdotes, personal experiences, additional information, news items, and "whatever" relating to broadcasting, wireless, and comms of the past.

HOW I GOT STARTED

POP'COMM invites readers to submit, in not more than about 150 words or so, how they got started in the communications hobby. Each month, we'll accept them (preferably) typewritten, or otherwise easily legible. If you have a now and/or then photo of yourself, please include it with your story. We can't return or acknowledge material, whether or not it is used. Your story need be submitted only once. We'll keep it on file to consider it for future issues. All submissions become the property of *Popular Communications*.

Each month, we will select one writer to be featured in our issue. Entries will be judged taking into consideration if the story they tell is interesting, amusing, or unusual. We reserve the right to make necessary editorial changes to improve style or grammar.

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

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



Vincent Garcia at his Utah monitoring station. That's a live Persian cat on the top shelf. Vincent assures us that the cat is also an avid SW listener. A purrfect arrangement.

Our Winner For August

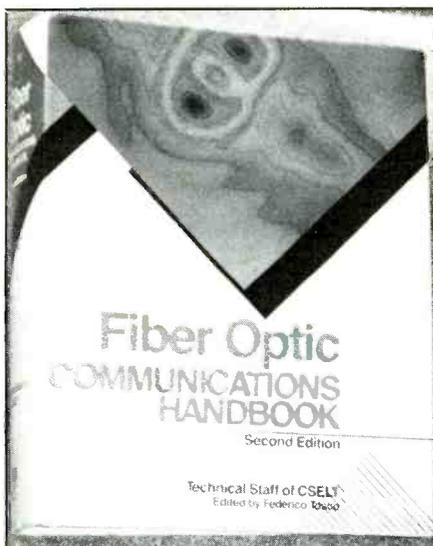
The winning story for August came in from Vincent A. Garcia, Salt Lake City, UT. Vincent wrote:

"My interest began in 1948 when I was an 8-year old boy living in a Northern Chilean mining town. This is the most arid desert on earth. One day, while left at home alone, I decided to investigate our family's RCA console radio. I began pushing buttons, and found that the one marked "SW" treated me to foreign voices and strange music. The mystery and excitement that day was what

made me keep coming back for more. During my teens, I built crystal radios for myself and my friends. Then I found a discarded Telefunken shortwave receiver that I rebuilt. The first station it brought in was *Radio Belgrano* in Argentina. My dream was to one day own a Zenith Transoceanic, but the price was far more than I could afford. Later, I built a Heathkit SW-7. Presently, I DX on a JRC NRD-525, a Realistic DX-160, and a Sangean ATS-803. I still love shortwave, and I find that POP'COMM helps me to enjoy it to the maximum."

Optimum Optics

One of the rapidly advancing areas in communications involves fiber optics. In an attempt at oversimplifying a description of fiber optics for those who haven't yet heard of it, it relates to transmitting signals via light as opposed to either wire or radio waves. Because of the extremely high frequencies of light waves, very large amounts of information may be transmitted. In practice, the signals are sent using glass fibers as a guiding medium.



First operational experiments of fiber optics commenced in the 1950's, and the technology developed into various areas where, today, fiber optics is the preferred communications system for many military, telephone, and other applications. The military views fiber optic technology as ideal for high security systems and therefore tends to treat technological developments in the field with considerable secrecy.

Fiber Optic Communications Handbook, 2nd Edition, edited by Federico Tosco, is the most up-to-date and fully comprehensive resource available to professionals and advanced students in the rapidly growing field of fiber optic communications. This is a hardcover book containing 1,178 pages. It is filled with equations, graphs, charts, diagrams, schematics, and text. It's not intended as a beginner's primer, by any means.

Balancing concepts, experiments, and actual hands-on practice, the book provides all the knowledge and working tools necessary to engage competently in this exploding technology which is rapidly becoming an increasingly important factor in telecommunications.

The 2nd Edition contains detailed descriptions of the latest, state-of-the-art advances in the field, including coverage of: single-mode fibers; optoelectronic compo-

nents; polarization aspects; nonlinear aspects; integrated optics; coherent systems; distributed and local area networking; and more.

The applications potentials for fiber optics in the fields of telecommunications, entertainment, industrial and scientific electronics, as well as national defense, are enormous. For those of a technical bent who would like to expand their activities into this field, this information source is highly recommended.

Fiber Optic Communications Handbook, 2nd Edition is available from TAB Books, Inc., Blue Ridge Summit, PA 17294-0850. The book is \$89.50, and its TAB book number is 3201.

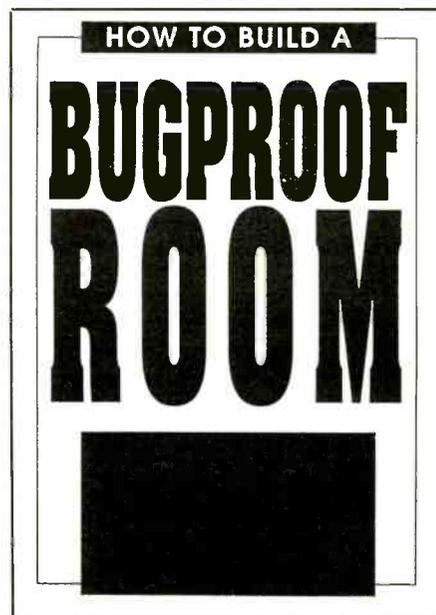
Bug Free, At Last

Science fiction stories of the 1950's predicted a world where government, industry, and private parties have the ability to watch over and snoop into the lives of average citizens. With a big boost from the technological advances of the late 1980's, a flood of legal and illegal electronic probes that can hear through walls, windows, ceilings, and floors has made those chilling predictions the reality of the 1990's.

The 1990's are seeing more and more telephone taps, room bugs, and other intrusive electronic snooping devices being used by overzealous bureaucrats, investigators, business competitors, jealous spouses, and others to pry into the personal and professional lives of others. It's been said that unless average citizens learn to protect themselves from this electronic invasion, by the year 2000, personal privacy as it is now understood by most people will have virtually ceased to exist. It will have been replaced by computer tracking, cross-indexing, and high-tech electronic probes operated legally and illegally by numerous private parties and public agencies.

The illustrated book, *How To Build A Bugproof Room*, by Angus Glas, teaches the average person how to put today's technology to work to ensure privacy, instead of permitting that technology to be used as a weapon against them. It contains everything a person needs to know to take effective countermeasures against aural and visual intrusions. These methods are widely varied and range from simple, inexpensive quick fixes to exotic space-age soundproof, electronically impregnable rooms to make a home or office leakproof.

Using simple instructions and precise illustrations, the author shows the average person how intelligence professionals safeguard their own secrets, and how you can easily put those same effective methods to use for yourself.



Some of the techniques taught in the book include: determining how vulnerable you are to being tapped; how to assess a room's weaknesses for being electronically probed; how to electronically "sweep" a room to find or activate any hidden bugs; how to take apart telephones, light switches, sound systems, and electronic equipment to locate prying eyes and ears; how to check out walls, ceilings, and floors; how to examine the exterior of buildings for external retransmitters; how to build a Faraday Cage in your home, garage, or vehicle; and more.

This excellent book not only explains the threats to personal privacy, but explains how to defeat those threats. It was written with the average person in mind; you do not need to be an engineer or technician to put it to use. I don't want to sound like a fright-monger, but it does seem that what you do to protect your privacy today could easily have a major affect on your life, and the lives of your family and business associates.

How To Build A Bugproof Room is available from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. It is \$12.95, plus \$3.50 UPS shipping to addresses in the 48 contiguous states (and by First Class mail to Canada/APO/FPO/AK/HI/PR addresses). Residents of NY State, please add 97 cents sales tax.

WWII German Comms Reference Book

Last year, Charles J. Barger wrote an interesting book called *Radio Equipment of The German Army: 1933-1945*. He has now followed up that volume with a new book entitled *Radio Equipment of The Third Reich: 1933-1945*.



This 112 page book is an indispensable reference for serious military, crypto, and radio historians. Once again, Barger focuses on a most impressive collection of rare Nazi comms hardware and offers the most comprehensive guide to be found anywhere on the specs, operation, and performance of this equipment. There are more than 100 photos, illustrations, and charts in addition to the explanatory text. The photos and illustrations depict every facet of the controls, switches, and inner workings of the equipment.

A special section explains the workings of the ultrasecret ENIGMA coding machine, providing a fascinating counterpart to the historical account of how Allied intelligence cracked the code used by the German high command. Other chapters cover vital statistics and instructions for the installation, operation, and maintenance of Nazi transmitters, vehicular radios, receivers, and field telephones.

When WWII ended in 1945, most of the captured Nazi comms equipment was destroyed by the Allied Forces, as was the documentation accompanying the equipment. Little of the equipment survived, and even less in the way of manuals to explain the radios. A few radio historians painstakingly collected whatever was left, and Barger's books are based upon his personal examinations and actual use of the items in the largest of these collections. Quite a fine book in every respect.

Radio Equipment Of The Third Reich: 1933-1945 is available from Paladin Press, P.O. Box 1307, Boulder, CO 80306. The book is \$25.00, plus \$3.50 for 4th Class Book Rate mailing to American addresses, or \$5.50 for UPS. Postage to Canada is \$5.00. Residents of CO, add 93 cents sales tax.

In Addition . . .

A fine booklet entitled *When The Oualtins Sang*, by Ron Montague, is the history of how Radio Luxembourg, Radio Normandy, Radio Toulouse, and many others long ago captured the English-speaking ra-

dio audiences of the 1930's with sponsored broadcasts. This is a rather unassuming 24-page publication. The text is illustrated with wonderful old ads and skeds from European broadcasters of the 1930's. It's available for US\$ 3 (or 7 IRC's) from Ron Montague, 38 Orchill Drive, Berfleet, Essex SS-7 2-LS, England. (Thanks go to Alan Gale, Lancashire, England, for bringing this book to our attention by sending us a copy.)

Discover DX'ing, by John Zondlo, is a well done 31-page booklet explaining the basics of TV/FM and mediumwave DX'ing. Intended for the beginner, it provides an overview of these aspects of the hobby, and then directs the reader to various clubs and reference materials to provide further information for actual participation in the hobby. Pretty good information for any beginner, we thought. It's \$5 from Discover DX'ing, Box 770228, Oklahoma City, OK 73177.

Sports and Entertainment Frequencies, by Bob Grove, is a very handy 70-page pocket-guide to a great number of scanner frequencies. This includes: motorsports,

airshows, baseball, basketball, cycling, dog racing, entertainers, tourist attractions, wireless mikes, horse racing, fast-food places, fishing, football, golf, gun clubs, hockey, hotels/casinos, Olympics, shopping malls, skating, skiing, soccer, tennis, stadiums, arenas, and centers, etc. There's a huge amount of information packed into this publication. It is \$9.95, and available from a number of POP'COMM advertisers.

We received a ton and a half of press information (but no review copy) relating to a book entitled *QTC, The Seagoing Radio Officer's Scrapbook*, by "Sparks." We don't know how good it is, but the descriptive literature reports that it contains stories of what it was like being a seagoing radio operator in the early days of wireless. From what they sent, the book certainly looks interesting. It has 376 pages and 109 illustrations. It's available at \$10.95 (includes shipping to addresses in USA, add \$2.50 postage for Canada) from Sequoia Press Texas, 2502 Cockburn, Austin, TX 78745. Residents of TX, add 72 cents sales tax. ■

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THIS INVENTION IS THE TRIUMPH OF THE AGE, AND IS WORTH A SHIPLOAD OF GOLD

Did Nathan B. Stubblefield Invent Radio?

Why Do People Insist That He, Not Marconi, Invented Radio?

BY JOSH MORGAN, KKY4WS

Agrowing chorus of voices continues to insist the true inventor of radio was someone by the name of Nathan B. Stubblefield. Stubblefield's own descendants are included in this chorus demanding what they feel is the credit due him for his work. As these voices grow louder and more demanding, let's see who Nathan Bowman Stubblefield was, and what he did.

Stubblefield hailed from Murray, a community of 14,000 souls located in the tobacco-growing area of southwestern Kentucky. He was born in the summer of 1860, and resided in Murray all of his 68 years. He was known as the town's resident eccentric experimenter. Yes, he had a small vegetable farm with which he supported his family, but he spent all of his free time chasing a dream. His dream consisted of the concept that people could converse with one another at a distance, and that it could be done without the need for wires to link their locations together.

Mostly he worked in secret, fearing the theft of his apparatus, notes, and ideas. His workshop was in back of his residence, a humble shack on the outskirts of Murray. It was ringed by an overgrown hedge. His security system included a shotgun, just in case the remoteness of his shack and the dense foliage didn't give visitors the message that they weren't invited. When he went into town, he was the center of curiosity.

Unfortunately, Stubblefield's obsession with secrecy may have been a major contributing factor in his works having gone virtually unrecognized while others who came after him garnered all of the laurels, glory, and money. It does appear that Stubblefield did do pioneering work in telecommunications, but his unwillingness to allow others to use his ideas worked against him.

To put this into a time perspective, Stubblefield was probably working on his concepts about the same time that Alexander Graham Bell was developing the telephone (patented 1876), and the formulas relating to radio waves published by Maxwell in 1865 and 1873. In 1888, Hertz proved that radio waves existed. Marconi's early telegraphic experiments were in 1894, with his radio telegraph device patent issued in June, 1896. Marconi's first telegraph transmission across the Atlantic took place in December of 1901.

With this in mind, know that Stubblefield had success transmitting the human voice over what he called a Vibrating Telephone, a wireless circuit in 1885! Not long after this experiment, he told a local friend, Duncan Holt, "Duncan, I've done it. I've been able to talk without wires . . . all of two hundred yards . . . and it will work anywhere." Holt never saw the apparatus, however.

The first record of anybody actually seeing Stubblefield's wireless apparatus was in 1892. He showed it to Dr. Rainey T. Wells, who was a prominent educator, and who also happened to be an attorney. Wells wrote of this years later, "One day Stubble-

field invited me to his farm for a demonstration of some kind of wireless outfit. Mind you, this was in the days when telephones were rare.

"He had a shack about four feet square near his house, from which he took an ordinary telephone receiver such as we have today, but entirely without wires. Handing me this, he asked me to walk some distance away and listen. I had already reached my post which happened to be in an apple orchard when I heard, 'Hello, Rainey' come booming out of the receiver.

"I jumped a foot and said to myself, 'This fellow is fooling me. He has wires someplace.' I moved to the side about twenty feet but all the while he kept talking to me. I talked back and he answered me as a human voice sounds over a telephone today. But there were no wires."

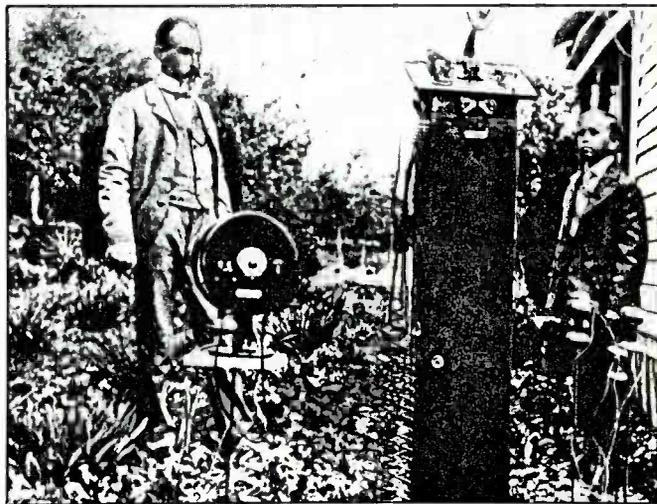
Sometimes, after that, he would allow certain carefully selected persons to witness private demonstrations of his system. Stubblefield's family physician told of being given a private demonstration that included Nathan talking and playing the harmonica.

Also, in 1892, he began giving public demonstrations of his apparatus in the Murray town square. Hundreds of people came from miles around to watch as Stubblefield set up one set near the courthouse, and the other set about 250 feet away without any wires between the devices. The crowd startled at watching Stubblefield speak into one unit in a normal tone of voice, and hearing his voice emerge clearly from the distant apparatus.



Nathan B. Stubblefield shown posing with his invention around the turn of the century. The loop is apparently the antenna for what may have been an induction-type system.

Nathan (left) and his son, Bernard, shown with two pieces of his communications equipment around 1905. Hard to see in this old photo, but Bernard is standing next to two rods driven into the ground.



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Perhaps these people scarcely realized the significance of Stubblefield's device. But remember, that he was considered by local residents as merely the strange and eccentric inventor who lived on the outskirts of town. They didn't know what to make of Stubblefield. It's doubtful that they took him very seriously, or his invention either. That didn't discourage Stubblefield at all.

In March of 1902, Stubblefield loaded his wireless telephone aboard the steam launch *Bartholdi* on the Potomac River. As the vessel made its way upriver from Washington, Stubblefield showed his radio at work by transmitting his voice to a group of scientists standing on the bank of the river.

The prestigious *Washington Post* quickly recognized that the reclusive inventor had developed something their readers would like to know more about. On March 21, 1902, the newspaper published an interview containing just about the only words Stubblefield ever had to divulge to the public regarding his device. He still wasn't divulging much, but it was amazingly perceptive, and more than he had said until then.

"My invention . . . is capable of sending simultaneous messages from a central distribution station over a very wide territory. For instance, anyone having a receiving instrument, which would consist merely of a telephone receiver and a few feet of wire, and a signaling gong could, upon being signaled by a transmitting station . . . be informed of weather news. My apparatus is capable of sending out a gong signal as well as voice messages. Eventually it will be used for the general transmission of news of every description.

"I have as yet devised no method whereby it can be used with privacy. Wherever there is a receiving station, the signal and the receiving message may be heard simultaneously. Eventually I, or someone, will discover a method of tuning the transmitting and receiving instruments so that each will answer its own mate.

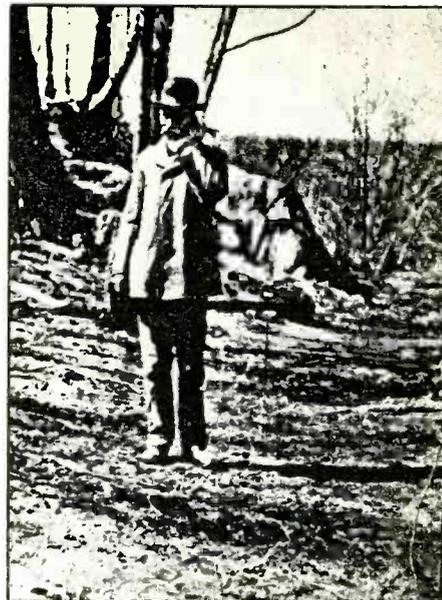
"The system can be developed until messages by voice can be sent and heard all over the country, to Europe, all over the world."

This didn't tell anything of the theory or design of his device, which he was reticent to discuss. His son, Bernard, who was born around 1890, was perhaps the only person ever to be present when he was working.

In 1930, after Stubblefield's death two years earlier, *The New York Sun* offered a vague description of the apparatus.

"His transmitting apparatus was placed in a box four feet high and six inches in width. A coil of heavy wire was at one end and led to the ground. Stubblefield made the startling statement that the earth's electrical waves furnished the power by which an ordinary power transmitter was operated. About a quarter of a mile away another box was fastened to a stump. There were wires leading to the ground and a pair of telephone receivers on top.

"Examination showed that the wires terminated in each case at steel rods topped



Nathan Stubblefield using one of his wireless telephones during the 1902 demonstrations in Washington, DC.

with a ball of iron which was nickel-plated.

"Stubblefield claimed that the earth and all about it is charged with electrical power, part of which he was harnessing—and that in time spoken messages could be sent without wires thousands of miles.

"He admitted that he had developed a radio-frequency current through a battery of his own arrangement, and an earth battery, following which he devised a system of modulation and an adjustment for tuning. The detector was a receiving coil, tapped for adjustable inductance."

From a vantage point of more than sixty years after this description, we still can't get much of an insight into what Stubblefield was really doing except to guess that it may have relied upon induction. Undoubtedly the telephone equipment itself was standard, but had been adapted for wireless operation. The transmitter he designed most likely included in its components some tuning coils, some type of amplifier, and a ground battery cell system. The use of rods placed in the earth could suggest a sub-strata communications system, but the knobs atop the rods could have meant they were antennas. And we don't know if the distance separating the placement of the rods was critical.

For years, many friends told him to patent his invention, but Stubblefield refused. He said it needed more work to get it perfected. One patent, No. 887357, issued on May 12, 1908, was given to Stubblefield for a radiotelephone device.

You may question why Stubblefield failed to attain general recognition for his work and become widely known as radio's inventor. He certainly appeared to be standing on the threshold of destiny when he gave his 1902 demonstrations on the Potomac.

Somehow, though, after that he seemed to fade from the public eye.

A probable contributing factor was his long-standing fear of permitting anyone to buy into his invention, which would have provided sufficient funds to develop and market the device. It wasn't that nobody wanted to invest. Many big city investors traveled to Murray to entice Stubblefield after the St. Louis Dispatch carried a story about him on January 10, 1902. He turned them all away, including (friends said) one attempting to give him a check for \$40,000. It's said that he once turned down an offer for \$500,000 for his invention, declaring it was worth double that amount.

But there are rumors. One story says that he took the device with him in a trunk when he visited Washington in 1912. When he returned from Washington, nobody saw the device. Had it been stolen? Stubblefield became embittered and disillusioned.

Apparently, the facts seem to be that in order to raise funds, Stubblefield had been persuaded to exchange all of his secrets, rights, and equipment for a half-million shares in a company called The Wireless Telephone Company of America. The company was a fraud, its stock was totally worthless. Wireless Telephone had no interest in developing and marketing his invention, only in selling more of its worthless shares to gullible suckers. He had been swindled.

Not long after, Stubblefield's house had been taken by creditors. He left his wife and nine children, moving to nearby Alamo, KY. There he built and moved into a crude tin hut insulated with corn husks. The house in which the family resided later burned down under mysterious circumstances. In complete isolation and obscurity, Stubblefield became a recluse and continued to work secretly on his inventions for years from his little shack. Neighbors reported hearing strange disembodied wireless voices resulting from his experiments, and they also described wireless electric lights in the trees near his shanty. But then, they had always expected the unusual from Nathan. On March 28, 1928, he died of starvation and, some said, a broken heart. He was laid to rest in an unmarked grave at Bowman's Cemetery, near Murray. A tragic end to a true eccentric genius.

In 1930, the New York Supreme Court ruled that Stubblefield's heirs had proven all of the details in their claim for patent rights, but that the statute of limitations had voided their claims regarding royalties.

Murray, KY honors Stubblefield as the inventor of radio. In 1930, they put up a memorial to Stubblefield on the campus of Murray State University. In 1948, twenty years after Stubblefield's death, a broadcast station in Murray went on the air, taking the call letters WNBS to pay homage to Stubblefield. Some books do offer passing mention to Stubblefield, but usually little information is given.

Stubblefield's descendants continue to

proclaim the invention of radio by their esteemed ancestor, and press for appropriate recognition to be given to him. Many historians feel that these claims have merit, but they do wish that old Nathan had been less secretive and reclusive.

The author wishes to thank Christopher Adams, of Murray, KY, and also Steve Cole, of New York, NY for the information

they provided in conjunction with this story. A lengthy, and excellent story about Stubblefield was called "The Man History Overheard," by Harvey Geller. It was included in "Circular," Vol. 7, No. 34, of December 8, 1975, published by Warner-Reprise Records. Another story about Stubblefield appeared in the July, 1961 issue of *Electronics Illustrated*.

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Radio Vilnius

As Lithuania Fights For Independence, Its Shortwave Voice Struggles To Stay In Operation.

BY CHARLES BRIAN GOSLOW

When Soviet Paratroopers took over Lithuania's Radio and Television Center on the morning of January 13, 1991, Radio Vilnius' English Section had just concluded its daily broadcast to North America. The emotion filled program included reports of hostilities at Lithuania's council minister's building and the large number of Lithuanian citizens amassed around their own building and television tower. Within an hour, Soviet tanks had broken through the human barricade, leaving 13 dead and over 600 injured.

Despite the loss of its facilities, Lithuania's "independent" broadcasters returned to the air from a transmitter site in Kaunas (60 miles northwest of Vilnius) only 40 seconds after the intruders shut their regular studio down. The attack had been anticipated for

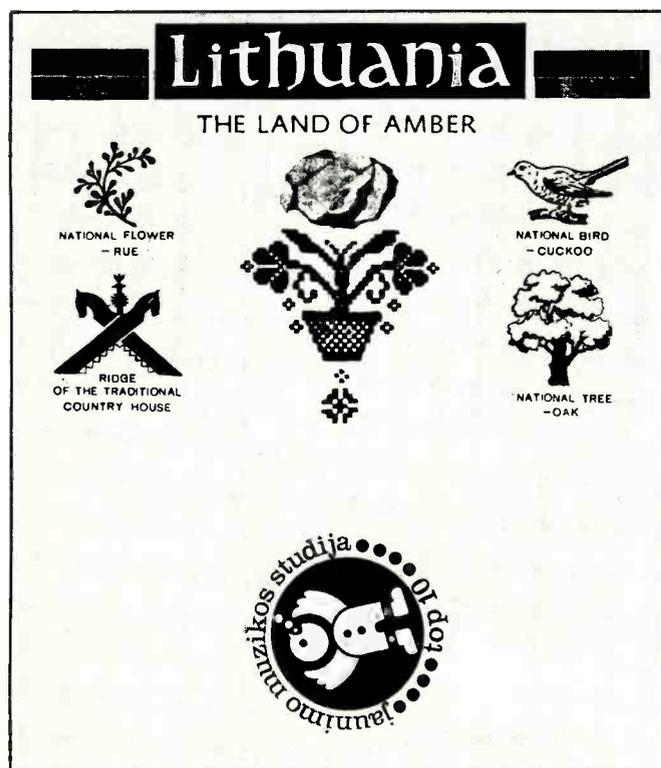
months and professional equipment had been installed in a number of locations.

North American listeners who tuned in to hear Radio Vilnius' Sunday broadcast, aired over Radio Moscow transmitters, did not hear the Lithuanian voices of independence. Instead, instrumental music similar to the kind acquainted with the death of a Soviet leader carried a silent message to the world. With its international outlet down, news from Lithuania reached the world by amateur radio operators based in Lithuania's Parliament building. LY2WR/A's requests for medical supplies were joined by calls for assistance from Lithuanian President Vytautas Landsbergis. One of the operators, Sigidas Zilianis, LY2PX, hosts a program for radio amateurs and DX'ers

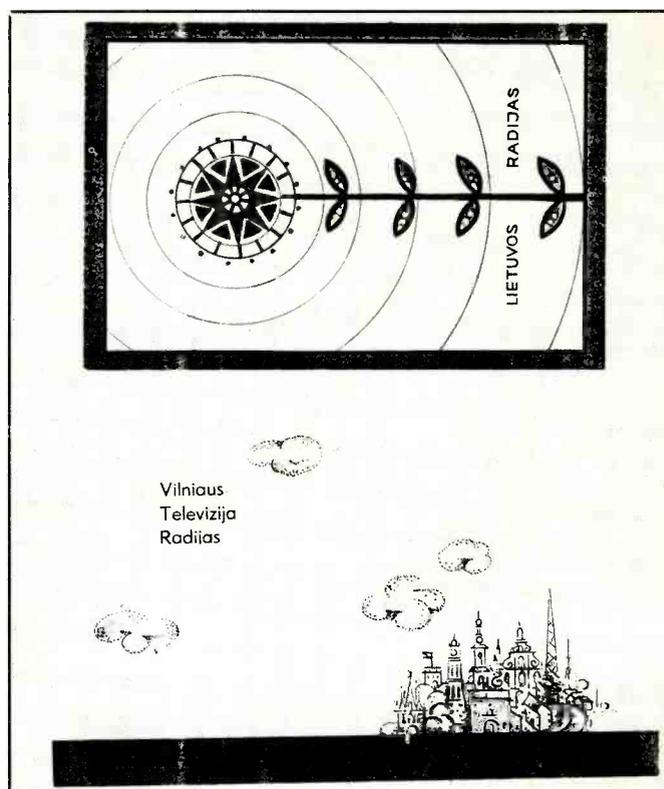
each Monday on Radio Vilnius.

Much of Radio Vilnius' programming is devoted to Lithuania's efforts to attain diplomatic recognition from the world's democratic governments. Lithuania declared its independence from the Soviet Union on March 11, 1990. It had been an independent state from 1918 until 1940 when, along with its Baltic State neighbors, Estonia and Latvia, it was annexed by the Soviet Union as part of the Molotov-Ribbentrop pact drawn up by Soviet leader Josef Stalin and German leader Adolf Hitler.

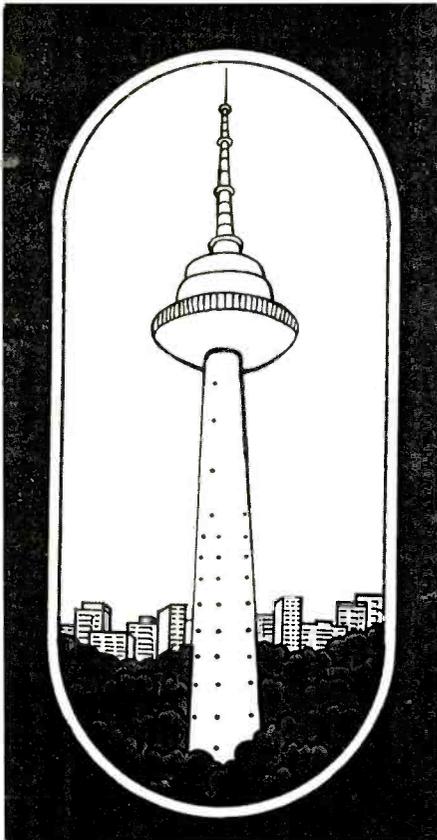
Located on the Baltic Sea, Lithuania is bordered by Latvia to the North, Byelorussia to the West, and Poland and Russia's Kaliningrad region to the Southwest. Located 180 miles east of the Baltic Sea and only 21



Radio Vilnius' Wednesday schedule features a program on Lithuanian culture. This QSL was received prior to the January occupation (Courtesy Sam Barto, Ct.).



Samples of QSL cards from the Lithuanian Radio Service, forerunner of Radio Vilnius.



This Lithuanian Radio Service QSL card from the early 1980's features the TV Tower occupied by Soviet paratroopers on January 13.

their status. BBC correspondent Bridget Kendall found them working in cramped and crowded quarters, while Radio Nederland's Media Network spoke with Zilianis and Dutch listener Julius Hammond, whose efforts on behalf of Lithuania in the Dutch Parliament, spurred on by Radio Vilnius' emotional broadcasts of mid-January, have gained him international prominence.

Radio Vilnius' staff was allowed to retrieve their personal belongings from the Radio and TV Center in late February. Vladas Dobilas told of being "greeted" at the entrance by a Soviet soldier carrying a kolashnikov rifle and being escorted with colleague, Rasa Lukaite, to the English department's sixth floor office by a Soviet Army lieutenant. Arriving at room 601, they found the office's contents smashed and its windows riddled with bullet holes. The station's file cabinets had been searched, its equipment stolen, and tape archives, containing material of great cultural and historical importance to Lithuania, plundered.

One of those recordings had been used to

open Radio Vilnius' broadcasts. The beautiful sounds of a Lithuanian harp have been "temporarily" replaced with a powerful and emotional recording of, "We Have Been Born Lithuanians ('This honor is given to us in blood and we must not forsake it')."

Having lost its production facilities, Lithuania's independent radio and television stations continue to broadcast using tape recorders and video cameras lent by its fellow citizens. The radio department has been producing its programs at a Vilnius recording studio which had been converted from the Lithuanian national radio system's former facilities. The television department is utilizing its former Kaunas base, with its Vilnius programming originating from a portable studio inside the Lithuanian Parliament building.

With its archives in the possession of pro-Moscow Communists and recording funds cut from its budget, Radio Vilnius has been assisted by the Lithuanian Recording Studio in producing new material for broadcast. The studio is collecting and recording as

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miles from the Byelorussian border, Vilnius, with a population of 650,000, is its capital.

Lithuania's domestic shortwave broadcasts on 9710 kHz resumed on January 22, although they were barely audible in North America. Three days later, Radio Vilnius' North American broadcast was back on the air after Lithuania agreed to rebroadcast television programming originating from Moscow. The Soviet government also needed the revenue it receives for leasing airtime for the broadcast.

Once again able to communicate with the world, Radio Vilnius told its version of the January 13 events, expressing heartfelt respect and gratitude for those who had died. Virginija Budryte, host of Letterbox and announcer Vladas Dobilas read letters of support for the Lithuanian people and questions about their own working conditions and safety. The tone of their responses made it clear that contrary to reports in the western media that Soviet troops were pulling out of Lithuania, they were still there ("... and we are still here.").

Uniquely, Radio Vilnius' staff became a story in themselves, although they were quick to point out that they considered those who had tried to protect their radio and TV center the real heroes. Other international broadcasters carried updates on

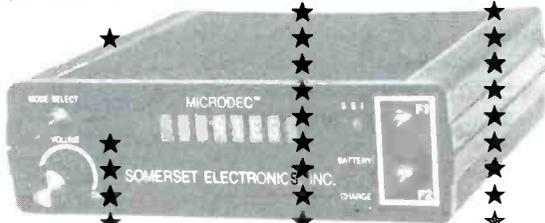
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much material as possible. Even in the best conditions, the record LP is a rarity in Lithuania, with only 10 record albums scheduled for 1991 release. Musical programs can be heard on Radio Vilnius' week-end broadcasts, hosted by Rita Kaminskaite.

Despite their open hostility towards them, Radio Vilnius' has carried interviews with the current occupants of the Lithuanian Radio and Television Center, various Soviet officials, and the occasional KGB officer. They've been interspersed with Lithuanian psychologists studying the country's psyche, farmers anticipating the dispersal of state land, tourists who've been hassled by Soviet authorities and a report on United States ex-President Richard Nixon's vow to assist their country in achieving its freedom, "until the day I die." A few weeks later, it was revealed Mr. Nixon had met with parties opposing Lithuania's current government. The emergence of the Lithuanian Democratic Labor Party, Lithuanian Social Democratic Party and the Lithuanian Liberal Union suggests heated times ahead.

As the only Baltic State broadcaster clearly heard in North America, Radio Vilnius is aware that listeners with ancestral ties to the region turn to them for news about their "homeland." Weekly reports from Latvia and Estonia are aired on Fridays.

Even if the Radio and Television Center is returned to Lithuania, its independence minded broadcasters return home may be delayed. The country's environmental protection commission discovered radioactive and quicksilver contamination at the facility, caused by the uncaredful handling of its equipment, has created unsafe working conditions with radiation levels three times higher than normal. Whether they remain "underground" or safely "return home," Radio Vilnius broadcasts promise to present a unique glimpse into history as it happens.

Radio Vilnius currently broadcasts to the east coast of North America on 11790 and 15485 kHz, and to the west coast of North America and South America on 13645, 15180 and 15455 kHz at 2300 UTC daily. Lithuania's home service operates on 9710 kHz, 24 hours a day, broadcasting in English to Europe at 2130 and 2300 UTC (a new commercial station, Radio Centras, was scheduled to begin testing a new transmitter on the frequency in late spring). The Lithuanian Amateur Community Network operates on 14153 kHz USB, with alternating frequencies of 3614, 7060 and 21220 kHz USB.

While mail out of Lithuania has been nearly non-existent since the January occupation, the station can be reached by mail, which it acknowledges on its Letterbox program (aired Tuesday and Thursdays). Their address is Radio Vilnius, Vilnius, Lithuania. The station's announcers have stressed that letters and packages addressed in this fashion does reach them and the omission of USSR, "that really awful looking enigmatic obsolete name," assists them, if only morally, in gaining their independence. ■

Selected English Language Broadcasts

Summer – 1991

BY GERRY DEXTER

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

Time	Country/Station	Frequencies
0000	R. Netherlands (30) R. Beijing R. Moscow	6020, 6165, 15560 9720, 11715 9530, 9685, 11735, 11850, 11860, 11950, 12050, 15425, 17605, 17665, 17700, 21480
	R. Sofia, Bulgaria R. Prague Int'l, Czechoslovakia Kol Israel R. For Peace Int'l, Costa Rica WHRI, Indiana Spanish National Radio R. Havana Cuba R. Korea, S. Korea R. Pyongyang, N. Korea R. Budapest, Hungary (30)	9700, 11680, 15330 7345, 9540, 11990 7456, 9435, 11605 7375USB, 13630, 21565 7315, 9495 9360, 11880 11820 15575 11335, 13760, 15115 6110, 9520, 9585, 9835, 11910, 15160
	Vatican Radio (50) All India Radio	6150, 9605, 11780 9535, 9910, 11715, 11745, 15110
	BRT, Belgium (30)	13685, 13720
0100	RAI, Italy Kol Israel R. Austria Int'l (30) V of Greece (30) R. Japan RAE, Argentina Deutsche Welle	9575, 11800 8465, 9435, 11605 9875, 13730 9395, 9420, 11645 5960 11710 6040, 6145, 6155, 9565, 11865, 11890, 13610, 13770, 15105, 15425
	R. Yugoslavia R. Prague Int'l R. Norway Int'l (Sat/Sun) R. Alma Ata, Kazkhkstan SSR(30)	9620, 11735 5930, 7345, 9540 11925, 15360 5035, 5915, 7230
0200	R. Sweden R. Tirana, Albania (30) R. Portugal (30) R. Cairo, Egypt V of Free China, Taiwan R. Romania Int'l	9695, 11705 9760, 11825 9600, 9680, 9705, 11840 9475, 9675 5960, 9680, 15345 5990, 9510, 9570, 11830, 11940, 15380

Time	Country/Station	Frequencies
	Swiss Radio Int'l	6125, 6135, 9650, 9885, 12035, 17730
	UAE Radio	11945, 13675, 15400, 15435
	R. Yerevan, Armenian SSR (50)	11675, 11790, 15180, 15455
0300	R. Netherlands (30) R. Beijing TWR, Bonaire V of Greece (30) R. Tirana, Albania R. Sweden (30) Vatican Radio (10) R. Sofia, Bugaria Deutsche Welle	6165, 9590 9690, 11715 11930 9395, 9420, 11645 9760, 11825 9695, 11705 9635 7115, 9700, 11735 6085, 6145, 9545, 11810, 11890, 13610, 13770, 15205, 15245 17795 11945, 13675, 15400, 15435
	R. Australia UAE Radio	17795 11945, 13675, 15400, 15435
0400	R. Beijing R. RSA, S. Africa Kol Israel R. Romania Int'l	11695 7270, 11900 7410, 7465, 9435, 11605 5990, 9510, 9570, 11930, 11940, 15380
	Swiss Radio Int'l R. Havana Cuba WSHB, S. Carolina TWR, Swaziland Deutsche Welle	6136, 9650, 9885, 12035 9505, 9750, 11760, 11820 9455, 13760 11750 6040, 7150, 9565, 9765, 11765, 11890, 13610, 13770, 13965, 15265, 15440
	R. Romania Int'l	5990, 6155, 9510, 9570, 11830, 11940
0500	R. Beijing R. Moscow	11840 9505, 9795, 12050, 13665, 15180, 15240, 15405, 17665, 17690, 17720
	Spanish National Radio R. Australia Int'l HCJB, Ecuador V of Nigeria R. New Zealand Int'l Vatican Radio CRTV, Cameroon UAE Radio (30)	9630 6015 9745, 15155 7255 17770 17710, 17730, 21650 4795, 4850, 5010 15435, 17830, 21700
0600	V. of Mediterranean, Malta R. Korea, S. Korea R. Havana, Cuba TWR, Swaziland Deutsche Welle	9765 9570, 11830 11835 7200 17765, 13610, 13790, 15185, 15440, 17875
	R. New Zealand Int'l (30) GBC, Ghana	9700 4915

Time	Country/Station	Frequencies	Time	Country/Station	Frequencies
0700	R. Netherlands (30) R. Moscow	9630, 9715 9505, 9795, 12010, 12050, 13665, 15180, 15240, 15405, 17690, 17720		KNLS, Alaska Deutsche Welle	9615 9735, 9760, 11965, 11765, 21600
	V of Free China, Taiwan HCJB, Ecuador TWR, Monaco (30)	5950 6205, 9610, 11835 9480	1600	R. Netherlands (30) R. Beijing R. Moscow	6020, 15570 9570, 15510, 15130 7265, 9655, 11840, 11995, 12050, 15425, 15595, 17585, 21495, 21685 21480
0800	R. Netherlands (30) WHRI, Indiana SIBC, Solomon Islands KLNS, Alaska V of Indonesia	9770, 17575, 21485 7315, 7355 9545 11715 11755, 11785		HCJB, Ecuador (30) UAE Radio Radio Pakistan BSKSA, Saudi Arabia BBC R. France Int'l	11795, 15320 17725, 21480 9705, 9720 9515, 15260 6175, 11705, 12015, 17620, 17795, 17850
0900	R. Beijing R. Australia Deutsche Welle R. Ulan Bator, Mongolia (10) NBC, Papua New Guinea	11755, 15440, 17710 9580 9565, 15410, 21600 11850, 12015 4890	1700	R. RSA, S. Africa R. Pakistan R. Japan R. Moscow	17790 9370, 11570 7140, 9505, 11815, 15210 7170, 9770, 11840, 12030, 15450, 17790, 17810 6040, 6180, 9700, 9760, 15205
1000	R. Netherlands (30) Kol Israel R. Moscow	6020, 11890 11585, 17575, 21790 9600, 17790, 17830, 21495, 21685		V of America	R. Norway (Sat/Sun) FEBA, Seychelles (30) R. Austria Int'l (30)
	R. Finland All India Radio	15400, 21550 15050, 15335, 17387, 17865, 21735			9655, 17760 11860 5945, 6155, 12010, 13720
1100	R. RSA, S. Africa TWR, Bonaire BBC R. Pyongyang, N. Korea R. Japan R. Austria Int'l (30) R. Jordan Deutsche Welle	9555, 11900, 17835 11815, 15345 9565, 9515, 15220 9977, 11335 6120 21490 13655 11890, 15410, 17765, 17800, 21600	1800	R. Netherlands R. Norway (Sat/Sun) RFPI, Costa Rica KNLS, Alaska R. Bangladesh	6020, 15570, 17605, 21685 17735 13630, 21565 11945 9577, 12030
	V of Vietnam VOIRI, Iran	7416, 9730v 9685, 9705, 11790	1900	Kol Israel R. Afghanistan VOIRI, Iran (30) HCJB, Ecuador Deutsche Welle	7465, 9435, 11605 6020, 9635 9022 15270, 17790, 21480 9760, 17785, 11810, 13790, 15350, 15390, 17810
1200	R. Beijing V of Greece (35) Radiobras, Brazil CBCNQS, Canada (part English) HCJB, Ecuador R. Korea, S. Korea (15) R. France Int'l (30) V of Vietnam (30) R. Tashkent, Uzbekistan	9665, 9670, 11600, 15450 15625, 15650, 17535 11745 6065, 9625 11740, 15115, 17890 9750 17650, 21635 9840, 12020, 15101 7325, 9600, 9715, 11860, 15470		R. Yugoslavia	6165, 7165, 15165, 17840
1300	R. Beijing BRT, Belgium R. Finland WWCR, Tennessee R. Moscow	11600 21810 15400, 21550 15690 7265, 9640, 9655, 9755, 9895, 11840, 17585, 17830, 21945, 21685	2000	R. Netherlands (30) R. Moscow	7285, 9860, 11660, 13700 11730, 11840, 11930, 12050, 12060, 15355, 15425, 17605, 17665, 17700, 17840
	All India Radio R. Peace & Progress, USSR V of Vietnam AWR, Costa Rica	9565, 11760, 15335 5960, 7150, 15490, 17870 9840, 12020, 15010 9725, 11870		Radio Damascus, Syria (05) KNLS, Alaska R. Luxembourg	12085, 15095 11910 15350
1400	R. Netherlands (30)	5955, 13770, 15150, 17575, 17605	2100	R. Damascus (10) Kol Israel (30) HCJB, Ecuador (30) R. Cairo, Egypt (15)	9950, 12085 7465, 9435, 11605, 11655 17790, 21480 9900
	R. Beijing V of Mediterranean, Malta R. Japan R. Norway (Sat/Sun) R. Ulan Bator, Mongolia (45) R. Sweden R. Australia	7405, 11815, 15165 11925 9505 11790, 15305 9795, 13750 9695, 17740, 21570 6080, 7240, 9580, 11720, 11930, 17630, 21775	2200	R. Vilnius, Lithuania	6100, 7400, 9750, 15180, 17690, 17720
1500	V of Greece (30) R. RSA, S. Africa HCJB, Ecuador R. Sweden (30)	11645, 15640, 17535 7230, 15270 15115, 17890 17875, 21600		V of Turkey R. Peace & Progress, USSR RTVC, Congo V of the UAE R. Yugoslavia	9445 6145, 7205, 7360, 9775 7465, 5985 11965 5955, 6100, 15165
			2300	R. Finland Kol Israel R. Pyongyang, N. Korea RFPI, Costa Rica R. Tirana, Albania (30) R. Budapest, Hungary (30)	9645, 11755 7465, 9435, 11605 11700, 13650 13630, 21565 9700 6110, 9520, 9585, 9835, 11910, 15160 9700, 11680, 15330 7400, 9750, 15180, 17690, 17720
				R. Sofia, Bulgari R. Kiev, Ukrainian SSR	15420 9535, 9910, 11715, 11745, 15110
				WRNO, Louisiana All India Radio (15)	15420 9535, 9910, 11715, 11745, 15110

Scanning The New AMTS Band

Some Folks Call it the "Maritime Cellular Band." An All-New Eavesdropping Adventure For You & Your Scanner!

BY CHUCK ROBERTSON

Prepare to board and search, or search/scan! It starts at 216 MHz and ends at 220 MHz. It's the new nationwide Automated Maritime Telecommunications System (AMTS). They used to call it the Inland Waterways Communications System (IWCS), but AMTS is a new name that reflects its new broader agenda. It's not just "inland" any longer, now it's going nationwide!

AMTS is already operational along the Gulf of Mexico, Vessels and oil rigs as far as 70 miles offshore use the service. The Mississippi River and its huge system of tributaries are also fully covered by AMTS. I live in

the southern part of Illinois, right between the Ohio and Mississippi Rivers, and the salty AMTS comms are going full blast.

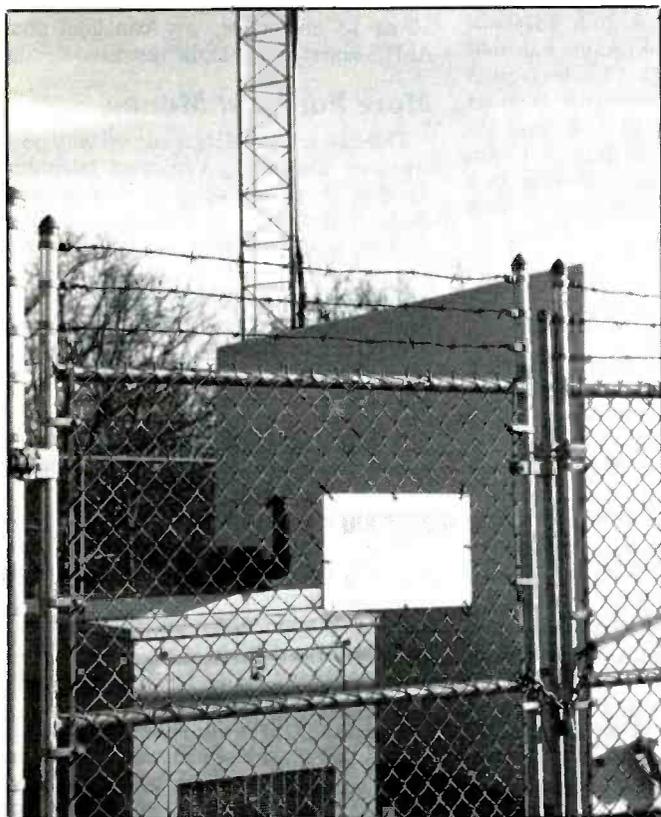
Very soon, AMTS networks will be operating along the East Coast, the West Coast, the Great Lakes, and most navigable waterways of the USA. Since the 216 to 220 MHz band is allocated for maritime use throughout the Americas, it's possible that such systems could eventually evolve in Canada, Mexico, and elsewhere.

Here's a look at this new nationwide marine radio band, with some scanning tips added for extra measure.

Rollin' Down The Repeater

AMTS is similar in many ways to cellular car phones. As vessels move, their in-progress AMTS comms are automatically handed off to the nearest shore-based tower. But AMTS has more than this to offer.

The system is computer controlled, so that lets it have all kinds of fancy features like the ability to track vessels. If, for example, a company is concerned about the status of one of their vessels, they simply dial up a landline phone number and vital stats come back to them over the phone by FAX or



Watercom's "Station 19" is located on Bald Knob Cross Road, near Alto Pass, IL. This is 10 miles east of the Mississippi River.

Closer view of the fence around "Station 19" shows a warning sign containing a toll-free number to call in case of emergencies. That's a gasoline powered generator over to the left.



TTY. The information might include the vessel's location, estimated time of arrival at its next port, engine RPM's, fuel consumption, sea conditions, river levels, and the skipper's log entries.

The owner of many vessels can also use AMTS to send out a voice or data broadcast to all of the vessels in his fleet, or just to specifically selected vessels. This might be weather updates, river conditions, last minute port arrangements, etc. Vessels with AMTS have a printer terminal that operates around the clock, so data messages can be received even if there's nobody on watch in the pilot house or on the bridge.

And, yes, AMTS vessels can place and receive regular landline phone calls through their equipment, and they can also contact other AMTS-equipped vessels by voice. In fact, most of what there is to be monitored on this band consists of telephone calls and other voice comms.

Any maritime interest willing to pay for AMTS is entitled to use the service. So, that means all types of river boats, offshore oil rigs, shrimpers, trawlers, tankers, the Coast Guard, ferries, ore carriers, coastal tankers, work boats, cruise ships, harbor craft, barges, cable layers, dredges, and even some pleasure craft.

Who? How? Where?

AMTS consists of 166 channel pairs (12.5 kHz spacing). Coastal stations oper-

ate between 216.0125 to 217.9875 MHz. Ships and offshore oil rigs operate between 218.0125 and 219.9875 MHz.

FCC Part 80 lists only 80 channel pairs (25 kHz spacing). However, a close reading of the fine print reveals that 12.5 kHz offset channels are also allowed. Always use a 12.5 kHz search increment while scanning for AMTS signals.

In my own area, where there is a typical system, the active full-duplex base frequencies are 217.1125, 217.125, 217.30, 217.3875, 217.4375, 217.475, 217.50, 217.6375, 217.70, and 217.8625 MHz. Control channels (continuous data) are on 217.0125, 217.2875, 217.7125, and 217.9375 MHz. Out of the ten voice channels, half are 12.5 kHz offsets.

All shore transmitters are limited to 50 watts maximum output. These are used with vertically polarized directional array antennas that boost the signals to 1 kW ERP (effective radiated output). Vessels use 10 watt transmitters.

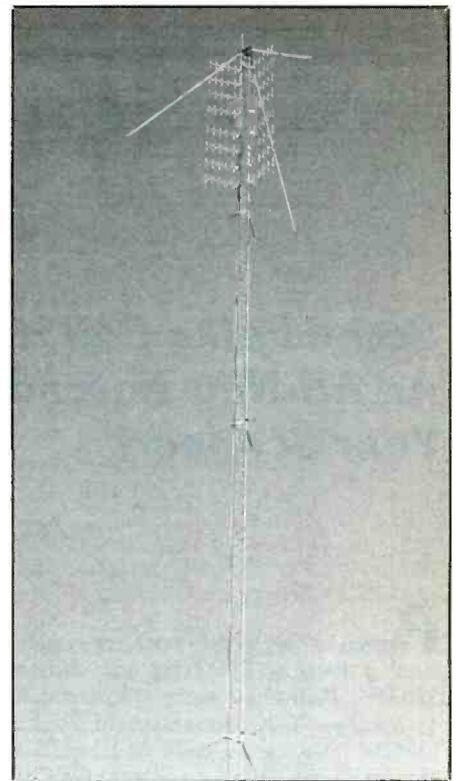
All transmissions are narrowband FM (NFM), so they should be able to be received on any standard scanners that include these frequencies. A regular multi-band antenna should bring in the stations. A really super antenna would be an omnidirectional type intended for 222 to 225 MHz ham band use.

AMTS is operated by one company, Watercom, Inc., 453 East Park Place, Jeffersonville, IN 47130. It has 54 active shore stations at this time. These are as far south as Florida, as far west as Texas, and as far north as Wisconsin.

Watercom maintenance and administrative comms are heard on 2087.4, 2183.4, 2783.4, 4117.1, 6520.2, 8726.5, 13105.3, and 17293.2 kHz USB. A remote transmitter site is at Lanesville, IN (14 miles west of Jeffersonville). Watercom is also licensed on VHF-FM channels 16, 24, and 26 (156.80, 161.80, and 161.90 MHz) from the Jeffersonville office. Jeffersonville, IN is directly on the Ohio River, across from Louisville, KY.

TV Interference Problems

To avoid the possibilities of interference to TV broadcasts on TV Channels 10 and 13, AMTS operations near areas where those TV channels are active have some restrictions. In those areas, AMTS activities are restricted to 217.0125 to 217.9875 MHz and 219.0125 to 219.9875 MHz. Distance limitations vary with the situation (and the direction in which the AMTS antenna is aimed). AMTS stations beaming their signals offshore into the Gulf of Mexico are allowed to operate quite close to service areas of TV Channels 10 and 13. Inland stations may be limited to as much as 105 miles from the closest Channel 13 TV station, and 80 miles from the nearest Channel 10 TV station. The FCC is presently rethinking these limits and they will probably be reduced.



Most Watercom AMTS towers are about 300 ft. tall, although the one in this photo is only about 180 ft. high. There are two antenna arrays, one aimed upriver, the other aimed downriver. The angle between the antenna arrays shown is determined by a bend in the river. The ERP from each array is 1 kW.

If you live in an area where TV Channels 10 or 13 are active, you can limit your AMTS signal search to the restricted bands.

More For Your Money

The 216 to 220 MHz is shared with government and non-government telemetry devices. These non-voice transmissions include those from remote seismographic sensors, wildlife tracking, sea buoys, oil exploration, and other scientific devices and associated telecommand equipment. Airborne wildlife telemetry is limited to the 216.00 to 216.10 MHz portion of the band.

Get Set

Now that you know about AMTS, it can be added to your roster of bands to monitor. If you live near any navigable waterway, it will be a busy service once it gets up a full head of steam. This could still be a few months into the future in your particular area because this is a new service. So don't become disappointed if you monitor there today and you don't hear any activity. Keep trying. As time goes by, you'll hear things as systems begin activating.

This is the USA's first nationwide marine telephone network of its type. It should be playing on your scanner very soon. Bait your hook, and reel in those stations!

SUPER LONG PLAY TAPE RECORDERS

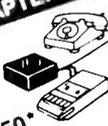
12 Hour Model — USES 120 TAPE \$119.00*

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CIRCLE 134 ON READER SERVICE CARD

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

STS-37 And 39 Mission Profile

Two space records were set recently by a shuttle crew. The mission was STS-37, Discovery, launched last April. First, the entire crew were licensed Amateur Radio Operators. Its second record was to carry and launch the heaviest satellite ever deployed by the space shuttle. The satellite was the Gamma Ray Observatory weighing in at 35,000 lbs.

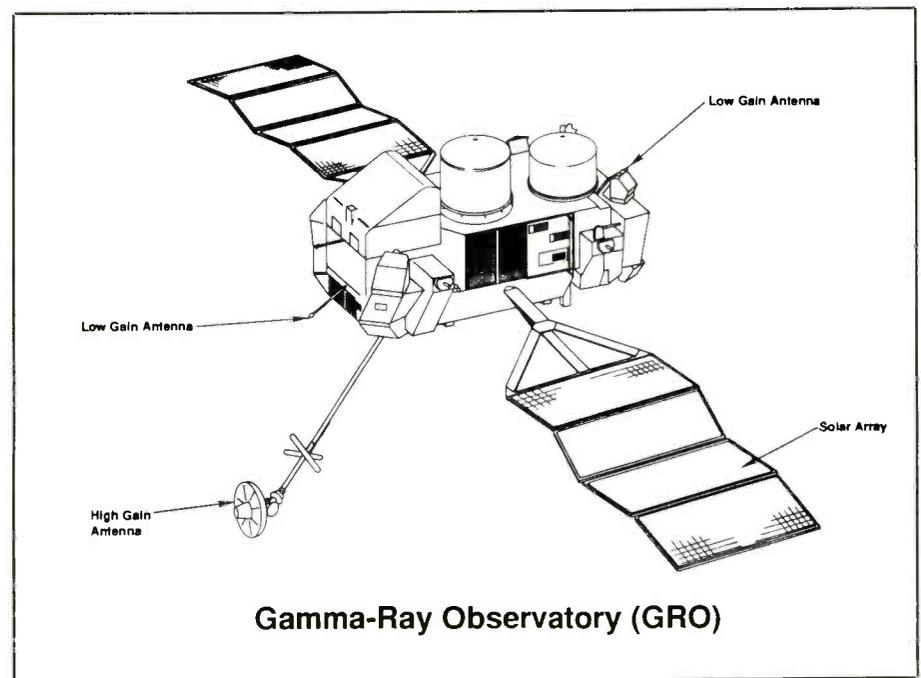
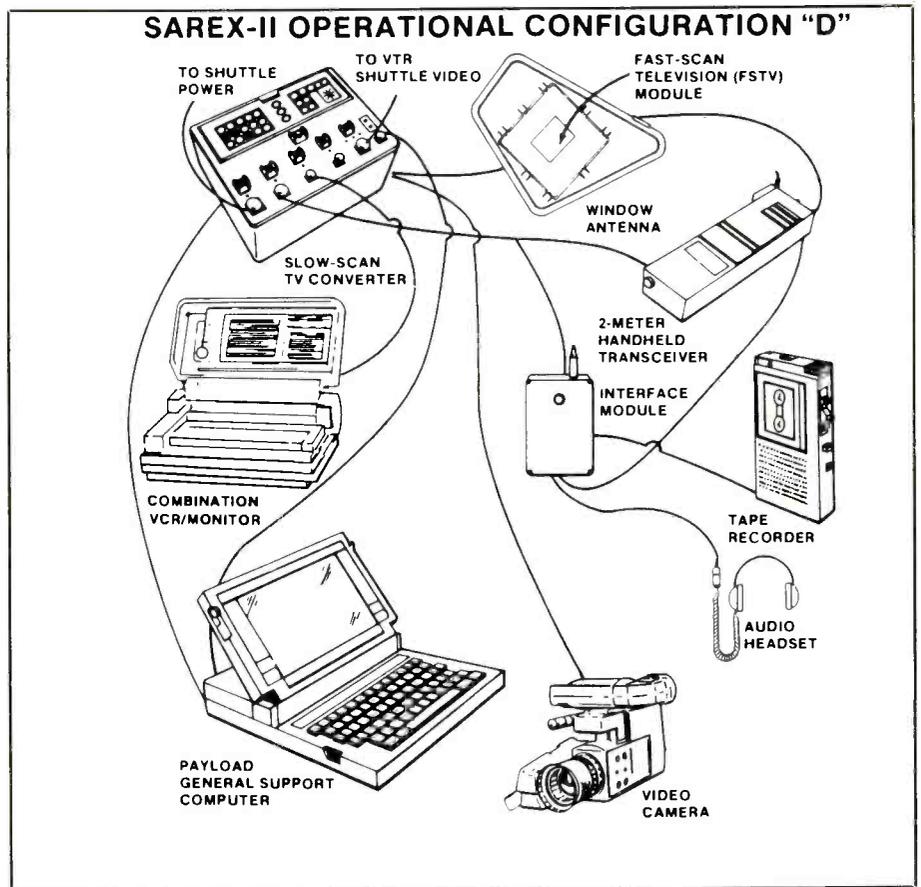
The Amateur crew of Discovery conducted radio experiments with ground stations. The program is called SAREX, Shuttle Amateur Radio Experiment. The onboard equipment allows ground stations to contact the crew in four modes of operation: Voice, Slow Scan TV (SSTV), data and Fast Scan TV (FSTV). The TV mode runs automatically without the assistance of the astronauts.

STS-37 pilot, Ken Cameron (WB5AWP) made at least four transmissions on each mode as part of the scheduled SAREX experiment. Commander Steve Nagel (N5NAW), mission specialist Linda Godwin (N5RAX), Jay Apt (N5QW) and Jerry Ross (KB5OHL) operated the Amateur equipment during lunch breaks and free time, which there is not very much of during a Shuttle flight. The crew also made several attempts to contact cosmonauts onboard the Soviet's Mir Space Complex. Mir, as you know if you are a regular visitor to Satellite View, was equipped with an Amateur Radio Station in 1988. (See the April 1988 issue).

Contacting Mir may be more difficult than you think. As both spacecraft are in Low Earth Orbit (LEO), the usual line-of-sight requirement for space communications is complicated by the different orbital paths each spacecraft takes. STS-37 is the 4th shuttle mission to carry the SAREX experiment. This program is designed to demonstrate Amateur Radios reliability in preparation for a permanent station on board the proposed Freedom space station.

The Gamma Ray Observatory (GRO) is a space based observatory designed to study the universe in an invisible high-energy form of light known as a gamma ray. Gamma-rays, which cannot penetrate the Earth's atmosphere, are of interest because they provide a reliable record of cosmic changes, and will yield unprecedented answers about such structures as pulsars, quasars, black holes, neutron stars and the dynamics of the Milky Way Galaxy.

GRO carries instruments that are 10 times more sensitive than any previous Gamma-



1991 Shuttle Launches

DATE	MISSION	VEHICLE	PAYLOAD
August 1991	STS-43	Atlantis	TDRS-E
October 1991	STS-48	Discovery	UARS
December 1991	STS-44	Atlantis	DSP

1992 Shuttle Launches

DATE	MISSION	VEHICLE	PAYLOAD
February 1992	STS-42	Discovery	IML-1
April 1992	STS-45	Atlantis	ATLAS-1
May 1992	STS-49	Endeavour	INTELSAT-R
June 1992	STS-50	Columbia	USML-1
August 1992	STS-46	Atlantis	TSS-1/EURECA
Sept. 1992	STS-47	Endeavour	Spacelab-J
Sept. 1992	STS-52	Columbia	USMP/LAGEOS/CANEX

SAREX is a joint effort of NASA, the American Radio Relay League (ARRL)/Amateur Radio Satellite Corporation (AMSAT) and the JSC Amateur Radio Club.

STS-37 SAREX Frequencies

	Shuttle Transmitting Frequency	Accompanying Shuttle Receiving Frequencies
Group 1	145.55 MHz	144.95 MHz
	145.55	144.91
	145.55	144.97
Group 2	145.51	144.91
	145.51	144.93
	145.51	144.99

Group 1 includes voice and slow scan operations. Group 2 includes digital and packet operations.

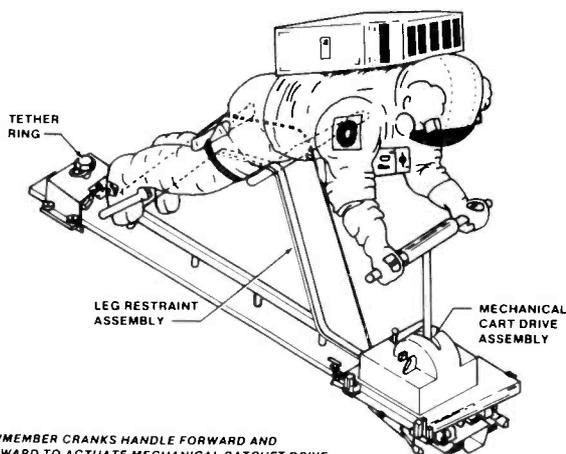
ray explorer. The spacecraft's communications and data handling system is based on the standard NASA modular design used on the Solar Maximum Mission and the Landsat satellites. GRO carries a 60 inch (152 centimeter) high-gain antenna, two omni-directional low-gain antennas and a radio frequency combiner to interface the module to the antennas. In addition, two Tracking and Data Relay Satellite System (TDRSS) transponders, used for both incoming and outgoing transmissions to the TDRSS satellites and the Space Shuttle, are carried by the spacecraft. Tape recorders are used to store data which is forwarded to Goddard Space Flight Center at 512 kilobytes per second via the high-gain antenna and TDRSS transponders. The transponders operate in the S-band near 2.3 GHz.

Instructions are sent to GRO from Goddard Space Flight Centers Multisatellite Operations Control Center. Goddard provides mission scheduling, tracking, telemetry data acquisition, command and processing for down-linked.

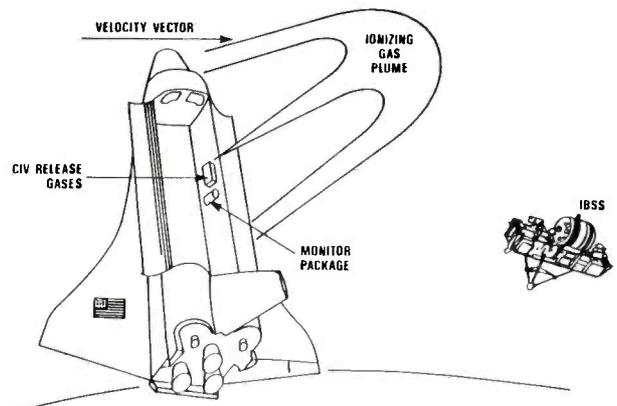
The GRO provided an opportunity for EVA (Extra Vehicular Activity). Astronauts Apt and Ross were already scheduled to EVA to test new equipment that will transport astronauts around the exterior of the proposed space station Freedom on small platforms. The high-gain dish antenna on GRO would not deploy, so Apt and Ross had to manually pull the antenna into place.

STS-39, also launched in April, carried several interesting experiments involving satellites. Another experiment and the highest priority experiment is CIRRIIS, a Cryogenic Infrared Radiance Instrumentation for Shuttle. It is an infrared study of spectral and spatial measurements of airflow and auroral emissions. This will hold the DOD design surveillance systems. Aurora is created by solar flares or sun spots. Aurorae emit visible, ultraviolet, infrared and radio frequencies. It can completely shutdown all HF communications and alter, but expand

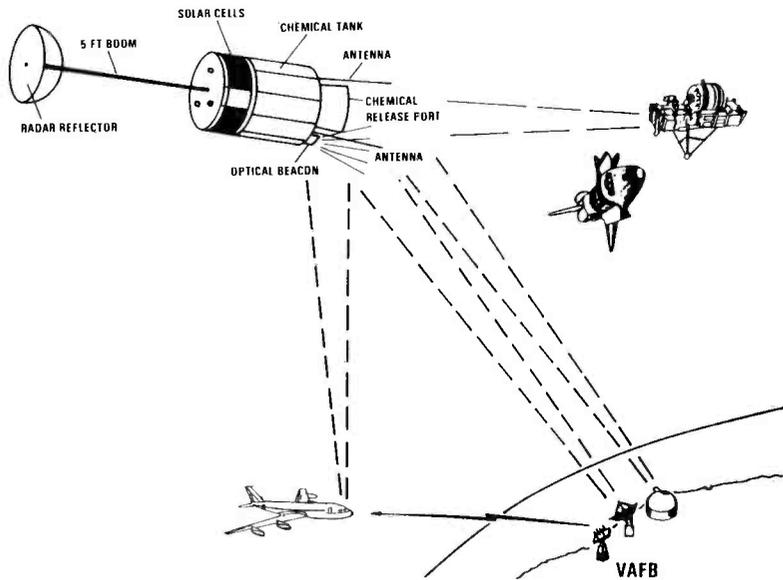
MECHANICAL CART



CIV EXPERIMENT



CHEMICAL RELEASE OBSERVATION (CRO)



Signature Survey (IBSS). This survey has two phases. The first is the Chemical Release Observation (CRO). Three separate satellites were released from the Satellite bay. As the satellites pass over Vandenberg AFB (VAFB) a signal will be sent which will start the telemetry from the spacecraft. A second signal will start a chemical release from the satellites. These will be observed by ground stations and special airborne sensors on the ARGUS aircraft simultaneously. These observations will assist the SDI office in characterizing the signatures of liquid fuel clouds escaping from damaged ICBM boosters.

The second phase is the CIV or Critical Ionization Velocity. Four different canisters of compressed gas (xenon, neon, carbon dioxide and nitrous oxide) will be released at high velocity into the ambient plasma of space. The kinetic energy of the gas will exceed its ionization potential resulting in enhanced ionization.

If you heard or talked to any of the shuttle crew of STS-37 or monitored any of the HF relays of shuttle communications for STS-39 be sure to let us know.

We will close with this final note. The aging Salyut 7 space station reentered the Earth's atmosphere over Argentina at 0344 UTC on February 7. Remember your comments, suggestions, loggings, photos and questions are always welcome. ■

greatly, VHF/UHF communications. The ground stations of the Defense Meteorological Satellite Program (DMSP) will be used to

monitor this experiment.

The Strategic Defense Initiative Organization sponsored a Infrared Background

Improve Your Scanning Coverage!

GRE America is proud to introduce a new family of products to enhance your scanning pleasure! First, GRE has designed the new **Super Converter 9001** for base model scanners. The 9001 converts 810 MHz - 950 MHz down to 410 MHz - 550 MHz. The 9001 is the perfect alternative to buying a new, expensive scanner covering the 800 MHz band. Next, GRE announces the new **Super Amplifier 3001** for base model scanners. The 3001 will increase gain by as much as 20 dB, and is engineered to help scanners with low sensitivity pull in weak signals. Both products use BNC connectors, (1) 9 volt battery and have an off/pass switch for returning to normal operation.



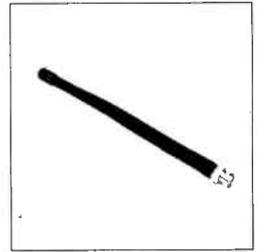
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CIRCLE 137 ON READER SERVICE CARD

Lithium Battery Back-up—How Long Will It Last?

Your beeper goes off, and it's a Code 3 run over to the airport for a commuter airline crash. When you go 10-97, you find that it's only a minor nose-gear collapse, and everyone is okay. You switch on your H.T. to deactivate the hospital mass-casualty alert, and to your amazement, all memory channels are wiped out. What? How could all the memory channels in your handheld or your mobile or your H.F., or worse yet, your scanner get dumped?

You may have just experienced a lithium battery failure. It's usually not catastrophic, and after you carefully solder in a new lithium battery cell, you should be back in business after reprogramming all those lost frequencies.

But before you panic and grab your volt meter, I suggest you read over your radio equipment owner's manual to see whether or not the memory is backed-up by lithium cells. Most professional Part 90 business radio mobile units and handheld transceivers feature non-volatile memory circuits. No lithiums, here! It's the same thing with most newer scanners: all of their memory is non-volatile, and no lithium batteries are in the circuit.

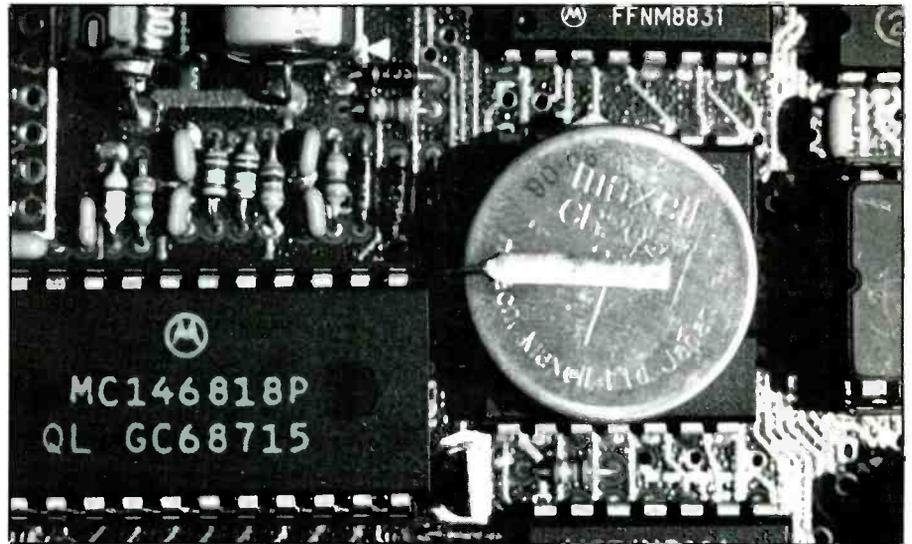
However, ham radio sets (especially the portables) regularly use a lithium cell to back up memory, and sometimes back-up factory-programmed RAM circuits.

"The life of a lithium cell will probably outlive the equipment," comments Gary Fiber, KF7XV, with ICOM Corporation. "We expect the lithium cells to last a minimum of 10 to 15 years," adds Fiber.

On certain pieces of ICOM equipment, the 3.35 volt lithium cell backs-up factory-programmed RAM memory in the following equipment: IC-745 H.F. base/mobile transceiver; IC-751 & 751A base/mobile H.F. transceivers; R71 receiver; 271, 471 & 1271 VHF/UHF base/mobile transceivers; and M700 marine SSB transceiver.

"When these sets are turned off, the lithium cell goes into action backing-up RAM. I have a board in my desk that's been there for over 10 years, and the lithium cell is still hanging in there," adds Fiber. Factory-programmed RAM "dump" on ICOM equipment is extremely rare, but if it does occur, it's only a \$25 re-programming charge, and a new lithium cell to get you back in business.

"A dead lithium battery in Kenwood equipment only causes user-programmable memory loss," comments Wayne Pardue, amateur radio service at Kenwood. "No factory re-programming is required after battery replacement, since Kenwood trans-



If the memory or RAM circuit is still alive, you will need to back-up the battery voltage when you change this cell.

ceivers do not contain volatile memory circuits," adds Pardue.

The same goes for Yaesu gear and MFJ clock and packet products. After battery replacement, the set is simply "reset" by the operator, and will not require any factory service to get it back on the air.

"Our Radio Shack HTX-100 doesn't use lithium battery back-up memory," comments Ed Juge, W5TOO, of Tandy Corporation. At Alinco, they indicate that once a lithium cell is replaced, the user simply needs to go back and re-program all memory channels.

Different types of lithium cells are used in various pieces of equipment. Sometimes lithium cells are stacked, but more often the lithium cell is simply a soldered-in a "button" type battery with clearly marked positive (+) and negative (-) sides. Unlike wrist-watch or calculator batteries, most radio lithiums are all solder-in types.

The procedure for soldering in a replacement lithium cell is to first obtain an exact replacement lithium battery. Most manufacturers agree it's best to order these batteries directly from their consumer parts department. If you decide to go out and find your own solder-in lithium cell, make absolutely sure it's the right size and the right voltage.

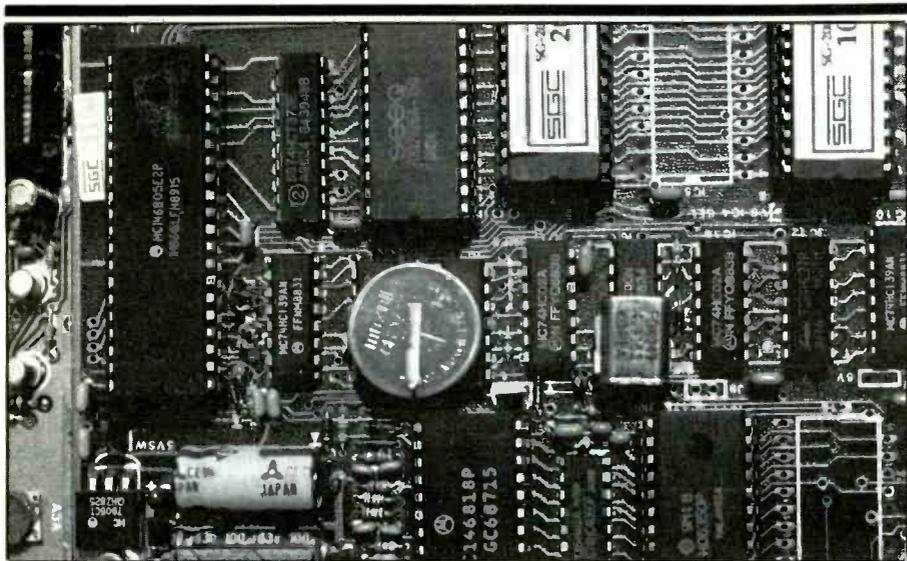
If your radio memory circuit no longer retains memorized channels after you shut off the radio, chances are you will need to replace the lithium battery. If the battery is dead, you can easily detect this condition with a simple volt meter with the unit turned

off. Except for the few specific pieces of ICOM equipment previously mentioned, the set will not require any fancy re-programming by the factory which includes many ICOM handhelds that are easily serviced in the field.

If you own one of those ICOM base/mobile units with factory-programmed RAM, and the batteries are low but not dead, you can change out the lithium yourself. To do it just keep a regulated DC voltage the same as that of the lithium battery on the circuit as you are swapping out the old battery for a new one.

"When replacing a low lithium battery where memory hasn't yet dumped, be sure to keep the right amount of voltage on the circuit during cell replacement," comments Ken Riley, senior technician at Ham Radio Outlet in Anaheim, California. "Always disconnect the minus lead first, and then the positive lead. When installing the new battery, connect the positive lead, followed by the minus lead. This avoids shorting the battery if a grounded-tip soldering iron is used," adds Riley. Many technicians regularly replace lithium batteries as preventive maintenance, before they go dead.

Putting a battery in backwards is usually instant death to the brains of your equipment, so make absolutely sure you watch for the right polarity when you install a new lithium cell. Do this when checking voltage as well, even though lithium cells may look the same, they quite often have a slightly different voltage.



Would I, as preventive maintenance, go into my mobile and H.T.'s and change out my lithium cells before my memory circuit dies? Probably not. I have some pretty old handhelds, and only one has dumped memory from a dead lithium cell. I needed to re-write my memory channels anyway, so I suggest you simply wait until your memory circuits fail, and chances are, they won't.

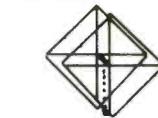
If you're really losing sleep worrying about those specific few ICOM sets with factory-programmed RAM, then go ahead and contact the ICOM parts department for re-

placement cells, and do the change out yourself, making sure to keep the right amount of voltage on the circuit when you swap out the old cell for a new one.

If you are the technical type that regularly works on your team's radio equipment, find out now how memory circuits are backed-up, and bring in a few lithium batteries, just to have on hand in case you ever need to replace them. It's about a 5-minute job, and with only 2 solder connections to work on, it's easily accomplished without any major problems.

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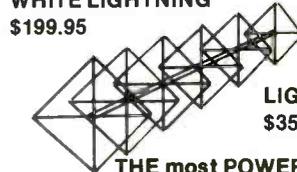


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CIRCLE 130 ON READER SERVICE CARD

THE MONITORING MAGAZINE

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CIRCLE 131 ON READER SERVICE CARD

August 1991 / POPULAR COMMUNICATIONS / 37

Mr. Harry's Neighborhoods

Why do DX'ers always seem to hear the good stuff? Basically, it's the same reason you can tell when something out of the ordinary is going on in your neighborhood.

Think about your neighborhood. You know who lives there, what they do for a living, when they're supposed to be home, and the cars they drive. When a car is parked along your street that doesn't belong to someone who lives there, or a light is on when no one is supposed to be home, you notice. It's not that you're nosey or a busybody, but rather that you are so familiar with your neighborhood that you notice anomalies without having to look for them. When something's unusual, it jumps out at you.

DX'ers who always seem to hear the good stuff have their neighborhoods, too. They specialize in certain frequency ranges and get to know the stations normally heard there. Those DX'ers become familiar with the propagation of those bands. That familiarity lets such DX'ers rapidly scan those bands and in seconds recognize whether reception conditions are normal or not. They can rapidly identify whether a station is one that's normally heard or rare DX. In other words, they know certain bands like you know your neighborhood. And that means they can often spot great DX on those bands without really trying!

This kind of familiarity with certain bands is a bigger advantage in hearing rare DX than a megabuck receiver. Unfortunately, if you want such familiarity, you'll have to work at it. That's a tall order, so let's get started.

Pick A Band, Any Band

So what chunks of the radio spectrum are you going to stake out as your "turf"? That's really up to you and what you're interested in, but you'll have to choose. There's just too much RF spectrum out there for anyone to be an expert on all of it. You can zero in on longwave, specialize in frequencies above 50 MHz, spend all of your time on the tropical broadcast bands—whatever turns you on. The point is that you can't be familiar with everything at once. Personally, I prefer to "rotate" specialties every few years. In part, this is because I have moved quite a bit over the past twenty years (having lived and DX'ed everywhere from New York to southern California) and have been forced to get reacquainted with the radio spectrum with each move. Also, changing interests every few years keeps me from get-

ting bored with a certain segment of DX'ing. The past couple of years, I've been heavily into numbers stations and ham radio DX'ing. But I feel some latent urges stirring to get back into AM and FM broadcast band DX'ing, and I'm rearranging the gear in my shack toward that end. A few years from now, I might be into longwave or shortwave utilities. But the point is that I rotate specialties because I know I can't become proficient at all types of monitoring at once. And the skills I learn in one segment of DX'ing (such as chasing utilities) will help me master another (such as FM DX'ing).

Once you find the bands or types of DX'ing that suits you, the next step is to equip yourself with the tools of your trade. Start with your receiver and antenna. While you don't have to go out and buy an entirely new shack, you should "max out" the performance of your listening gear for the bands and modes you specialize in. For example, you could erect a dipole or multi-band antenna system for the bands you want to DX. You could add accessories, such as audio filters or RTTY terminals, to better equip you to dig out weak signals.

You will also need a good set of reference books for the frequencies you're interested in. Obviously, this means you will need station lists and frequency directories for those bands. It also means you'll need books about radio propagation and theory so you can understand how DX signals reach your listening post and how to get the most out of your equipment.

Finally, you'll need current sources of information. *POP'COMM* is a must, of course, and you'll probably find membership in a SWL or DX club covering the bands you're most interested in to be invaluable.

Got all that stuff together? Good. Here comes the fun—and hard—part.

Grunt Work

There's only one way to learn a new band. Ya gotta tune!

Tuning means more than zipping through a certain frequency range once and then deciding that you "know" it. It means tuning it at different times of the day over an extended period during normal and disturbed conditions. It means getting so familiar with a frequency range that you know within seconds whether you're hearing something routine or some really terrific DX.

Some sort of written log or band chart is essential when you're learning a new fre-

quency range. You're going to be running across a lot of stuff that is new to you, and it will be too much to initially keep all in your head. After a while, you'll "know" what's supposed to be on which frequency at what time, and you won't need to refer to your log book. But in the beginning, it's a bug time and effort saver. And it's a good way to spot those subtle long-term changes in the bands you're interested in.

Let's suppose you're going to try to find new stuff on your scanner. You'd first start off by "turbo scanning" the new range to see what's there at the different times you listen. Every time your scanner stops on a frequency, you note what the frequency is and who's using the channel (this is where a good set of frequency guides and references prove their worth). As you learn who the major users of the scanned range are, you can then lock out those frequencies and concentrate your search efforts on the less used frequencies. You'll find yourself listening to more squelched silence than before, but what you do hear at this stage is more likely to be "good stuff." Eventually, you'll run across a few frequencies and users which aren't listed in any frequency guides. At this point, you'll be the reigning expert on the frequency range in your area!

Now let's suppose you're learning a new shortwave frequency range. The first thing you have to do is decide on the "size" of the range you want to learn. Myself, I usually try to keep it under 2 MHz, and typically select about 500 kHz. Since reception conditions can change rapidly at certain times of the

Figure 1
Bandscan 1600-3500 kHz
Starting 0630 GMT

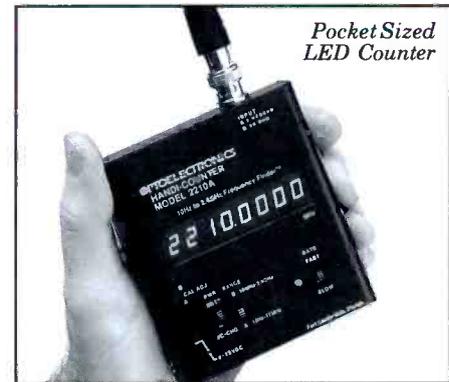
1610	Traveler's information station in Balboa Park, San Diego, and Anguilla mixing
1662	"U" beacon in CW
1720	"Chirper" radiolocation beacon
1727	"Pip" every second—strong
1921	Metallic sounding "F" beacon
1921	Two "chirpers"
2500	WWV strong
3074	Male reading letters from phonetic alphabet in USB, weak
3230	Loud unmodulated carrier
3330	CHU, Canada
3366	Spanish language telephone call in AM—loud
3379	Three-letter CW random groups, WGY912 identification 0655

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CIRCLE 173 ON READER SERVICE CARD



POP'COMM's World Band Tuning Tips

August, 1991

This PopComm feature is designed to help you hear more shortwave stations. Each month, this handy, pull-out guide shows you when and where to tune to hear a wide variety of local and international broadcasts on shortwave.

The list includes broadcasts in many languages besides English. Most of the transmissions are not beamed to North America. Keep in mind that stations make frequent changes in their broadcast times and frequencies. Changes in propagation conditions may also make some stations difficult or impossible to receive. Your own equipment and receiving location will also have a bearing on what stations you are able to hear.

Note: EE, SS, FF, etc. are abbreviations for English, Spanish, French and so on. Some frequencies may vary slightly. All times are in UTC.

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
3240	Trans World R., Swaziland	0255	sign on	5057	RFO, French Guiana	0230	FF
3250	R. Luz y Vida, Honduras	0400	EE	5060	R. Progreso, Ecuador	0300	
3270	Ecos del Oriente, Ecuador	1000	EE	5561	La Voz de Cutervo, Peru	0200	SS
3290	Radio Centro, Ecuador	0230	SS	5875	BBC	0030	SS
3290	Radio Namibia	0200	EE	5930	R. Prague Int'l, Czechoslovakia	0300	
3300	R. Cultural, Guatemala	0330	EE	5935	R. Riga Int'l, Latvia	0700	
3316	SLBC, Sierra Leone	0557	sign on	5954	R. Casino, Costa Rica	0930	
3320	R. Orion, S. Africa	0330		5955	LV de Centauros, Colombia	0330	SS
3360	La Voz de Nahuala, Guatemala	1100	SS	5981	AWR Union Radio, Guatemala	1130	SS
3365	R. Cultura de Araquara, Brazil	0300	PP	5975	BBC	0100	via Antigua
3380	R. Chortis, Guatemala	1130	SS	6005	RIAS, Germany	0600	GG
3385	R. East New Britain, Papua New Guinea	1130		6010	R. Mil, Mexico	1200	SS
3395	R. Zaracay, Ecuador	0100	SS	6015	R. Austria Int'l	0600	via Canada
4000	RRI Kendari, Indonesia	1200		6025	R. Amanacer, Dominican Rep.	0100	SS
4750	CRTV, Cameroon	0500		6030	R. Marti	1030	SS, via VOA
4755	Sani Radio, Honduras	2330	SS	6060	R. Nacional, Argentina	1000	SS
4760	R. Frontera, Venezuela	0100	SS	6070	CFRX, Toronto, Canada	24hrs	
4785	Ecos del Combelma, Colombia	0100	SS	6075	Caracol, Bogota, Colombia	0800	SS
4800	R. Popular, Ecuador	0200	SS	6075	R. Tachira, Venezuela	0130	SS//4830
4800	R. Norte, Dominican Rep.	0430	SS	6085	Bayescher Rundfunk, Germany	0700	GG
4805	Rdf. Amazonas, Brazil	0900	PP	6105	R. Panamericana, Bolivia	1100	SS
4810	R. Suid Africa, S. Africa	0300	Afrikaans	6115	R. Union, Peru	0700	SS
4815	RTV Burkina, Burkina Faso	0600	FF	6130	CHNX, Halifax, Canada	1200	
4835	R. Tezulutlan, Guatemala	0100	SS	6135	Swiss Radio Int'l	0200	
4835	RTV Malienne, Mali	0600	FF	6150	Vatican Radio	0050	
4845	ORTM, Mauritania	0700	FF	6150	Caracol, Neiva, Colombia	0600	SS
4870	ORTB, Benin	0530	FF	6185	R. Educacion, Mexico	0900	SS
4875	Voice of Jinling, China	1130	CC	6190	Sender Freies Berlin, Germany	0530	GG
4875	R. Journal do Brazil	0230	PP	6205	HCJB, Ecuador	0500	
4885	Radio Clube do Para, Brazil	0830	PP	6210	European Christian Radio, Italy	0700	EE, Sundays
4885	Ondas del Meta, Colombia	0230	SS	6218	INBS, Iceland	0030	Icelandic
4890	NBC, Papua New Guinea	1200		6305	La Voz del CID	0530	SS
4890	ORTS, Senegal	0700	FF	6452	V of Vietnam	1230	VV
4890	R. Centinela del Sur, Ecuador	0300	SS	6550	Voice of Lebanon	0500	AA
4900	RTV, Guinea	0700	FF	6900	Turkish Met. Radio, Turkey	0500	TT
4904.5	RN Tachienne, Chad	0445	FF	7115	R. Sofia, Bulgaria	0400	
4911	Em. Gran Colombia, Ecuador	0200	SS	7160	R. Denmark	0430	DD, via Norway
4915	R. Anhanguera, Brazil	0900	PP	7170	R. Beijing	2230	via USSR
4915	GBC-1, Ghana	0530		7180	BBC	0900	via Hong Kong
4920v	R. Rica, Nicaragua	1200	SS	7190	Rep of Yemen Radio	0330	AA
4935	Kenya Broadcasting Corp.	0300		7255	Voice of Nigerias	0530	
4940	R. Continental, Venezuela	0200	SS	7255	Radio Botswana	0400	
4965	R. Alvorada, Brazil	0930	PP	7270	Radio RSA, South Africa	0400	
5010	CRTV, Garoua, Cameroon	0530	FF	7285	RTV Mali	0700	FF
5020	Solomon Is. Bc. Corp	0800		7365	KNLS, Alaska	0800	
5020	LV du Sahel, Nigeria	0530	FF	7370	Turkish Police Radio	0455	sign on, TT
5025	R. Rebelde, Cuba	0400	SS	7375	RFPI, Costa Rica	0400	
5035	RTV, Central Af. Republic	0530	FF	7400	R. Vilnius, Lithuania	2300	
5041	Em. Prov. de Benegueta, Angola	0500	PP	7475	RTT Tunisia	0500	AA
5047	RTT, Togo	0600	FF	7485	Kol Israel	0130	Hebrew

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
7510	KTNB, Utah	0600		11925	Radio RSA, South Africa	0430	
8300	New Star Broadcasting Station, China	1230	CC	11930	Trans World Radio, Bonaire	0330	
9022	VOIRI, Iran	0400		11935	Radio Tirana, Albania	0230	
9115	R. Continental, Argentina	2300	SS, feeder	11938	Voice of People of Cambodia	1245	
9360	Spanish National Radio	0300	SS	11940	Radio Romania Int'l	0400	
9388	Kol Israel	0200	Hebrew	11940	Radio Jordan	0445	AA
9435	Kol Israel	0100		11945	Radio Encarnion, Paraguay	2230	SS
9465	WMLK, Pennsylvania	1700		12010	Radio Austria Int'l	1930	
9475	KFBS, Saipan	1300	EE	12020	Trans World Radio, Monaco	1600	
9475	R. Cairo, Egypt	0200		12040	Radio Moscow	2100	FF
9480	Trans World Radio	0745		12050	Radio Cairo, Egypt	2230	AA
9480	R. Tirana, Albania	2230		12050	BBC	0300	AA
9505	Radio Japan	1400		12085	R. Damascus, Syria	2130	
9450	Radio Nacional, Venezuela	1100	SS	12105	Voice of Greece	2330	SS
9555	Radio Veritas, Philippines	1130	Asian langs.	13605	Radio Australia	1130	
9565	All India Radio	1330		13630	RFPJ, Costa Rica	0200	
9565	Radio Universo, Brazil	0100	PP	13665	Radio Pakistan	2000	
9575	Radio Medi Un, Morocco	0745	FF	13685	Swiss Radio Int'l	0745	
9580	Radio Australia	1300		13720	BRT, Belgium	0030	
9590	Radio Netherlands	0400	via Bonaire	13745	BBC	1600	AA
9600	R. Renascenca, Portugal	0030	PP	13770	Deutsche Welle	0115	
9600	Radio Tashkent, Uzbek	1330		14917v	Radio Kiribati	0630	
9605	Adventist World Radio, Portugal	0745		15010	Voice of Vietnam	1600	
9620	SODRE, Uruguay	0900	SS	15060	BSKSA, Saudi Arabia	0400	sign on
9620	Radio Yugoslavia	0100		15084	VOIRI, Iran	2130	
9630	Spanish National Radio	0100		15095	R. Damascus, Syria	2000	
9635	Vatican Radio	0315		15115	R. Pyongyang, N. Korea	0015	
9640	Ecos del Torbes, Venezuela	1200	SS	15140	Radio Nacional, Chile	0030	SS
9645	Radio Finland Int'l	0000		15150	Radio Netherlands	1430	via Madagascar
9645	Radio Norway Int'l	2300		15115	HCJB, Ecuador	0030	
9660	Radio Rumbos, Venezuela	0900	SS	15160	Radio Australia	2230	
9660	ABC, Australia	1200		15172	Radio Tahiti	0545	Tahitian
9665	SABC, South Africa	0400	Afrikaans	15185	Radio Finland Int'l	1500	
9675	Radio Polonia, Poland	0630		15200	FEBA, Seychelles	0300	unknown lang.
9695	Radio Sweden	0200		15215	Radio Algiers, Algeria	2100	AA
9705	Radio Portugal	0245		15225	KSDA, Guam	0800	CC
9706	Voice of Ethiopia	0315	Amharic	15260	BBC	2000	via Ascension
9710	Radio Vilnius, Lithuania	0400		15265	Radio Nacional, Brazil	2030	PP
9715	RTVC Congo	0700	FF	15270	Radio RSA, South Africa	1630	
9725	Adventist World R., Costa Rica	2300		15295	WINB, Pennsylvania	1900	
9735	Radio Nacional, Paraguay	0000	SS	15300	Radio Japan	0300	via Fr. Guiana
9745	HCJB, Ecuador	0830		15335	RTVM Morocco	0000	FF
9760	R. Tirana, Albania	0330		15345	Voice of Free China, Taiwan	0200	via WYFR
9765	V. of Mediterranean, Malta	0700	AA	15345	RAE, Argentina	2145	GG
9779	Rep. of Yemen Radio	2130	AA	15350	Radio Luxembourg	1530	
9835	Radio Budapest, Hungary	0130		15400	Radio Finland Int'l	1330	
9840	Voice of Vietnam	1230	VV	15400	UAE Radio, Dubai	0430	
9860	Radio Australia	1500	Asia langs.	15425	Radio Portugal	1630	
9870	BSKSA, Saudi Arabia	200	AA	15430	Swiss Radio Int'l	2000	
9895	Swiss Radio Int'l	0200		15450	FEBC, Philippines	0000	
9900	Radio Cairo, Egypt	2200		15575	Radio Korea, S. Korea	0030	
9977	R. Pyongyang, N. Korea	1100		15647	Radio Bangladesh	1230	
11585	Kol Israel	0230		15750	Radio Russiya	1230	RR, USB
11588	Kol Israel	1900	Hebrew	17740	INBS, Iceland	1430	Icelandic
11600	R. Beijing, China	1300		17500	RTT Tunisia	1700	AA
11605	Kol Israel	2000		17525	Voice of Greece	1530	
11620	All India Radio	1800		17554	Radio Pakistan	1500	Urdu
11645	Voice of Greece	0130		17595	RTVM, Morocco	1530	
11680	Radio Sofia, Bulgaria	0000		17605	Radio Netherlands	1430	
11685	Radio Monte Carlo, Monaco	0700	via TWR Monaco	17630	Radio Australia	1530	
11685	FEBC, Philippines	0900		17630	Africa No. One, Gabon	1530	FF
11685	KGEL, California	0330	RR	17670	Radio Moscow	0500	
11705	Radio Sweden	0200		17720	Radio Kiev, Ukraine	0030	
11710	RAE, Argentina	0130	SS	17745	Radio RSA, South Africa	1830	FF
11715	Trans World R., Bonaire	2330	SS	17745	Radio Romania Int'l	0530	
11715	Radio Beijing	0130	CC, via Mali	17750	Radio Bangladesh	1230	
11735	Radio Yugoslavia	0115		17770	Radio New Zealand Int'l	0430	
11735	Radio Denmark	0630	Dan., via Norway	17785	Radio Japan	2330	
11760	R. Cook Islands	0800		17795	Radio Australia	0645	
11770	Radio Havana Cuba	0130	SS	17875	Radio Sweden Int'l	1530	
11790	VOIRI, Iran	1200	EE	17900	RAI, Italy	1400	Italian
11795	UAE Radio, Dubai, UAE	0130		21455	HCJB, Ecuador	1900	USB
11800	Radio Australia	1445		21490	Radio Austria Int'l	1400	
11800	RAI, Italy	0100		21555	Spanish National Radio	1700	SS
11805	Radio Globo, Brazil	2200	PP	21605	UAE Radio, Dubai	1330	
11810	Radio Jordan	2100	AA	21610	Radio Japan	0300	
11820	Radio Havana Cuba	0130		21695	Swiss Radio Int'l	1330	
11821	Radio Nacional, Colombia	2230	SS	21705	Radio Norway Int'l	1900	
11827	Radio Tahiti	0400	FF	21715	Radio Yugoslavia	1300	
11840	Radio Japan	0100	via Sri Lanka	21740	Radio Australia	0100	
11855	Radio Norway Int'l	2100		21770	Radio France Int'l	1400	
11860	FEBA, Seychelles	1800	unknown lang.	21810	BRT, Belgium	1400	
11870	Adventist World R., Costa Rica	2230	SS	25645	BRT, Belgium	1500	FF
11880	Spanish National Radio	0000		25740	Deutsche Welle, Germany	1330	GG
11890	Radio Oman	1830	AA	25820	Radio France Int'l	1300	FF
11915	Radio Budapest, Hungary	0200		25950	HCJB, Ecuador	0200	USB
11920	RTV Ivoirienne, Ivory Coast	2300	FF				

day, I usually try to complete a scan within a half hour or less.

A lot of new receivers for shortwave have a "scan" function. I have one like that myself. Do as I do and ignore it. Shortwave scanning is a hands-on proposition. I tune most of my tuning by selecting the SSB bandwidth (2.4 kHz) of my receiver while putting the receiver in the CW mode. In this way, I can spot weak carriers and other signals I might overlook if I tuned in the AM mode. I use the slowest tuning speed on my receiver and spin the dial myself. When I hear the heterodyne tone of a carrier, garbled speech of a SSB signal, or note of a CW signal, I stop and try to identify the signal using my reference guides. Since I'm learning the band at this point, I don't stop and "take a log" of the station at this point for a reception report. My purpose is to *learn* the band at this point.

It so happens that I'm in the process of getting better acquainted with the 1600 to 3500 kHz range as I write this column. Figures 1 and 2 show two actual bandscans I made of that range before writing this column. One was made during my local evening (beginning at 0630 UTC) while the other was made during my local morning (starting at 1330) on two consecutive days. During this scan, I was after AM, CW, or SSB signals only; there was a lot of interesting RTTY in there but I wasn't stopping to

identify them. And I was mainly after utility and unidentified/covert signals; I did note broadcasters but only as references to help me understand what is normal propagation for this frequency range. If I was interested exclusively in shortwave broadcasters, I would have done the opposite!

So what's the value of such scans? Two alone aren't enough to make me an expert on that range; several more over the next few weeks will be necessary for that. But already I've discovered something that's got me curious. The three-letter CW groups on 3379 kHz are transmitted by stations of the Federal Emergency Management Agency (FEMA), and I caught a WGY912 identification at 0655. WGY912 is supposedly the special FEMA relocation facility at Berryville, VA, where VIPs (such as the President, Vice-President, Chairman of the Joint Chiefs, etc) will be taken in the event of an atomic war. But I was able to hear similar signals in the morning after 1330. It's extremely unlikely signals from Virginia could make it to southern California at that hour on 3379 kHz, so they are probably coming from a West Coast FEMA facility. But which one? Only two scanning sessions and I already have a puzzle to work on!

There's a lot more I could write about this topic, but I need to get familiar with the AM broadcast band here, and I really should get better acquainted with 90 and 60 meter

Figure 2
Bandscan 1600-3500 kHz
Starting 1330 GMT

1610	Traveler's information station, Balboa Park, San Diego
1662	"U" beacon CW
1720	"Chirper"
1921	Metallic sounding "F" beacon
1923	"TU" CW beacon—where is this? Can't find it in any reference
2340	Chinese broadcast station, weak
2500	WWV/WWVH mixing
2755	CKN, Vancouver, BC, Canada with CW marker
2774	"Rasper" seemingly random dots and dashes
2850	North Korean broadcast station
3205	Indonesian broadcast station
3215	Indonesia broadcast station
3232	Indonesia broadcast station
3280	China broadcast station
3325	Indonesia broadcast station—loud
3379	Three-letter random CW groups, no identification noted
3447	Faint broadcast station barely above the noise; Indonesia?
3480	Jumbled mess, seemingly broadcaster and a jammer; Korea?

broadcasting bands in the mornings, in short, I need to take my own advice. Invest some time and effort in getting to know the bands you DX. The results will be in the DX you hear! ■

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The Amateur's Code: Still Working In The 90's

Mutual respect and good operating techniques are (or should be) the goals of every new operator. Unfortunately, we sometimes forget our manners . . . Taking a fresh look at our "Golden Rules" and what that means today is a valuable reminder for all of us—and a vital lesson for new hams.

The following Amateur's Code has been updated to reflect changing cultural values, but it's still essentially the same Code that's served us well for 65 years. (The Amateur's Code was written by Paul M. Segal, W9EEA, of Denver, Colorado. It first appeared in February 1927 *QST*. The Code appears just before Chapter 1 of every *ARRL Handbook*, as it has since 1928.)

"The radio operator is considerate . . . never knowingly operates in such a way as to lessen the pleasure of others."

- Do I make a real effort to learn if a particular frequency is in use before calling CQ or another station?
- If politely asked to move off a frequency, do I try to accommodate the other operator, or do I make a speech about no one owning a particular frequency or my having been there first?
- Do I tie up the local repeater with lengthy ragchewing and prevent others from using the system, or do I switch to a simplex frequency whenever possible?
- If asked to QSL, do I prepare and mail the card promptly?
- Do I make a sincere effort to eliminate or minimize RFI problems, even if the problem isn't the fault of my equipment?
- Do I try to minimize the confusion of a DX pileup by following the DX station's instructions for calling, or do I become impatient and operate by the rule of the jungle?

"The radio amateur is loyal . . . offers loyalty, encouragement and support to his fellow radio amateurs, local clubs and the American Radio League, through which Amateur Radio in the United States is represented nationally and internationally."

- Do I belong to and actively participate in a local radio club, or do I "fly solo"?
- Do I recognize the fact that my on-air activities will be monitored worldwide and make sure listeners and officials in other countries will be impressed by and respect the Amateur Radio service?

"The radio amateur is progressive . . . with knowledge abreast of science, well-built and efficient station and operation above reproach."

- Do I run my rig "barefoot," especially on



Shown (l-r) are Matthew Kleinke, KC6EPT; Kenny Wallis, KC6EPU; Zack (logging assistant); and Chad Morgan, KC6EWK—all from Auburn, CA. The gang, known as "Team-10," made 1,400+ QSOs on 10-meter SSB to take first place multioperator in last year's Novice Roundup contest. All of the budding contesters were born in 1979!

crowded bands, or do I automatically turn on the amplifier when I turn on the lights in the shack?

- Have I purchased the service manual for my rig and familiarized myself with its design and circuitry?
- During the past year, did I construct a new piece of equipment or design and hang up a new antenna?
- If asked to handle a piece of traffic, would I feel confident to take it, or would I beg off because I "don't do traffic"?

"The radio amateur is friendly . . . slow and patient operating when requested; friendly advice and counsel to the beginner; kindly assistance, cooperation and consideration for the interests of others; these are hallmarks of the amateur spirit."

- Do I drop into the Novice subbands and work newcomers, making them feel they're a part of our hobby?
- When I hear an operator violate a regulation or use bad operating procedure, do I try to point out the problem to him in private, or do I launch a broadside over the air?
- Do I constructively encourage Novices and Technicians to upgrade, stressing the additional benefits they'll enjoy, or do I em-

barrass them with rude comments about their inability to pass the Morse code or written exams?

- Do I strictly avoid racist, ethnic and sexist jokes, refusing to be drawn into QSO's that would be offensive to members of any minority group?
- When I hear stations with unfamiliar call signs on the local repeater do I respond, or do I ignore them because they aren't members of my clique?
- Have I ever complimented an operator because he or she used good operating techniques?

"The radio amateur is balanced . . . radio is an avocation, never interfering with duties owed to family, job, school or community."

- Is my day divided into work, sleep and Amateur Radio, or do I allow time for other activities with friends and family members?
- Do I have friends who aren't hams or belong to groups that aren't Amateur Radio oriented?
- When was the last time I planned a family vacation or outing not centered on a hamfest or radio activity?
- Have I ever asked my wife or children to give me a Christmas or birthday present that wasn't a piece of Amateur Radio equipment?
- Do I ever stop to think if I'm boring co-workers, friends or family members about my latest DX'ing conquest or stories about Amateur Radio?

"The radio amateur is patriotic . . . station and skill always ready for service to country and community."

- Have I ever volunteered to help out in community events that benefit charitable or service organizations?
- Have I ever written to the FCC to voice my opinion about a Notice of Proposed Rule Making, or do I just grumble and complain to others?

With a little effort, we can all play a part in returning Amateur Radio to a state where good operating techniques and the desire to be respected are the Golden Rule. So do your part to follow the Amateur's Code. Amateur Radio can always use a few more role models!

Since the February inception of the codeless Technician license, my mailbox has been pretty full—even overflowing at times. It seems like more than a few of you are finally taking your shot at becoming hams. Congratulations! Keep your letters, photos, and ideas coming to me at ARRL, Department PCN, 225 Main Street, Newington, CT 06111. And good luck! ■

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

The FCC has been granting Experimental licenses for trials of Personal Communications Networks (PCN). PCN is a two-way mobile telecommunications system using small, lightweight personal telephones that can be used in office, on-street, and residential environments. It's somewhat like a low-cost marriage between cellular phone and cordless phone technologies.

For those who always demand to know the nitty-gritty, the licenses granted for these PCN technical studies and/or market trials include:

AT&T authorized to test in the vicinity of Chester, NJ for evaluating technologies appropriate for wireless loop access. The license is KF2XID, 1850 to 1990 MHz.

Cable USA, Inc. is testing and developing in the 866 to 868 MHz and 1850 to 1990 MHz bands. Tests are within 35 miles of the following cities: Omaha, NE (KF2XHV); Kearney, NE (KF2XHW); Grand Island, NE (KF2XHX); and Hastings, NE (KF2XHY).

MTEL PCN, Inc., operating in the 1850 to 1990 MHz band within a 25 mile radius of Dallas, TX (KF2XHT).

Satcom, Inc., is developing and testing PCN services in the 866 to 868 MHz and 1850 to 1990 MHz bands within a 35 mile radius of Spokane, WA (KF2XIA); Missoula, MT (KF2XIB); and Billings, MT (KF2XIC).

Specific frequencies not given for the following two companies, but likely to be 866 to 868 MHz and 1850 to 1990 MHz:

LDH International, Inc. developing and testing around Greenville, NC (KF2XIE); Denver, CO (KF2XII); Atlanta, GA (KF2XIJ).

Time Warner Cable Group, developing and testing within a 35 mile radius of the following cities: New York, NY (KF2XHP); St. Petersburg, FL (KF2XHQ); Cincinnati, OH (KF2XHR); Columbus, OH (KF2XHS).

Other PCN systems are also under test. See the June *Washington Pulse* column in POP'COMM for some additional listings. Bell Atlantic Mobile systems has one of these microcellular technology tests operating at Amtrak's Union Station in Washington, DC. It is intended to enhance cellular reception indoors at public locations.

Bell Atlantic feels that with 40 percent of their new customers buying portable and transportable cell phones, they'll be wanting to use them inside buildings like hotel lobbies and transportation terminals. Traditional cell sites weren't designed to penetrate buildings, so the microcells are intended to fill in the coverage gaps.

In Union Station, a suitcase-sized transmitter and antenna is in the Amtrak passen-



The Russians are coming! When Yevgeny Yeutushenko, Russia's leading poet (and a member of the government) visited Rochester, NY recently for a poetry reading, he tried out a cellular. Cellular One/Genesee Telephone Company's "Good Neighbor" program loaned him a cellular to call home. "Can you believe this? I am talking to myself" was his comment when he tried to call his wife in Philadelphia, PA. The phone in Philadelphia was answered by his own voice on an answering machine. Undaunted, he dialed up his sister in Moscow (where a cellular system is now being built with help from American companies). Photo by Laurie Mercer.

ger waiting area. Microcell technology utilizes the cellular concept on a smaller scale, placing very low powered cell sites in heavily trafficked areas. During the Union Station tests, Bell Atlantic will be trying out equipment from a number of manufacturers, and with several different antenna configurations to see how to obtain the best results.

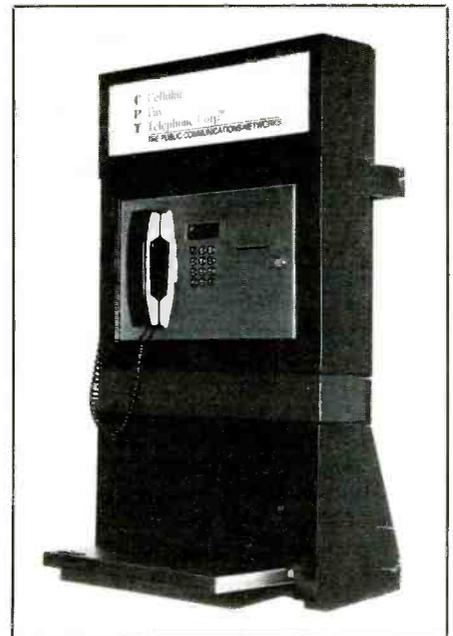
Early tests of the Union Station system will be used only for making calls within the microcell's coverage area, although by the end of the year the system will be linked to the full Bell Atlantic cellular system in Washington.

In a separate test, Bell Atlantic Mobile Systems, in conjunction with Cellular Data, Inc., are trying out a new, patented technology that allows the transmission of data over existing cellular networks without using the cellular voice channels and voice capacity.

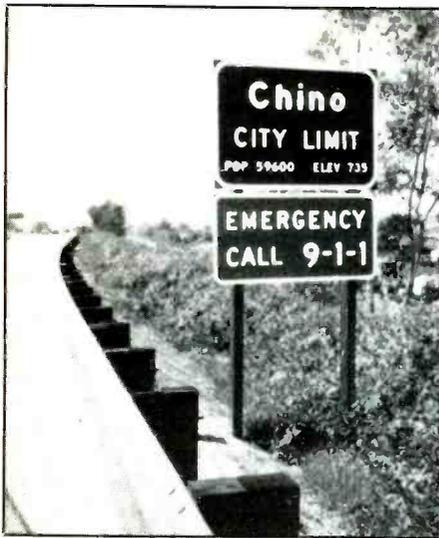
Currently, data transmission requires a



A Hackensack (NJ) Medical Center Mobile Intensive Care Unit paramedic uses a specially modified cellular to transmit an EKG. This shaves an hour off the time needed to treat heart attacks since it lets the doctors at the hospital know what special medication and equipment to have waiting when the patient arrives.



The inevitable invention; the cellular pay phone. It's really here, and actually a pretty good idea.



In Chino, they encourage motorists with cellulars to use 9-1-1 if there's an urgent need for assistance. Photo courtesy Bill McCombs.

modem for cellular access. The new technology is faster and more economical by allowing multiple users to utilize a single cellular data channel. Testing began in the Philadelphia area as a two phase operation. The first phase calls for the installation of a narrowband packet transmission data network, plus the evaluation of such factors as site propagation and interference testing. The second phase will consist of point-of-sale market trials.

When it becomes commercially available, it will have an immediate impact on point-of-sale credit card bar-code scanners. Because the technology is wireless, it could permit the use of credit cards in taxis or limos. It can also be used in regular store applications, if desired.

Future applications include remote monitoring of devices ranging from vending machines to burglar alarms and utility meters.

Bell Atlantic Mobile Systems is headquartered at 180 Washington Valley Road, Bedminster, NJ 07921.

Flying High

Two years of litigation have ended in a settlement that will allow Jack Goeken's In-Flight Phone Corporation to offer air/ground telephone service. The litigation had been between Goeken and GTE Corp., which has its own air/ground phone service called GTE Airphone.

Goeken's company is offering digital transmission (the GTE Airphone system is analog), which they claim is more reliable and better sounding than analog. By the end of the year, In-Flight plans to be offering their telephone and data services to passengers aboard Northwest, USAir, and American Airlines. Arrangements with additional

carriers are still pending as this is being written.

In-Flight Phone Corporation is located at 122 West 22nd Street, Suite 100, Oak Brook, IL 60521.

By the way, we were pleased to note that the Director of Communications at In-Flight is Darren S. Leno, a long-time communications hobbyist. Darren wrote a monthly column for *POP'COMM* until he entered military service.

Here and There

RMC Paul Caruso, FPO San Francisco, tells us the cellular system on Guam is going on line this summer. Four cell sites will offer coverage of the entire island and offshore for ten miles. The system, operated by the Guam Telephone Authority, was financed with a \$3-million loan from the Rural Electrification Administration.

From Antigua, West Indies, we heard from Alan B. Scholl. He tells us that there's been a cellular system there for two years, but it's expensive and gets only minimal use. Any older 1-inch walk-around TV (like the Panasonic TravelVision) with a freewheel tuner knob picks up all of the cellular calls there if you tune to TV Channels 82 or 83. Monitoring in Antigua isn't illegal.

That 9-1-1 Problem

We had previously mentioned here that in many areas cellular users dial 9-1-1 to report "emergencies" ranging from flat tires to running out of gas. Inasmuch as many law enforcement agencies tend to view a 9-1-1 type emergency as something involving immediate danger to life or property, or a felony in progress, some have taken a dim view of their dispatchers being tied up with routine disabled motorist problems.

Comment on this came in from Bill McCombs, Chino, CA, who is a police officer and part time dispatcher in Southern California. He handles 9-1-1 calls in a regional police/fire center serving two cities and thousands of residents.

He recognizes that the term "emergency" obviously means different things to different people. Most folks instantly think of 9-1-1 when they face whatever they personally define as an emergency and, because 9-1-1 is so versatile, it can handle a wide assortment of problems that require urgent help.

Non-urgent calls, such as an abandoned car, should not be made to 9-1-1. Following a suspected drunk driver, though, is probably a good reason to call 9-1-1. For routine mechanical breakdowns, many cellular companies offer a customer service number that may be preferable to calling 9-1-1.

In Bill's area, a 9-1-1 landline call within the city limits automatically rings at the police dispatch center where local police, fire, CHP, and other agencies can be connected to the caller, as required. Cellular calls, regardless of location, are routed directly to the CHP. If the caller has a medical emer-

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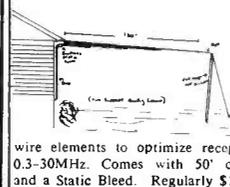


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gency, or is reporting an off-freeway incident, the CHP can transfer the call to the appropriate agency.

On transferring any 9-1-1 call, two agencies can talk to a caller at one time so they can process the call together. For instance, a cellular call report of a brush fire along the freeway calls 9-1-1 and reaches the CHP, which then brings the FD in on the line to ask for additional questions.

If, for any reason, a dispatcher feels the incoming call should not have been made to 9-1-1, the dispatcher will provide the caller with the proper number to call for animal

control, air pollution, highway repair, or whatever.

Cellular Medical Application

Persons suffering heart attacks have improved chances of survival if they happen to live in the service area of the Hackensack (NJ) Mobile Intensive Care Unit (MICU), thanks to cellular technology. That's because cellular phone service from NYNEX Mobile Communications now makes it possible to transmit a 12-lead EKG directly to the medical center's Emergency/Trauma

Department. This technology saves an average of more than seven lives a month.

Central to the success of the specially equipped MICU vehicle is the In-Field Assessment for the Suitability of Thrombolysis (IN-FAST) I trial. The IN-FAST I trial uses a portable device to allow paramedics to communicate a heart attack diagnosis from the site of the attack to the hospital via cellular phone.

IN-FAST I is the size of a briefcase, yet measures a heartbeat with the same detail and precision as an EKG machine used in a hospital. The detailed picture of the patient's heart allows the doctor to prepare for the patient's arrival, have special medicines or equipment standing by awaiting the arrival of the patient when minutes count so importantly.

NYNEX has been working with the hospital for more than a year to modify a cellular phone so it can transmit this type of data.

NYNEX Mobile Communications Company is headquartered at 1 Blue Hill Plaza, Pearl River, NY 10965.

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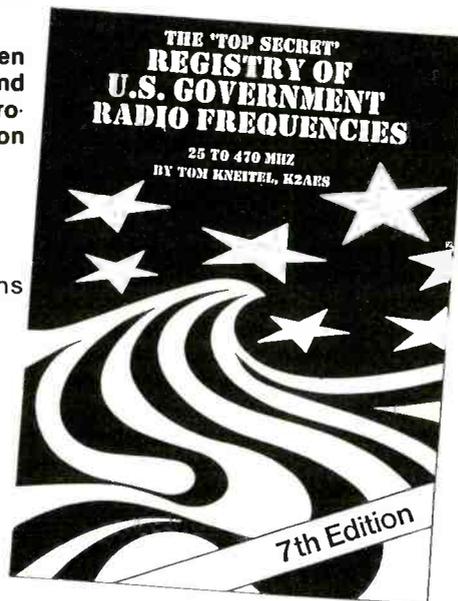
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It Had To Come

The cellular pay phone has arrived! The Cellular Pay Telephone Corp. (CPT), Citicorp Center, 1 Sansome St., San Francisco, CA 94104, expects to have 250,000 units in operation worldwide by 1995. CPT sees the units especially well-suited to areas where the installation of landline pay phones are either cost prohibitive or else physically difficult. This would include rural areas, backwoods areas, islands, and third world nations.

The units can also augment existing service. They can be set up temporarily or permanently at airports, malls, conventions, trade shows, hotels, sporting events, or anywhere extra phone service is needed in a hurry. Without the need for landline hook-ups, they can be moved into a location and put into operation in no more than the travel time it takes to bring them there.

Calls can be charged to major credit cards, long distance calling cards, or a pre-paid debit card.

CPT is establishing a franchise business structure. The franchisee buys or leases the units from CPT, then expands into his own local market. CPT assists the franchisee in marketing and sales strategies. The CPT phones operate in existing cellular networks, with CPT buying large blocks of air time from major cellular operators and then reselling the time to franchisees.

Initially, the CPT units are operating in the Sacramento and San Francisco Bay areas.

We are always interested in hearing from you with your thoughts and ideas, questions, newspaper clippings, and anything relating to cellulars, beepers, or other on-the-go personal comms activities. Also happy to hear from equipment manufacturers and service suppliers.

SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

The end of summer is approaching. While you're taking your scanners on vacation, don't forget to drop us a line here at POP'COMM about what frequencies you are finding!

From Ottawa, Ontario, J. Stevens says that emergency services in his city have switched over to dispatch with computer terminals in all mobile units, making it almost useless for monitoring. He's wondering whether it is possible to monitor these computer signals with a scanner and a home computer. I often hear tales about some hobbyist who is decoding such transmissions, but never have seen hard evidence. Although I'm no computer expert, it would seem that one would need to know system parameters and other proprietary information to decode such messages. Until I receive a printout from someone who claims to have done so, don't count on being able to do so. That's not to say some of the advanced hobbyists shouldn't try!

Ken Fowler of Fairfax, Virginia, sends along some frequency updates for Fairfax City Police in Virginia: 453.975, F-1 and F-2, dispatch; 460.075, F-3 and F-4, detectives, fire marshals and youth services; 460.050, F-5 and F-6, surveillance and alternate; 453.550, F-7 and F-8, P-MARS mutual aid.

D. Dosbiber of Brunswick, Ohio, says he lives in a high air traffic area next to Cleveland but is unable to hear the air route traffic control frequencies. He wants to know why he can hear only the plane side of the conversation, but never Cleveland ARTCC. First of all, ground stations on aero frequencies use very low power. Let's face it, no matter where the plane is, the ground station can "see" it and talk to it. I live a mile from an airport and have no trouble hearing Chicago Center. However, when I lived on the other side of town, that wasn't the case. The low-power transmitter has its limitations. An amplifier may help you, but without some initial signal there to pull it out, you'll be lucky if you generate static. You may want to consider figuring out where the transmitter you want to hear is located (try writing the FAA), and then try using a directional antenna aimed at the transmitter. You'll have a better shot at hearing it then. If some signal is generated, then an amplifier may be of some help.

Albert A. Nunnery of Cary, North Carolina, says having a scanner paid off in his neighborhood recently. On a Saturday morning, he heard the rescue squad dispatched to the apartment across the street from his home. A little girl had fallen into a rain gutter that collapsed while she and her friends were playing on it. The girl wasn't seriously hurt, Albert says, but thanks to



Here's the comfortable listening post of Roger West of Amery, Wisconsin. Roger's gear includes Realistic PRO-2020, PRO-2004, PRO-2005 (not shown), Grove PRE-3 and PRE-4 signal boosters and a Diamond D-130J discone antenna.

his scanner, he was there in moments to help out.

Mike Breier of Buffalo, New York, writes in with a tip. Mike says that an instant weather or extra channel can be implemented on your scanner by using the search mode. For example, to monitor 162.550 for weather, punch in that frequency for both the upper and lower limits. Now when you hit search, it will give you instant access to that frequency.

From John Schmid of Line Lexington, Pennsylvania, comes word on Bell of Pennsylvania's new 900 MHz trunked system. The system is used for its eastern area construction department and is used throughout the 215 area code except for the city of Philadelphia. The system is divided into two sections: North: 935.4625, 935.475, 935.4875 and 935.500; South: 939.900, 939.9125, 939.925 and 939.9375. The 30 watt Motorola radios are installed in trucks used by linemen, cable splicers and their supervisors. That's a big step from the Bell of Pennsylvania that used virtually no two-way radios just a few years ago! New Jersey Bell Telephone Co. also was scheduled to install a similar 900 MHz trunked statewide system in New Jersey, so keep an ear out.

Gary K. Hamlin, Registered Monitor, KNY2AAW, of Utica, New York, claims that scanner manufacturers should be required to put warning labels on their products: "Beware: Scanner use can be addictive." At least that proved to be the case when his brother visited him recently and he became so enthralled with what he heard that he went out and bought a Realistic PRO-34 handheld. He lives in California and works for NASA at Edwards Air Force

Base, so Gary figures he'll find plenty to listen to.

In addition, Gary says that he likes listening to the New York State Thruway Authority on 453.425. He says that there's plenty of activity on the toll road and of special interest is the weather condition reports given by interchanges during hourly roll calls. General forecasts and road condition reports also can be heard periodically. That's not to mention you'll hear New York State Police Troop T handling disabled vehicles, tollbooth beaters, accidents, etc.

Ben Rogers of West Windsor, New Jersey, says he monitors communications on 151.625, but it never seems to be the same users from week to week. He wonders who might be using this frequency. This frequency is known as an itinerant business band channel. This channel can be licensed to any business that moves around from one area to another. For instance, if a circus travels all around the United States, this frequency serves the purpose. This way, the user is on a frequency where if they used any frequency in the business radio service, they would potentially interfere with normal users as they moved from city to city. By using 151.625, the user knows he/she is using it on an itinerant basis with all the other users on the same frequency. Likewise, 464.500 and 464.550 are used in the same way (with 469.500 and 469.550 used as repeater inputs or for mobile or handheld use). You never know who you might find using itinerant frequencies. In some areas, they are popular with hot-air balloonists. In other areas, they may be used as a switch-over channel for licensees who have regular channels, too. In my area, the frequency seems to be used by married couples trying to keep in touch with one another. In fact, one couple goes as far as to scramble their conversations!

Most major national organizations use an itinerant frequency at special events or activities. The itinerants also are used by contractors who move from one job site to another. There are separate itinerant frequencies set aside for special industrial users such as farming and heavy road construction: 151.505, 158.400, 451.800 and 456.800. Some additional business band itinerants that may be used include: 27.49 and 35.04. They most certainly are worth plugging into your scanner because anyone may show up on them as they go through your town!

What do you hear on your scanner? We welcome your frequency lists and updates, questions, photographs and QSL cards here at Scanning VHF/UHF. Write to: Chuck Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 North Broadway, Hicksville, NY 11801.

Flicker: When a station quits, we say it's "gone dark." But when it has had a temporary interruption in its service, but promises to return as soon as it can get things worked out, I prefer to think of it as having "flickered" rather than gone dark. That's what happened to WPRW/1460, Manassas, VA last March. The 34-year old station, which runs 5 kW, signed off temporarily (a month and a half). Business was slow, and the station's owner said that it was the right time to take it off temporarily. He said that when WPRW returned, it would be replacing its country music format with something else.

Stations such as WPRW rely upon advertising from local businesses for about 80 percent of their budget. When the economy gets tight, such funds dry up fast and local broadcasters immediately feel the pinch. Some just go dark. We've got our fingers crossed that WPRW's grit and determination to ride out the storm pays off for Bob McKee, the station's dedicated owner. Thanks to Stew Tyler, WA4JUO, of Suffolk, VA for letting us know about WPRW.

The Station That Refused To Die: WGBB/1240, Freeport, NY began its career in 1924 as an extension of Harry Carman's ham station, 2EL. After several changes in ownership, it ended up owned by rocker WBAB-FM/102.3 in nearby Babylon, NY. Despite protests from Freeport residents who loved their little local AM station, in January of 1988 the station's owners dumped the historic WGBB call letters (along with the WGBB staff and talk programming format) and relegated the station to merely simulcasting WBAB-FM's programs.

Freeport residents simply refused to acknowledge the alien callsign, nor would they refer to their hometown station as anything other than what they had called it for 64 years, WGBB. Looks like their doggedness won out.

Last April 24th, the station owners restored the station's original beloved WGBB call letters, and put back the talk and news format. CNN Headline News is being used. Bravo, WGBB!

Havana Banana: Dr. M. L. Cornette, Assistant Professor of Communication Arts at Eastern Montana College, notes that Cuba is continuing to interfere with U.S. radio broadcasts. For the most part, says Cornette, the interference is caused by two stations using the same frequency. Deliberate broadcasting of jamming noises is limited by the Cuban economy which is too strapped to mount any large-scale efforts along those lines.

Dr. Cornette observes that co-channel interference to American stations from Cu-



Old timers in Southern California will fondly recall KWST of the 1970's. These days it's known as KPWR. This historic bumper sticker was furnished by Victor Kosuda, of Torrance, CA.

bans is about equal to the time when anti-Castro Radio Marti went on the air in May, 1985.

After Radio Marti started, Cuba, notes Cornette, did build two powerful stations with the ability to interfere with American stations, especially those in our southern states. And Cuba did some jamming of Radio Marti in response to TV Marti tests and early broadcasts. However, Cuba did not have the funds to provide the ongoing costs of the energy required to continue such transmissions on a large scale.

While some interference will always be a continuing problem, it's not serious enough that most people (including American broadcasters) are concerned about the situation.

Sticker Swapper: Our mail indicates that readers enjoy collecting and swapping bumper stickers from broadcast stations. One recent letter came from collector Donald J. Weber, 2169 Walter Road, Westlake, OH 44145. He told us that of all of the stickers in his collection, his favorite is the one from WCDN/1560, of Chardon, OH. He likes it because, "it's not fancy, it's not splashy, it doesn't have pizzazz, but it's unique in its own quiet (any hokey) way." Don sent the column a sample of the WCDN bumper sticker.

Victor P. Kosuda, of Torrance, CA sent us a beautiful assortment of area bumper stickers, some dating back many years.

Filling In The Blanks: Broadcast Engineer Mark W. Parsons, of Brainerd, MN wrote to tell us that he noticed a mention of KFYZ/550, Bismarck, ND in our column a couple of months ago.

Mark points out that KFYZ enjoys more square miles of coverage than any other AM or FM radio station in the US, including all

New FM Callsigns Issued

KDBX	Banks, OR
KLEO	Kahaluu, HI
KZUA	Holbrook, AL
KZUB	Tahoka, TX
KZUC	Ellensburg, WA
KZUD	Wilburton, OK
WIKK	Newton, IL
WLTN-FM	Lisbon, NH
WMYB	Socastee, SC
WOHO	Mt. Gilead, OH
WPBK-FM	Whitehall, MI
WRSG	Panama City, FL
WZQC	Copenhagen, NY
WZQD	Georgiana, AL
WZQE	Shepherdsville, KY
WZQF	Lecanto, FL

New AM Callsign Issued

WZQA	Flowood, MS
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FM Callsign Changes Approved

New	Was	
KCFY	KZPL	Yuma, AZ
KCOE	KAUB-FM	Auburn, ME
KFRC-FM	KXXX-FM	San Francisco, CA
KGLC	KSSM	Miami, OK
KLVT-FM	KHOC	Levelland, TX
KMMY	KKWK	Muskogee, OK
KNOW-FM	KSJN	St. Paul, MN
KUFY	KWSS	Gilroy, CA
KZRT	KFMA	Jerome, ID
WBMX-FM	WROR	Boston, MA
WBUK	WFSO-FM	Ft. Shawnee, OH
WFXH	WHHR-FM	Hilton Head, SC
WHEB	WHEB-FM	Portsmouth, NH
WMMY	WQOL	Solana, FL
WOQL	WCXL	Vero Beach, FL
WQEZ	WBZM	Chillicothe, OH
WSNL	WMRY	East St. Louis, IL
WWHT	WNRJ	Marysville, OH
WWWQ	WOVO	Glasgow, KY

Applications For New FM Stations

CA	California City	106.9 MHz	3 kW
CA	Healdsburg	95.9 MHz	
CA	Rosamond	93.5 MHz	
CA	San Luis Obispo	89.3 MHz	4 kW
CA	Susanville	96.3 MHz	25 kW
CA	Thousand Oaks	94.7 MHz	
CO	Telluride	104.9 MHz	100 kW
DE	Bethany Beach	103.5 MHz	
FL	Fort Pierce	91.1 MHz	3 kW
HI	Hilo	95.9 MHz	
IA	Hampton	98.9 MHz	6 kW
MI	Traverse City	104.5 MHz	
MS	Starkville	88.5 MHz	
MT	Helena	103.1 MHz	
NC	Winston-Salem	89.3 MHz	7 kW
ND	Beulah	97.9 MHz	6 kW
ND	Dickinson	99.1 MHz	100 kW
NJ	Egg Harbor Twp.	90.5 MHz	100 watts
NM	Kirkland	102.9 MHz	100 kW
NY	Monticello	99.7 MHz	
NY	Morristown	102.9 MHz	3 kW
NY	Syracuse	90.3 MHz	500 watts
OH	Maumee	89.3 MHz	6.3 kW
OK	Ponca City	99.7 MHz	11.5 kW
OR	Newport	92.7 MHz	3.8 kW
SC	Bowman	94.5 MHz	
SC	Pawley's Island	98.5 MHz	6 kW
SC	S. Congaree	95.3 MHz	
TX	Eagle Pass	89.5 MHz	100 kW
WI	Portage	95.9 MHz	6 kW

Permits Issued For New AM Stations

NY	Youngstown	770 kHz
PA	Brockway	800 kHz

Applications To Change AM Facilities

KASM	Albany, MN	1150 kHz Drop to 2.1 kW
KBSG	Auburn, WA	1210 kHz Drop to 6.5 kW
WGAB	Newburgh, IN	1180 kHz Drop to 675 watts

Applications Filed to Change FM Frequencies

KBEK	Mora, MN	95.3 MHz Seeks 95.5 MHz 17 kW
W_____	Rural Retreat, VA	103.1 MHz Seeks 95.3 MHz 6 kW
WJJQ-FM	Tomahawk, WI	92.7 MHz Seeks 92.5 MHz 25 kW
WLCX	Farmville, VA	90.1 MHz Seeks 91.7 MHz 1.5 kW
WXJI	Grand Rapids, MI	98.9 MHz Seeks 98.7 MHz 2.75 kW

FM Frequency Changes Granted

KETX-FM	Livingston, TX	92.1 MHz Move to 92.3 MHz 50 kW
KJFM	Louisiana, MO	101.7 MHz Move to 102.1 MHz 4 kW
WXLQ	Hinesville, GA	92.1 MHz Move to 92.3 MHz 50 kW

AM Facilities Changes Granted

KPUP	Carmel Valley, CA	540 kHz Increase days to 50 kW
KWNK	Simi Valley, CA	670 kHz Increase days to 5 kW
WNWZ	Germantown, TN	1430 kHz Increase days to 2.8 kW

Permits Issued For New FM Stations

AL	Uniontown	107.5 MHz	1.4 kW
AZ	Buckeye	106.9 MHz	3 kW
CA	Big Bear City	93.3 MHz	60 watts
CA	Independence	106.3 MHz	3 kW
CA	Mount Shasta	88.1 MHz	2 kW
CT	Ledyard	106.5 MHz	3 kW
FL	Coral Cove	107.9 MHz	3 kW
GA	Evans	92.3 MHz	3 kW
IL	Newton	106.9 MHz	3 kW
IN	Syracuse	103.5 MHz	3 kW
IN	West Lafayette	101.3 MHz	2.5 kW
KY	Irvine	106.1 MHz	670 watts
KY	Marion	102.7 MHz	3 kW
MA	Orange	97.1 MHz	3 kW
ME	Kennebunk	99.3 MHz	3 kW
MN	Duluth	97.3 MHz	40 kW
MO	Lutesville	105.1 MHz	2 kW
MS	Tupelo	88.3 MHz	50 kW
MT	Great Falls	107.3 MHz	100 kW
NH	Winchester	98.7 MHz	3 kW
NJ	Berlin	88.1 MHz	120 watts
NJ	Trenton	88.1 MHz	15 watts
NY	Essex	101.3 MHz	860 watts
NY	Honeoye Falls	107.3 MHz	300 watts
OH	Delaware	107.9 MHz	3 kW
OH	Oak Harbor	97.3 MHz	3 kW
PA	Covington	101.5 MHz	2 kW
SC	Johnsonville	105.1 MHz	3 kW
SC	Kershaw	106.1 MHz	3 kW
TN	Celina	101.5 MHz	6 kW
TN	Columbia	88.7 MHz	3.5 kW
TN	Cookeville	90.9 MHz	20 kW
TX	Raymondville	105.7 MHz	310 watts
TX	Santa Fe	90.5 MHz	5 kW
VT	Hartford	104.3 MHz	2 kW
WV	Spencer	104.7 MHz	300 watts

Applications To Change FM Callsigns

Now	Seeks	
WJML-FM	WKLZ	Petoskey, MI
WOBB	WSLE	Cairo, CA

Applications To Change AM Callsigns

Now	Seeks	
KDAY	KBLA	Santa Monica, CA
WBIG	WPJS	Conway, SC
WMAK	WBBE	London, KY

AM Callsign Changes Approved

New	Was	
KEYZ	KQSR	Williston, ND
KVIS	KGLC	Miami, OK
WNRJ	WNRE	Circleville, OH
WPNX	WIQN	Phoenix City, AL
WROR	WBMX	Zeeland, MI
WWBH	WCCZ	New Smyrna Beach, FL
WZZJ	WKNN	Moss Point, MS

50 kW clear channel stations. KFYZ runs on 5 kW, but the transmitter site is in extremely rich farm soil. The soil conductivity is around 60, while in other parts of the nation it typically ranges from 0.5 to 15.

KFYZ uses its 700 ft. tower as an omnidirectional day antenna. At night, it is used in combination with its 300 ft. tower to radiate a directional pattern. Both towers are self-supporting, with huge base insulators. The night directional pattern is run at 5 kW and is a cardioid pointing north with a major

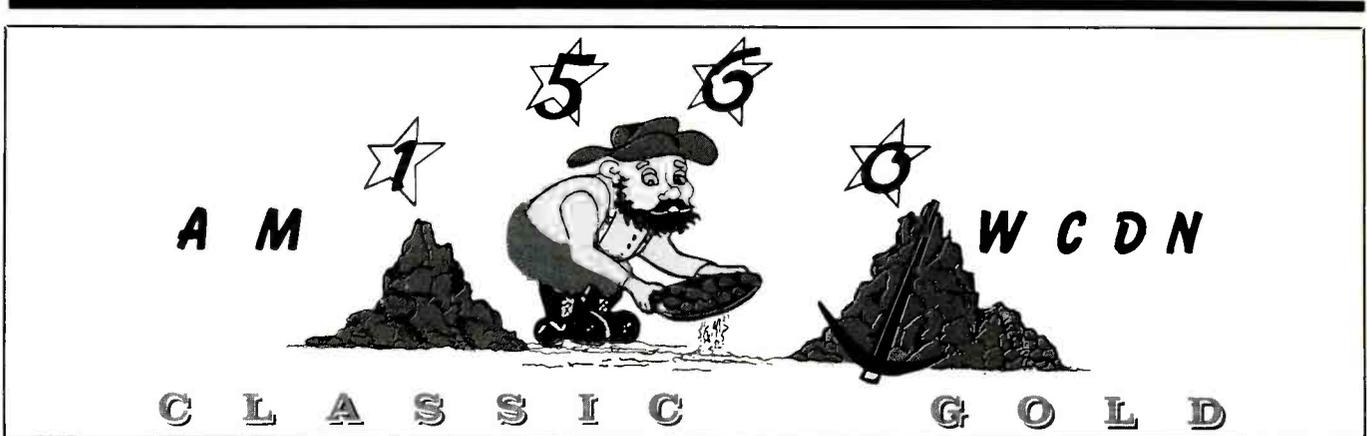
lobe to the south. Nulls are at about 120 and 240 degrees (true). KFYZ transmits in Motorola C-QUAM stereo, which was a switch from the Harris system that had previously been in use.

Format Switch: George Schwenk, of San Pedro, CA wrote to tell us that KKJZ/540, Hesperia had some changes. You wouldn't recognize the station. It moved to Costa Mesa, became known as KJQI, then swapped its jazz format for a "joy" music satellite feed. You need a scorecard to keep

abreast of the station changes in Southern California.

FCC Rumblings: The licensee of KJME/1390 (5 kW) was fined \$5,000 by the FCC. Representatives from the FCC's Denver office found KJME to be operating in excess of its authorized power output. The FCC claimed that the power was as much as 450 percent over the legal power limit.

The routine forfeiture for such a violation is \$1,000. But only about a year earlier, KJME had been fined for the same viola-



Bumper sticker collector Don Weber, of Westlake, OH tells us that this sticker from WCDN/1560 may not be the most beautiful in the world, but it's his favorite. It does have a certain charm, but why do they have a drawing of Tom Kneitel in its design?

tion. The increased forfeiture was imposed because the FCC claimed the violation continued after the imposition of the earlier sanction.

The FCC officially assigned TV Marti, in South Florida, to TV Channel 13 on a temporary basis. At such time as the TV Marti operations are discontinued, Channel 13 will become available in Key West for non-commercial educational TV broadcasts.

The FCC raised questions of possible interference problems when an application was recently filed for a TV station on Channel 64 from Charlottesville, VA. The proposed transmitter site is just outside the "Quiet Zone" established by the FCC in 1958 to protect activities at the National Radio Astronomy Observatory (NRAO), Green Bank, WV.

Latest FCC broadcast totals included 4,990 AM broadcasters, 4,420 FM commercial, 1,453 FM educational, and 1,864 FM translators and boosters. In the world of TV, there are 1,116 VHF/UHF commercial broadcasters, 353 VHF/UHF educational stations, 4,979 VHF/UHF translators, and 836 VHF/UHF LPTV stations.

Forthcoming Development: A mention in a recent POP'COMM of the impending FCC allocation of 218.0 to 218.5 MHz to a two-way interactive video data service brought in mail from readers seeking more information.

According to TV Answer, Inc., one of the companies planning on being active in this new service, it will revolutionize TV by providing viewers with an instant response capability to an infinite variety of new interactive programs and services. A simple remote cursor control lets viewers select from TV Answer's multiple choice menu screens, offering music, news, networks, home shopping, educational, sports, foreign language, banking, and other services. The viewer can select the type of programming wanted, and will then be able to instantly interact with the programming source to order items, become a game show contestant, participate in polls, make reservations at hotels and on airlines, etc.

The service is expected to cost \$12.95

per month, with up to a \$1 rebate for most purchases and other on-screen transactions.

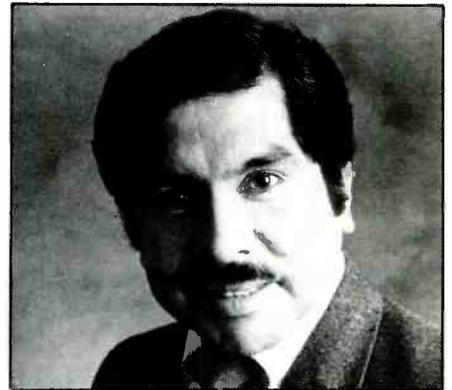
Each subscriber will have a TV Answer "box" that transmits the instructions in the 218 MHz band to a nearby cell site. From there, the information will be uplinked to a satellite, then downlinked to TV Answer headquarters, and thence to various program and service providers. Each local cell site will handle about 10,000 subscribers, handling about 600,000 responses per minute. The cell sites also transmit information to the units in the subscribers' homes.

This is all still in the proposal stage, but it looks promising. The address of TV Answer, Inc. is 1941 Roland Clarke Place, Reston, VA 22091. Written inquiries only, please.

Pot Still Boiling: Several issues back we mentioned that the Association for Maximum Service Television (MSTV) had complained to the FCC about the agency's practice of issuing two-way land mobile licenses in the UHF-T band in areas where only TV stations were supposed to be licensed. MSTV cited an example of no less than eight land mobile stations being licensed on TV Channel 16 in the area of South Bend, IN. This is in the TV service area of WNDU-TV on that channel, and violates the FCC's own rules for keeping land mobile stations off any UHF TV channel that has a TV station within range.

The FCC was responsive to the MSTV's complaint, and reminded local frequency coordinators that they have a responsibility to see that such conflicting allocations aren't allowed to slip through. In view of the fact that MSTV claims that the FCC has licensed 132 land mobile stations within 90 miles of adjacent-channel TV stations (70 without the proper waivers), MSTV felt that the FCC's response to the problem fell short of what was needed to properly address the situation and end it once and for all.

MSTV went so far as to suggest that the problem is a symptom suggesting "a serious breakdown in the commission's licensing process and its monitoring of rules governing the TV shared bands." What MSTV was hoping for was for the FCC to cancel the im-



Congratulations to Pepe Barreto, popular Hispanic deejay at Los Angeles' KLVE-FM/107.5. He just celebrated his 28th anniversary in radio. Pepe is also a news announcer on KVEA-TV. He began his career in Lima at age 16, then was with the VOA in Peru, and moved to the US in 1972. Pepe created a special Spanish language program for soldiers participating in Operation Desert Storm. It was carried over the Armed Forces Network. Nice going!

properly issued land mobile licenses, then reissue the licenses with the stations assigned to different frequencies that comply with the TV shared band rules the FCC had established.

MSTV pointed out that, of the 132 land-mobile stations allowed on UHF frequencies where they don't belong, almost one third of them are near Hanover, NH. That's where WHED-TV used to operate before it went dark a while back. Of course, MSTV doesn't claim that any of the NH land-mobile operations could presently be causing interference to the inactive TV station, but they noted that the hope is the station in Hanover will eventually return to the air. That being the case, says MSTV, NH land-mobile licenses on the Hanover UHF TV channel should have been granted authorizations conditional upon the frequency being relinquished if necessary to end interference at such time as the TV station in Hanover comes back on the air. ■

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

The *Voice of Free Iraq* (Sowt al-Iraq al-Hur) continued to operate well after the anti-Saddam coalition forces had suspended armed activities. According to Arabic-speaker Hans Johnson of Maryland the station has been providing extensive coverage of the insurgency within Iraq. Hans says he heard the station operating in what he believes was Kurdish (in addition to the usual Arabic programming). Johnson says the best reception at his location is between 2000 and sign off, which occurs shortly before 2300. 9570, 9995 and 15600 are all received well. The *Voice of Free Iraq* is believed to use Egyptian government transmitters. Although it's very much a guess, we can likely expect this station to remain active as long as Hussein is in power.

Johnson also passes along information on some other anti-Iraq clandestines: *Gulf Voice Radio* is said to be a pro-Shiite station and to be operating on 8962 upper sideband between 1800-1900, which means reception in North America isn't likely.

The Voice of Rebellious Iraq (Sowt al-Iraq al-Thal'air) claims to be in Basra but is reportedly coming from Iran. It is quoted frequently on Iranian government broadcasts. The station is on the air at 0430, 1230 and 1730 and 7097.

There have been a number of Kurdish clandestines active over the years. The latest one was born out of the Kurd's war against the Hussein government. Aira Dangi Kurdistan (*Voice of the People of Kurdistan*) is said to be using 3960 and 7030 but we don't have a time schedule for this one yet.

The problems in Indian Kashmir have led to the opening of a pro-Kashmir, anti-Indian clandestine, the *Voice of Kashmir Freedom* (Sadai Hurriyat-e Kashmir) said to be operating from Pakistan-controlled Azad Kashmir, although the broadcasts claim to be from inside India. The station's frequency choice is unfortunate—5000! Schedule information is conflicting, but may be from 1435-1505 and 1635-1705, though other reports say it may be active as early as 0200. Some sources say operations are 0230-0330, 0700-0800, 1100-1200, 1430-1530 and 1630-1730. The address is PO Box 102, Muzaffarabad, Azad Kashmir, via Pakistan.

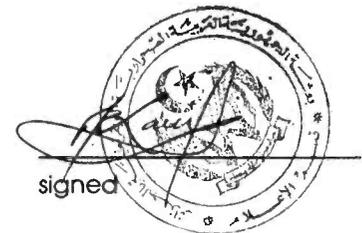
There are reports that the *Voice of June Fourth* is having funding problems and may not continue much longer or may even be off the air now. This clandestine program is produced in Chicago by the Independent Federation of Chinese Students and is aired

VERIFICATION OF RECEPTION

Voice of Free Sahara

June 24, 1988 15215 kHz at 2252-2258 UTC

The reception of our program by Harold Sellers is verified.



The Polisario Front sent this QSL to Harold Sellers, confirming his reception of their Voice of Free Sahara program over Radio Algiers.

several times a day over the first network of Taiwan's Broadcasting Corporation of China, via several shortwave frequencies.

Still another anti-Castro voice has joined the several which are already active. "Esperanza" is the name of a program produced by something called *La Voz de los Municipios de Cuba en el Exilio*, now aired over WWCR in Nashville. It is scheduled at about 0007 to 0100 Monday through Friday local time (Tuesday-Saturday, UTC). The address is said to be 5600 NW 7th St., Miami, FL 33126. We hope to have more information on this for you later.

La Voz de la Resistencia do Galo Negro, the Unita-run station opposing the Angolan government is being heard again at good strength on another new frequency—17890—running to sign off at 2229, all in Portuguese. Apparently, this replaces 15500 which was used for a few months from late 1990 into early 1991 and heard very well. The broadcasts are not daily but seem to show mostly on Wednesdays and Sundays. Some QSLs for this one have been received from Mr. Jardo Muekalia, 1850 K Street NW, Suite 370, Washington, DC 20006-2202.

Ontario's Robert Ross reports reception of the Polisario Front's *La Voz du Sahara Libre*, aired via Radio Algiers. He heard it on 15215 in Spanish to closing at 2300. An-

other Ontarian, Harold Sellers, recently QSL'd this one (see illustration).

Ross also caught the anti-Castro *La Voz de Alpha 66* via Indiana shortwave station WHRI on 9495 at 2319 with fanfares, IDs and many mentions of Cuba.

He also reports the interesting *New Star Broadcasting Station* on 8300 at 1230-1305 with music and a woman in Chinese, then another woman reading Chinese numbers. We've still not seen a good argument, one way or the other, putting this on Taiwan or the mainland. The station has been quite widely heard over the past several months.

Radio SNM (Somali National Movement) has changed its name, it seems, and now identifies as *Radio Hargeisa*—the name of a Somali city which was also once home to a station of that name. The current version operates in the 6200-6500 range. Foreign monitors have found it on 6320 at 1600 of late.

That's our allotment this month. We solicit your informational support in the form of loggings, address information, copies of QSLs, schedules and newsletters issued by clandestine stations or the groups which back them. Your name can be withheld from publication if you desire. Thanks for your support.

Until next month, good hunting!

27 MHz COMMUNICATIONS ACTIVITIES

Don't confuse Midland's 75-781 handheld with one of those micro-power transceivers for 49 MHz. Yes, it's a handheld, but it's also a full-powered (4 watt), 40 channel 27 MHz CB transceiver.

The 75-781 has some interesting features, like the ability to scan across the entire band searching for active channels. The unit has a dual power output switch to conserve battery strength. It has its own internal rechargeable batteries but can also be powered from any external 12VDC source, or from its 120VAC battery charger. Channel changing is by up/down push buttons.

For more information on the Midland 75-781 handheld CB, contact Midland International Corporation, Consumer Communications Division, 1690 N. Topping, Kansas City, MO 64120, or circle 101 on our Readers' Service.

Shack Photos

Jeff C. Seymour, Colonial Heights, VA tells us that *POP'COMM* was the first communications magazine given to him when he started in the hobby several years ago. He says we have always remained "No. 1" with him, and he strives to keep his shack looking as good as those he sees in our pages. From the looks of the photo of that shack Jeff sent in, it looks as though he's done a good job.

From the bayous of LA we also received a shack photo from Bill, known on the airwaves as "Unit 369." He advises that since this photo was snapped, he's added shelves on the wall above the desk. Bill is a proponent of getting the FCC to open up frequencies above 27.405 MHz (CB Channel 40). Bill remarks that he enjoys *POP'COMM*, but always reads these pages first.

Speaking of More Channels

In past issues we have mentioned recent petitions filed with the FCC requesting legalization of so-called *Freebanding* (or *Outbanding*) above Channel 40, usually with higher power and SSB mode. Although the petitions we saw were all well thought out and articulate, we pointed out here that such proposals are nothing new. They had previously been presented to the FCC by many others going back to the late 1970's. The FCC never looked with any favor on the concept when it was suggested in the past.

Of those petitions recently filed, that of the *Super Talkers of Philadelphia* (STP) was among the best. The FCC formally rejected their petition, citing a curious logic that made it clear there's little reason to hope that these frequencies will ever be made legal for ratchet jawing.



Midland offers this Model 75-781 full-powered CB handheld.

The FCC told STP that, "for almost 33 years, the CB Radio Service has fulfilled its purpose as a low-cost, short-range, two-way voice radio service for both personal and business communications. It is, however, based upon an older technology where the collaborative effort of disciplined operators is essential. It is likely that this factor severely limits its potential for any meaningful improvement."

That factor, of course, might also be used by the FCC to put the screws to any number of radio services, including hams, marine radio, etc. It didn't seem like a good reason to us.

It seemed odd to see the FCC now claiming that CB radio has, for 33 years, "fulfilled" its original FCC definition. It is the shining example of the one radio service that insisted upon defining itself, and in a manner that bore almost no similarity with the FCC's plans, regulations, and guidelines. The FCC's strident refusal to recognize the CB service for what it was, and then seek to make the best of the situation, long ago cost the agency its ability to control the service, or even issue licenses to its users. What a joke!

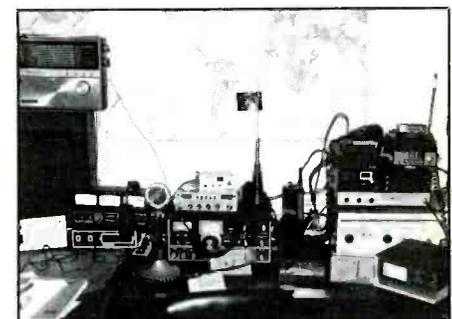
In the meantime, the FCC told STP that, "modern technology makes possible more contemporary systems, such as cellular telephones." How the FCC considers cellulars to be a suitable replacement for CB or any other system they describe as "low cost" is open to speculation. But, they also assured STP, that, "industry and the Commission



CB shack operated by Jeff Seymour, Colonial Heights, VA.



Jeff Seymour at the controls. We dig that D-104 "Lollypop."



Nifty operations center used by Bill, Unit 369, in Louisiana.

are working hard to bring into being additional communications system to meet the needs of the public."

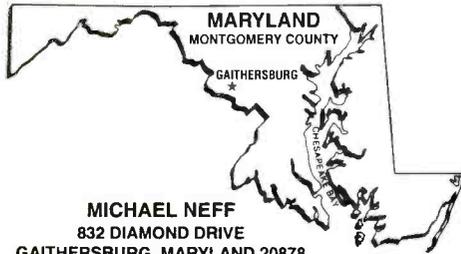
We can hardly wait to find out what that means.

Export Topic

A reader desiring anonymity in Baton Rouge, LA writes to comment on "export" CB rigs. These are transceivers supposedly intended for use only outside the USA, usu-

KCS 9190 SSB 59U

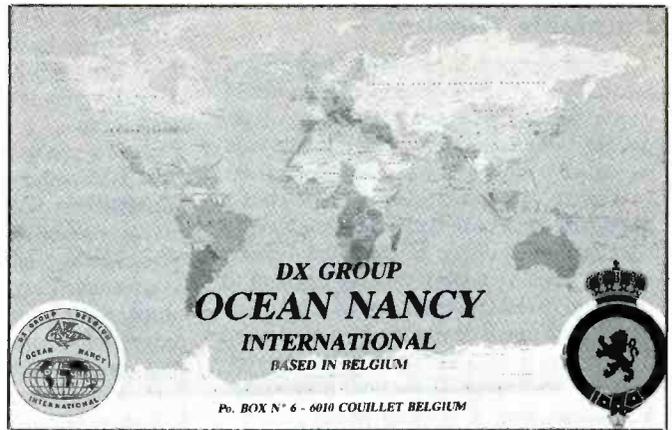
COBRA 142GTL
PDL-II



MICHAEL NEFF
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GAIHERSBURG, MARYLAND 20878
U S A



Great looking wallpaper issued by Mike, SSB Network member SSB-59U, of Gaithersburg, MD.



A bit of overseas wallpaper from the Belgian "Ocean Nancy International" DX group. It was submitted by Alain, 16-ON-1, of Couillet, Belgium. He's the prez of the ON group.

ally because they run high power and can operate on freeband frequencies. The FCC claims that those caught selling or using such illegal equipment are given fines, and the equipment is confiscated.

Our correspondent reports that for months he has tried in vain to get the FCC to "enforce this selectively used law, but to no avail." He claims that in Baton Rouge there are "plenty" of city police and sheriff's units equipped with SuperStar and other illegal export CB transceivers. Our correspondent tells us that he has brought this to the atten-

tion of law enforcement agency officials as well as the FCC, but the radios remain in use.

He would know why he can't also use one of these radios if the FCC is unwilling to enforce their regulations with fairness and uniformity.

49 MHz Operators

Although not actually CB, low powered two-way operations on 49 MHz come closer to CB than any other radio service. Actual-

ly, 49 MHz operations were split off from 27 MHz about 20 years ago. Such comms on 49 MHz have always had devotees exploring the potentials there for hobby use and experimentation.

Those interested in belonging to a new group organizing to promote 49 MHz comms, are invited to contact Michael Goetsch, The Association to Promote 49 MHz., P.O. Box 626 Edgewater Branch, Lakewood, OH 44107-0626. It might be a good idea to include a self-addressed, stamped (US 29 cents), reply envelope.

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Multiplication Factors: 12 Times
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Requires 1 Coaxial Cable for Hook-up

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Vertical - 4.75 DB
Multiplication Factors: Horizontal - 12 Times
Vertical - 15 Times
Horz. to Vert. Separation: 20-25 DB
Power Rating: 2000 CW, 4000 PEP
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Weight: 10 Lbs
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Patch Me Through

We get a lot of mail asking for "more information" about phone patches. That's sort of vague, and we have mentioned these useful devices here in the past, although not very recently. Maybe it's time for a brief refresher.

In terms of CB radio, a phone patch is a device used at a base station that enables the base station operator to (manually) patch regular landline telephone calls through to (or from) mobile units via the CB channels. The phone patch device itself interfaces the base station transceiver with the landline telephone instrument. These units require that a few very simple hookup wiring connections be made. We have seen pretty good basic phone patches selling in the \$40 to \$45 price range, although fancier units can run much more.

The base station operator dials all outgoing calls, upon instructions from the mobile unit's operator. He or she is also required to manually switch the base station from transmit to receive mode during the course of all calls.

The CB base station retains its full use for regular two-way communications, in addition to the phone patch capabilities. No special equipment or modification is required at any mobile unit to be used with a patch-equipped base station. The patch will work with either AM or SSB (or FM, in other radio services). Landline phone calls can also be patched through to mobile units via the operators at their patch-equipped base stations.

Phone company charges (local or long distance) are the same as if any regular call were being placed from or sent to the base stations' landline phone. There aren't any air-time or other additional telco charges incurred by the use of the patch. A phone patch is legal in the CB service.

Like ship/shore radio, only one person at

a time is able to be speaking, then must say "over" to let the other party know it's their turn. The mobile unit's operator must release the mike button when listening to the other party.

In view of the fact that the only cost incurred in having phone patch capabilities is the initial cost of the device, it comes off as a lot less costly than a cellular, at the compromise of being a bit less convenient. You pay only standard landline phone call rates. You supply your own base station operator to process all incoming and outgoing calls instead of it being done automatically.

However, also remember that your patching abilities will be limited to the communications range between your base station and your mobile unit. So, it offers no "roaming" potentials.

There are point-to-point DX uses for phone patches at HF ham stations, and VHF ham stations have autopatch facilities that are more sophisticated than the units permitted on CB. But what I have described here are what and how thousands have been used in the CB service for many years. I believe I've covered all the bases.

Going To Great Lengths

Douglas Moe, of Streamwood, IL writes in with a commonly asked question. He's got a high SWR, and some people have told him that since everything appears to be hooked up correctly, the problem most likely is being caused by the coaxial feedline being cut to the wrong length. That was followed by a number of different theories being given to him on the proper formula to use when measuring coaxial cable for his antenna system. The question relates to whether the length of the coax is important.

Although there are those who insist that it doesn't so long as you keep it as short as

possible, most people conclude that the length of the coax does make a difference. Keep in mind that a CB rig has only 4 watts going for it, which isn't much. The trick is to transfer as much of this power possible from the transceiver to the antenna. The problem lies in the impedance of the antenna. All quarter wave antennas are rated at a so-called 52-ohms. Nevertheless, in actuality, they contain shear radiation resistance between 5 and 10 ohms.

The reason is that at the resonant frequency of the antenna, the inductive reactance equals the capacity reactance and they cancel one another to leave only the radiation resistance of the antenna. If we assume 10 ohms radiation resistance, the mismatch becomes 5:1, which means a considerable loss in power. Unless your antenna is supplied by its manufacturer with a pre-measured length of coax (and instructions not to change its length), you could eliminate this mismatch and power loss by using exactly 18 feet of RG-58/U cable between your transceiver and the antenna.

Here's why. First, understand that the CB radio signal travels much slower through the coaxial cable than it does through the air. This is called the velocity factor, which means that the time it takes for a radio signal to travel through 100 feet is the same time it takes it to travel only 66 feet through a coaxial cable.

Putting it another way, the velocity factor has the ability to shorten a physical wavelength by 66 percent. By using "odd" number multiples of the quarter wave velocity factor, we can use coaxial cable as an impedance matching device for optimum signal transfer to the antenna.

Let's take CB Channel 11 (27.085 MHz). Accordingly, the physical wavelength will be 435.66 inches for a full wavelength; 108.9 inches for a quarter wavelength. By taking the velocity of the quarter wavelength, we get a measurement of 71.884 inches as the electrical wavelength of the coaxial cable. Multiply this by any "odd" number, say 3 for example, and we make the cable act as an impedance transformer.

It will "see" the 10 ohms of antenna radiation resistance at the antenna connection so the transceiver can achieve the best possible power transfer. For simplicity in selecting the best lengths of RG-58/U coaxial cable for your installation, just remember that these lengths turn the cable into an impedance transformer: 6 ft., 18 ft., 30 ft., 42 ft., and 54 ft. These lengths listed include the length of the PL-259 connectors on the cable ends.

Different types of coaxial cable will have other velocity factor ratings, and our numbers relate only to RG-58/U since it is commonly used in CB installations. You'll have to check the specs for other cables you might be using.

We look forward to your questions, comments, CB QSL's, shack photos, and news from the wonderful world of 27 MHz. We be down and gone, and standing on the side.

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NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



World Band Shortwave Receiver

R.L. Drake is reprising a product that helped build its leadership position in the American communications industry, the shortwave receiver. Since the early '50's, Drake has offered a shortwave product line. It was not until the early '80's, that the company discontinued the category from its line to concentrate its resources on its burgeoning satellite receiver business.

Now, a totally re-engineered shortwave receiver is back in the Drake line-up. It's the new R8, packed with the latest technology. Because of Drake's long experience producing receivers this new, high performance product is at once friendly and loaded with convenient features.

The new R8 shortwave receiver operates in AM, LSB, USB, CW RTTY, and narrow band FM modes. The frequency range is from 100 kHz to 30 MHz, and covers all world band frequencies as well as most amateur bands. With an optionally module, R8 can also cover fire, police, public service broadcasts, and additional amateur bands in VHF (35-55 MHz, 108-174 MHz).

The front panel design of the R8 features clearly labeled functions and easy access to all operating controls and pushbuttons. A back lit LCD digital display provides frequency, operating, mode status information—all at a glance. A back-lighted signal strength meter provides an indispensable aid for fine-tuning.

The R8 system offers an E² ROM solid-state non-volatile memory. This means the R8 requires no back up battery. Instead, stored information is written automatically to the units ROM memory chip in the event of a power outage.

R8 features a generous 100-channel memory capacity. These memory "pages" can be programmed to store frequency, band and mode data. Once programmed, finding a favorite broadcast or frequency is as easy as one-touch dialing. The R8 also features a built-in, switchable, multivoltage power supply.

For computer buffs, there's a built-in RS232C computer interface that allows a

personal computer to automate a host of receiver functions. There is also a programmable built-in timer for unattended operations.

The R8 uses a synchronous detector to improve the reception of AM signals under severe fading conditions. A dual-mode noise blanker works to minimize electrical interference and impulse noise. There's also a built-in preamp and attenuator to "process" both weak and strong signals, enhancing reception. Finally, a sophisticated Pass-band offset system helps eliminate "adjacent" interference, letting the user "focus" on the desired signal.

Once a selected frequency is "locked on," Drake's receiver offers five switchable, built-in bandwidth filters to further enhance reception. Simply switch to the filter that optimizes broadcast reception. The R8 speaker delivers a full 2.5 watts of audio, or the user can elect to connect an optional external speaker.

The R8 Shortwave Receiver is manufactured in the United States by the R.L. Drake Company.

For more information, contact R.L. Drake Co., PO Box 112, Miamisburg, OH 45342, or circle 102 on our Readers' Service.



Receiver Bandpass Filter Eliminates Interfering Signals

Optoelectronics Inc announces a receiver bandpass filter that separates closely spaced radio signals. The unit passes desired frequencies and eliminates interfering frequencies. It has a constant 4 MHz bandwidth and continuous electronic tuning over 20 MHz to 1,000 MHz.

New Model APS-204 Band Pass Filter is useful in dense urban areas, military operations and other situations where many radio transmitters must operate in close proximity, overloading and interfering with nearby receivers. It works as an active pre-selector,

isolating desired signals and passing them on to the protected receiver, while rejecting all others.

Model APS-204 filter replaces clumsy, passive, discrete units which use fixed coils and large variable capacitors to filter each octave band. Brick-sized boxes for use in labs, each octave filter would cost over \$1000. Their bandpass varies in width according to the center frequency to which they are tuned, thus selectivity varies with frequency; this is a problem at higher frequencies where spectrum crowding is most prevalent and discrete filter selectivity is the poorest. They attenuate the signal of interest.

New APS-204 overcomes these problems. It is an active filter with no insertion loss whatever. It provides seamless, easy-to-use bandpass filter tuning over the entire six octave range from 20 MHz to 1,000 MHz. It measures a mere 4 x 1½ x 7 inches, and costs less than one of the brick-sized filter boxes.

APS-204's bandpass width is uniquely fixed at 4 MHz, regardless of the center frequency to which it is tuned. This is accomplished with a four-pole resonant cavity filter with a Q of 325—far higher than possible with ordinary L-C filters.

The antenna output to be filtered is routed to and from the unit's 4-MHz-wide resonant cavity by a unique double-heterodyne technique, currently being patented. This technique uses a simple voltage-controlled local oscillator (LO) whose frequency is set by a ten-turn pot. Output of the LO is mixed with the incoming antenna signal. The resultant intermediate frequency (IF) is passed through the 4-MHz-wide resonant filter and mixed back down with the same LO, then passed on to the protected radio receiver. Since the same LO is used both ways, APS-204 is totally insensitive to drift, allowing low cost, non-critical parts to be used in the local oscillator.

The unit operates on 12 VDC for mobile convenience and consumes just 6 watts. It is housed in a rugged aluminum extrusion, and provides a simple ON/OFF switch and ten-turn pot for selecting center frequency of the 4 MHz filter. Noise figure is specified at 10 dB maximum, and its 3rd order intercept is specified at 15 dB typical, indicating the unit is highly sensitive, yet immune to overload by very strong signals.

New Model APS-204 Band Pass Filter is priced at \$995 in unit quantities. Delivery is quoted at stock to 4 weeks ARO.

For more information, contact: Optoelectronics Inc., 5821 NE 14th Avenue, Ft. Lauderdale, FL 33334., or circle 101 on our Readers' Service.

THE EXCITING WORLD OF RADIOTELETYPE MONITORING

When the ground war began last February, during the final week of the 43-day-old Persian Gulf war, a spate of diplomatic RTTY traffic by coalition partners broke out.

War-related traffic from the foreign affairs ministries of Egypt, France, Italy, and Turkey was observed. The International Red Cross also transmitted messages that spoke of its problem in getting Iraq to allow the agency to see the allied prisoners of war.

Much of that traffic was found on the 20 MHz band, where, for the better part of the war, I confined my monitoring activity. Soon after a temporary cease fire was called and all became quiet on the eastern front, the diplomatic transmissions stopped, and the 20 MHz band quickly began to resemble a ghost town.

Abbreviations Used in The RTTY Column

AA	Arabic
ARQ	SITOR mode
BC	Broadcast
EE	English
FEC	Forward Error Connection mode
FF	French
foxes	"Quick brown fox ... "test tape
GG	German
ID	Identification/led
MFA	Ministry of Foreign Affairs
nx	News
PP	Portuguese
RURY	"RURY ... "test tape
SS	Spanish
tfc	Traffic
w/	With
wx	Weather

RTTY Intercepts

4056: TJK, ASECNA, Douala, Cameroon, w RURY, 50 baud at 0225. (Robert Hall, RSA)

4353.5: ZSC, Cape Town R., RSA, w wx at 0933, FEC (Hall, RSA).

4442: RGC72, Kiev Meteo, USSR, w coded wx, 50 baud at 0215. (Hetherington, FL)

4464.5: TJK w RURY at 0250, 50 baud. (Hall, RSA)

4570: DHJ51, Grefgel Meteo, Germany, w coded wx, 100 baud at 0305. (Hall, RSA)

4813: LZA8, Sofia Meteo, Bulgaria, w coded wx, 50 baud at 0434. (Hal Bilodeau, IL) The correct c/s here is LZA4. LZA8 is on 14380 kHz—Ed.

5020: RWW74, Moscow Meteo, USSR, w coded wx, 50 baud at 0325. (Hall, RSA)

5140: RWW73, Moscow Meteo, USSR, w coded wx, 50 baud at 0356. (Jerry Domokur, OH)

5431: Un-ID w 5L grps at 0945, 75 baud. Very strong sig. S/off 1010 w NIL CFM GB SK. (Hetherington, FL)

5462: VOA, Greenville, NC, w nx in AA, 0420-0500, 75 baud. (Paul Scalzo, PQ)

5804: 9GC, Accra Aero, Ghana, w RURY at 0430, 50 baud. (Hall, RSA)

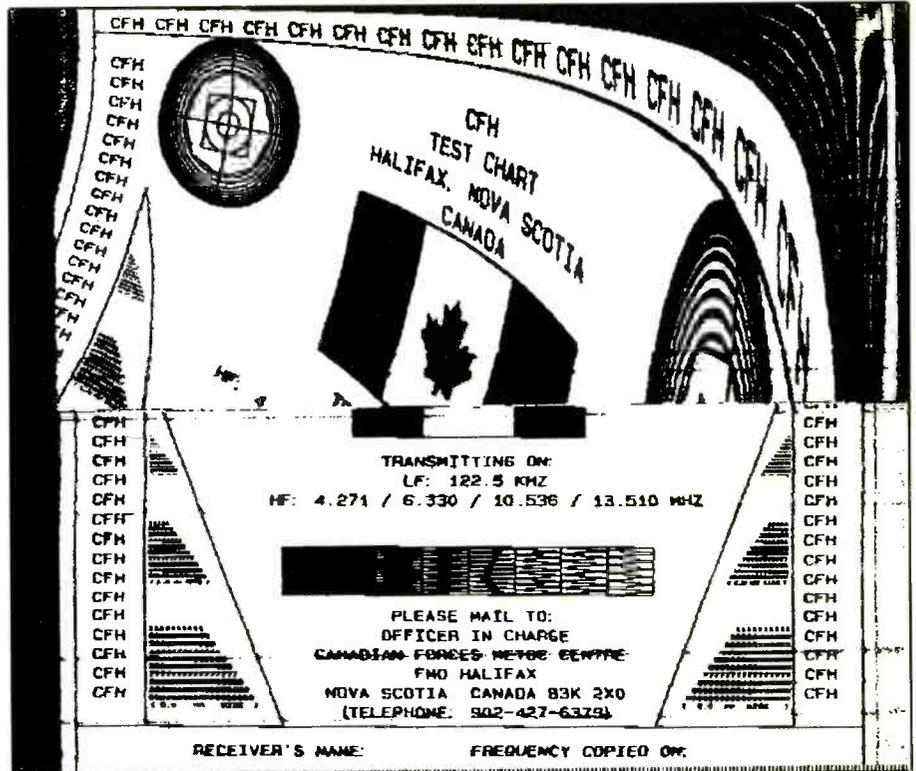
5887.5: IMB31, Rome Meteo, Italy, w RURY foll by coded wx, 50 baud at 0559. (Bilodeau, IL) Correct c/s here is IMB32—Ed.

6436.5: Un-ID w occasional RURY + VMGCNJBH foll by encryption, 75 baud, 0440-0600. (Scalzo, PQ) Similar loggings are to be found at 19463 & 20160.3 kHz—Ed.

6737.5: ETD3, Addis Ababa Aero, Ethiopia, w RURY, 50 baud at 0615. (Scalzo, PQ)

6870: RTV55, Bakhtar, Moscow, USSR, w RURY at 0407, 50 baud. (Bilodeau, IL)

6902.5: "KAWN," Offutt AFB, Elk Horn, NE, w aero wx, 75 baud at 0440. (Hall, RSA)



Oooops! This radiofacsimile blunder ran at 1015 UTC recently on 10536 kHz. (Submitted by Richard Sprau, Registered Monitor, KFL4DN, of Florida.)

6966: FDY, French Air Force, Orleans, France, w RURY, 10 count, & le bricks, 50 baud at 0222. (Hetherington, FL)

7760: RGH77, Arkhangelsk Meteo, USSR, w RURY, 50 baud at 0309. (Domokur, OH)

7776.5: OST38, Oostende R., Belgium, w FEC t/c at 0221. (Hetherington, FL)

7805: FDY, French Air Force, Orleans, France, w RURY & le bricks at 0233, 50 baud. (Scalzo, PQ)

8060: RAW71, Tass, Moscow, USSR, w nx in EE, 50 baud at 0430. (Ed.)

8140: RNN51, Tass, Moscow, w nx in EE at 0436, 50 baud. (Ed.)

8165: 5YD, Nairobi Aero, Kenya, w aero wx, 50 baud at 2300. ("Bunky," IL)

9285: TNL, ASECNA, Brazzaville, Congo, w RURY, 50 baud at 0519. (Ed.)

9298: SOJ229, PAP, Warsaw, Poland, w RURY & QRA at 0543, 50 baud, foll by nx in EE at 1604. (Ed.)

9323.5: "RPTI," Portuguese Navy, Ponta Delgada, Azores, w RURY, 75 baud at 0316. (Bilodeau, IL)

10132: TNL55, ASECNA, Brazzaville, Congo, w RURY, 50 baud at 0049. (Bilodeau, IL)

10150: SUA246, MENA, Cairo, Egypt, w nx in AA, 50 baud at 0206. (Bilodeau, IL)

10380: RBW43, SAM, Murransk, USSR, w coded wx & telexes in RR at 0217, 50 baud. (Bilodeau, IL)

10524: HMF45, APA, Bosong, North Korea, w last nx item of the day, in FF, at 1242, 50 baud. (Ed.)

10600: XVN37, VNA, Hanoi, Vietnam, w nx at 1525, 50 baud. (Bilodeau, IL)

10610: SUA251, MENA, Cairo, Egypt, w nx in FF & EE at 0609, 50 baud. (Bilodeau, IL), & in FF at 2035. (Hall, RSA)

10635: SUC, Cairo Aero, Egypt, w aero wx, 50 baud at 2231. (Scalzo, PQ)

10805: NA, Buenos Aires, Argentina, w nx in SS, 75 baud at 0015. ("Bunky," IL), & at 2000. (Hall, RSA)

10894: LRB39, Telam, Buenos Aires, Argentina, w

nx in SS, 50 baud at 2240 & 0015 ("Bunky," IL)

10985: RCB53, Tass, Moscow, USSR, w RURY at 1558, 50 baud. (Bilodeau, IL)

11012.5: SUU, Cairo Meteo, Egypt, w coded wx at 2240 & 0015, 50 baud. ("Bunky," IL)

11066.5: Un-ID Chilean Naval sta w garbled xmsn, ARQ-M2/96 at 0130. (Ed.)

11121: "L620" w CQ's foll by 3F grps at 1545, 75 baud. (Scalzo, PQ)

11434.7: Un-ID Egyptian diplo w TVVV selcal, ARQ at 2100. (Ed.)

11456: Rome Meteo, Italy, w RURY, 50 baud at 2333. (Scalzo, PQ)

11536: HMF49, KCNA, Bosong, North Korea, w nx in FF, 50 baud at 1800. (Manthey, NY)

11538.7: "KAWN," Offutt AFB, Elk Horn, NE, w aero wx, FDM 75 baud at 2350. (Bilodeau, IL)

11541: 7OC, Khormaksar Aero, Yemen, w RURY, 50 baud at 2225. ("Bunky," IL)

12131: "DKI" w RY's & a msg in some European lang, 75 baud at 2105. (Hetherington, FL)

12313: 5YE, Nairobi Meteo, Kenya, w coded wx, 50 baud at 1830. ("Bunky," IL)

12096: GYA, Royal Navy, London, England, testing at 1835, 75 baud. (Hall, RSA)

13396: OMZ, MFA, Prague, Czechoslovakia, w msgs to Islamabad, Pakistan, 100 baud at 1135. (Hetherington, FL)

13541: "JMS" w3 RURY, ID + 3/771 at 1753, foll by 5L msgs at 1754 & QRU SK at 1803. Was 75 baud. (Ed.)

13542: ZRO3, Pretoria Meteo, RSA, w coded wx, 75 baud at 0935. (Hall, RSA)

13552.9: Un-ID U.S. mil w AP & UPI nx, 1659-1730, 50 baud, FDM channel 13. (Ed.) Similar nx b/c found at 1800. (Hetherington, FL)

13582: HMF36, KCNA, Jungsan, North Korea, w nx in Ee at 2230, 50 baud. (Scalzo, PQ)

14420: "RFTJDA," French Mil., Libreville, Gabon,

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SNN299, MFA, Warsaw, Poland, sent this traffic to its embassy at Managua, Nicaragua, on 20418 kHz at 1423 UTC, POLARQ. (Logged by the RTTY column editor.)

w "controle de voie," ARQ-E/72 at 1500. (Hall, RSA)
14460: "RFTJF," French Mil., Port Bouet, Ivory Coast, w "controle de voie," ARQ-E3/48 at 1700. (Hall, RSA)
14542.6: MKK, RAF, London, England, w RYI's & foxes at 0444, FDM 50 baud. (Dallas Williams, CO)
14550: SPW, Warsaw R., Poland, giving QSL's at 2328, ARQ (Ed.)
14573: 9HC67, Jana, Malta, w nx in AA, 50 baud at 1612. (Manthey, NY) and a t 1755. (Williams, CO)
14633: 9UA, Bujumbura Aero, Burundi, w RYRY, 50 baud at 0430. (Bilodeau, IL)
14762: NNNOICE, USN MARS, McMurdo sta., Antarctica, w MARSgrams in FEC at 0136. (Bilodeau, IL)
14764: AGM90, GNA, Manama, Bahrain, heard at 1610, 75 baud. (Hall, RSA)
14801.7: "RFVI," French Navy, Le Port, Reunion, w "controle de voie," ARQ-E3/100 at 2052. (Ed.)
14805: BPA, Yuryumqi Meteo, China, w coded wx at 1610, 75 baud. (Hetherington, FL)
14809.8: GXQ, Royal Army, London, England, w RYI's & foxes at 0438, FDM 50 baud. (Williams, CO)
14880: JMG4, Tokyo Meteo, Japan, w coded wx, 50 baud at 0108. (Manthey, NY)
14945.5: CLP1, MFA, Havana, Cuba, w prensa-minrex, 2112-2125, 75 baud. (Ed.)
14964: "RFFXL," French Mil., Beirut, Lebanon, w encryption, ARQ-E/72 at 2134. (Ed.)
14970.4: SAM, MFA, Stockholm, Sweden, w a 5L msg at 1345, SWED-ARQ. (Hetherington, FL)
15602: Un-ID w tfc in SS, 75 baud at 2309. Went to USB & spoke SS on 15600 at 2321. (domokur, OH)
15705: YZJ6, Tanjung, Belgrade, Yugoslavia, w pooled nx in FF, 50 baud at 1234. (Ed.)
15856.6: DMK, MFA, Bonn, Germany, w crypto between VVVVVV & KKKKK to Managua, ARQ-E/96 at 1526. (Ed.)
15873: "RFGW," MFA, Paris, France, w 5L msgs to "L9C," FEC-A/192 at 2215. (Ed.)
15935: SUA291, MENA, Cairo, Egypt, w nx in FF, 50 baud at 1224 & in EE & FF at 2235. (Ed.)
15966: Un-ID w 5F msgs, 75 baud at 2240. (Ed.)
16112.2: Un-ID Swiss diplo w 5L grps, ARQ at 1300. (Ed.)
16117: 6VK317, PANA, Dakar, Senegal, w nx in FF, 50 baud at 1737. (Williams, CO)
16119.7: CLP1, MFA, Havana, Cuba, w prensa-

minrex at 0622, 75 baud. (Ed.)
16183: New Delhi Meteo, India, heard at 1710, 50 baud. (Hall, RSA) Jerry Domokur: This might be that un-ID wx sta you said you logged on 16182.2 at 2250. I can't verify thru my refbooks, however, that this sta is New Delhi. There is (or was) a SSB telephone & telegraph link between Bombay, New Delhi, Madras, & Shillong on 16182.5, but not for RTTY—Ed.
16202: STK, Khartoum Aero, Sudan, w RYRY at 2159, 50 baud. (Ed.)
16210: MFA, Jakarta, Indonesia, w nx in Indonesian, 1234-1252, ARQ. (Ed.)
16224: 3MA35, CNA, Taipei, Taiwan, w nx in EE at 1528, 50 baud. (Manthey, NY)
16304: Cuban Embassy, Lima, Peru, w 5F-grpd cables, 75 baud at 2120. (Ed.)
17414: Un-ID French military w a 5L msg at 1409, ARQ-E/72. (Ed.)
17454.5: Un-ID French diplo w a 5L msg, ARQ at 1703. (Ed.)
17510: RFD53, Tass, Moscow, USSR. w nx in FF at 1411, 50 aud. (Ed.)
17532: ZPK, Chaco Navrad, Paraguay, w msgs to YWMI at 1325, 75 baud. (Ed.)
17599: Un-ID w 5L grps at 1401, foll by QRU SK at 1403, 75 baud. (Williams, CO)
18016.7: Egyptian Embassy, Havana, Cuba, w a telex in AA, ARQ at 1842. (Ed.)
18021.7: Un-ID Egyptian diplo w KKXE selcal, ARQ, 1813-1822. (Ed.)
18035: ZRH, Fisantekraal Navrad, RSA, w RYRY, 75 baud at 1200. (Hall, RSA)
18040: CCM, Ponta Arenas Navrad, Chile, w RYRY & foxes, 50 baud at 1244. (Williams, CO)
18195: RIC73, Tass, Moscow, w RYRY at 1409, 50 baud. (Ed.)
18211.5: Indonesian Embassy, Damascus, Syria, w nx of the Perian Gulf war in Indonesian at 1355, SI-ARQ/96 (5 charac.). (Hetherington, FL)
18310: RD757, Tass, Moscow, w nx in FF, 50 baud at 1416. (Ed.)
18316.5: Un-ID Indonesian diplo w text in Indonesian, 1439-1446, 50 baud. (Ed.)
18441.5: Un-ID w nx in AA, 1516-1530, 50 baud. (Ed.)
18553.7: "RFTJ," French Mil., Dakar, Senegal, w "controle de voie" at 1616 & 1646, ARQ-E3/100. (Ed.)

18760: "P6Z," MFA, Paris, France, w msgs to "A9C," French Embassy, Bucharest, Romania, 75 baud at 1235 (Hetherington, FL)
18802: TAD, MFA, Ankara, Turkey, w a lengthy, 5L msg at 1430, FEC-A/144, foll by nx in Turk to Riyadh, Saudi Arabia. (Hetherington, FL)
18907.8: GXQ, Royal Army, London, England, w RYI's & foxes, FDM 50 baud at 0404. (Williams, CO)
19039.7: CLP1, MFA, Havana, Cuba, w prensa-minrex & msgs to CLP7, 50 baud at 2345. (Ed.)
19051.7: MFA, Cairo, Egypt, ending xmsn in ARQ at 1338. (Hetherington, FL)
19146.6-19148.3: KNY26, Hungarian Embassy, Washington, DC, w a 5F msg & tfc in HH, that channel hopped on 5 freqs, DUP-ARQ at 1626. (Ed.)
19181.7: Un-ID in Lisbon, Portugal, w ARQ msgs in PP at 1710. (Ed.)
19209.6: RCC79, Tass, Moscow, USSR, w nx in AA, 50 baud at 1348. (Williams, CO)
19296.7: "RFQP," French Mil., Djibouti, w "controle de voie," ARQ-E3/100 at 2051. (Ed.)
19463: Un-ID w occasional RYRY + VMGTCNJBH, foll by encryption, 100 baud at 2045. (Ed.)
19576: ORI49, PTT, Ruselede, Belgium, idling at 2043, ARQ-M2-242/96. (Ed.)
19863: Possibly ARA, Karachi Meteo, Pakistan, w coded wx at 0356, 50 baud. (Williams, CO)
19731.7: Un-ID Egyptian diplo idling or w TVVP, TVVS, & TVKF selcals, ARQ at 1556. (Ed.)
19756.7: MFA, Jakarta, Indonesia, w diplo text in Indonesian at 1330, SI-ARQ/96 (5 charac.) (Ed.)
19821.5: Un-ID w a telex in FF, ARQ, 1510-1515. (Ed.)
19860.5: GYA, Royal Navy, London, England, w a test tape, 75 baud at 1659. (Ed.)
19865.5: YZJ4, Tanjung, Belgrade, Yugoslavia, w pooled nx in SS, 50 baud at 1643. (Manthey, NY)
19932: French Embassy, Rio de Janeiro, Brazil, w 5L mws & msgs in FF at 1527, ARQ6-90/200. (Ed.)
19980: 9BC33, IRNA, Halgehdehreh, Iran, w nx in AA, 50 baud at 1223. (Ed.)

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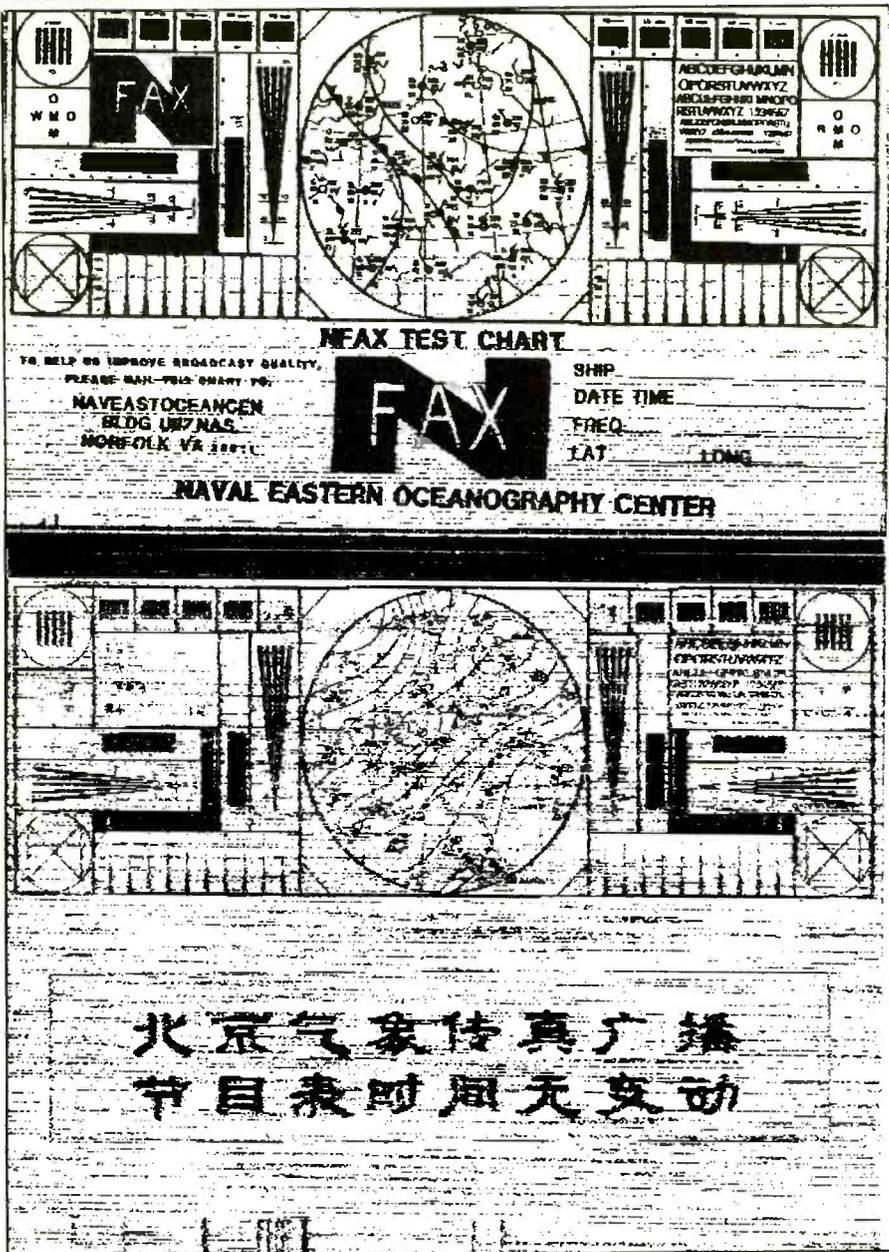
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CIRCLE 138 ON READER SERVICE CARD



Standardized radiofacsimile test charts of the World Meteorological Organization are used by both NAM, U.S. Navy, Norfolk, VA, and BAF 8, Beijing Meteo, China. Richard Sprau, KFL4DN, of Florida, monitored NAM (top) on 10865 kHz at 1445 UTC, and BAF 8 on 14367 at 0700.

20005.4: IPG20, MFA, Rome, Italy, w text re "guerra del golfo: situazione Kuwait" during the Persian Gulf war, + 5L msgs & nx in II, ARQ at 1354. (Ed.)
20011.7: Un-ID Egyptian diplo w KMEU selcal, ARQ, 1424-1430. (Ed.)
20045.5-20046.7: HGX21, MFA, Budapest, Hungary, w freq-hopping tfc in Hungarian, DUP-ARQ at 1404. (Ed.)
20050.8: IPG20, MFA, Rome, w 5L msgs & msgs in Italian, ARQ-N/96, 1336-1424. Headers to 5L msgs read "messaggio computerizzato non toccare la tastiera da esteri roma," which meant that the msgs were sent from MFA, Rome, by computer & were not manually typed. (Ed.)
20061.6: JWT, Stavanger Navrad, Norway, relaying tfc for "RYFDD" of the Norwegian Army to "RYF-WY" in Lebanon. Was ARQ at 1326. (Ed.)
20068: "PHWR," Hickam AFB, Honolulu, HI, w aerok wx at 1244, 75 baud. (Ed.)
20072: "DOR," MFA, Sofia, Bulgaria, w nx in Bulgarian to Paris at 1348, 75 baud. (Ed.)
20078: DIPLO, Noumea, New Caledonia, w French

MFA nx in EE, 50 aud at 0345. (Ed.)
20080.5: IPG20, MFA, Rome, Italy w 5L msgs marked "urgentissimo" to Amman & Damascus, ARQ at 1436. (Ed.)
20101.7: Un-ID Egyptian embassy w a telex in AA to Cairo, ARQ at 1400 MFA, Cairo, in FEC & ARQ modes at 1552 w tfc to Lagos, Nigeria. (Ed.)
20107.6: Un-ID Egyptian diplo w a telex in AA at 1422, ARQ. (Ed.)
20108: "PHWR," Hickam AFB, HI, w aero wx at 0330 & 1145, 75 baud. (Ed.)
20114: Un-ID sta w a 5F msg at 1620 & QRU SK at 1621, 50 baud. (Ed.)
20135: HSF212BKK, MFA, Bangkok, Thailand, w tfc & nx summary in EE to Bonn, Germany, 75 baud at 1435. HSF212BNN, Bonn, gives QSL's to Bangkok at 1436 between tfc & nx summary. (Ed.)
20152: HSF212BKK, MFA, Bangkok, w end of Thai nx summary in EE. Was 75 baud at 1246. (Ed.)
20157: 5KM, Bogota Navrad, Colombia, w RYRY & unclassified tfc to CCS, 75 baud at 1625. (Ed.)
20160.3: Un-ID w occasional RYRY +

VMGTCNJBH, foll by encryption, 75 baud, 1632-1700. Also intercepted a couple weeks later at 1546. (Ed.)
20165.5: Un-ID w heavily garbled tfc, possibly in EE, 50 baud at 1208. (Ed.)
20182.2: Un-ID Egyptian diplo, but not Cairo, w ARQ tfc in AA at 1842. (Ed.)
20185: Un-ID w 5F & 5L msgs, each msg separated by RYRY, 75 baud, 1449-1518. (Ed.)
20204: YZJ, Tanjug, Belgrade, Yugoslavia, w nx in FF at 1200, 50 baud. (Ed.)
20254: TAD, MFA, Ankara, Turkey, w telexes in Turk & 5L msgs to Rome & Copenhagen, FEC-A/144 at 1507. (Ed.)
20280: RTU48, APN, Moscow, USSR, w nx in PP, 100 baud at 1210. (Ed.)
20286.5: SOV228, PAP, Warsaw, Poland, w nx in Polish, FEC at 1400. (Ed.)
20330: MFA, Riyadh, Saudi Arabia, w tfc at 1441, SAU-FEC/164. (Ed.)
20331.1-20332.7: MKD, RAF, Akrotiri, Cyprus, w RYI's, foxes, & 10 count, on several FDM channels, 50 baud at 1520. (Ed.)
20348.5: 9RE203, PTT, Lubumbashi, Zaire, w telexes in FF to Brussels, ARQ-M2-242/962 channel B, at 1240; and on channel A at 1539. (Ed.)
20354: TAD, MFA, Ankara, Turkey, w telexes in Turk to Brussels, FEC-A/144 at 1609. (Ed.)
20361: MFA, Riyadh, Saudi Arabia, w tfc at 1432, SAU-FEC/164. (Ed.)
20364: TAD, MFA, Ankara, Turkey, w tfc in EE & Turk & a 5L msg to its UN mission in New York City. Was FEC-A/144 at 1353. And w 5L msgs at 1730, 100 baud. (Ed.)
20391.5: Un-ID Indonesian diplo w msgs in Indonesian, ARQ at 1533. (Ed.)
20396.5: MFA, Jakarta, Indonesia, w tfc in Indonesian to Dar es Salaam, Tanzania, ARQ at 1228. (Ed.)
20401.5: Indonesian Embassy, Dar es Salaam, w nx in EE, re Tanzanian agriculture, to Jakarta, ARQ at 1254. (Ed.)
20402: YWMI, Maracaibo Navrad, Venezuela, w IANTN tfc to 5KM, Bogota, 75 baud at 1750. (Ed.)
20411.5: MFA, Jakarta, Indonesia, w telexes in Indonesian, 1626-1652, ARQ. (Ed.)
20416.7: MFA, Jakarta, w telexes in Indonesia to Lagos, Nigeria, ARQ at 1735. (Ed.)
20418: SNN299, MFA, Warsaw, Poland, w nx in Polish & telexes to Managua, Nicaragua at 1423, POL-ARQ. (Ed.)
20418.5: German Embassy, Managua, Nicaragua, w a "notiz" in GG to MFA, Bonn at 1642, ARQ-E/96; & the German Embassy at Havana, Cuba, w crypto between VVVVV & KKKKK to Bonn at 1810. (Ed.)
20428: CXR, Montevideo Navrad, Uruguay, w RYRY, SGSG, & 10 count to NBA, 75 baud at 0300. (Ed.)
20456.5: Un-ID w encryption at 1725, ARQ-E/192. Switches to 100 baud normal RTTY at 1735 to request QSW. (Ed.)
20467: Un-ID w a 5L msg at 1517 & w QRU SK at 1519, 75 baud. (Ed.)
20475: CXR, Montevideo Navrad, Uruguay, w msgs to PWX, 75 baud at 1857. (Ed.)
20482.5: VOA, Poro La Union, Philippines, w RYRY & b/c sked, 75 baud at 0003. (Ed.)
20556.5: "P6Z," MFA, Paris, France, w a 5L msg at 1125, FEC-A/192. (Hetherington, FL)
20560: 5AQ88, Jana, Tripoli, Libya, w nx in EE at 1607, 50 baud. (Ed.)
20584: Un-ID, possibly IPG20, MFA, Rome, Italy, w ARQ msgs in II at 1818. Msgs were signed "de Nicola." (Ed.)
20584.5: RCC73, Tass, Moscow, USSR, w nx in FF, 50 baud at 1348; and in AA at 1633. (Ed.)
20596: HBD20, MFA, Berne, Switzerland, w 5L msgs at 1415, ARQ, HBD46, Swiss Embassy, Havana, Cuba, w a 5L msg, ARQ at 1826. (Ed.)
20609.5: HBD20, MFA, Berne, w a telex in FF & a 5L msg, ARQ at 1558. (Ed.)
20610: HBD20 w ATS nx in GG & FF, ARQ at 1713. (Ed.)
20612: IPG20, MFA, Rome, w msgs in II & 5L msgs to Moscow, ARQ-E/96 at 1432. (Ed.)
20617: OMZ, MFA, Prague, Czechoslovakia, w nx in EE & telexes in Czech to Mexico & New York City, 100 baud at 1505 (Ed.); & w 5F grps at 1534. (Dormokur, OH)

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

The world of shortwave has taken some sad hits since we last met. Radio Canada International has been virtually shut down as a result of government belt tightening. RCI's funding had long come out of the budget of the Canadian Broadcasting Corporation. But the CBC, trying to operate under an increasing financial squeeze, announced last year that it would close down RCI. The hue and cry raised by RCI's fans kept it alive and the government decided to finance RCI directly. But a cut in RCI's new budget (from \$20 to 12 million) has completely wiped out both the French and English language departments. Only broadcasts in Russian, Ukrainian, Spanish, Chinese and Arabic remain on the air. The English now heard on RCI is simply a relay of the CBC domestic service network. Among the many fine RCI programs we've lost is the popular SWL Digest, with its weekly news and features about shortwave and other communications subjects.

SWL Digest's very popular and longtime host, Ian McFarland left shortly before the blows landed on RCI. He has taken a job as an English specialist at Radio Japan. For thousands of RCI listeners, Ian McFarland was Canada. We wish him well in his new position. Ironically, we'll probably hear him on Radio Japan via the Sackville relay so, in a sense, he'll still be on RCI facilities!

Reader Roy Hafeli, an on-air personality at CFVR-850, suggests we send letters of complaint about the RCI situation. He recommends the following as targets for your letters: Prime Minister Brian Mulroney, Jean Chretien, leader of the Liberal Party of Canada and Audry McLaughlan, leader of the New Democratic Party of Canada. All may be addressed at the Parliament Buildings, Ottawa, Ontario.

Radio Canada International wasn't the only recent shortwave casualty. The "other" Belgian station, RTBF (Radio Television Belge de la Communaute Francaise) has gone off the air on shortwave. The shortwave outlet, which relayed the various local French language networks in Belgium, dates all the way back to World War II and the Belgian Congo. Again, government funding, or lack of it, was the culprit. The shortwave outlet, used the name Radio Four International and had one of the nearest interval signals you'll ever hear.

Budget cuts are troubling Radio Moscow, too. We're seeing cutbacks and consolidations in various services. Even Radio Tirana has dropped several of its language services due to lack of money. And, as noted last time, Radio Budapest is also making cutbacks.

On the brighter side, the resurgence of shortwave in Central America continues, with another new station to announce. Dino Bloisse of New Jersey passed word of the arrival of "La N-103" from Santiago, the Dominican Republic. The station, on 4800, is relaying a local FM outlet and runs from 1000-1300 but is also being heard in our evenings to past 0500. Actually there is still some question about the actual name of the station. There's a possibility that the shortwave transmitter may be that of long silent Radio Norte.

And, word is that we'll be hearing El Salvador back on shortwave before long. The government is reported to be planning to put its station back on the air with Spanish and English programming aimed at Salvadorans living in the United States. Keep a watch in the vicinity of 9555, a frequency used by El Salvador's Radio Nacional in past years.

Another station, long silent on shortwave, has returned, though in a hybrid manner and perhaps not permanently. Radio Monte Carlo, Monaco, is now being relayed by Trans World Radio, Monaco. It is scheduled on 11685 between 0430-0730. The broadcasts, in French, are intended for the Gulf.

Keep an ear open for the possible return of Dallas shortwave station KCBI, a religious broadcaster which has been off for a couple of years. The word is that this may be back under new ownership. Check 15375 between 1400-0230 and 9815 between 0230-1400.

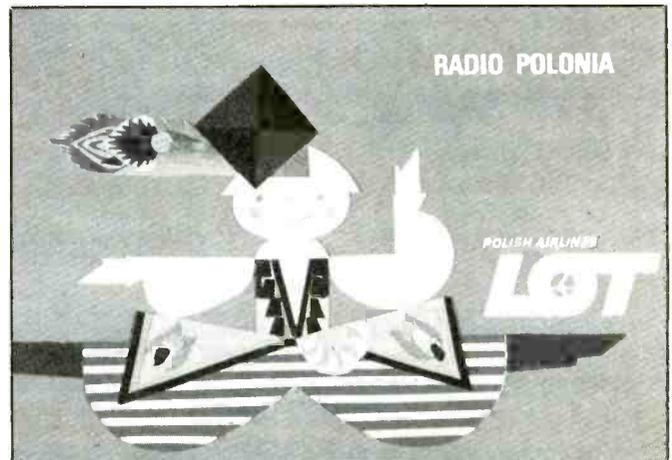
Adventist World Radio's KSDA has upped its weekend schedule to 24 hours on Saturdays and Sundays and has added programming in Russian and Swahili. Russian is on the air Saturdays at 1000 and Sundays at 1900, both on 1372. Swahili is on 1800 both days on the same frequency.

MAIL CALL: Harold Burchards in Sequim, Washington sends a list of reporting requirements he received from the DX Section at Spanish National Radio in Madrid. To obtain one of the QSL's your reception report must include the date and time in UTC, a minimum of 15 minutes' reception, noting the time listening began and ended, frequency in kHz or wavelength in meters, the language the program was in and some details heard. Reception conditions are requested in the SINPO reporting code.

Mark Kaufman in Brea, California sends a copy of a letter he received after he sent a reception report to Radio Nigeria. The letter, which did not come from the station, is a rather crude attempt at a con job. The writer claims to have a friend who needs help in moving an illegally gained bank account of \$32.5 million into an account here. The



Popular shortwave personality Ian McFarland left Radio Canada International for Radio Japan.



One of Radio Polonia's QSLs. Looks as if Polish Airlines takes care of the printing bill!



An aerial view of the Radio Netherlands facility.



Even Radio Moscow has begun to cutback on some of its services. (QSL courtesy of Jack McMahon, Buffalo, NY)

writer wanted blank bank letterheads, blank proforma bank invoices (but signed and stamped!) and Mark's bank account number. In exchange the writer said that 35% of the fund would be turned over to Mark. Right. This is the most outrageous of the scams we can recall seeing. Usually it's a request for \$50 for clothes or a plane ticket or help getting a visa or money to come to school here.

We are always glad to hear from you with your log reports, letters, questions, comments, spare QSLs and shack photos for illustrations, schedules, news clippings and what have you. Log reports should be by country, with space between each item and your last name and state abbreviation indicated after each item. Thanks for your continued support.

Here are this month's loggings. All times are UTC. Language is English except where noted (EE = English, SS = Spanish, etc)

Albania: Radio Tirana, 9760 at 2333 with talk about transition to a market economy. (Carson, OK)

Argentina: Radio Nacional in SS at 0030 on 6060. (Bednarski, BC)
RAE in SS with tangos in 11710 at 0000. (Bednarski, BC)

Radio Continental (feeder, ed) on 9118 in SS at 0200. Lower sideband. (Bednarski, BC)

Ascension Island: BBC Relay, 21660 at 2110 to Africa. (Carson, OK)

Australia: Radio Australia, 7240//9850//9710 at 0840, 11880 at 1800. (Bednarski, BC) 13705 at 0706 with news. (Carson, OK) 11795 at 0541. (Bailey, AR)

Austria: Radio Austria International, 6015 (via Canada, editor) at 0535. (Bailey, AR) 9870 at 0245 in SS. (Bednarski, BC)

Brazil: Radio Universo, 9565 in PP in ID at 0045. (Bednarski, BC)

Radio Brazil Central, 4985 in PP with music at 0055. (Bednarski, BC)

Radio Nacional Amazonia, 11780 at 0920 in PP, talks about carnival. (Bednarski, BC)

Bulgaria: Radio Sofia, 7115 at 0550. (Bednarski, BC) Here and //9700 at 0430. (Carson, OK) 11680 at 0042. (Bailey, AR)

Canada: CFRX Toronto, 6070 at 0446, relay CFRB. (Carson, OK)

Chile: Radio Nacional, 15140 in SS at 2305, another day with soccer at 0120. (Bednarski, BC)

China: Radio Beijing, 9570 at 1712. (Paun, CA)

11600 and 11695 at 1315. (Northrup, MO) 11515 at 0930, 11840 at 0510 and 15100, in SS, at 2330. (Bednarski, BC)

Central People's Broadcasting Station in CC at 1428 on 7516. (Paun, CA)

Colombia: Caracol network, 6075 at 0730, 6150 at 0530 in SS. (Bednarski, BC)

La Voz del Cinaruco, 4865 at 0865 in SS. (Bednarski, BC)

Ondas del Meta, 4885 in SS at 0925. (Bednarski, BC)
Costa Rica: Radio For Peace International, 7375 at 0635. (Carson, OK) 21565 at 2319. (Bednarski, BC)

Cuba: Radio Havana Cuba, 9505//11820 at 0340. (Carson, OK) 9550//11760 at 0030 in SS, 11835 at

0630, 11950//11970 in SS at 0920. (Bednarski, BC) 11705 at 1310, 11760 at 1320, 11875 and 11930 at 1315, all in SS. (Northrup, MO)

Radio Rebelde, 3365 at 0621 in SS, rhumbas, into news at 0630. (Carson, OK) 5025 in SS at 0135. (Bednarski, BC)

Czechoslovakia: Radio Prague International, 5930 at 0104, 7345 at 0108, 9540 at 0116. (Bailey, AR) 11990 at 0014. (Carson, OK)

Ecuador: HCJB, 6050 in Quechua at 0850, 6205 with Andean music at 0650. (Bednarski, BC) 9745 at 0516. (Bailey, AR) 15155 at 0210. (Foss, AK) 21455 USB at 2150. (Carson, OK)

Egypt: Radio Cairo, 9475 at 0040 in AA, 12050 in

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AA at 2220. (Bednarski, BC) 9900 at 2154. (Carson, OK)

England: BBC, 7325 at 0350 and 9410 at 0634. (Carson, OK) 7275 in AA at 1652. (Paun, CA) 9640 at 0800. (Bednarski, BC)

British Forces Broadcasting Service, 6840 feeder at 0337 with Europops, greetings to various servicemen in the Gulf. (Carson, OK)

Finland: Radio Finland International, 15245 at 0948 with program about Finnish jazz. (Foss, AK) 15400 at 1418 with ID. (Paun, CA)

French Guiana: Radio France International relay, 17620 in PP at 2200. (Paun, CA)

Germany: Deutsche Welle, 6040 at 0100, 6085 in GG at 0400, 9545 at 0430 in GG, 9690 in GG at 0800, 11810 in SS at 0200, 11965 in GG at 0715, 15105 in SS at 2300, 15315 in SS at 2335. (Bednarski, BC) 6075 at 0329. (Carson, OK) 15410 via Antigua at 2300 in GG and 17810 in GG at 2144. (Paun, CA)

Radio Free Europe, 7165//9595 at 0400 in Romania. (Paun, CA)

Greece: Voice of Greece, 9395//9420 at 0130 with EE news, 11645 at 2240. (Carson, OK) 9425 at 2320 in SS, 0000 in Greek. (Bednarski, BC)

Guam: Trans World Radio, 11805 at 0831 with religion. (Bednarski, BC) 11895 at 1315, EE ID. (Northrup, MO)

Guatemala: Radio Cultural, 3300 at 0428 with EE religion. (Carson, OK)

Hungary: Radio Budapest, 9835 at 0032. (Bailey, AR) 11910 at 0147. (Carson, OK)

Iran: VOIRI, 9022 at 0015 in AA. (Bednarski, BC)

Israel: Kol Israel, 9435 at 0510. (Bailey, AR) 9435 at 0200, 11585//11605//12077 at 2210 in FF, 2230 in EE, 11605 in RR at 1935 and 0340, 12077 in AA at 0050. (Bednarski, BC)

Italy: RAI, 9575 at 0020 in Italian. (Bednarski, BC)

Japan: Radio Tanpa, 6055 at 1619 in JJ, 9595 in JJ at 1330. (Paun, CA)

Radio Japan, 9505 at 1646 in JJ, 11815 at 1722 in EE. (Paun, CA) 9595//9675 in JJ at 0840, 9675//11875 at 0930 in SS, 15320 in EE at 2300. (Bednarski, BC) 11865 at 1320 in JJ. (Northrup, MO) 17825 at 0315. (Foss, AK)

Libya: Radio Jamahiriya, 15415 at 2245 in AA, also at 1720 and 2140. (Bednarski, BC)

Lithuania: Radio Vilnius, 7400 at 2300 sign on to 2327 close. (Carson, OK) 15180 at 2315 with news of Lithuania. (Foss, AK)

Madagascar: Radio Netherlands relay, 17575//17605 at 1442 with Media Network. (Carson, OK)

Malta: Deutsche Welle relay, 7235 in AA "Huna al-Deutsche Welle." 0415 with news. (Carson, OK)
Voice of the Mediterranean, 9765 at 0650 with news from Malta and Libya. (Carson, OK)

Mexico: Radio Educacion, 6185 at 0820 in SS. (Bednarski, BC)

Radio Universidad, 6115 at 0645 in SS. (Bednarski, BC)

Morocco: RTV Marocaine, 15335 at 2240 in AA. (Bednarski, BC)

Netherlands: Radio Netherlands, 6020//15560 at 0027 with sign on. (Carson, OK) 15560 at 0105. (Foss, AK)

Netherlands Antilles: Radio Netherlands Bonaire relay, 6165 at 0030, 9590 at 0430 in SS, 9630 at 0845 in Dutch, 11715//15315 at 2340. (Bednarski, BC) 15315 at 2305 in PP. (Paun, CA)

New Zealand: Radio New Zealand International, 9700 at 0702 with news, sports, features. (Carson, OK) 1700 at 0558. (Bailey, AR)

Nigeria: Voice of Nigeria, 7255 at 0521, 0535, 0-610. (Bailey, AR; Paun, CA; Carson, OK)

North Korea: Radio Pyongyang, 9570 at 1324 in KK, EE on 9640. (Paun, CA) 9977 at 0900 in SS and 13650 in EE at 2300. (Bednarski, BC) 15115 at 0000 with news, commentary, features. (Miller, GA)

Oman: Radio Oman, 9735 at 2210 in AA, 11730//11890 in AA at 1640. (Bednarski, BC)

Paraguay: Radio Nacional, 9735 in SS at 0020 wit futbol. (Bednarski, BC)

Peru: Radio Atahualpa, 4822 with SS commercials at 0904. (Bednarski, BC)

Philippines: Far East Broadcasting Company, 11685 at 1410. 0900 with start of "Radio Internacional." (Bednarski, BC)

Poland: Radio Polonia, 7270 at 2305 with news, Polish Press, folk music. (Miller, GA) 9675 at 0630. (Carson, OK)

Portugal: Radio Portugal, 15140 at 2000 in PP. (Bednarski, BC)

Radio Liberty in Kazakh at 0236 on 11935, into Ukrainian at 0300. (Carson, OK)

Romania: Radio Romania International, 9510//9570 in Romanian at 0135, into EE at 0200. (Paun, CA) 21665 at 1349 to Europe. (Carson, OK)

Saudi Arabia: BSKSA, 9885 at 2140, 11935 at 1945 and 21505 at 1620, all in AA. (Bednarski, BC)

Solomon Islands: SIBC, 5020 at 0950 in EE. (Bednarski, BC)

South Africa: Radio RSA, 11910 at 0352 with IS, sign on at 0359. (Carson, OK) 13625 at 1315, tentative. (Northrup, MO)

South Korea: Radio Korea, 9570 at 0916, 1430. (Bednarski, BC; Paun, CA)

Spain: Spanish National Radio, 9630 at 0538, 11880 at 0126. (Bailey, AR) 9650//11730 in SS to Australia at 0500. 15110//17845 at 2200 in SS. 15375 at 1945 in EE, 17815//17890 at 0920 in SS and 17870 in SS at 0245. (Bednarski, BC)

Sri Lanka: Sri Lanka Broadcasting Corporation, 11895 at 1352 in Tamil, music. (Paun, CA)

Sweden: Radio Sweden, 9695 at 0343, ski features. (Carson, OK)

Switzerland: Swiss Radio International, 6135 at 0428. (Bailey, AR) 9885 in FF at 0020, SS at 0050 and Italian at 0130 and 1350. (Bednarski, BC)

Syria: Radio Damascus, 12085 at 2123 with news.

Abbreviation Used In Listening Post	
AA	Arabic
BC	Broadcasting
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel frequencies

(Carson, OK) 0020 in AA. Gone at 0028. (Bednarski, BC)

Taiwan: Voice of Free China, 15540 via WYFR in CC at 2255. (Paun, CA) 2300 in 17805 in SS. (Bednarski, BC)

Tunisia: RTV Tunisienne, 7475 at 0545 in AA and 11550 at 0930 in AA. (Bednarski, BC)

Turkey: Voice of Turkey, 9445 at 0404. (Bailey, AR)

Unidentified: 9725. Program of Led Zep-pelin, no announcements. (Carson, OK)

United Arab Emirates: Voice of the UAE, 9685//11985 at 2335 in AA. Also at 1630. (Bednarski, BC)

UAE Radio, Dubai, 15320 at 1630. (Bednarski, BC)

United States: Voice of the OAS, via VOA, 9565//15160//118830 in SS at 0015. Announced 9565. (Bednarski, BC)

Voice of America, 6873 LSB feeder at 0525, 18275 at 2341 in RR. (Carson, OK)

KTBN, Salt Lake City, 7510 at 0524. (Bailey, AR)

Radio Newyork International via WWCR on 7520 at 0330 (Sunday local). (Carson, OK)

USSR: Radio Moscow, 5905 at 0600, 0705, 6135 at 0401, 7195 at 0435 in SS 7260 in EE at 0635 and JJ at 0930, 9480 at 2300 in FF, 9520 at 2200 in SS, 9860 in SS at 0045, 15425//15475 at 2120 in EE, 17700//17720 at 0455, 17880 at 1701 in AA. (Bednarski, BC) 6000 at 0402, 11840 at 1809 (both via Cuba, editor) 17700 at 2246. (Carson, OK) 11850 at 0252, 15180 at 0434 and 15425 at 0255. (Bailey, AR) 21690 at 0131. (Foss, AK)

Radio Peace and Progress, 11770 in EE at 0153. (Bailey, AR)

Vatican City: Vatican Radio, 9605 at 0031. (Bednarski, BC) 11830 at 2214, into CC at 2215. (Carson, OK)

Venezuela: Ecos del Torbes on 4980 in SS at 0930. (Bednarski, BC)

Radio Tachira, 4830 in SS at 0130. (Bednarski, BC)

Radio Rumbos, 4970 in SS at 0120. (Bednarski, BC)

Radio Continental, 4940 in SS at 0930. (Bednarski, BC)

Radio Valera, 4840 in SS at 0920. (Bednarski, BC)

Yemen: Republic of Yemen Radio, 9780 in AA at 2130. (Bednarski, BC)

Yugoslavia: Radio Yugoslavia, 21715 at 1315 with Science and Technology Report. (Carson, OK)

Hats off and thanks to the following reporters this month:

John Carson, Jr., Norman, OK; Adrian Newell Paun, Modesto, CA; Kelly Bailey, Midland, AR; A.E. Bednarski, N. Vancouver, BC; John Miller, Thomasville, GA; Marty Foss, Anchorage, AK and Mark A. Northrup, Gladstone, MO.

Thanks to all and, until next month, good listening!

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FOCUS ON FREE RADIO BROADCASTING

Again this month, let's get right into the reports:

New Pirate Den reporter Glenn Turner of Ohio found **Radio Hope International** on 7415 between 0300-0330, giving the PO Box 109, Blue Ridge Summit, PA 17214 address. They were advertising t-shirts priced at \$10 each. Robert Ross of Ontario had this station at 2202 to 2209 with heavy rock music and a DJ calling himself "MJ," IDs and a mention that they would have a new phone line installed soon.

Ross had the *Voice of Anarchy* on 7413 at 0326 to close down at 0337, with Frank Zappa, Jazz From Hell and an ID as the "Voice of Anarchy in Chicago, Illinois." They announce the Blue Ridge address, too. Turner had this one at 0005-0038 with classical music programming so they cover a wide range of musical tastes. Mark Burns heard this one from his Indiana location at 0015 playing classical music and giving a Chicago location and the Blue Ridge address for mail.

Another Turner log was the **Clandestine Voice of the People of Iraq** (which surely is a pirate rather than an actual Iraqi clandestine, as the name might lead you to believe). This was on 7415, lower sideband, at 0031. Glenn says the broadcast lasted for only 30 seconds and was a mideast-accented male voice. The station returned to the air at 0103, this time for about a minute. From Glenn's description the content was crude, anti-Saddam remarks and, says Glenn, also a sentence or two in what might have been Arabic.

KUSA was found on 7411 by Tom Scott of Tennessee from tune in at 0029, playing ZZ Top, Led Zeppelin and others. War news was also included, along with comments. They announced a mideast service operating on 21850. KUSA left the air abruptly at 0129. Ross tuned this one at 0018 with a broadcast hosted by Mr. Blue Sky, hard core punk rock, funny commercials and mention of the Wellsville, NY address (which is PO Box 452, zip code 14895). Scott also had them at 0330 with more rock music and comments on the Gulf war. In addition to 7415 they gave frequencies of 6210, 11540, 15735 and 21870 but did not announce any times for use of any of these. This station has since been busted.

Ross logged the **Voice of Hell**, which I don't think we've seen reported here before. Bob heard this one on 7415 at 0038 to 0053. The station announced an address of Box 116, Hell River, MA 04716. My atlas doesn't show any such place in that state. The station was playing church organ music when it faded out at 0053.

WKR was found by Scott in Tennessee at 2200 on 7415 with music by Emerson,

Lake and Palmer, ZZ Top, Scorpions, etc. The DJ called himself "Slik." The broadcast closed at 2227 with the instrumental "Mystify Me." Tom heard this as WKR, but it usually announces WKAR, as it did when Ross heard them at 0459 to 0535 sign off, running AC/DC, Motley Crue and others. ID as "WKAR, all digital, all the time." Closed with "Happy Trails."

A fairly new station, perhaps Canadian from the call, was heard by Ross on two occasions. **CSIC** was noted on 7412 at 2300-2356 closing and, on another day, on 7552 from 0256-0316. Music was by CCR, The Police, B-52's, etc. ID's simply as

"CSIC Radio" and announced the Blue Ridge address.

Radio Music was heard by Scott on 7415 at 2350, airing the song "Give Peace a Chance."

Bob Ross reports another flood of pirate QSLs this month, including Radio East Coast from Holland, heard on 11490; Samurai Radio, WHDA, the Voice of Pancho Villa, the clandestine Voice of the People of Iraq (received via the Wellsville address), Radio Fluffernut via the Merlin, Ontario maildrop mentioned in this column a month

(Continued on page 76)

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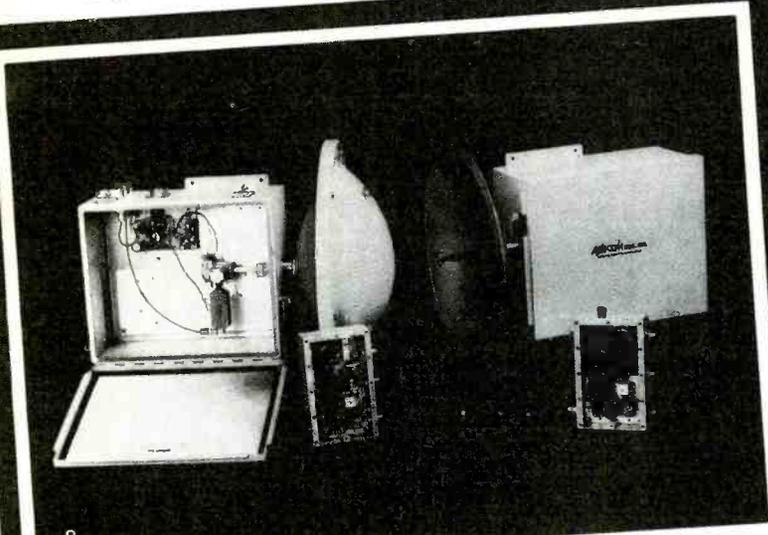
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WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Fancy Ham

The FCC Form 660, "Amateur Radio License," began being produced on a laser printer in the second half of April, 1991. This method will save the Commission resources as well as provide the public with a more acceptable license document. The new version will contain two official licenses. One is credit card size and suitable for use in wallets. The other is a 5" x 7" document suitable for framing.

For further information contact the Private Radio Bureau's Consumer Assistance Branch, telephone 717-337-1212.

Fined For Attempting To Obtain Operator License By Fraud

The FCC's Portland Office recently fined Dean L. Kinzel of Auburn, Washington \$750.00 for attempting to obtain a FCC Radiotelephone Operator License by using falsified documents.

FCC rules require an individual to have a General Radiotelephone Operator License to perform maintenance and repair work on certain types of radio transmitters. Applicants seeking this license must demonstrate a knowledge of FCC rules and electronic theory by passing an examination. Kinzel attempted to obtain a license without having passed the required examination. Any attempt to obtain an operator license by fraudulent means is a violation of FCC rules (47 C.F.R. §13.70).

Arrested For False Distress Call By Radio

Richard M. Smith, Chief of the Federal Communications Commission Field Operations Bureau of Investigation's Washington Metropolitan Field Office, announced the arrest of James A. Haas, age 39, a resident of Athens, Ohio, on charges of obstruction of justice, a violation of 18 USC 1503, and making false statements, a violation of 18 USC 1001. Haas' actions may have also been in violation of Sections 301, 325 and 333 of the Communications Act of 1934, as amended, Title 47, USC, Sections 301, 325 and 333.

Haas was arrested by FBI Special Agents without incident in Sterling, VA, following the monitoring of bogus "officer in distress" radio transmissions received by the Prince William County, Virginia, Police Department, at approximately 10:30 PM on Friday, April 5, 1991. The Federal Communications Commission pinpointed the origin of the transmissions.

Haas was further identified as being a high school teacher in Athens, Ohio and an amateur radio operator.

The investigation is continuing in cooperation with the FBI and the Prince William County Police Department, to determine whether this individual was involved in a similar incident in July 1990. In that incident, the Prince William County Police Department received a radio call which appeared to be an officer in distress. Subsequently, the call was determined to be a hoax.

Haas was scheduled to be arraigned before a U.S. Magistrate in Alexandria, Virginia.

If convicted of both charges, Haas could face up to 10 years in jail and a fine of \$500,000.

Maritime Use Of 4125 kHz Clarified

This is to clarify the use of the frequency 4125 kHz in the maritime mobile service. Currently, 4125 kHz is used extensively by ships in the United States for recreational and private business purposes (provided the peak envelope power does not exceed 1 kW). Since 1983, 4125 kHz has also been available to supplement distress and safety frequency 2182 kHz, as well as for international calling purposes. On July 1, 1991, worldwide changes for the high frequency (HF) maritime service between 4000 kHz and 27500 kHz will become effective. Because of the forthcoming HF changes, we have received a number of inquiries from private ship and coast stations about the use of 4125 kHz.

Although most HF maritime frequencies changed on July 1, stations using 4125 kHz need not change frequency. Frequency 4125 kHz will continue to be available for recreational and private business uses in the United States. In addition to its use for international calling, 4125 kHz also will become available for domestic calls and replies with public coast stations. Further, on February 2, 1992, there will be a change concerning the use of 4125 kHz for distress and safety communications when the Global Maritime Distress and Safety System (GDMSS) comes into voluntary effect internationally. Under the GDMSS, 4125 kHz will continue to be used for conducting distress and safety HF communications for terrestrial radio systems (i.e., non-satellite) but the initial distress alert would be transmitted by digital selective calling (DSC) on separate DSC distress and safety frequencies. Consequently, frequency 4125 kHz will continue to be

available in the United States for private simplex communications, as well as, for distress and safety communications.

NOTE: Except for distress and safety communications, a private coast station may transmit on 4125 kHz only if it is listed on their license. Likewise, except for distress and safety communications, a ship station may transmit on 4125 kHz only if it is authorized "Radiotelephone 4000-23000 kHz" or "Radiotelephone 4000-27500 kHz" operations. Before transmitting on any distress and safety frequency such as 4125 kHz, a station must listen for a reasonable period to make sure that no distress traffic is being sent.

Additional Air-To-Air Frequencies In The Grand Canyon Area

The Commission amended Part 87 of its rules (Aviation Services) to replace one of three frequencies allocated for use in the vicinity of the Grand Canyon for air-to-air communications and to add a new air-to-air frequency for flights between the Grand Canyon and Las Vegas.

On May 9, 1989, in response to a request by the Federal Aviation Administration (FAA), the Commission adopted an order permitting air-to-air communications between all types of aircraft on VHF frequencies 121.950 MHz, 122.750 MHz and 122.850 MHz in the vicinity of the Grand Canyon National Park in Arizona.

Because of congestion caused by high altitude traffic on 122.750 MHz, the FAA requested additional changes to frequency assignments in the Grand Canyon vicinity to improve air flight safety. The FAA, on a trial basis, authorized use of two frequencies, 120.650 MHz and 127.050 MHz, for use in the Grand Canyon area. These frequencies have proven to be of great value in enhancing air safety.

The Commission said it concurred with the FAA that amending the FCC rules to replace the frequency 122.750 MHz with 127.050 MHz for use as an air-to-air frequency in the Grand Canyon Park and to assign exclusive use of 120.650 MHz as an air-to-air frequency in the corridor between the Grand Canyon and Las Vegas will enhance safety by providing improved air-to-air communications.

Eligibility Criteria For Motion Picture Service

The Commission proposed expanding eligibility criteria for Motion Picture Radio

Services (MPRS) to include entities using radio for the production of any filming, such as the videotaping or filming for sale to companies, as well as to entities providing supporting services during film production.

The MPRS was established in 1937 to provide two-way land mobile communications for entities involved in the filming of large and complex scenes in motion pictures set at remote locations. This service has ensured the safety of actors and technical staff during potentially hazardous filming sequences.

Since the formation of MPRS, the Commission has taken no action to expand its eligibility. At the time of its conception, the only outlets for motion picture distribution were theatres. Now there are many mass media outlets for motion picture distribution, of which motion pictures intended for theatrical screenings are only a part.

The FCC tentatively concluded, therefore, that the MPRS eligibility criteria should be expanded to include entities engaged in the production, videotaping, or filming of television programs and to entities providing supporting services during production. It said MPRS eligibility also should be extended to encompass the use of radio for the production of films not intended for theatrical or television distribution, such as educational and business training films, as well as generic training films for sale to companies. These proposed rule changes would preclude the use of private radio facilities for broadcast purposes.

Four Frequencies In 136-137 MHz Band Assigned For Aeronautical Enroute Data Link Communications

The Commission has arranged four contiguous frequencies in the 136-137 MHz band for aeronautical enroute data link communications, reducing the number of frequencies available for special purpose enroute communications.

The Final Acts of the 1979 World Administrative Radio Conference (1979 WARC) reallocates the 136-137 MHz band to the Aeronautical Mobile Service on a primary basis as of January 2, 1990. In proposing service rules, the Commission noted that the 40 channels available in this band could not satisfy the requests of all parties. As a fair compromise, it made the upper 20 channels in the 136-137 MHz band available for aeronautical enroute services. Eight of these 20 channels were allocated for special purpose enroute services in the Gulf of Mexico, such as the helicopter following system requested by the American Petroleum Institute. It also made the lower 20 channels available for Air Traffic Control and general aviation use with five of the 20 channels to be held temporarily in reserve for future general aviation use.

Aeronautical Radio, Inc. (ARINC) asked

the Commission to reconsider this Report and Order partially and move the frequencies designed for the flight following system to the Air Traffic Control and general aviation half of the band. It also asked to reduce the number of frequencies allotted for the flight following system to four.

ARINC said that an international consensus is developing to set aside the four channels highest in frequency for international data systems. It pointed out that the Report and Order allotted two of those frequencies for aeronautical enroute and two for special purpose enroute communications. ARINC requested that all four channels be allocated to aeronautical enroute channels without restrictions for future use by the international data systems.

On reconsideration, the Commission noted that the Communications/Meteorology/Operations Divisional Meeting of the International Civil Aviation Organization held September 5-28, 1990, recommended that the four channels highest in frequency in the 118-137 MHz band be specified for worldwide air-ground data link communications and decided to allocate the four contiguous channels highest in frequency in the 136-137 MHz band, including two that were previously allotted to the special purpose enroute service, to the aeronautical enroute service for future use by the international data systems.

The Commission determined that this action could satisfy the international recommendations and reduce the special purpose enroute channels from eight to six. However, it stated that if additional channels are needed in the future for a helicopter flight following system in the Gulf of Mexico, the Commission could consider reallocating some of the reserve channels.

Amendments To Assignments For Air-Ground Stations In The Public Mobile Service

The Commission proposed amending the Table of Assignments for air-ground stations in the Public Mobile Service. Specifically, the Commission is proposing to delete Channel 12 from Pittsburgh, PA; Channel 9 from Newark, NJ; Channel 9 from Seattle, WA; and Channel 10 from Washington, D.C. The Commission also proposed to add Channel 9 to Laurel Run, PA; and Channel 10 to Pittsburgh; and to relocate Channel 12 from Grand Canyon, AZ, to Williams, AZ.

Air-ground radiotelephone service is a public radio service between a base station and airborne mobile stations. The Commission created this service with the goal of utilizing the minimum amount of spectrum necessary. The Commission recognized that its allocation of 12 air-ground channels would permit nationwide service if the channels were used in sufficiently separate geographic areas.

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CIRCLE 142 ON READER SERVICE CARD

This proceeding was initiated by All-American Products, Inc., who asked the Commission to reassign Channel 9 (454.825 MHz) from Newark, NJ, to Laurel Run, PA; and by Mobile Telecommunications Technologies Corp., who requested relocation of its air-ground station (KWU428), operating on Channel 12 at Grand Canyon, AZ, to Williams, AZ.

Following those requests, the Department of Communication, Government of Canada, responded to the Commission's proposal to eliminate certain instances of interferences. The Canadian letter was in response to an oversight by FCC staff to amend the Commission's air-ground table of assignments in accordance with a 1971 exchange of letters between Canada and

the Commission which made minor changes in the table. In commencing service on Channel 12, Canada encountered interference from a Pittsburgh air-ground station. In reviewing the current table of assignments, it was discovered that activating Channel 9 in Seattle could also result in interference to Canadian operations.

Commenters should address whether unused air-ground Channel 9 in Newark, NJ, should be reassigned to Laurel Run, PA, as proposed by American, and whether the relocation of Channel 12 from Grand Canyon, AZ, to Williams, AZ as proposed by Mobile, is in the public interest. Commenters may also address the proposed actions to eliminate interference with Canada.

FCC Studies Amateur Radio Transmitter Power

The FCC conducted a study of amateur radio stations to determine compliance with the Section 97.313 (a), 47 CFR 97.313 (a), requiring the use of minimum transmitter power. The study also examined the link between operating power and interference to home electronic entertainment equipment (HEEE) such as television and radio receivers.

This nationwide study took place on February 26, and 27, 1991, during which time the FCC looked at 209 stations. It selected most of these stations on a random basis. The exception was 31 stations chosen because they were subjects of interference complaints. The FCC made observations of the communications conducted at the power usually used by the station, and then made similar observations with the power reduced by one-half or more.

The findings of the study are:

Seventy-five percent of the stations experienced no degradation in communications capability when the power was reduced by more than half.

Lower power resulted in reduced interference to HEEE in 1/3 of the cases.

Seventy percent of the amateur operators interviewed stated that their stations normally transmit with less than 200 watts of transmitter power.

Approximately 2/3 of the stations reported to be the source of receiving interference were transmitting with 100 watts or less.

The conclusions of the study are:

Most amateur stations are not operating at minimum power as required by Section 97.313 (a).

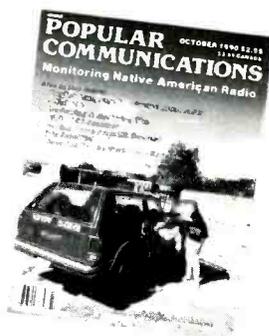
Reduced power can alleviate significant reception interference problems without degradation in communications capabilities.

In addition to reducing transmitter power, other remedies such as transmitter or receiver filtering may be required to eliminate interference.

For further information, you may contact Jeffrey B. Young, FCC, Field Operations Bureau, Enforcement Division at (202) 632-7014.

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COMMUNICATIONS CONFIDENTIAL

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Rich Dixson, NY wrote in asking about a repeated transmission he observed at 0126 on 14564 kHz consisting of an announcement by Cyprus radio. Rich, you heard a "voice mirror" which is a recorded voice announcement giving the identification of a radio circuit. The recording is continuously repeated and often is in English plus a foreign language. The particular frequency you were listening to is assigned to Cyprus station 5BC68. The foreign language is either Turkish or Greek. I don't recall which one is used.

A query was received from Cliff Mullican, TX who wondered what station he heard under WWV on 5 MHz. Cliff thought he caught the announcer saying "Venezuela." Yes, Cliff, it was the Venezuelan time station YVTO. The QSL address is Direccion de Hidrografia y Navegacion, Observatorio Cagigal, Apartado Postal No. 6745, Caracas, Venezuela.

From Simon Mason, England we learned that he had a bumper crop of intercepts this month. "Activity has been very high of late with many different stations present."

Robert C. Homuth, AZ said he is using a Radio Shack DX-400 with various loop antennas, a 100' longwire, and an Ameco preamp for monitoring the 150 kHz to 30 MHz range.

This rundown on Great Lakes shipping activity was provided by Russ Hill, MI. "The frequencies are 4369.8 kHz (shore) and 4075.4 kHz (ship). Channel 405. Most of the traffic is from ships of the USS Great Lakes Fleet (U.S. Steel). They work WLC in Rogers City, MI. The traffic is heaviest at 2300 EST (or right after the MAYFORS weather broadcast, usually at 2245 EST), on weekdays and at 1100 EST weekends. At these times the ships report weather conditions at their locations on the Lakes. Also, WLC will pass on any traffic they might have for the ships from the company offices. At 2130 EST WLC receives coded weather info from various ships. WLC handles phone patches.

The ships of the USS Great Lakes Fleet are: Arthur M. Anderson, Calcite II, Cason J. Calloway, Edgar B. Speer, Edwin H. Gott, George A. Sloan, John G. Munson,

Myron C. Taylor, Philip R. Clarke, Presque Isle, and Roger Blough.

QSL addresses: WLC, Rogers City Radio, Central Radio Telegraph, Rogers City, MI 49779.

For ships use: (ship name), c/o Marine Post Office, Detroit, MI 48222."

Our thanks to Russ for the above details.

Martin Giglio, PA is using a Sony ICF-2010 with an AN-1 active antenna.

First time contributor William J. Price, FL wrote, "My gear consists of a Yaesu FRG-9600 Receiver, Kuranishi Instruments CC-965 Console, FC-965 DX Converter for HF, WA-965 Amp and a FC-1300 Converter for expanded range (to 1300 MHz). The converters and the amp were also manufactured by Kuranishi Instruments. I am also using a Radio Shack Preamp with the FRG-9600 and I have a Realistic PRO-2021 Scanner."

Mr. Chinaski, Italy described the activity he heard on USAF GCCS frequencies during Desert Shield/Desert Storm operations. He mentioned that his monitoring of 11176 and 13215 kHz showed heavy communica-

AERONAUTICAL TELECOMMUNICATIONS SERVICES
 SANTA MARIA AERONAUTICAL FIXED STATION
 NORTH ATLANTIC

Hugh H. Hawkins

RADIO COMMUNICATION CONFIRMATION,

This will confirm your report of KFTY CSY to D4B on 12/11/90 at 2033 U.T.C., on frequency 14497.5 KHz.

SANTA MARIA AERONAUTICAL FIXED STATION is part of the Aeronautical Fixed Telecommunication Network, providing the exchange of messages and/or digital data for any aeronautical purpose, between aeronautical fixed station on a worldwide basis.

Frequencies presently assigned are:

To D4B (Gal) : 6775, 9994, 14497.5, 18380 KHz,
 To ELP (Shannon) : 5474, 10540, 12323 KHz,
 Transmitter output : 1 kWatt Rhombic aeriols
 AWP : 36°50'22" North, 025°10'17" West,
 Make : AEROCOM, USA.

Best regards and thank you,



 CHIEF, AERONAUTICAL FIXED STATION

Hugh Hawkins, MS received this letter QSL.

NLEZ

UNITED STATES COAST GUARD CUTTER POINT NOWELL (WPB82363)

THIS WILL VERIFY YOUR RECEPTION OF STATION
 NLEZ, USCGC POINT NOWELL (WPB82363).
 20320 KHZ USB AT 0241 UTC ON 4 OCTOBER 1989.
 TRANSMITTER/POWER: 850900 150 watts
 ANTENNA: WHIP
 LOCATION: GULF OF MEXICO
 SIGNATURE AND OFFICIAL STAMP:


Dave Savo

PFC from Dave Savo, CA.

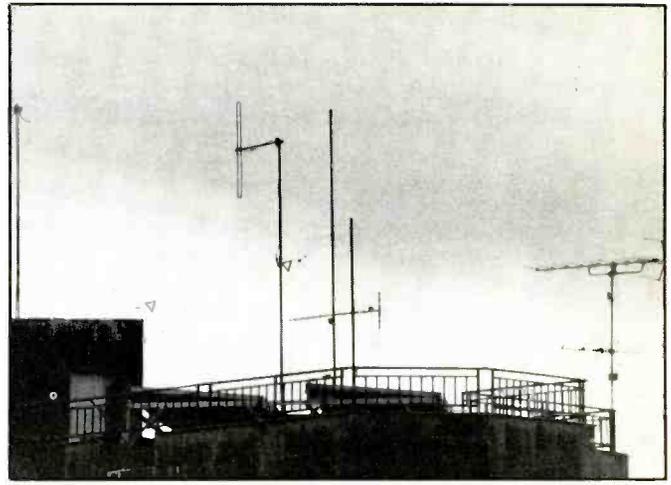
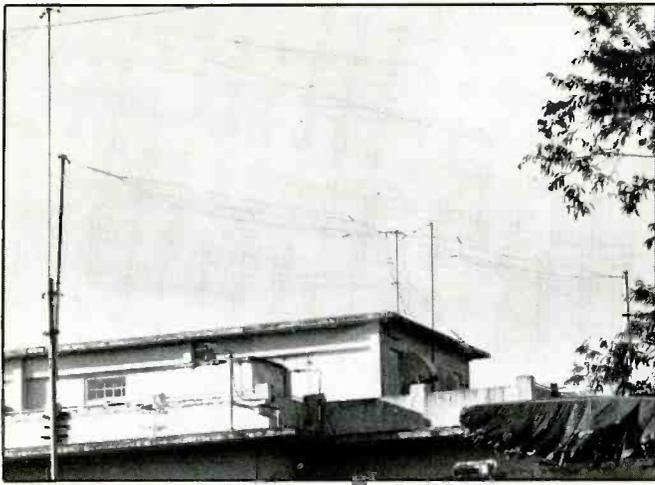
PQO

Phoenix Sky Harbor
 Radiobeacon 326 kHz

Robert C. Homuth, Phoenix, Arizona:
 This confirms your reception of radiobeacon
 "PQO" on 326 kHz on 2 December 1985
 Antenna: Triangle Guyed Tower (50 ft)
 Power: 100 watts

Notes:
 Signature: Judith L. Lyons, FAA/AFSFO Manager

Robert Homuth, AZ provided this copy of his PFC.



Two views of antennas on roof of Soviet Embassy in Mauritius. Photos courtesy of Desmond Ball, Australia.

tions on the circuits with various MAC aircraft contacting Croughton or Incirlik enroute to or from Dhahran.

An extremely interesting tape was received from Kevin Flagg, IA. The accompanying letter explained he had picked up the transmissions during Desert Storm and wondered why it was in plaintext English and not scrambled. The communications were on 13206 kHz between Command & AGAR-18. AGAR is used by the USAF as the callsign for EC-135N aircraft. Based on the statements made on the net, it would certainly appear that this was a SIGINT collection flight and the flight and the base station were comparing notes on the observations. However, the fact that these transmissions were not scrambled, does cause speculation that the communications were part of a deliberate deception plan. A radio deception plan was mentioned by one of the news media reporters after the conclusion of the Gulf War.

In one 24 hour period, M. Stuart, DE heard 52 USN MARS Afloat stations on 14441.5 kHz. He also pointed out that he had heard the Ready Reserve Force Oiler, SS Shoshone AT-AOT-151 of the Suisan Bay, CA West Coast Group, working USCG CAMSPAC San Francisco. The SS (steamship) designator means it is not owned by the US Navy but is leased by the Navy. T-AOT breaks down as follows: T is a MSC designator, A is Auxiliary, O is Oiler, and T is Transport.

Sean Dube, WA sent in some items he thought would be of interest to those who like to monitor Coast Guard comms. "Weather Broadcast schedules for USCG Communications Area Master Station Pacific are at 0430 & 1030 UTC on 4428.7, 8765.4 & 13113.2 kHz. At 1630 & 2230 UTC on 8765.4, 13113.2 & 17307.3 kHz. Weather schedules for NMN, USCG Communications Station Portsmouth, VA are as follows: High Seas Forecast - 0530 on 4428.7, 6506.4 & 8765.4 kHz; 1130 & 2330 on 6506.4, 8765.4 & 13113.2 kHz; 1730 on 8765.4, 13113.2 & 17307.3 kHz. Off

Shore Forecast: 0400 & 1000 on 4428.7, 6506.4 & 8765.4 kHz. 1500 & 2200 on 6506.4, 8765.4 & 13113.2 kHz."

Sean also indicated that NMO, USCG Communications Station in Honolulu maintains a watch on 4134.3, 6200 & 8241.5 kHz and that these frequencies are pretty good for hearing various Cutters. Other stations also use these frequencies most notably NOJ at Kodiak, Alaska."

Henry McGann, VA furnished a clipping from the Prince William Journal which told of efforts by the US Army to get Prince William and Faquier counties to restrict the use of equipment that emits high levels of electromagnetic "noise" near Vint Hill Farms station, US Army Electronics Material Readiness Activity, and other elements of the Army's Intelligence and Security Command.

The Army has temporarily abandoned its effort to get the two counties to enact restrictive legislation and instead is to work with IBM and Atlantic Research Corporation in an attempt to find solutions to the Vint Hill electronic noise problems.

Henry mentioned he has been a DX'er since the 40s and a CB'er since the late 50s. He uses a DX300, Bearcat 210, PRO-26 and CB equipment.

Ute Intercepts

- 284:** Beacon FHR, Friday Harbor, WA at 1250. (Arens, BC, Canada)
- 285:** Beacon PX, Presque Isle (Harbor Breakwater Light) at 1226. (Arens, BC, Canada)
- 335:** Beacon HP, Heath Point, PQ, Canada at 0133; Beacon POL, Opelousas, LA at 0423. (Crabill, VA)
- 341:** Beacon SB, South Bend, IN at 0350. (Grieb, IN)
- 357:** Beacon XYM, ?? at 2240. (Crabill, VA)
- 358:** Beacon OG, Ogdensburg, NY at 0111. (Crabill, VA)
- 359:** Beacon 2I, Connell, NB, Canada at 1049. (Crabill, VA)
- 369:** Beacon DDD, Doyon, AK at 1302. (Arens, BC, Canada)
- 385:** Beacon WL, Williams Lake, BC, Canada at 1336. (Arens, BC, Canada)
- 391:** Beacon BHN, Ft. Leonard Wood, MO at 1210; Beacon FIQ, Morganton, NC at 1417. (Crabill, VA)
- 404:** Beacon OUC, Ocracoke, NC at 0435; Beacon XCR, Little Falls, MN at 1131; Beacon ZR, Sarnia, Ont., Canada at 0356. (Crabill, VA)

Abbreviations Used For Intercepts

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

- 405:** Beacon UTX, Jupiter, FL at 0035. (Crabill, VA)
- 407:** Beacon CO, Colombia, MO at 1135. (Crabill, VA)
- 513:** Beacon PP, Omaha, NE at 0327. (Crabill, VA)
- 515:** Beacon ONH, Jefferson City, MO at 1123; Beacon RRQ, Rock Rapids, IA at 0326. (Crabill, VA)
- 521:** Beacon GF, Cleveland, OH at 0307. (Crabill, VA)
- 1610:** WXX790, Sky Harbor Intl Airport, Phoenix, AZ with parking information 24 hours. (Homuth, AZ)
- 1630:** Beacon 6E, Phoenix, AZ (100 mw) on occasionally w/AM tape loop. (Homuth, AZ)
- 1641:** Beacon 7V, Phoenix, AZ (100 mw) w/ID rptd in CW. (Homuth, AZ)
- 2716:** USS Fletcher (NJCN, DD992) in USB at 0431 w/kg San Diego Control One (NPL) re rendezvousing w/Tiger-62. Fletcher ref'd himself and USS Downes (FF1070) approaching their anchorage. Much talk re bridge-brodge channels 6 & 12. (Sabo, CA)
- 2716:** NLKC, USS Crommelin FFG37 clg Long Beach Control 2 at 1035; NCOV, USS Cowpens CG63 clg Norfolk Port Control at 1130; NWSS, USS W.S. Sims FF1059 clg Colon Harbor Control & Panama Harbor Control at 1020; NROS, USCGC Spencer, WMEC905 clg Navy Bermuda Control at 0205; Utility Landing Craft LCU 1611 w/kg AUTECH Ops and Snapper Base at 1100. (Stuart, DE)
- 3032:** Localizer (YL Opr) w/unanswered calls to Ab-stainer in USB at 0335. She called this channel Whiskey 100. (Sabo, CA)
- 3499:** Pings which sound similar to Sonar. One ping every second at 0655. USB mode. (Dube, WA)
- 3927:** CW stn w/callup of DRUTN, then TN MN and into cut nbrs. (White, ME)
- 4021:** CW sign on NNN . . . from 2100-05. Then YL/GG w/Gruppe 40 and into 5F grps. (Mason, England)
- 4025:** CW cut nbr bcst in progress at 0008. Down at 0012 w/AR AR AR VA VA VA. (White, ME)
- 4066.1:** USS Dwight D. Eisenhower CVN69 (Nike) at 1830 clg Norfolk ICSB; USS Chandler DDG996 (NPES) clg San Diego CSS1 at 1100. (Stuart, DE)



W5RRR is operated from the NASA Lyndon B. Johnson Space Center (JSC), located 25 miles southeast of Houston, Texas. The club station, established in the early sixties, supports the NASA and Contractor Ham Community under the auspices of the JSC Employees Activities Association. The sixty-plus members are active during Shuttle flights, contests, DXing, and general Rag-chewing QSO's. W5RRR also operates and maintains an open repeater (146.04/64) which serves the NASA-Clear Lake area.

The Johnson Space Center is responsible for the design, development, and testing of spacecraft systems for all NASA manned space flights; selection and training of the astronauts; planning and conducting manned missions; and extensive participation in medical, engineering, and scientific research.

This Center has successfully completed the Mercury, Gemini, Apollo, Skylab, and Apollo-Soyuz space flight programs and is currently developing and managing the Space Shuttle program, a reusable Space Transportation System providing easy access to space during the 1980's and beyond.

RADIO	DATE	TIME	FREQ.	MODE	RST
QSL	12/2/90	1703	20.185	USB	-

TNX QSL/QSO 73, *Kaiser*

QSL received by Rich Dixson, NY.

4097.1: U/i stn in USB at 0121 looking for phone patch w/WOM, Pensucco, FL. (Giglio, PA)

4143.6: M/V Laney Chouest in USB at 0349 wkg 12-OSCAR re notifying Native-echo that the electrical ground problem was fixed. 12-Oscar advised he couldn't hear vessel and would call back in 20 mins. Laney Chouest is civilian vessel leased by US Navy and carries the deep-diving Sea Cliff (DSV-4) and Turtle (DSV-8). (Sabo, CA)

4184.3: YUR, Rijeka, Yugoslavia in CW at 0035 w/ call mkr. (Ed.)

4191: UUBD, Soviet Tanker Krivbass in CW at 1820 w/tlx to IQX, Trieste, Italy. Vsl was unloading in Augusta, Sicily before trip to Venezia. (Chinaski, Italy)

4198: UJYV, Soviet Cargo Container Romny in CW at 2215 wtlx to IAR, Rome, Italy. Vsl anchored outside Gela, Sicily due to heavy storm. Enroute Algeria to Manipol, USSR. (Chinaski, Italy)

4363.5: Sky Princess in USB at 0130 wkg High Seas w/phone tfc. (Giglio, PA)

4395: YL/GG here every Tue/Thu. This time was repeating 211 211 211 26318 53 between 2100-2105. Then five digits and into 5F grps. Also on 5315 kHz. (Mason, England)

4415: M4L w/coded msg at 0718 then another at 0720 foll at 0722 by S4F w/coded msg. US Army stns, USB mode; on another day foll Army stns making rdo checks w/each other form 0625 to 0635: D2Y, M7Q, K0N, U0L, V4S, and Y1Y. (Dubee, WA) My ref shows this freq is National Guard, Region 1 (Eastern US). (Ed.)

4428.7: NMA, USCG CommSta Miami cglg fishing vessel Tear In Two at 0930. Many attempts but no answer. At 0937 NOJ, Kodiak came on wkg cutter Sweetbriar. At 0940 NMA back on & attempted contact w/ Tear In Two at 0944 NMA cld again saying that he transmitting blng & told Tear In Two to move to 8 MHz and attempt contact w/NMG, New Orleans. USB mode. (Dubee, WA)

4515: NZGW, USS Sumter LST 1811 wkg SESEF Charleston at 1745. (Stuart, DE)

4625: Buzzer here now has interval of 1.8 secs instead of former rate of 2.8 secs. Has been reported as Canadian Time Stn VEB2. (Mason, England)

4634.5: Gulf of Mexico petroleum-related tfc in USB at 0429: KPT9019 (vessel) wkg KAF466, Lafayette. Lots of talk re "the Chevron job." (Sabo, CA)

4640: X05 to X23 in USB at 0442-0445 w/plaintext msg re Captain meeting with people from TV stn at the Sisters Ranger Station. Ref's to "Three Peaks," and to X05 being the Hqs Element. Same stns, along with X21, noted here infrequently the next night also. (Sabo, CA)

4666: Tokyo radio wkg United 806 w/position report & instructions at 1010; wkg Hawaiian 3523 at 1013 & JAL 908 at 1015. USB mode. (Dubee, WA)

4740: YL/EE rptng 04127 between 1900-05 then Ready (x2) 31 (x2) and into 5F grps. (Mason, England)

4880: YL/EE (MOSSAD) at 2200 w/ULX2. At 0000-0003 same YL w/FTJ2. Never hrd this here before or anywhere else. (Mason, England)

5227: CW stn at 0028 sending 5L tfc. At 0032 sent II B 200 AS. Silent for moment then back up continuing msg. Obviously a Blind bcst. (DP, NC)

5264: MCW stn at 0030 rptng grps 4AN4 V4VD

AN4V TE6E until 0040. (DP, NC) This simulcast w/ 6792 kHz. Cut nbr system is AUV4E6BNDT = 1-0. (Ed.)

5299: CW stn at 0050 w/mkr V V DE 5J42/59 K. (DP, NC) Post Colombian allocation. (Ed.)

5415: Cut nbrs in CW at 0106. Another date hrd cut nbr tfc a 0040. Down with AR AR AR VA VA VA. (White, ME)

5500: YL/FF rptng 883 Strich zero zero at 2100 every Sat & then off at 2105. Rptd at 2200 on 5624 kHz. (Mason, England)

5547: Continental 015 wkg San Francisco w/selcall check at 0352; Northwest 034 w/same wkg Honolulu at 0353. USB mode. (Dubee, WA)

5574: Air France 403 cglg San Francisco w/position report at 0640 in USB. (Price, FL)

5600: Military drums & trumpets 2200-2205. Then YL/Czech w/Noma 705, Groppi 16 and into 5F grps. (Mason, England)

5696: NOJ, USCG CommSta Kodiak, AK wkg foll copters, #1749 w/position report at 0315; #1467 w/rdo check this freq & 8984 kHz at 0325; #1479 w/position report at 0328; NMA, CommSta Miami wkg Rescue #1708 w/response to unhrd msg at 0329; NOJ wkg #1707 w/flight status at 0329. All in USB. (Dubee, WA)

5725: YL/EE w/248 from 1900-05. Then 967 x2, 301 x2 & into 5F grps. Msg was 301 grps & at 6 GPM msg took 50 mins. Ended at 1951 w/00000. (Mason, England) Reportedly these bcsts ending w/3 or 5 T's (cut zeros) are KGB & some are xmtid from a GRU comms stn near Havana, Cuba. (Ed.)

5812: YL/SS w/4F grps in AM at 0416. (Margolis, IL)

6200: HMCS Porte Quebec YNG185 at 0240 w/lengthy plaintext tfc to Vancouver Military (not hrd), was still going at 0300; on top of this, USCGC Spar (NODV, WLB-403) at 0250 wkg CommSta Boston (NMF), then both moved up to 6518.8 kHz at 0253; M/V Matsonia (KHRC) wkg USCG CAMSPAC at 0342; USS Sampson (NZXV, DDG10) at 0634 w/brief comms to CommSta Miami (NMA), foll by vessel w/callsign PZAF w/wx obs to NMA from 0634-0636, and 6YSJ w/similar tfc from 0636-0637; finally USS Sampson back to NMA at 0638 re TTY comms. NMA seemed have 0630 sked w/USN ships for a while, since on another evening at 0636, USS Kidd (NKID, DDG993) was hrd wkg NMA re TTY tfc. All were USB mode, duplex working w/6506.4 kHz. (Sabo, CA)

6441.4: XFS2 at 0055 recvng xmsn fm u/i stn in CW. (DP, NC) This stn listed as C. Madero, Mexico. (Ed.)

6476: Call tape in CW at 0150 "DAAD DAAD DE DAM DAM EV DELTA EV DELTA QRU QRU." (DP, NC) DAAD is a collective callsign and DAM is Norddeich, Germany. (Ed.)

6506.4: NOJ, CommSta Kodiak, AK w/high seas forecast for North Pacific at 0205-0211. USB mode. (Dubee, WA)

6577: Canadian 100 cglg New York w/position report in USB at 0650. (Price, FL)

6628: TWA 840 cglg NY Radio. Also hrd Caracas wkg Flight 341. (DP, NC)

6644: 65Z, DE Y2L in CW at 0135 & passes plaintext

tfc in SS. (DP, NC) Other calls hrd this net - NEN, Z3F, MCJ and M3M appearing be control. Poss Naval net of u/i LA country. (Ed.)

6676: Southeast Asia VOLMET net in USB 1827-1850 w/Bombay, Sydney, Bangkok, Karachi, Singapore respectively w/their 5-min wx bcst. (Chinaski, Italy)

6680: OM/RR rptng 680 between 2130-35. Then 275 x2, 66 x2 and into 5F grps. (Mason, England)

6712: King-60 wkg Ops w/HF rdo check in USB at 0441. King-60 is tactical call for aerial rescue & recovery a/c and Moffet Rescue has been hrd this channel before. (there is a USAFR ARR Squadron stationed at NAS Moffet). (Sabo, CA)

6715: Jolly-32 told u/i party he'd see him on deck in a couple of mikes. USB at 0356. As w/6712 kHz logging Jolly is tactical call for aerial rescue & recovery a/c. (Sabo, CA)

6745: YL/EE at 0244 rptng CIO2 until 0248. (Pen-son, MN) Mossad bcst. (Ed.)

6751: Hold-69 in USB at 1745 w/pp via Croughton to Rhein-Main MAC post w/eta 1845. Hold-69 is C-130 MAC a/c. (Chinaski, Italy)

6753: VX4, Edmonton Military in USB w/aero wx report at 0820. (Dubee, WA)

6760: 46Charlie (Italian AF, 46th Wing Command-SAR & Airlift) in Pisa wkg ALF4617 enroute Erhac AB in Turkey. Also ALF4608 and 4609 from Erhac to Pisa carrying logistic support for 6 Italian F-104 a/c deployed in Turkey per NATO SHAPE. Erhac AB is near Dyarbakir & Incirlik. (Chinaski, Italy)

6763: Outpost cglg Browbeat w/freqs for contact. Primary was Papa 381 & secondary was Whiskey 104. USB at 0557. (Price, FL) Papa 381 is 5700 kHz and Whiskey 104 is 7475 kHz. SAC freqs. (Ed.)

6775: USAF MARS net in USB at 0320 w/much talk re packet comms & discussion of should they allow Region 5 stns to use Region 6 net freq. Calls incl AFA6VB, AFN6AT, AFA6FM, AFA6UX, AFA5PL, AFA6HF, & AFA5DA (who was not hrd.). (Sabo, CA)

6784: YL/EE in AM at 0236 w/3 = 2F grps. Warble jammer on top of bcst. Off at 0249. (Pen-son, MN)

6786: CW nbrs bcst at 0305. 5L grps (cut nbrs). Down with AR AR AR VA VA VA. (White, ME)

6802: YL/SS in USB at 0213 w/4F grps. (Price, FL)

6809: "Babbling Brook" tones at 0033. Off at 0100 like someone pulled the plug. (Pen-son, MN)

6813: "Babbling Brook" tones w/some hand sent near middle of xmsn. Off at 0146. (Pen-son, MN)

6824: Gypsy "Skylark" violin tune at 2100. Two days later noted on 5425 kHz at 2200. Next day on 5430 at 200. OM/Rumanian w/5F grps ending w/Terminat x3. (Mason, England)

6854: Slightly irregular series of "ding" like sounds at 0248 interwoven with a kind of his or buzz. The "ding" component consists of two separate dings about 1 kHz apart. Still going when I pulled the plug 10 mins later. (Pen-son, MN)

6989.5: Army MARS "Hi-Tech" net in LSB at 0346. Stns incl AAA9HT (Army MARS Hi-Tech Director, Eugene, OR), & others. (Sabo, CA)

7485: NNSS, USS, W.S. Sims FF1059 wkg SESEF Charleston at 1855 testing HF equip & then shifted to

7535 kHz to test w/SESEF Norfolk at 1930. (Stuart, DE)

7504.5: U/i CW stn at 0349 w/5L grps. (Ed.)

7527: Ping-pong and Gulf-70 in USB at 0413 re Gulf-70 being unable to go secure because his secure gear wasn't coded. This is DEA Channel ZB. (Sabo, CA)

7535: Foll ships testing comms equip w/Norfolk SESEF: NTMV, USS Patterson FF1061 at 1920; NRWH, USS Hayler DD997 at 1150; NYRW, USNS Prevail T-AGOS-8 at 1315; NHOV, USS Saipan LHA2 at 1600; NGET, USS Gettysburg CG64 at 1215; NRDC, USCGC Campbell WMEC-909 at 1800; NDKW, USS Rushmore LSD47 at 1236. (Stuart, DE)

7562: SDH256 in CW at 2200 w/nx. This is Polska Agencja Prasowa (PAP) Warsaw, Poland. (Boender, Netherlands)

7571.1: U/i stn in FSK CW at 1051 w/5F grps. Cuts zero as T. (Ed.)

7786: U/i CW stn at 0044 w/5F tfc. Vy sloppy characters. Sends fig 1 as DIDIDAHDADAHDADA, fig 9 usually sent as DAHDAHDADHDIT and fig 5 often has six dots. (DP, NC)

7831: Noontime wkg Splendid, Tame Fox & WAR46. Noontime advised keeping this channel (W-105) as primary & w-109 (13247 kHz) as secondary. USB at 0708. (Sabo, CA)

7836: CW stn at 0346 w/5F grps. Cuts zero as T. (Ed.)

7886: YL/SS in AM at 0600 rptng "Atencion 866 04" until 0604, then 04 25 x5 and into 5F grps. Down at 0607 w/Final Final Final. (Sabo, CA)

8002: Algerian Ministry of Interior CW net at 1345. A00 (Algiers) wkg A19 (Setif) w/tlx. Also hrd A06, A23, A18, A24. At 1400 heavy QRM from USSR stn. Net QSY'd to freq N2 (?). (Chinaski, Italy)

8031.3: U/i oil rig requesting spare parts be delivered next day by helo fm shore stn. No locations given. Poss South African coasts. Oprs had British accent. USB at 1520. (Chinaski, Italy)

8186: CW stn at 0342 w/5F grps (cut nbrs). Very heavy hum on carrier. (Ed.)

8241.5: S/V Mercy Louise (ZM2121) wkg USCG CAMSPAC (NMC) re crew member suffering fm chickenpox, USB 0505-0520. Vsl advised it due Seattle in 4 days. NMC instructed vsl to contact VGS, Puget Sound upon his arrival in area and in meantime maintain 12 hour comm sked w/NMC. Duplex w/8765.4 kHz; USCGC Polar Sea (NRUO, WAGB-11) to CommSta Portsmouth (NMN) at -612 for pp freq, USCGC Laurel (NRPJ, WLB-291) wkg CommSta New Orleans (NMG) w/msg re ATON ops incl advisory of light buoy extinguished due to accumulation of guano on its solar panel; at 0727, USCGC Kiska (NSFU, WPB-1336) wkg CommSta Honolulu (NMO) re setting up comm sked. All were USB, duplex w/8765.4 kHz. (Sabo, CA)

8241.5: British Warship HMS Gloucester D97, GBBF, clg Portishead at 1830; GUUS, HMS Broadword F88 clg radio stn Portishead at 1045 for p/p in U.K. (Stuart, DE)

8257: ICEI, Liner Enrico C. owned by Costacrociera Genoa enroute Turkey clg IAR Rome, Italy for RT calls. Vsl on cruise leg Oran-Gibraltar. USB at 1750; IBHE, the famous "Achille Lauro" liner owned by Star Lauro Naples in USB at 1715 clg IAR for RT calls on cruise leg Oran-Gibraltar; IAOR, Italian Warship Orsa F567 of Naval Group in the Gulf. Vsls Frigate equipped w/2 diff launch rockets systems. USB at 1835; A ship's radio opr comes up on USB at 1830 during chat between 2 Spanish fishing vsls & asks them to change freq cause they on intl clg freq. Fisherman continue to chat. Often the freq is busy with chatter in Spanish, Greek, Arabic or even Korean. (Chinaski, Italy)

8288: IALI, Italian Warship Libeccio F572 of Naval Gulf Fleet. Frigate w/2 rocket launch systems and 2 ASW helos. Hosted 20th Naval Group Command (COMGRUPNAV20) the Italian Naval Command in the Gulf. On patrol duty & conducting RT calls w/IAR. USB at 1830; IGNU, Italian Warship Stromboli A527 of Naval Gulf Fleet. Supply ship in Gulf operations. USB at 1845, conducting RT calls w/IAR. Later this ship deployed off Mogadishu Coasts to evacuate Italian community in Somalia during Civil War. (Chinaski, Italy)

8294.3: Towboat Trojan Warrior in USB. At mile 840 on Ohio River at 1940. (Giglio, PA)

8409: HOBW, Panamanian ship Rose Stone in CW at 1115. Anchored Barcelona w/tfc to GKC, Portishead, England re 3rd Officer unable to keep safety watch due to heavy drinking. Requested to downgrade him to

easier duties. (Chinaski, Italy)

8471: UXN, Arkangelsk in CW at 2042 w/call mkr. (Boender, Netherlands)

8532: LZW, Varna, Bulgaria in CW at 2205 w/call mkr. (Boender, Netherlands)

8700: YUR, Ryecka, Yugoslavia in CW at 2230 w/VVV DE YUR QX8 8 MHz CH 5/6/12. (Boender, Netherlands)

8719: NIID, USS Recovery ARS43 and NTWX, USS Hoist ARS40 on Salvage net wkg COMSUPRON-8, Little Creek, VA at 1140 & 1125 respectively. Both ships searching for unknown object, poss downed a/c. (Stuart, DE)

8806: Miami Marine Radio w/marine wx forecast in USB 0008-0011. (Price, FL)

8825: American 44 clg New York requesting Selcall check at 2346 in USB mode. (Price, FL)

8835: MFA Tirana in CW w/tlx & FAX #'s of Rolimpex, Agros, Interpegro, Polcoop. At 1840, also in CW, sends tlx to Embassy in Warsaw w/address: "Fabryka Mechanizmov Samochodowych Nyeqtes Szczecin" re motor carburetors delivery. (Chinaski, Italy)

8855: American 992 clg Maquetia, Venezuela w/position report UBS at 0630. (Price, FL)

8903: Bangui ACC passing air tfc in USB at 1750 to Brazzaville ACC. Opr was OM/FF. (Chinaski, Italy)

8906: KLM 752 wkg New York Aeradio in USB at 0230. Requested altitude change denied. (Symington, OH)

8911: Slingshot clg Swordfish-20. Ranch House clg Slingshot for rdo check. USB at 0029-0034. (Price, FL)

8930: Stockholm Radio wkg Northwind-47 in USB at 0541. (Sabo, CA)

8942: Hong Kong clg a/c 741 at 1434; Bangkok wkg Singapore-91 at 1435; Ho Chi Minh City wkg Delta-59 at 1438. Manila also hrd during this time. All USB mode. (Sabo, CA)

8964: AGA2, Hickam AFB w/coded comms at 0213; then wkg MACF 496 w/pp to Linament at 0240. All USB (Dubee, WA)

8989: Bandsaw clg McClellan AFB for pp to Phoenix-3. Bandsaw told Phoenix-3 that they would be on ground at Tinker at 0515. Bandsaw gave Phoenix-3 phone nbrs for two of crew members and also reported they had one passenger who was EA6B Prowler crew member, a Navy Lt. USB 0353 to 0358. (Price, FL)

9002: Algerian Ministry of Interior net in CW at 1130 w/A32 (Wargla) sending urgent tlx to A00 (Algiers) re car accident of Ministry Officer. Off at 1145. (Chinaski, Italy)

9017: Register to Camel Rugin in USB at 0321, then into secure comm's from 0322-0325; foll by Register w/unanswered calls to Belly Flop at 0334; then at 0335 to Dispense w/advisory that he going "monitor only" and requested a primary, secondary and "working table." Dispense advised that X-904 (this freq) was primary, P-381 (5700 kHz) was secondary, and the working table was number three. (Sabo, CA)

9270: YL/SS w/Seis Ocho Siete and 00000 in AM at 2200. Rptd at 2300 on 7700 kHz. (Mason, England)

10066: Kathmandu ACC in USB at 1608 clg Rangoon & Dhaka w/no answer. Then wkg Calcutta & passing air tfc. (Chinaski, Italy)

10074: Italian Army Logistic Support net in LSB at 1540 during earthquake emergency in Eastern Sicily. Net was composed of Lupo, Marco, Marco 5, Marco 13, Marco 24, Marco 62 and Marco 91. Marco has Hqs located in Messina, others were Army camps or local Army posts such as Marcello who xmtd w/24v emergency generator due to energy blackout. All camps located in Siracusa and Catania provinces. Towns in critical situation were Francofonte, Carlentini, and Noto. Several weeks after the earthquake struck, the Civil Security Minister visited the Army camps. (Chinaski, Italy)

10242: Hammer wkg a/c 17 in USB at 1833 on Customs Service channel TA; on another day, 207 wkg Shindig cleartext and secure in drug interdiction ops at 1844. (Sabo, CA)

10255: YL/GG w/255 x3 87541 50 every Friday at 1910. Five dashes and into 5F grps. Parallel w/8490 kHz. In background OM/EE (US) asking Burnout for wx info. (Mason, England)

10345: YL/SS in AM at 0511 rptng Atencion 75301 until 0513 then 01 017 x5 and into 5F grps. (Sabo, CA)

10493: WGY93 (FEMA, Santa Fe, NM) w/unanswered calls to WGY906 (Denton, TX) in USB at 1444; was answered by WGY912 (VIP Relocation Site, Mt. Weather, VA) 936 asked 912 to try contact 906. 912

This will verify your reception of vessel:	
PRESQUE ISLE	
Type: Bulk carrier	Tonnage: 55,000
Frequency: 4075 KHz	Call sign: WZE 4928
Date: Nov. 22, 1990	Time: 1109 EST
Antenna: 35' TWT	Power: 125W ERP
Signature: [Handwritten Signature]	
Stamp:	
M/V PRESQUE ISLE	

This PFC was sent in by Russ Hill, MI.

couldn't get an answer either. (Sabo, CA)

10711: French Army drill net in CW at 0900. Net control was 81DA. Other stns 2V2U and TI23. Passing drill msgs. Senders were PC MR and PC AV. PC is possibly Poste de Commande (Command Post). Authentication was given. Msgs were "non protege" (unclassified) and the object was "Exer Radio Mensuel" (Monthly Radio Drill). Off at 1000. (Chinaski, Italy)

11191: USN net in USB at 0553 incl IHN, Whiskey, FIT, Hershey (Joint Reconnaissance Center, Key West) and 5F1. Refs to Stockyard-Charlie, XAI, XAE, Papa Uniforms & Alligator Playground. (Sabo, CA)

11233: Lahr Military clg CanForce flight 5701 in USB at 2115 requesting wx update. (Price, FL)

11239: AF12, McClellan AFB w/wx for AFB's in USB at 0134. (Dubee, WA)

11243: Fortunate clg IVA2F w/coded tfc. USB at 2223. (Price, FL)

11269: ZAG, MFA Tirana in CW at 1335 sending nx in Albanian to u/i stn. At 1400 sending V's to ZAG5 (?); at 1412 sends msg w/heading NR34867 34868 34869 GR 100 16 14 15 61/333 BT. Xmttr slowly drifting down to 11267. At 1415 back up to 11269 sending V's CQ DE ZAG K QRK IMI. At 1418 V's on 11272 and at 1421 QSY'd "NR1." MFA Tirana usually seems to pass its tfc drifting all over. (Chinaski, Italy)

11275: Belgian AF in Bruxelles in USB at 1540 w/tfc between Senior Officers of airlift a/c at Inerhac Air Base. Giving times of departure & arrivals of various flights. Gives alternative airports of Erkilez and Incirlik because of heavy fog persisting in Erhac. There are 18 Belgian Mirage-5 fighters deployed in Erhac by NATO SHAPE. Comms in French with some Flemish also. (Chinaski, Italy)

11357: 31 Charlie, Italian AF 31st Airwing Command in Rome (Special Air Missions) in USB at 1603 wkg I2013 (C-130) which enroute Rome from Mombasa Airport. Was on mission of evacuation of Italian community in Mogadishu during Civil War. (Chinaski, Italy)

11396: MAC flight 13243 clg New York w/position report. USB at 2102. (Price, FL)

12240: YL/SS in AM at 0543 w/5F grps, each x2. (Sabo, CA)

12574: Maltese ship Alycia sending unclas MARREP (Maritime Report) via GKB, Portishead, England to several Military Commands: CTF48, CTG 63.8, CTG 106.2, CTG 106.3, CINCLANTFLT Norfolk, AMVER NYC and many others. It possible that ships owned or chartered by British Companies were ordered keep this procedure on trips to Gulf area. (Chinaski, Italy) Henry, the CTF-CTG designators stand for Commander Task Force and Commander Task Group respectively. (Ed.)

12588: YVEW, u/i Venezuelan ship in CW at 2156 clg YVR52 (unlocated) w/QRU QX8 13205, then QX8 13210. Off at 2210. Prob Venezuelan Navy. (Chinaski, Italy)

12803: UDK2, Murmansk, USSR in CW at 1850 passing msg. (Boender, Netherlands)

12909: DHS, replacement for Y5M, Rugen, former East Germany in CW at 1520 w/mkr & SITOR burst. (Chinaski, Italy)

12856: XSG, Shanghai, PRC in CW at 1450 w/CQ DE XSG. (Boender, Netherlands)

13123: Voice mirror at 0500 "Here is Saudi Arabia with its radiotelephone maritime service" rptd in EE and Arabic by OM announcer. (Homuth, AZ)

13201: Andersen (AIE2) wkg Aussie-227 in USB at 0748. Great sigs from Andersen. (Sabo, CA)

13241: Outpost clg & indicating it was STANDING

BY FOR TFC. USB at 0600. (Price, FL)

13380: U/i CW stn at 1930 w/heading of TW MW BT and into 5L grps (cut nbrs). (White, ME)

13457: KCP63 (Faa Longmont, CO) wkg Dark Star-Papa w/pp to Red Dog Ops. Dark Star-Papa also id'd as Red Dog-25. Red Dog-10 also up on freq and wrkd Red Dog-25. USB from 1848-1853. (Sabo, CA)

13550.7: STINGRAY (opr John) cld by CARPENTER (opr Doug) in USB at 1359 per personnel matters. Freq indicated as Alfa 6. QSY'd to Alfa 7, unknown freq. (Ed.)

13826: NNN0ICE, MARS, South Pole wkg stns in CONUS & Hawaii at 0300-0400 w/pp's. (Homuth, AZ)

13927: USAF MARS net in USB at 0055 incl AFA20F & AGA0B0. (Sabo, CA)

14360: KWZ99, u/i US Embassy clg KWS78 (Athens) w/ZBO O INT QRV K. After QRV given by KWS78, the embassy stn send DE KWZ99 QSO KKN50 NW TU AR. At 1438 KWS78 mkr running. (Chinaski, Italy)

4379: Foghorn signal, every 40 secs or so. Still going 0310-0440. (Penson, MN)

14383.5: NGUA, USS McKee AS41 using their MARS callsign NNN0CAB at 1100 wkg NNN0NPN (NAVCOMSWESTPAC-Guam). McKee was nprn using Subic Bay, Philippines. (Stuart, DE)

14405: Various USAF MARS stns incl AFA3AD hrd in USB between 2336-2345. (Sabo, CA)

14441.5: NHWI, USS Racine LST 1191 using NNN0CRS (reissued MARS callsign formerly belonging to USCGC Taney clg "any Stateside MARS stn" at 2200; NFHU, USS Francis Hammond FF 1067 using reissued MARS callsign NNN0CNQ clg NNN0NTI at 0100; NMER, USNS Mercy T-AH-19 using MARS callsign NNN0CHO at 2215 wkg NNN0TSD; KRHI, SS Gulf Trader T-AK-2036 w/MARS call NNN0CEG wkg NNN0PWT at 2235. (Stuart, DE)

14454: VCS, Halifax CG Radio, NS, Canada in CW at 0333 w/call mkr. (Penson, MN)

14467: NNN0CNP, USS Bainbridge in USB at 2345 wkg NNN0NIU, Cecil Field NAS w/pp; NNN0COH, USS Cape Cod wkg NNN0NRJ w/pp in USB at 0040. (Symington, OH)

14470: NNN0CBT in USB at 2056 wkg NNN0KRQ; NNN0CYY, USS San Jacinto in USB at 2056 wkg NNN0ERA. (Symington, OH)

14477: NWSS, USS W.S. Sims FF 1059 NNN0COS wkg NNN0QLP, USCGC Spencer WMEC-905 and USCG Rescue a/c 1713 (HC-130H Hercules) re fire and explosion in one boiler of Sims. No casualties but ship dead in the water, no electricity, only comms via MARS circuit relaying to USCG & CINCLANTFLEET. Comms from 0300-1200. (Stuart, DE)

14483: NNN0CNJ, USS Carson in USB at 2145 wkg NNN0MQU, Quantico MCB w/pp's. (Symington, OH)

14510.5: AEM3USG and AEM3VV, US Army MARS stns w/pp's to unreadable stateside MARS stns. USB at 1430. (Chinaski, Italy)

14563: Voice mirror at 0530 w/"Here is Cyprus, with its radiotelephone maritime service." (Homuth, AZ)

14686: Atlas (Customs Service, Washington, DC) wkg Ambush for patch to Warrior. This is Customs Service "Papa" channel. USB at 0107. (Sabo, CA)

14811: YL/EE w/1-0 count and 960. At 1510 ten dashes Count 225 and into 3/2F grps. Parallel w/ 13518 kHz. Both affected by warbler jammers. (Mason, England)

14825: CW stn at 1547 w/cut nbrs msg. Goes down w/AR AR AR VA VA VA. Few moments later sent UWM once then nil more. (Ed.)

14930: YL/GG w/930 x3, 70086, 77 at 1200 every Wed/Fri. After callup, 5 dashes and into 5F grps. Also on 11190 kHz. (Mason, England)

15000: BSF, Taiwan w/CW identifier at 0459. (Homuth, AZ)

15060: YL/EE w/308 from 1400-05. Then 49 49 and into 5F grps. Ended w/308 x2 00000. Rptd at 1500 on 12671 kHz. (Mason, England)

15875: USCG LORSTA Marcus (NRV6) in USB at 0629 wkg LORSTA Iwo Jima (NRT3) w/talk re coming up on 17 MHz channel. Then Marcus to Guam Comm-Sta (NRV) at 0633. (Sabo, CA)

16431: YL/EE w/1-0 count and 798. At 1310 ten dashes, count 100 and into 3/2F grps. (Mason, England)

16463.1: Warship HMS Ariadne F72 (GNUL) w/ unanswered calls to Portishead, England. USB from

2140-2146. QSL reply for this reception included 8x10 glossy of the ship, stamped PFC, and a personal letter from the Radio Supervisor. (Sabo, CA)

16534.4: NOAAS Malcolm Baldrige (R-103) ID'ing w/int'l c/s WTER w/unanswered calls to CommSta Honolulu in USB at 2224. Vessel formerly known as NOAAS Researcher. QSL reply from ship included net re name change and color postcard of the ship. (Sabo, CA)

18171: Atlas wkg 790 in USB from 0246-0254 on Customs Service channel "SI." (Sabo, CA)

18897: 3IF, MFA Algiers receiving msg from 7LH in Arabic re meeting in Tripoli. Kaddafi & Yassar Arafat names mentioned. Tlx signed Benamara Driss. Off at 1457. Regularly observed between 1000-1500. (Chinaski, Italy)

20002.1: IPG20, MFA, Rome, Italy w/callup in CW at 1341 to tis embassies in the Middle East. RYRY in CW at 1425. (Margolis, IL)

20015.5: U/i in CW from 2001-2005 w/5F grps. Zero cut as T. (Margolis, IL)

20096: Six tone mkr. Notes C-E-C-Eb-C-D hrd on USB 1257-1259. (Margolis, IL)

20936: USCG LORAN stns on foll Pacific Islands, NNN0NCE, Kure Islands; NNN0NCB, Iwo Jima, & NNN0NCA, Marcus Island at 2330. All cig NNN0NRU for p/p Stateside. (Stuart, DE)

20990.5: Army MARS net w/9VE wkg ABM4USM w/pp's in USB at 0102. (Sabo, CA)

20993.5: AEM3WC, u/i Army MARS in Europe wkg AAR3NAA Stateside at 1350; AAR4USD Army MARS Fort Jackson, NC wkg AEM1UFB and AEM1UD u/i MARS IN Europe at 1355; AAR3NAA u/i Army MARS wkg AEM1US, Army MARS 13th Sig Btn Heidelberg, FRG at 1535. All in USB. (Chinaski, Italy)55

21754: Consideration w/Alfa tfc on PACAF "U" channel in USB at 0012. (Sabo, CA)

22255: ELNK5, Liberian ship Silver Bin w/msgs in CW at 0930 to ZSC, Cape Town, RSA. Ship bound for Maputo; M/V Ravel in CW at 0920 w/msgs via GKC, Portishead, England to RFA Orangeleaf (British supply ship) to be passed to Senior Naval Officer Middle East. (Chinaski, Italy)

22282: Ship Atlas Voyager in CW at 1020 w/tfc to 9VG, Singapore. Enroute Tamatave, Madagascar to Singapore. (Chinaski, Italy)

22300: 5BYL, Cypriot Wheat Carrier Maria Diamant in CW at 1100 sending QTC to SVB, Athens, Greece. Ship enroute Rouen to Algiers w/cargo of wheat. (Chinaski, Italy)

22518: WCC, Chatham, MA in CW at 1455 w/tfc list. (Boender, Netherlands)

23285: HEE91, Berne Aero, Switzerland, wkg a/c on USB at 1509. (Margolis, IL)

23408: SPH, Gdynia, Poland in CW at 1600 w/telegrams in Polish to SQED, M/S Bronislaw Lachowicz. (Margolis, IL)

25120: Very odd activity in LSB at 1440 w/two Italians chatting (Sicilian accent). They were using coded speech made of numbers instead of letters. (Every letter matched with a number). Speaking this coded speech as if they were chatting normally. Very weak. Off at 1500 w/"Ciao a Domani." "Bye-bye, see you tomorrow." Whozit? (Chinaski, Italy)

26120: Two OM/EE in comms btwn East Coast Canada & London, England. LSB at 1559. (Margolis, IL)

29713: Outlanders "Vince" and "Vic" complaining at 1907 that WLDW was on "their" private frequency. (Homuth, AZ)

29780: "Brian" wkg "Sybil" ordering supplies for an apartment. Sounded like business comms at 1930. (Homuth, AZ)

29936: CMU97, Soviet Navy, Santiago, Cuba w/CW tfc to warship c/s RXXG at 1434. (Margolis, IL)

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Pirates Den (from page 66)

or two ago. Bob also QSL'd a station he'd labelled as "Vietnam unidentified" after he sent logs into some of the club bulletins. The QSL was on a Selective Service Registration form (or a facsimile?). Also included was a plastic US flag, hand grenade bulletins, GI Joe tote bag, organ donor stickers and yellow ribbons. As Bob noted, "everything you need to go to war!"

Other recent pirate activity I've seen noted here and there includes Radio Transylvania, Radio Fox, "Radio Baghdad," Omega Radio, KCUF, East Coast Beer Drinker and Delta Tango 306—all of them using the 7415 area and operating in the late afternoon or into the evening hours. Some things to be on the lookout for!

I continue to get loggings on Radio Newyork International and Radio Free New York. These are not considered pirate stations, although Radio Newyork International, at least, was at one time. These are simply programs, though independently produced—aired over the licensed shortwave broadcaster WWCR in Nashville, Tennessee and not via illegal pirate transmitters.

That's a wrap for this time. Be sure to keep those pirate loggings coming my way, along with address and QSL information and station news. I am always interested in hearing from station operators about your station (plans, formats, equipment, etc), so please drop me a line now and then. Thanks.

Beaming In

(from page 4)

menting on the situation in the Persian Gulf? With the public curious about listening to shortwave stations, this would have been a natural. I received no reports of stations offering such programming.

One excellent touch was supplied by Larry Magne, Editor of *Passport to World Band Radio*. During the early days of the war, Larry prepared last-minute updates relating to stations, skeds, and frequencies involved in the Mideast shortwave war of words. He sent this information out by FAX to selected news media in order to keep them abreast of the situation, and to help in publicizing shortwave radio. Good work, Larry!

Oddly, and sadly, in the midst of shortwave's greatest renaissance with the public in recent memory, Radio Canada International (RCI) was in the process of going through the type of hell that it neither needed nor deserved. Last December, the CBC (which operated RCI) announced that it had to trim millions from its 1991-1992 budget. They decided that doing this would mean dumping RCI unless the Canadian government coughed up some additional cash by the end of March. In mid-March, the government agreed to come up with some money, but things weren't going to be the same at RCI.

CBC was no longer going to operate RCI, the government would be in charge. The budget would be cut by a third of the previous year's budget. Half the services (89 jobs) were being cut, including the departments that created English and French programming. RCI will be rebroadcasting domestic CBC English and French programs, but not creating any original programming in those languages. Original programming will exist only in Russian, Ukrainian, Spanish, Chinese, and Arabic.

Larry Magne's worthy contributions to RCI are gone. And Ian McFarland, an RCI institution, is now working for NHK in Tokyo. RCI without Ian McFarland isn't something I've quite been ready to accept at this point. It's just too much!

So, in a one year period we saw some big changes in radio, especially if you toss in the no-code ham license that also came into being within the same time frame.

With the exception of the RCI debacle, other things were mostly positive. The question will be if those who purchased shortwave radios during the past year got so caught up in the excitement of listening that they will continue and become more or less regular (or even advanced) radio hobbyists as time goes on. Let's hope that a goodly percentage stick with the hobby.

If given half a chance, radio is a fantastic pastime for anybody with a bit of curiosity and a taste for adventure.

Mailbag (from page 6)

piece that was aired. Still, on balance, I felt it was a decent enough presentation, given that it was a prime time network TV show intended for a mass audience. I have no gripes. —Editor.

The Big Picture

The bio information on the back cover of your books mentions that you once wrote training films for the US Army Signal Corps. As a person who has sat through many such screen epics, I wonder if you'd say more about your Army films and how you came to write films. What did you do before you became a writer to prepare you for this work?

SFC Lawrence Harewood,
APO New York

All were produced by the US Army Signal Corps Pictorial Center, then located at the Astoria Studios, in New York. I wrote several relating to the Quartermaster Corps, but most of the films I scripted related to radio communications, and were for use by the Army Security Agency (ASA), Fort Devens, Mass. The ASA films were all classified by the Army as "Secret." I grew up in the motion picture industry (members of my family have been making animated car-

toons, features and other motion pictures since 1915). I worked for United Artists for six years, myself, and still have heavy duties to Tinseltown. Before I became a writer, I prepared by growing a beard. —Editor.

What Cost Privacy?

The June issue story about the lack of privacy on cordless telephones had many fine insights. It didn't mention voice scramblers, so I thought I would mention that one cordless phone in monitoring range of my station uses one.

Mike Derman,
Alexandria, VA

They don't seem to be an important factor in cordless phone use, but scramblers are gaining in popularity for land mobile radio, cellars, and with landline for voice, computer, and FAX communications in an effort to thwart eavesdropping. Scramblers are gaining in popularity to the extent that the US Senate is mulling over new legislation that would compel scrambler manufacturers to supply the government with the information necessary to permit Big Brother to listen in on scrambled communications. The civil liberty people who applauded anti-scanner legislation are running around yelling, "The sky is falling!" —Editor.

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IF: 561.225, 58.075, 455KHz or 10.7MHz
Increments: 5 to 955KHz selectable/ 5 or 12.5 steps.
Audio: .4 Watts
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Scan Speed: 15 ch/sec.
IF: 21.4MHz, 455KHz
Increments: 10,12.5,25,30
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 Increments: 5,12,5,25 KHz
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 Antenna: BNC
 Display: LCD, backlighted
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 Speed: 20 ch/sec. scan. 20ch/sec. search
 IF: 736.23, (352.23) (198.63) 45.0275, 455KHz
 Increments: 50Hz and greater
 Audio: 1.2 Watts at 4 ohms
 Power: Input 13.8 V. DC 500mA
 Antenna: BNC
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